

Zuber - DNR, Rob <rob.zuber@state.co.us>

MT5 RCE for Bowie 2

1 message

Zuber - DNR, Rob <rob.zuber@state.co.us> Thu, To: Tamme Bishop <tamme.jestover@bresnan.net>, Basil Bear <basilbear@wolverinefuels.com>

Thu, Oct 3, 2019 at 12:17 PM

Tamme and Basil -

Attached is the full RCE for the Bowie No. 2 midterm (MT-05). I will be sending the findings to you both later today or tomorrow. The findings have some explanation of the changes to the RCE, but if you need additional information, please contact me.

Regards, Rob

Rob Zuber, P.E. Environmental Protection Specialist II Coal Regulatory Program



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DRMS_RCE_for_MT05.pdf

COST SUMMARY WORK

Task description:		Midterm Review	v Cost Sumn	nary				
Site:	ite: Bowie No. 2 Mine		Permit Action: MT5		MT5	Permit/Job		
<u>P</u>]	ROJECT I Task #: Date: User:	DENTIFIC 000 9/30/2019 ZTT	CATION State: County:	Colorado Delta		Abbreviation: Filename:	None C083-000	

Agency or organization name: DRMS

TASK LIST (DIRECT COSTS)

Task		Form	Fleet	Task	
	Description	Used	Size	Hours	Cost
001	Pull back and Haul Portal Bench Fill Material to	TRUCK1	1	609.56	\$456,542
	Cut Slope	DOGED		1.50.00	
002	Regrade D-Portal Bench	DOZER	4	158.03	\$200,513
005	Rip and Regrade Material Storage Area at Gob Pile	DOZER	4	1.73	\$2,196
006	Pull Back Material @ Old Truck Loadout Material	EXCAVATE	2	21.27	\$12,072
0.07	Storage Area	DOZED		0.01	
007	Regrade Old Truck Loadout Material Storage Area	DOZER	4	8.21	\$10,415
008	Pull Back Material at Truck Loadout/Coal	EXCAVATE	2	147.57	\$83,755
009	Stockpile Regrade New Truck Loadout and Coal Stockpile	DOZED	4	22.28	\$41,085
	Pull Material Back onto Train L/O Facil. and	DOZER EXCAVATE	4	32.38 431.74	
010	Railbed Benches	EACAVATE	2	431.74	\$245,035
011	Regrade Train Loadout Facilities and Railbed	DOZER	4	171.56	\$217,672
011	Benches	DOZEK	4	171.50	\$217,072
012	Backfill and Regrade Train L/O Overland	DOZER	4	5.62	\$7,124
012	Conveyor Corridor	DOLLK	-	5.02	ψ <i>1</i> ,12 1
013	Haul Fill from Upper Mat'l Strge Area to B-Seam	SCRAPER1	1	60.63	\$37,237
010	Portal Bench		-	00.00	<i>\(\begin{bmm} \begin{bmm} 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 \\ 0 & 0 &</i>
014	Haul Fill fr Adj. Mat'l Storage Area to B-Seam	TRUCK1	1	89.33	\$61,925
	Portal Bench				
015	Backfill and Regrade B-Seam Portal Bench	DOZER	4	38.70	\$53,616
019	Regrade Drill Pads from MRs and TRs	DOZER	4	8.01	\$10,165
020	Regrade Material Storage Area from TR-29	DOZER	4	0.48	\$609
021	Backfill and Regrade New Prep Plant Bench	DOZER	4	36.99	\$46,936
022	Replace Fill from Material Storage Area to Water	SCRAPER1	1	1.51	\$928
	Tank Bench				
023	Regrade Borrow Area	DOZER	4	19.14	\$24,289
025	Regrade Upper Parking Lot Expansion Area	EXCAVATE	1	3.65	\$1,038
027	Haul Rock to Vent Shafts for Disposal	TRUCK1	1	10.50	\$3,842
036	Spread Uncompacted Refuse on Gob Pile #2	DOZER	4	89.54	\$113,605
037	Spread Uncompacted Refuse at Gob Pile #3	DOZER	4	100.73	\$127,806
038	Compact Material Hauled to Gob Pile #1	COMPACT	1	11.85	\$2,697
039	Compact Refuse on Gob Pile #2	COMPACT	1	135.94	\$30,927
040	Haul refuse out of Gob Pile #2/#3 drying areas for	TRUCK1	1	909.13	\$299,539
	placement				
041	Compact Refuse at Gob Pile #3	COMPACT] 1	147.84	\$33,633
042	Haul Topsoil from Stockpile Area to Gob Pile #1	SCRAPER1	1	2.18	\$1,341
043	Place 3.5' of Coverfill on Gob Pile #1	SCRAPER1	1	15.80	\$9,706
044	Place Coverfill from Stockpiles on Gob Pile #2	SCRAPER1	1	173.74	\$106,704

045	Haul Cover Material from Gob Pile #3 to Gob Pile #2	TRUCK1	1	235.64	\$86,227
046	Place 2.5' of Coverfill on Gob Pile #3, from stockpile	SCRAPER1	1	196.56	\$120,714
047	Push temp coverfill mat. to face of Gob pile #3	DOZER	1	16.77	\$4,505
050	Compact Backfilled D-Portal Bench,Roads, & Utility Corridor	COMPACT	1	511.43	\$116,345
051	Compact Backfilled Material at Truck Loadout/Coal Stockpile	COMPACT	1	56.10	\$12,764
052	Compact Backfilled Train Loadout	COMPACT	1	191.23	\$43,503
053	Compact B-Seam Portal Bench	COMPACT	1	113.99	\$25,933
060	Rip Utility Bench	RIPPER	4	0.30	\$429
061	Rip D-Portal Bench	RIPPER	4	3.71	\$5,146
062	Rip Truck Loadout/Coal Stockpile Area	RIPPER	4	2.06	\$2,859
063	Rip Regraded Mine Area Prior to Topsoil Replacement	RIPPER	4	59.09	\$81,865
064	Rip Train Loadout Facilities and Railbed Benches	RIPPER	4	7.69	\$10,657
065	Rip B-Seam Portal Bench	RIPPER	4	3.71	\$5,146
066	Rip Rock Laydown Pad Topsoil	RIPPER	1	0.43	\$149
070	Rip Haul Roads (Portion Being Reclaimed) & Old Truck Loadout	RIPPER	4	116.47	\$162,613
071	Remove Haul Road Subbase and Place on Gob Pile #1	SCRAPER1	1	30.54	\$18,756
072	Rip Truck Loadout Road	RIPPER	4	2.14	\$2,997
073	Haul Truck Loadout Subbase to Gob Pile #1	SCRAPER1	1	12.75	\$7,828
074	Rip Upper Haul Road Asphalt Prior to Road Narrowing	RIPPER	4	2.95	\$4,120
075	Pull Back/Haul Fill Mat'l from Upper Haul Rd Narrowing	TRUCK1	1	141.47	\$105,958
076	Regrade Narrowed Section of Haul Road	DOZER	4	26.11	\$33,127
077	Rip Gob Pile #1 Road	RIPPER	4	2.35	\$3,294
078	Regrade Gob Pile #1 Road	DOZER	4	5.17	\$6,156
079	Rip Access Road	RIPPER	4	0.73	\$1,029
080	Haul Access Road Surface to Gob Pile #1	SCRAPER1	1	4.86	\$2,984
081	Regrade Access Road	DOZER	4	1.79	\$2,276
083	Backfill and Regrade Haul Road to Gob Pile #2	DOZER	4	0.44	\$607
084	Rip Lower Haul Road	RIPPER	4	0.95	\$1,322
085	Regrade Lower Haul Road	DOZER	4	36.46	\$50,503
086	Regrade Light Use Roads from MRs and TRs	DOZER	4	60.96	\$84,454
090	Finish Grade Disturbed Mine Area	GRADER	1	129.92	\$19,907
091	Finish Grade Train Loadout	GRADER	1	16.91	\$2,591
092	Finish Grade B-Seam Portal Bench	GRADER	1	6.91	\$1,060
093	Finish Grade Gob Piles #1, #2, #3, and #4	GRADER	1	50.64	\$7,760
095	Backfill and Regrade Pond B	DOZER	1	7.63	\$2,641
096	Backfill and Regrade Pond C	DOZER	1	11.61	\$3,896
097	Backfill and Regrade Gob Pile Pond D	DOZER	1	8.18	\$2,746
098	Backfill and Regrade Pond F	DOZER	1	10.87	\$3,647
099	Backfill and Regrade Pond J	DOZER	1	24.64	\$8,269
100	Backfill and Regrade Pond K	DOZER	1	1.52	\$511
101	Excavate for Post-mining Channel at B-Seam Portals	EXCAVATE	2	0.63	\$358
102	Install Riprap, Gravel, and Geotextile in B-Seam Channel	POSTMININ G	1	43.66	\$7,080
106ag	Plug and seal AW-15	BOREHOLE	1	6.00	\$1,250
-			1	6.00	
106ai		BOREHOLE	1	6.00	
106ah	Plug and seal AW16 Plug and seal AW-17	BOREHOLE		6.00	\$1,244 \$1,237

106aj	Plug and seal BD-101	BOREHOLE	1	4.00	\$816
106ak	Plug and seal BD-103	BOREHOLE	1	6.00	\$1,216
106al	Plug and seal BD-105	BOREHOLE	1	7.00	\$1,424
106a	Plug and seal BD-105A	BOREHOLE	1	6.00	\$1,213
m					
106an	Plug and seal BD-102	BOREHOLE	1	6.00	\$1,210
106ao	Plug and seal BL-101A	BOREHOLE	1	6.00	\$1,210
106ap	Plug and seal BL-102	BOREHOLE	1	6.00	\$1,211
106aq	Plug and seal BL-102A	BOREHOLE	1	6.00	\$1,210
106bb	Plug and seal GVB-6A	BOREHOLE] 1	11.00	\$4,784
106cn	Plug and seal MR133 Utility Hole #1	BOREHOLE] 1	10.00	\$5,320
106co	Plug and seal MR133 Utility Hole #2	BOREHOLE	1	10.00	\$5,320
106cp	Plug and seal MR133 Utility Hole #3	BOREHOLE	1	10.00	\$5,320
106cq	Plug and seal MR133 Utility Hole #4	BOREHOLE] 1	10.00	\$5,320
106cy	Plug and seal GVB-D-3A (aka GVB-D3-A)	BOREHOLE	1	12.00	\$4,248
106db	Plug and seal GVB-D-7A (aka GVB-D7-A)	BOREHOLE] 1	10.00	\$2,916
106dd	Plug and seal GVB-D-5A	BOREHOLE	1	9.00	\$2,472
106do	Plug and seal GVB-D-6A (aka GVB-D6-A)	BOREHOLE	1	10.00	\$2,909
106dp	Plug and seal GVB-D-6B (aka GVB-D6-B)	BOREHOLE	1	6.00	\$4,121
106dq	Plug and seal GVB-D-7B (aka GVB-D7-B)	BOREHOLE	1	11.00	\$3,589
106du	Plug and seal GVB-D-8C (aka GVB-D8-C)	BOREHOLE	1	12.00	\$4,308
106ed	Plug and seal P-TC-03-01 (aka TC-03-01)	BOREHOLE	1	10.00	\$3,338
106ee	Plug and seal P-TC-03-02 (aka TC-03-02)	BOREHOLE	1	10.00	\$3,338
106gb	Plug and seal GVB-17C (aka GVB-B17C)	BOREHOLE	1	12.00	\$8,389
106gc	Plug and seal GVB-17D (aka GVB-B17D)	BOREHOLE	1	12.00	\$9,566
106gd	Plug and seal GVB-17E (aka GVB-B17E)	BOREHOLE	1	12.00	\$11,308
106gi	Plug and seal GVB-17F (aka GVB-B17F)	BOREHOLE	1	12.00	\$11,526
106gn	Plug and seal AW-1	BOREHOLE] 1	7.00	\$1,518
106go	Plug and seal AW-2	BOREHOLE] 1	6.00	\$1,264
106gp	Plug and seal AW-3	BOREHOLE	1	7.00	\$1,548
106gq	Plug and seal AW-4	BOREHOLE] 1	6.00	\$1,264
106gr	Plug and seal AW-5	BOREHOLE] 1	6.00	\$1,304
106gs	Plug and seal AW-6	BOREHOLE	1	7.00	\$1,511
106gt	Plug and seal AW-7	BOREHOLE	1	8.00	\$1,668
106gu	Plug and seal AW-8	BOREHOLE	1	6.00	\$1,226
106gv	Plug and seal AW-9	BOREHOLE	1	6.00	\$1,234
106g	Plug and seal AW-11	BOREHOLE	1	6.00	\$1,223
W			ļ		
106gx	Plug and seal AW-12	BOREHOLE	1	6.00	\$1,218
106gy	Plug and seal AW-13	BOREHOLE	1	6.00	\$1,223
106gz	Plug and seal AW-14	BOREHOLE	1	6.00	\$1,210
106hd	Plug and seal DH-13	BOREHOLE	1	12.00	\$3,398
106he	Plug and seal DH-15	BOREHOLE	1	8.00	\$1,808
106hf	Plug and seal DH-15	BOREHOLE	1	9.00	\$2,213
106hg	Plug and seal DH-25	BOREHOLE	1	9.00	\$2,152
106hq	Plug and seal DH-34C	BOREHOLE	1	7.00	\$1,555
106hr	Plug and seal DH-38	BOREHOLE	1	10.00	\$2,434
106hs	Plug and seal DH-39	BOREHOLE	1	8.00	\$1,773
106hv	Plug and seal CWI-DH-47	BOREHOLE	1	12.00	\$4,158
106h	Plug and seal CWI-DH-48	BOREHOLE	1	12.00	\$4,554
W					** 100
106hx	Plug and seal DH-49	BOREHOLE	1	9.00	\$2,109
106if	Plug and seal DH-57B (aka 98-57B)	BOREHOLE	1	12.00	\$3,248
106ii	Plug and seal DH-58B (aka DH-58A)	BOREHOLE	1	12.00	\$3,316
106ij	Plug and seal CWI-DH-60 (aka Mon Well)	BOREHOLE	1	12.00	\$2,638
106ip	Plug and seal DH-67B	BOREHOLE	1	10.00	\$2,261

		1		1	
106iq	Plug and seal DH-67-D	BOREHOLE	1	9.00	\$1,940
106ir	Plug and seal DH-67-Abv	BOREHOLE	1	8.00	\$1,683
106is	Plug and seal DH-67-Blw	BOREHOLE	1	9.00	\$1,927
106it	Plug and seal CWI-DH-69 (aka B-1 Mon Well)	BOREHOLE	1	12.00	\$2,856
106iu	Plug and seal CWI-DH-70 (aka B-1 Mon Well)	BOREHOLE	1	11.00	\$2,868
106iy	Plug and seal 2010-1B	BOREHOLE	1	12.00	\$3,583
106iz	Plug and seal 2010-1SS	BOREHOLE	1	12.00	\$3,504
110	Replace Topsoil from Stockpile A to Portal/Utility	SCRAPER1	1	652.39	\$400,661
	Bench				
111	Replace Topsoil from Stockpile A to Truck Loadout/Coal Stkpl	SCRAPER1	1	45.95	\$28,218
112	Replace Topsoil from Stockpile F to Train Loadout	SCRAPER1	1	39.98	\$24,553
113	Replace Topsoil from Stockpile A to B-Seam Portal Bench	SCRAPER1	1	87.66	\$53,835
115	Replace Topsoil fm Stockpiles C/D to Pond C and Gob Pond D	SCRAPER1	1	13.12	\$8,055
116	Replace topsoil from Stockpile to Pond F	DOZER	1	3.95	\$1,370
117	Replace topsoil from Stockpile F to Pond J	SCRAPER1	1	2.85	\$1,752
118	Replace topsoil from Stockpile F to Pond K	SCRAPER1	1	1.92	\$1,178
119	Replace topsoil fm stockpile to MR/TR Light-Use Roads	DOZER	4	25.96	\$35,960
120	Replace topsoil from stockpiles to MR/TR drill pads	DOZER	4	27.04	\$36,297
121	Replace topsoil from Stockpile A to Prep Plant Bench	SCRAPER1	1	22.41	\$13,763
122	Replace topsoil from stockpile to Material Storage Area	DOZER	4	0.18	\$254
123	Replace topsoil from Stockpile E to Gob Pile #2	SCRAPER1	1	83.69	\$51,400
124	Replace Topsoil from Stockpile D to Gob Pile #4	SCRAPER1	1	7.01	\$4,306
125	Replace topsoil from stockpile to Gob Pile #3	SCRAPER1	1	85.33	\$52,406
126	Replace topsoil from stockpile to Haul Road	DOZER	4	0.17	\$232
127	Replace topsoil from stockpile to Water Tank Bench	SCRAPER1	1	1.71	\$1,051
128	Replace topsoil from Stockpile G to TR35 road/pad	SCRAPER1	1	5.01	\$3,079
129	Replace topsoil from stockpile to Borrow Area	DOZER	4	5.44	\$7,539
130	Replace topsoil fm stockpile to Upper Parking Lot Expansion	DOZER	1	0.46	\$147
140	Seal Portals and Shafts	MINESEAL	1	40.00	\$229,819
150	Drill Seed Mix 3 on Disturbed Area	REVEGE	1	225.02	\$505,123
151	Drill Seed Drill Pads	REVEGE	1	82.97	\$114,100
152	Drill Seed Lt-Use Roads to Drill Pads and Terror Creek	REVEGE	1	62.01	\$85,276
154	Broadcast Seed Mix 3 on Gob Pile #3	REVEGE	1	60.63	\$112,160
155	Drill seed Hubbard Creek Vent Shaft Pad	REVEGE	1	1.20	\$1,650
156	Drill Seed Rock Laydown Area	REVEGE	1	0.50	\$275
157	Weed Control Over 10-Year Liability Period	REVEGE	1	400.00	\$57,403
165	Demolish and Remove all Structures	DEMOLISH	1	160.00	\$1,598,336
170	Proctor Testing of Backfill (5 tests)	SITEMAINT ENANCE	1	0.00	\$675
171	Nuclear Density Testing of Backfill	SITEMAINT ENANCE	1	0.00	\$128,709
172	Water Truck for Moisture Augmentation of Backfill Material	MISCTRUK	1	1,437.02	\$127,148
173	Site Maintenance - Ten Years	SITEMAINT ENANCE	1	292.00	\$242,813
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174	Support Equipment for Scraper Hauling	SITEMAINT ENANCE	1	449.16	\$108,805
180	Mobilize/Demobilize Equipment for First Construction Season	MOBILIZE	1	12.00	\$52,331
181	Mobilize/Demobilize Equipment for Second Construction Season	MOBILIZE	1	12.00	\$52,331
182	Mobilize/Demoblize Equipment for Pond Removal	MOBILIZE	1	6.50	\$4,965
183	Mobilize/Demobilize Equipment for Yearly Site Maintenance	MOBILIZE	1	14.00	\$28,469
241	Regrade Terror Creek Light-Use Road	DOZER	1	29.73	\$7,985
242	Replace Topsoil from Stockpile to Terror Creek Lt-Use Road	DOZER	1	22.45	\$6,029
261	Concrete Plug and Backfill Terror Creek Vent Shaft	MINESEAL	1	40.00	\$105,205
301	Reseed Add'l Disturbance from Utility Boreholes at Fan Bench	REVEGE	1	1.00	\$536
302	Regrade Fan Bench - Utility Borehole Mudpit Add'l Dist.	DOZER	1	4.06	\$1,089
352	Re-topsoil Pitkin Mesa Pipeline corridor	DOZER	1	10.60	\$2,848
353	Reseed Pitkin Mesa Pipeline Corridor	REVEGE	1	2.00	\$2,750
369	Seal Well DH-67blw	BOREHOLE	1	12.00	\$5,302
374	Seal CWI-DH-58A	BOREHOLE	1	12.00	\$6,159
379	Regrade Section 5 Road	DOZER] 1	12.88	\$3,458
380	Re-topsoil Section 5 Road	DOZER] 1	5.46	\$1,467
381	Reseed Section 5 road	REVEGE] 1	2.00	\$1,678
45A	Distribute Gob Pile #2 cover hauled by T/L	DOZER	1	375.26	\$119,033
45B	Haul Cover Material from Borrow Area #1 to Gob Pile #2	TRUCK1	1	50.03	\$8,398
45C	Haul Cover Material from Borrow Area #2 to Gob Pile #2	TRUCK1	1	228.88	\$38,420
45D	Haul Cover Material from Borrow Area #3 to Gob Pile #2	TRUCK1	1	41.55	\$6,974
45E	Haul Cover Material from B Portal Storage to Gob Pile #2	TRUCK1	1	108.83	\$39,824
		<u>SUBTO</u>	TALS:	11479.3	\$8,026,005

INDIRECT COSTS

OVERHEAD AND PROFIT:

Liability insurance:	2.02	Total =	\$162,125
Performance bond:	1.05	Total =	\$84,273
Job superintendent:	5,739.65	Total =	\$398,274
Profit:	10.00	Total =	\$802,600
		TOTAL O & P =	\$1,447,273
		CONTRACT AMOUNT (direct + $O \& P$) =	\$9,473,278

LEGAL - ENGINEERING - PROJECT MANAGEMENT:

\$500	Total =	\$500
4.00	Total =	\$378,931
3.13		\$296,514
0.00	Total =	\$0
	· · ·	4.00 Total =

TOTAL INDIRECT COST = \$2,123,218

TOTAL BOND AMOUNT (direct + indirect) = _____\$10,149,223

TRUCK/LOADER TEAM WORK

Task description:	Pull bac	ck and Haul Po	rtal Bench Fill M	aterial to Cut Sl	ope	
Site: Bowie No. 2 Mine	<u>)</u>	Permit Ac	ction: MT5		Permit/Job#	#: <u>C1996083</u>
PROJECT IDENT	IFICATION					
Task #: 001		State: Colo	rado	Abł		None
Date: 9/30/20 User: ZTT	019 (County: Delta	1		Filename:	C083-001
Agency or or	rganization nan	ne: DRMS				
HOURLY EQUIPM	MENT COST	<u>[</u>		Shift ba	sis: <u>1 per day</u>	
			Equipment Descr	iption		
Tru	ick Loader Tea		t 773F	-		
			t 365C L 13'-7" S	Stick		
Support	t Equipment -L	oad Area: NA Imp Area: NA				
Road Mair	ntenance – Moto					
Road Main		ter Truck: NA				
		1	6			
<u>Cost Breakdown</u> :	Truck/Loa	Excavator	Load Area	Equipment Dump Area	Maint	tenance Equipment Water Truck
	TTUCK	Excavator	Load Alea	Dump Alea	Grader	water Huck
%Utilization-machine:	100	100	NA	NA	Ν	A NA
Ownership cost/hour:	\$105.90	\$121.37	NA	NA	N	A NA
Operating cost/hour:	\$93.41	\$125.13	NA	NA	N	A NA
%Utilization-riper:	NA	0	NA	NA	N	IA NA
Ripper own. cost/hour:	NA	\$0.00	NA	NA	N	A NA
Ripper op. cost/hour:	NA	\$0.00	NA	NA	N	A NA
Operator cost/hour:	\$33.29	\$37.27	NA	NA	N	A NA

Total work team cost/hour: \$748.97

\$232.60

Work:

2

\$283.77

\$748.97

1

MATERIAL QUANTITIES

Unit Subtotals:

Number of Units:

Group Subtotals:

260,953	CCY	Swell factor:	1.165	
304,010	LCY			
e of estimated volume:	Operator Es	stimate		
estimated swell factor:	Cat Handbo	ook		
Aaterial Purchase Cost:	\$0.00			
Total Cost:	\$0.00			
	304,010 The of estimated volume: The estimated swell factor: Material Purchase Cost:	304,010LCYge of estimated volume: estimated swell factor:Operator Estimated Swell factor: Cat Handbox \$0.00	304,010LCYge of estimated volume:Operator Estimateestimated swell factor:Cat HandbookMaterial Purchase Cost:\$0.00	304,010LCYwe of estimated volume:Operator Estimateestimated swell factor:Cat HandbookMaterial Purchase Cost:\$0.00

NA

Support:

0

\$0.00

NA

0

NA

Maint:

0

\$0.00

NA

0

HOURLY PRODUCTION

<u>Truck Capacity:</u>					
Truck Payload (weight) Basis					
Material weight:	2,900	Pounds/			
Description:		ck - 50% Rock, 50%	Earth		
Rated Payload:	122,520	Pounds			
Payload Capacity:	42.25	LCY			
Truch Ded (volume) Design					
Truck Bed (volume) Basis: Struck Volume:	35.00 L	СҮ			
Heaped Volume:		CY			
Average Volume:		CY			
Adjusted Volume:		CY			
Adjusted Volume.	<u></u>				
Final	Fruck Volume Ba	sed on Number of Lo	oader Passes:	42.26	LCY
Loading Tool Capacity					
			Buck	et Size Class:	Large
Rated Capacity:	6.900	LCY (heaped)			
Bucket Fill Factor:	0.875	Loose material - 1	" and over (8	5 - 90%) 0.875	
Adjusted Capacity:	6.038	LCY			
Job Condition Corrections:	_	Site	Altitude (ft.):	<u>6900</u> feet	
	Truck	Loader	Source		
Altitude Adj:	1.000	1.000	(CAT HB	,	
Job Efficiency:	0.830	0.830	(CAT HB)	
			(CAT HB)	
Net Correction:	0.830	0.830			
Net Correction:	0.830			ired to Fill	7 passes
Net Correction:	0.830 Nu	0.830			7 passes
Net Correction: Loading Tool Cycle Time: Excavators and Front Shovel	0.830 Nu	0.830 mber of Loading Too		ired to Fill	7 passes
Net Correction: Loading Tool Cycle Time: Excavators and Front Shovel Machine Cycle Time vs	0.830 Nu l <u>s:</u> s. Job Condition F	0.830 mber of Loading Too Rating: <u>SEVERE</u>		ired to Fill	7 passes
Net Correction: Loading Tool Cycle Time: Excavators and Front Shovel Machine Cycle Time vs Selected Value v	0.830 Nu l <u>s:</u> s. Job Condition F vithin this Basic F	0.830 mber of Loading Too Rating: <u>SEVERE</u> SEVERE		ired to Fill	7 passes
Net Correction: Loading Tool Cycle Time: Excavators and Front Shovel Machine Cycle Time vs Selected Value v	0.830 Nu l <u>s:</u> s. Job Condition F	0.830 mber of Loading Too Rating: <u>SEVERE</u> SEVERE		ired to Fill	7 passes
Net Correction: Loading Tool Cycle Time: Excavators and Front Shovel Machine Cycle Time vs Selected Value v Track Loaders –	0.830 Nu ls: s. Job Condition F vithin this Basic F Material Descript	0.830 mber of Loading Too Rating: <u>SEVERE</u> SEVERE		ired to Fill	7 passes
Net Correction: Loading Tool Cycle Time: Excavators and Front Shovel Machine Cycle Time vs Selected Value v Track Loaders – Cycle Time Elements (min.):	0.830 Nu: ls: s. Job Condition F vithin this Basic F Material Descript	0.830 mber of Loading Too Rating: <u>SEVERE</u> Rating: <u>SEVERE</u> tion:		ired to Fill Truck:	/ ·
Net Correction: Loading Tool Cycle Time: Excavators and Front Shovel Machine Cycle Time vs Selected Value v Track Loaders –	0.830 Nu: ls: s. Job Condition F vithin this Basic F Material Descript	0.830 mber of Loading Too Rating: <u>SEVERE</u> SEVERE		ired to Fill	/ ·
Net Correction: Loading Tool Cycle Time: Excavators and Front Shovel Machine Cycle Time vs Selected Value v Track Loaders – Cycle Time Elements (min.): Load: NA	0.830 Nu ls: s. Job Condition F vithin this Basic F Material Descript Mar	0.830 mber of Loading Too Rating: <u>SEVERE</u> Rating: <u>SEVERE</u> tion:	ol Passes Requ	ired to Fill Truck: 	<u> </u>
Net Correction: Loading Tool Cycle Time: Excavators and Front Shovel Machine Cycle Time vs Selected Value v Track Loaders – Cycle Time Elements (min.): Load: NA	0.830 Nu ls: s. Job Condition F vithin this Basic F Material Descript Mar	0.830 mber of Loading Too Rating: <u>SEVERE</u> Rating: <u>SEVERE</u> tion:	ol Passes Requ	ired to Fill Truck: Dump:0.10 ad, dump,	/ ·
Net Correction: Loading Tool Cycle Time: Excavators and Front Shovel Machine Cycle Time vs Selected Value v Track Loaders – Cycle Time Elements (min.): Load: <u>NA</u> Wheel and Track	0.830 Nu ls: s. Job Condition F vithin this Basic F Material Descript Mar	0.830 mber of Loading Too Rating: <u>SEVERE</u> Rating: <u>SEVERE</u> tion:	ol Passes Requ	ired to Fill Truck: Dump: ad, dump, naneuver):	0 minutes
Net Correction: Loading Tool Cycle Time: Excavators and Front Shovel Machine Cycle Time vs Selected Value v Track Loaders – Cycle Time Elements (min.): Load: NA Wheel and Track Cycle Time Factors	0.830 Nu ls: s. Job Condition F vithin this Basic F Material Descript Mar k Loaders - Unadj	0.830 mber of Loading Too Rating: <u>SEVERE</u> Rating: <u>SEVERE</u> tion:	ol Passes Requ	ired to Fill Truck: Dump: ad, dump, naneuver): Factor (min.)	0 NA minutes Source
Net Correction: Loading Tool Cycle Time: Excavators and Front Shovel Machine Cycle Time vs Selected Value v Track Loaders – Cycle Time Elements (min.): Load: NA Wheel and Track Cycle Time Factors Material:	0.830 Nu ls: s. Job Condition F vithin this Basic F Material Descript 	0.830 mber of Loading Too Rating: <u>SEVERE</u> Rating: <u>SEVERE</u> tion:	ol Passes Requ	ired to Fill Truck: Dump: ad, dump, naneuver): Factor (min.) NA	0 NA minutes Source (Cat HB)
Net Correction: Loading Tool Cycle Time: Excavators and Front Shovel Machine Cycle Time vs Selected Value v Track Loaders – Cycle Time Elements (min.): Load: NA Wheel and Track Cycle Time Factors Material: Stockpile:	0.830 Nu ls: s. Job Condition F vithin this Basic F Material Descript 	0.830 mber of Loading Too Rating: <u>SEVERE</u> Rating: <u>SEVERE</u> tion:	ol Passes Requ	ired to Fill Truck: Dump: ad, dump, naneuver): Factor (min.) NA NA	0 NA minutes Source (Cat HB) (Cat HB)
Net Correction: Loading Tool Cycle Time: Excavators and Front Shovel Machine Cycle Time vs Selected Value v Track Loaders – Cycle Time Elements (min.): Load: NA Wheel and Track Cycle Time Factors Material: Stockpile: Truck Ownership:	0.830 Nu ls: s. Job Condition F vithin this Basic F Material Descript 	0.830 mber of Loading Too Rating: <u>SEVERE</u> Rating: <u>SEVERE</u> tion:	ol Passes Requ	ired to Fill Truck: Dump: ad, dump, naneuver): Factor (min.) NA NA NA NA	0 NA minutes Source (Cat HB) (Cat HB) (Cat HB)
Net Correction: Loading Tool Cycle Time: Excavators and Front Shovel Machine Cycle Time vs Selected Value v Track Loaders – Cycle Time Elements (min.): Load: NA Wheel and Track Cycle Time Factors Material: Stockpile: Truck Ownership: Operation:	0.830 Nu ls: s. Job Condition F vithin this Basic F Material Descript 	0.830 mber of Loading Too Rating: <u>SEVERE</u> Rating: <u>SEVERE</u> tion:	ol Passes Requ	ired to Fill Truck: Dump: ad, dump, aneuver): Factor (min.) NA NA NA NA NA NA	0 NA Source (Cat HB) (Cat HB) (Cat HB) (Cat HB) (Cat HB)
Net Correction: Loading Tool Cycle Time: Excavators and Front Shovel Machine Cycle Time vs Selected Value v Track Loaders – Cycle Time Elements (min.): Load: NA Wheel and Track Cycle Time Factors Material: Stockpile: Truck Ownership:	0.830 Nu ls: s. Job Condition F vithin this Basic F Material Descript 	0.830 mber of Loading Too Rating: SEVERE Rating: SEVERE tion:	DI Passes Requ	ired to Fill Truck: Dump: ad, dump, naneuver): Factor (min.) NA NA NA NA NA NA NA	0 NA minutes Source (Cat HB) (Cat HB) (Cat HB) (Cat HB) (Cat HB) (Cat HB) (Cat HB)
Net Correction: Loading Tool Cycle Time: Excavators and Front Shovel Machine Cycle Time vs Selected Value v Track Loaders – Cycle Time Elements (min.): Load: NA Wheel and Track Cycle Time Factors Material: Stockpile: Truck Ownership: Operation:	0.830 Nu ls: s. Job Condition F vithin this Basic F Material Descript 	0.830 mber of Loading Too Rating: <u>SEVERE</u> Rating: <u>SEVERE</u> tion:	DI Passes Requ	ired to Fill Truck: Dump: ad, dump, aneuver): Factor (min.) NA NA NA NA NA NA	0 NA Source (Cat HB) (Cat HB) (Cat HB) (Cat HB) (Cat HB)

Truck Exchange Time:		0.70	Minutes	Adju	sted for site al	titude:	0.700	Minutes		
	Truck Load Time:			3.520	Minutes	Adju	sted for site al	titude:	3.520	Minutes
	Truck M	aneuvei	and Dump Time:	1 0			titude:	1.100	Minutes	
	Truck Trav maintained Haul Route	3.0	l & Return) T	<u>'ime:</u>	Road Conditi	on: <u>Firm, smoo</u>	th, rolling, dirt	t/lt. surfaced,	watered,	
	Seg #		Distance	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)		
	1	600.0	0	17.00	3.00	20.00	379	1.588]	
						Haul Time:	1.588	minut	es	
	Return Rou			1	1				1	
	Seg # Haul Distance (Ft)		Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)			
	1	600.0	0	-17.00	3.00	-14.00	1377	0.566		
					Total Tru	Return Time: ck Cycle Time:				
	oading Too. Produ Unit Produ	iction	600.89	LCY/Hou	r	Adjusted for j	ob efficiency:	498.74	LCY	/Hour
Truck	Comt Produ	-	339.28	LCY/Hour		Adjusted for job efficiency:		281.60	LCY	/Hour
Optim	al No. of Tr	ucks:	2	Truck(s)		Selected Numb	per of Trucks:	2	Truc	k(s)
	Adjusted hourly truck team production:563.20LCY/HourAdjusted single truck/loader team production:498.74LCY/HourAdjusted multiple truck/loader team production:498.74LCY/Hour									
	JOB TIM	IE ANI	D COST							
	Fleet	size:	1	Team(s)	Т	otal job time:	609.5	6 H	lours	

 Unit cost:
 \$1.502
 /LCY
 Total job cost:
 \$456,542

Task description:	Regrade D-Portal	Bench			
e: Bowie No. 2 Mine	Perm	it Action:	MT5	Permit/Jo	b#: <u>C1996083</u>
PROJECT IDENTIF	ICATION				
Task #: 002 Date: 9/30/2019 User: ZTT		Colorado Delta		Abbreviation: Filename:	None C083-002
Agency or organ	nization name:	IS			
HOURLY EQUIPME	<u>ENT COST</u>				
Basic Machine: Ca	t D10T - 10SU				
Horsepower: 574	4				
	mi-Universal				
Attachment: NA					
	ber day				
Data Source: (C	RG)				
Cost Breakdown:					
			Utilization %		
Ownership Cost/Hour:		\$140.61	NA		
Operating Cost/Hour:		\$135.35	100		
Ripper own. Cost/Hour:		\$0.00	NA		
Ripper op. Cost/Hour:		\$0.00	0		
Operator Cost/Hour:		\$41.24	NA		
MATERIAL QUANT Initial Volume: _ 260	ITIES ,593				
Swell factor: 1.16 Loose volume: 303	55 ,591 LCY				
	·				
Source of estimated vol Source of estimated swe factor:					
HOURLY PRODUCT	<u>FION</u>				
Average push distance:	100 feet				
Unadjusted hourly production:	1,718.9 LCY/	hr			
Materials consistency description:	Compacte	ed fill or en	nbankment 0.9		
Average push gradient:	10 %	_			
Average site altitude:	6,900 feet	_			
Material weight:	2,900 lbs/LCY				
Weight description:	Decomposed rock -	50% Rock,	50% Earth		

	Source
0.750	(AVG.)
0.900	(CAT HB))
1.000	(GEN.)
1.000	(AVG.)
0.830	(1 SHIFT/DAY)
0.800	(FND-RF)
0.786	(CAT HB)
1.000	(CAT HB)
0.793	(CAT HB)
1.000	(PAT)
	0.900 1.000 1.000 0.830 0.800 0.786 1.000 0.793

Adjusted unit production:	480.26 LCY/hr		
Adjusted fleet production:	1921.04 LCY/hr		

Fleet size:	4 Dozer(s)	
Unit cost:	\$0.660/LCY	

Total job time:	158.03 Hours
Total job cost:	\$200,513

Task description:	Rip and Regrade	e Material S	torage Area at Gob P	ile	
Bowie No. 2 Mine	Per	Permit Action:		Permit/Job#: C1996	
PROJECT IDENTIFI	CATION				
Task #: 005 Date: 9/30/2019 User: ZTT	State: County:	Colorado Delta		Abbreviation: Filename:	None C083-005
Agency or organ	nization name: DR	MS			
HOURLY EQUIPME	NT COST				
	D10T - 10SU				
Horsepower: 574					
	ni-Universal				
Attachment: NA					
	er day				
Data Source: (CH	(G)				
Cost Breakdown:		I	Utilization %		
Ownership Cost/Hour		\$140.61	NA		
Ownership Cost/Hour: Operating Cost/Hour:		\$135.35	100		
Ripper own.					
Cost/Hour:		\$0.00	NA		
Ripper op. Cost/Hour:		\$0.00	0		
Operator Cost/Hour:		\$41.24	NA		
Total Fleet Cost/Hour:					
Initial Volume:3,63Swell factor:1.16Loose volume:4,22		_			
Source of estimated volu	ime: Map 15-1				
Source of estimated voit Source of estimated swe	1	nok			
factor:					
HOURLY PRODUCT					
Average push distance: Unadjusted hourly production:	100 feet 1,718.9 LCY	ť/hr			
Materials consistency description:	Compac	cted fill or en	nbankment 0.9		
Average push gradient:	0 %				
Average site altitude:	6,000 feet				
Material weight:	2,900 lbs/LCY				
Weight description:	Decomposed rock	- 50% Rock,	50% Earth		

Job Condition Correction Factor		Source
Operator Skill:	0.750	(AVG.)
Material consistency:	0.900	(CAT HB))
Dozing method:	1.000	(GEN.)
Visibility:	1.000	(AVG.)
Job efficiency:	0.830	(1 SHIFT/DAY)
Spoil pile:	0.800	(FND-RF)
Push gradient:	1.000	(CAT HB)
Altitude:	1.000	(CAT HB)
Material Weight:	0.793	(CAT HB)
Blade type:	1.000	(PAT)

Adjusted unit production:	610.90 LCY/hr		
Adjusted fleet production:	2443.6 LCY/hr		

Fleet size:	4 Dozer(s)	
Unit cost:	\$0.519/LCY	

Total job time:	1.73 Hours
Total job cost:	\$2,196

HYDRAULIC EXCAVATOR WORK

	Pe	rmit Action	: <u>MT5</u>	Permit/J	ob#: C1996083
PROJECT IDENTIFIC	CATION				
Task #: 006 Date: 9/30/2019 User: ZTT	State: County:	Colorado Delta		Abbreviation: Filename:	None C083-006
Agency or organi	ization name: DR	RMS			
HOURLY EQUIPMEN	NT COST				
	Cat 365C L 13'-7" ROPS Cab	' Stick	Weig Sh	ift Basis: 1	404 70.51 per day (CRG)
Cost Breakdown:					
Ownership Cost/H Operating Cost/H			Utilization % NA 100		
Operator Cost/H			NA		
Total Unit Cost/H Total Fleet Cost/H	·				
	TIES 790 1 ,405	CCY LCY	Swell factor:	1.165	
Source of	estimated volume:	Page 3.0	2-2		
	estimated volume: mated swell factor:	Page 3.0 Cat Hand			
Source of estin	mated swell factor: ION	Cat Hand	dbook		
Source of estin	mated swell factor: ION d bucket, swing loa	Cat Hand	dbook bucket, swing empty)	_	
Source of estin	mated swell factor: ION d bucket, swing loa I	Cat Hand ded, dump t Basic Job Co	dbook bucket, swing empty) ondition Description: in Basic Description:	SEVERE SEVERE	
Source of estin HOURLY PRODUCTI Excavator Cycle Time (loa	mated swell factor: ION d bucket, swing loa I	Cat Hand ded, dump t Basic Job Co	dbook bucket, swing empty) ondition Description:	SEVERE SEVERE	minutes
Source of estin	mated swell factor: ION d bucket, swing loa I	Cat Hand ded, dump t Basic Job Co	dbook bucket, swing empty) ondition Description: in Basic Description: Cycle Time Value:	SEVERE SEVERE 0.570	minutes
Source of estin HOURLY PRODUCTI Excavator Cycle Time (loa	mated swell factor: ION d bucket, swing loa I Secondary Job Cor 	Cat Hand ded, dump l Basic Job Co ndition with	dbook bucket, swing empty) ondition Description: in Basic Description: Cycle Time Value: Bu	SEVERE SEVERE 0.570	
Source of estin HOURLY PRODUCTI Excavator Cycle Time (loa Load Bucket Capacity Rated Capacity: Bucket Fill Factor:	mated swell factor: ION d bucket, swing loa I Secondary Job Cor 3.61 0.850 3.07	Cat Hand ded, dump b Basic Job Co ndition with LCY (he Hard, too	dbook bucket, swing empty) ondition Description: in Basic Description: Cycle Time Value: Bu eaped) ugh clay (80% - 90%	SEVERE SEVERE 0.570	
Source of estin HOURLY PRODUCTI Excavator Cycle Time (loa Load Bucket Capacity Rated Capacity: Bucket Fill Factor: Adjusted Capacity:	mated swell factor: ION d bucket, swing loa I Secondary Job Cor 3.61 0.850 3.07	Cat Hand ded, dump b Basic Job Co ndition with LCY (he Hard, too	dbook bucket, swing empty) ondition Description: in Basic Description: Cycle Time Value: Bu caped) ugh clay (80% - 90% Site Al c B) ay)	SEVERE SEVERE 0.570 ucket Size Class: S	
Source of estin HOURLY PRODUCTI Excavator Cycle Time (loa Load Bucket Capacity Rated Capacity: Bucket Fill Factor: Adjusted Capacity: Ob Condition Correction F Altitude Adj: Job Efficiency: Net Correction: Unadj Adj	mated swell factor: ION d bucket, swing loa I Secondary Job Cor 3.61 0.850 3.07 Factors 1.00 0.83	Cat Hand ded, dump I Basic Job Condition with LCY (he Hard, tou LCY Source (CAT H (1 shift/d multiplier Production: Production:	$\frac{\text{dbook}}{\text{bucket, swing empty}}$ ondition Description: in Basic Description: Cycle Time Value: Bu caped) ugh clay (80% - 90% Site Al B) ay) r $\frac{323.00}{268.09}$	SEVERE SEVERE 0.570 ucket Size Class: S	
Source of estin HOURLY PRODUCTI Excavator Cycle Time (loa Load Bucket Capacity Rated Capacity: Bucket Fill Factor: Adjusted Capacity: Ob Condition Correction F Altitude Adj: Job Efficiency: Net Correction: Unadj Adj	mated swell factor: ION d bucket, swing loa I Secondary Job Cor 3.61 0.850 3.07 Factors 1.00 0.83 0.83 justed Hourly Unit I justed Hourly Unit I justed Hourly Fleet I	Cat Hand ded, dump I Basic Job Condition with LCY (he Hard, tou LCY Source (CAT H (1 shift/d multiplier Production: Production:	dbook bucket, swing empty) ondition Description: in Basic Description: Cycle Time Value: Bu ugh clay (80% - 90% Site Al e B) ay) r 323.00 268.09	SEVERE SEVERE 0.570 ocket Size Class: <u>S</u>) 0.850 titude: <u>6500</u> feet LCY/Hour LCY/Hour	

Unit cost:	\$1.058	/LCY
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Total job cost: \$12,072

Task description:	Regrade Old Tr	uck Loadout	: Material Storage Ar	rea	
ite: Bowie No. 2 Mine	Pe	rmit Action:	MT5	Permit/Jo	b#: <u>C1996083</u>
PROJECT IDENTII	FICATION				
Task #: 007 Date: 9/30/201 User: ZTT	State: 9 County:	Colorado Delta		Abbreviation: Filename:	None C083-007
	anization name:	RMS			
HOURLY EQUIPM	ENT COST				
Horsepower: 5 Blade Type: S Attachment: N Shift Basis: 1	Cat D10T - 10SU 74 Gemi-Universal VA per day CRG)				
Cost Breakdown:			Utilization %		
Ownership Cost/Hour	r:	\$140.61	NA		
Operating Cost/Hour	r:	\$135.35	100		
Ripper own Cost/Hour		\$0.00	NA		
Ripper op. Cost/Hour		\$0.00	0		
Operator Cost/Hour		\$41.24	NA		
Swell factor: 1.	790	_			
	,405 LCY				
Source of estimated vo Source of estimated sv factor:	U				
HOURLY PRODUC	CTION				
Average push distance Unadjusted hourly production:	e: <u>150 feet</u> 1,243.2 LC	Y/hr			
Materials consistency description:	Compa	cted fill or en	nbankment 0.9		
Average push gradient:	10 %				
Average site altitude:	6,500 feet				
Material weight:	2,900 lbs/LCY				
Weight description:	Decomposed rock	a - 50% Rock,	50% Earth		

Job Condition Correction Factor		Source
Operator Skill:	0.750	(AVG.)
Material consistency:	0.900	(CAT HB))
Dozing method:	1.000	(GEN.)
Visibility:	1.000	(AVG.)
Job efficiency:	0.830	(1 SHIFT/DAY)
Spoil pile:	0.800	(FND-RF)
Push gradient:	0.786	(CAT HB)
Altitude:	1.000	(CAT HB)
Material Weight:	0.793	(CAT HB)
Blade type:	1.000	(PAT)

Adjusted unit production:	347.35 LCY/hr
Adjusted fleet production:	1389.4 LCY/hr

Fleet size:	4 Dozer(s)	
Unit cost:	\$0.913/LCY	-

Total job time:	8.21 Hours
Total job cost:	\$10,415

HYDRAULIC EXCAVATOR WORK

	Pe	rmit Action:	MID		Permit/Jo	b#: <u>C1996083</u>
ROJECT IDENTIFIC	CATION					
Task #: 008 Date: 9/30/2019 User: ZTT	State: County:	Colorado Delta			eviation: Filename:	None C-86-083
Agency or organi	zation name: DF	RMS				
OURLY EQUIPMEN	NT COST					
	Cat 365C L 13'-7" ROPS Cab	' Stick		Horsepower: Weight (MT): Shift Basis: Data Source:		404 70.51 ber day CRG)
ost Breakdown:				Data Source.	(
Ownership Cost/H Operating Cost/H Operator Cost/H Total Unit Cost/H	our: \$125. our: \$37.2	13 27	Utilization % NA 100 NA			
Total Fleet Cost/H	Hour: \$567	.54				
	7,920 9,127	_ CCY LCY	Swell fac	ctor: 1.165		
Source of estin	estimated volume: mated swell factor:	Operator Cat Hand		mpty):		
Source of estin	estimated volume: mated swell factor: [ON] d bucket, swing loa	Operator Cat Hand	lbook		RE	
Source of estin	estimated volume: mated swell factor: [ON] d bucket, swing loa	Operator Cat Hand ded, dump t	lbook pucket, swing er pndition Descrij in Basic Descrij	otion: <u>SEVER</u> otion: <u>SEVER</u>		
Source of estin OURLY PRODUCTI xcavator Cycle Time (loa	estimated volume: mated swell factor: [ON] d bucket, swing loa	Operator Cat Hand ded, dump t	lbook bucket, swing er ondition Descrij	otion: SEVER		minutes
Source of estin OURLY PRODUCTI xcavator Cycle Time (loa pad Bucket Capacity	estimated volume: mated swell factor: [ON d bucket, swing loa Secondary Job Con	Operator Cat Hand ded, dump t Basic Job Co ndition withi	lbook bucket, swing er ondition Descrij in Basic Descrij Cycle Time V	otion: SEVER	RE	_ minutes
Source of estin OURLY PRODUCTI xcavator Cycle Time (loa	estimated volume: mated swell factor: [ON d bucket, swing loa Secondary Job Con 	Operator Cat Hand ded, dump t Basic Job Co ndition withi	lbook bucket, swing er ondition Descrij in Basic Descrij Cycle Time V	otion: SEVER otion: SEVER Value: 0.570 Bucket Size C	RE	_
Source of estin OURLY PRODUCTI xcavator Cycle Time (loa bad Bucket Capacity Dad Bucket Capacity: Bucket Fill Factor: Adjusted Capacity:	estimated volume: mated swell factor: [ON d bucket, swing loa secondary Job Con 	<u>Operator</u> <u>Cat Hand</u> <u>ded, dump b</u> Basic Job Co ndition withit _ LCY (he Hard, tou	lbook bucket, swing en ondition Descrip in Basic Descrip Cycle Time V aped) 1gh clay (80% -	otion: SEVER otion: SEVER Value: 0.570 Bucket Size C	RE Class: S	_
Source of estin OURLY PRODUCTI cavator Cycle Time (loa Dad Bucket Capacity Rated Capacity: Bucket Fill Factor: Adjusted Capacity:	estimated volume: mated swell factor: [ON d bucket, swing loa secondary Job Con 	<u>Operator</u> <u>Cat Hand</u> <u>ded, dump b</u> Basic Job Co ndition withit _ LCY (he Hard, tou	Ibook bucket, swing en pondition Descrip In Basic Descrip Cycle Time V aped) agh clay (80% - Si B) ay)	otion: SEVER otion: SEVER Value: 0.570 Bucket Size (90%) 0.850	RE Class: S	_
Source of estin OURLY PRODUCTI Accavator Cycle Time (loa bad Bucket Capacity Rated Capacity: Bucket Fill Factor: Adjusted Capacity: b Condition Correction F Altitude Adj: Job Efficiency: Net Correction: Unadj Adj	estimated volume: mated swell factor: [ON d bucket, swing loa Secondary Job Con 3.61 0.850 3.07 Factors 1.00 0.83 0.83 justed Hourly Unit 1 justed Hourly Unit 1	 <u>Operator</u> <u>Cat Hand</u> <u>ded, dump b</u> Basic Job Co ndition within LCY (he Hard, tou LCY Source (CAT Hi (1 shift/da multiplier Production: Production:	Ibook pucket, swing en pondition Descrip in Basic Descrip Cycle Time V aped) aped) aph clay (80% - Si B) ay) 5 323.00 268.09	ption: <u>SEVER</u> otion: <u>SEVER</u> alue: <u>0.570</u> Bucket Size C <u>90%) 0.850</u> ite Altitude: <u>600</u> <u>LCY/Hour</u> <u>LCY/Hour</u>	RE Class: <u>S</u> <u>0</u> feet	_
Source of estin COURLY PRODUCTI Excavator Cycle Time (loa Dad Bucket Capacity Rated Capacity: Bucket Fill Factor: Adjusted Capacity: Db Condition Correction F Altitude Adj: Job Efficiency: Net Correction: Unadj Adj	estimated volume: mated swell factor: [ON d bucket, swing loa Secondary Job Con 3.61 0.850 3.07 Factors 1.00 0.83 0.83 justed Hourly Unit 1 justed Hourly Unit 1 justed Hourly Fleet 1	 <u>Operator</u> <u>Cat Hand</u> <u>ded, dump b</u> Basic Job Co ndition within LCY (he Hard, tou LCY Source (CAT Hi (1 shift/da multiplier Production: Production:	Ibook Ducket, swing en pondition Descrip In Basic Descrip Cycle Time V aped) aph clay (80% - Si B) ay) 323.00	ption: <u>SEVER</u> otion: <u>SEVER</u> alue: <u>0.570</u> Bucket Size C <u>90%) 0.850</u> ite Altitude: <u>600</u>	RE Class: <u>S</u> <u>0</u> feet	_

Unit cost:	\$1.058	/LCY
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Total job cost: \$83,755

Task description:	Regrade New T	ruck Loadou	t and Coal Stockpile		
Site: Bowie No. 2 Mine	Per	rmit Action:	MT5	Permit/Jo	b#: <u>C1996083</u>
PROJECT IDENTIFI	CATION				
Task #: 009 Date: 9/30/2019 User: ZTT	State: County:	Colorado Delta		Abbreviation: Filename:	None C-83-009
Agency or organ	nization name: DR	RMS			
HOURLY EQUIPME	NT COST				
Horsepower: 574 Blade Type: Ser Attachment: NA Shift Basis: 1 p	ni-Universal		-		
Cost Breakdown:		I	Utilization %		
Ownership Cost/Hour: Operating Cost/Hour:		\$140.61 \$135.35	Utilization % NA 100		
Ripper own. Cost/Hour:		\$0.00	NA		
Ripper op. Cost/Hour:		\$0.00	0		
Operator Cost/Hour:		\$41.24	NA		
Total Fleet Cost/Hour: MATERIAL QUANT Initial Volume: 67,9 Swell factor: 1.16 Loose volume: 79,1	20				
Source of estimated volu		Estimata			
Source of estimated voir Source of estimated swe factor:	_				
HOURLY PRODUCT	<u>'ION</u>				
Average push distance: Unadjusted hourly production:	100 feet 1,718.9 LC	Y/hr			
Materials consistency description:	Compa	cted fill or er	nbankment 0.9		
Average push gradient: Average site altitude:	0 %				
Average site attitude:	0,000 1001				
Material weight:	2,900 lbs/LCY				
Weight description:	Decomposed rock	- 50% Rock,	, 50% Earth		

Job Condition Correction Factor		Source
Operator Skill:	0.750	(AVG.)
Material consistency:	0.900	(CAT HB))
Dozing method:	1.000	(GEN.)
Visibility:	1.000	(AVG.)
Job efficiency:	0.830	(1 SHIFT/DAY)
Spoil pile:	0.800	(FND-RF)
Push gradient:	1.000	(CAT HB)
Altitude:	1.000	(CAT HB)
Material Weight:	0.793	(CAT HB)
Blade type:	1.000	(PAT)

Adjusted unit production:	610.90 LCY/hr
Adjusted fleet production:	2443.6 LCY/hr

Fleet size:	4 Dozer(s)	
Unit cost:	\$0.519/LCY	_

Total job time:	32.38 Hours
Total job cost:	\$41,085

HYDRAULIC EXCAVATOR WORK

		Pe	rmit Actior	n: MT5		P	ermit/Jo	b#: C	C1996083
ROJECT IDENTI	FICATIO								
Task #: 010 Date: 9/30/201 User: ZTT		State: County:	Colorado Delta	,		Abbrev File	iation: mame:	None C83-	
Agency or org	anization r	name: DF	RMS						
IOURLY EQUIPM	ENT CO	ST							
Basic Machine: Attachment 1:	Cat 365 ROPS C	CL 13'-7" Cab	' Stick		Weight Shift	Basis:	7 1 p	404 70.51 per day	
ost Breakdown:				Utilization %		Source:	((CRG)	
Ownership Cos		\$121.		NA					
Operating Cos		\$125.		100					
Operator Cos Total Unit Cos		\$37.2 \$283.	I	NA					
Total Fleet Co	st/Hour:	\$567	.54						
IATERIAL QUAN Initial volume: Loose volume:	TITIES 231,495 231,495 231,495		CCY LCY	Swell fa	ector:	1.000			
		ed volume:		r Estimate					
Source of e	estimated s	ed volume: well factor:	Operato Cat Har						
Source of e	estimated s	well factor:	Cat Har	ldbook	(matu):				
Source of e	estimated s	well factor: t, swing loa	Cat Har	udbook bucket, swing e					
Source of e	estimated s CTION load bucke	well factor: t, swing loa l	Cat Har ded, dump Basic Job C	ldbook bucket, swing e Condition Descri	iption:	SEVERE			
Source of e	estimated s CTION load bucke	well factor: t, swing loa l	Cat Har ded, dump Basic Job C	udbook bucket, swing e	iption:	SEVERE SEVERE 0.570		minu	ites
Source of e IOURLY PRODUC xcavator Cycle Time (estimated s CTION load bucke	well factor: t, swing loa l	Cat Har ded, dump Basic Job C	dbook bucket, swing e Condition Descri iin Basic Descri	iption:	SEVERE		minu	ites
Source of e COURLY PRODUC xcavator Cycle Time (oad Bucket Capacity	estimated s CTION load bucke Second	well factor: t <u>, swing loa</u> l lary Job Cor	Cat Har ded, dump Basic Job C ndition with	dbook bucket, swing e Condition Descri nin Basic Descri Cycle Time V	iption: iption: Value:	SEVERE	ss: <u>S</u> 1	_ minu mall	ites
Source of e COURLY PRODUC xcavator Cycle Time (oad Bucket Capacity Rated Capac	estimated s <u>CTION</u> <u>load bucke</u> Second ity:	well factor: t <u>, swing loa</u> l ary Job Cor 3.61	Cat Har ded, dump Basic Job C ndition with LCY (h	dbook bucket, swing e Condition Descri nin Basic Descri Cycle Time V eaped)	iption: iption: Value: Buck	SEVERE 0.570 et Size Cla	ss: <u>S</u> 1	-	ıtes
Source of e COURLY PRODUC Excavator Cycle Time (Dad Bucket Capacity Rated Capac Bucket Fill Fact	estimated s <u>CTION</u> <u>load bucke</u> Second ity: tor:	well factor: <u>t, swing loa</u> lary Job Cor <u>3.61</u> 0.850	Cat Har ded, dump Basic Job C ndition with LCY (h Hard, to	dbook bucket, swing e Condition Descri nin Basic Descri Cycle Time V	iption: iption: Value: Buck	SEVERE 0.570 et Size Cla	ss: <u>S</u> 1	-	
Source of e COURLY PRODUC Excavator Cycle Time (Dad Bucket Capacity Rated Capac Bucket Fill Fact Adjusted Capac	estimated s CTION load bucke Second ity: tor: ity:	well factor: t <u>, swing loa</u> l ary Job Cor 3.61	Cat Har ded, dump Basic Job C ndition with LCY (h	dbook bucket, swing e Condition Descri nin Basic Descri Cycle Time V eaped) ough clay (80%	iption: iption: Value: Buck - 90%) 0	SEVERE 0.570 et Size Cla 0.850		-	ites
Source of e COURLY PRODUC xcavator Cycle Time (oad Bucket Capacity Rated Capac Bucket Fill Fact Adjusted Capac	estimated s CTION load bucke Second ity: tor: ity:	well factor: <u>t, swing loa</u> lary Job Cor <u>3.61</u> 0.850	Cat Har ded, dump Basic Job C ndition with LCY (h LCY	dbook bucket, swing e Condition Descri nin Basic Descri Cycle Time V eaped) ough clay (80%	iption: iption: Value: Buck - 90%) 0	SEVERE 0.570 et Size Cla		-	ttes
Source of e COURLY PRODUC xcavator Cycle Time (oad Bucket Capacity Rated Capac Bucket Fill Fac Adjusted Capac ob Condition Correctio Altitude Adj:	estimated s CTION load bucke Second ity: tor: ity: on Factors 1.	well factor: <u>t, swing loa</u> lary Job Cor <u>3.61</u> 0.850 3.07 00	Cat Har ded, dump Basic Job C ndition with LCY (h Hard, to LCY Sourc (CAT F	dbook bucket, swing e Condition Descri nin Basic Descri Cycle Time V eaped) ough clay (80% S e E B)	iption: iption: Value: Buck - 90%) 0	SEVERE 0.570 et Size Cla 0.850		-	
Source of e COURLY PRODUC Excavator Cycle Time (Dad Bucket Capacity Rated Capac Bucket Fill Fact Adjusted Capac Db Condition Correction Altitude Adj: Job Efficiency:	estimated s <u>CTION</u> <u>load bucke</u> Second ity: ity: <u>on Factors</u> <u>1.</u> 0.	well factor: <u>t, swing loa</u> lary Job Cor <u>3.61</u> <u>0.850</u> <u>3.07</u> 00 83	Cat Har ded, dump Basic Job C ndition with LCY (h Hard, to LCY Sourc (CAT F (1 shift/o	dbook bucket, swing e Condition Descri nin Basic Descri Cycle Time V eaped) bugh clay (80% S e (B) lay)	iption: iption: Value: Buck - 90%) 0	SEVERE 0.570 et Size Cla 0.850		-	Ites
Source of e COURLY PRODUC Excavator Cycle Time (Dad Bucket Capacity Rated Capac Bucket Fill Fact Adjusted Capac Ob Condition Correction Altitude Adj: Job Efficiency: Net Correction:	estimated s <u>CTION</u> <u>load bucke</u> Second ity: tor: on Factors 1. 0. 0.	well factor: <u>t, swing loa</u> lary Job Cor <u>3.61</u> 0.850 3.07 00 83 83	Cat Har ded, dump Basic Job C ndition with LCY (h Hard, to LCY Sourc (CAT F (1 shift/c multiplic	dbook bucket, swing e Condition Descri nin Basic Descri Cycle Time V eaped) ough clay (80% S e (B) lay) er	iption: iption: Value: Buck - 90%) 0	SEVERE 0.570 et Size Cla 0.850		-	ites
Source of e IOURLY PRODUC <u>xcavator Cycle Time (</u> <u>oad Bucket Capacity</u> Rated Capac Bucket Fill Fac Adjusted Capac <u>ob Condition Correction</u> Altitude Adj: Job Efficiency: Net Correction: Ur	estimated s <u>CTION</u> <u>load bucke</u> Second ity: ity: <u>on Factors</u> 1. <u>0.</u> 0. adjusted H	well factor: <u>t, swing loa</u> lary Job Cor <u>3.61</u> 0.850 3.07 00 83 83 lourly Unit 1	Cat Har ded, dump Basic Job C ndition with LCY (h Hard, to LCY Sourc (CAT H (1 shift/c multiplic	dbook bucket, swing e Condition Descri nin Basic Descri Cycle Time V eaped) ough clay (80% S e (B) lay) er :: 323.00	iption: iption: Value: Buck - 90%) 0 Site Altitute LC	<u>SEVERE</u> 0.570 et Size Cla 0.850 ude: <u>5900</u> f		-	tes
Source of e COURLY PRODUC xcavator Cycle Time (ad Bucket Capacity Rated Capac Bucket Fill Fact Adjusted Capac bb Condition Correction Altitude Adj: Job Efficiency: Net Correction: Ur	estimated s CTION load bucke Second ity: tor: on Factors 1. 0. 0. adjusted H Adjusted H	well factor: <u>t, swing loa</u> lary Job Cor <u>3.61</u> 0.850 <u>3.07</u> 00 83 83 lourly Unit 1 lourly Unit 1	Cat Har ded, dump Basic Job C ndition with LCY (h Hard, to LCY Sourc (CAT H (1 shift/c multiplic Production	dbook bucket, swing e Condition Descri in Basic Descri Cycle Time V eaped) bugh clay (80% S e (B) lay) er : : : : : : : : : : : : :	iption: iption: Value: Buck - 90%) 0 Site Altitute LC LC	SEVERE 0.570 et Size Cla 0.850 ude: <u>5900</u> f		-	ites
Source of e COURLY PRODUC xcavator Cycle Time (ad Bucket Capacity Rated Capac Bucket Fill Fac Adjusted Capac b Condition Correction Altitude Adj: Job Efficiency: Net Correction: Ur	estimated s CTION load bucke Second ity: tor: on Factors 1. on Factors 1. on adjusted H Adjusted He	well factor: <u>t, swing loa</u> lary Job Cor <u>3.61</u> 0.850 3.07 00 83 83 lourly Unit 1	Cat Har ded, dump Basic Job C ndition with LCY (h Hard, to LCY Sourc (CAT H (1 shift/c multiplic Production	dbook bucket, swing e Condition Descri nin Basic Descri Cycle Time V eaped) bugh clay (80% S e (B) lay) er :: 323.00 : 268.09	iption: iption: Value: Buck - 90%) 0 Site Altitute LC LC	<u>SEVERE</u> 0.570 et Size Cla 0.850 ude: <u>5900</u> f		-	Ites
Source of e COURLY PRODUC xcavator Cycle Time (ad Bucket Capacity Rated Capac Bucket Fill Fact Adjusted Capac bb Condition Correction Altitude Adj: Job Efficiency: Net Correction: Ur	estimated s CTION load bucke Second ity: tor: on Factors 1. on Factors 1. on adjusted H Adjusted He	well factor: <u>t, swing loa</u> lary Job Cor <u>3.61</u> 0.850 <u>3.07</u> 00 83 83 lourly Unit 1 lourly Unit 1	Cat Har ded, dump Basic Job C ndition with LCY (h Hard, to LCY Sourc (CAT F (1 shift/o multiplic Production Production	dbook bucket, swing e Condition Descri in Basic Descri Cycle Time V eaped) bugh clay (80% S e (B) lay) er : : : : : : : : : : : : :	iption: iption: Value: Buck - 90%) 0 Site Altitute LC LC	SEVERE 0.570 et Size Cla 0.850 ude: <u>5900</u> f		- mall	

Unit cost:	\$1.058	/LCY
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Total job cost: \$245,035

Task description:	Regrade Train I	.oadout Faci	lities and Railbed Be	nches	
e: Bowie No. 2 Mine	Per	mit Action:	MT5	Permit/Jo	b#: <u>C1996083</u>
PROJECT IDENTIFI	CATION				
Task #: 011 Date: 9/30/2019	State: County:	Colorado Delta		Abbreviation: Filename:	None C083-011
User: ZTT					
Agency or organ	ization name: DR	MS			
HOURLY EQUIPME	NT COST				
	D10T - 10SU				
Horsepower: 574					
• •	ni-Universal				
Attachment: NA					
	er day				
Data Source: (CF	(G)				
Cost Breakdown:		i.			
		*	<u>Utilization %</u>		
Ownership Cost/Hour:		\$140.61	NA		
Operating Cost/Hour:		\$135.35	100		
Ripper own. Cost/Hour:		\$0.00	NA		
Ripper op. Cost/Hour:		\$0.00	0		
Operator Cost/Hour:		\$41.24	NA		
MATERIAL QUANT Initial Volume: 231, Swell factor: 1.00	495	_			
	495 LCY	_			
Source of estimated volu		Estimato			
Source of estimated voit	1				
factor:		00011			
HOURLY PRODUCT	TON				
Average push distance:	200 feet				
Unadjusted hourly	946.0 LCY/	hr			
production:	2 TO.0 LC 17				
Materials consistency	Consoli	dated stockp	ile 1.0		
description:					
Average push gradient:	5 %				
Average site altitude:	5,900 feet				
Material weight:	2,900 lbs/LCY				
Weight description:	Decomposed rock	- 50% Rock,	50% Earth		

Job Condition Correction Factor		Source
Operator Skill:	0.750	(AVG.)
Material consistency:	1.000	(CAT HB)
Dozing method:	1.000	(GEN.)
Visibility:	1.000	(AVG.)
Job efficiency:	0.830	(1 SHIFT/DAY)
Spoil pile:	0.800	(FND-RF)
Push gradient:	0.903	(CAT HB)
Altitude:	1.000	(CAT HB)
Material Weight:	0.793	(CAT HB)
Blade type:	1.000	(PAT)

Adjusted unit production:	337.34 LCY/hr
Adjusted fleet production:	1349.36 LCY/hr

Fleet size:	4 Dozer(s)	
Unit cost:	\$0.940/LCY	

Total job time:	171.56 Hours
Total job cost:	\$217,672

Task description:	Backfill and Reg	grade Train	L/O Overland Conve	yor Corridor	
Bowie No. 2 Mine	Pe	rmit Action:	MT5	Permit/Jo	b#: <u>C1996083</u>
PROJECT IDENTIFI	CATION				
Task #: 012 Date: 9/30/2019 User: ZTT	State: County:	Colorado Delta		Abbreviation: Filename:	None C083-012
Agency or organ	nization name:	RMS			
HOURLY EQUIPME	NT COST				
Basic Machine: Ca	t D10T - 10SU				
Horsepower: 574	4		-		
Blade Type: Ser	mi-Universal		_		
Attachment: NA	Δ		_		
Shift Basis: <u>1 p</u>	er day		_		
Data Source: (Cl	RG)		-		
Cost Breakdown:		1			
		* • • • • • •	Utilization %		
Ownership Cost/Hour:		\$140.61	NA		
Operating Cost/Hour:		\$135.35	100		
Ripper own. Cost/Hour:		\$0.00	NA		
Ripper op. Cost/Hour:		\$0.00	0		
Operator Cost/Hour:		\$41.24	NA		
MATERIAL QUANT					
Initial Volume: 9,25 Swell factor: 1.16					
	787 LCY				
Loose volume. <u>10,7</u>	07 LU I				
Source of estimated volu	ume: Division	Estimate			
Source of estimated swe	cat Hand	book			
factor:					
HOURLY PRODUCT	<u>CION</u>				
Average push distance:	100 feet				
Unadjusted hourly	1,718.9 LC	V/hr			
production:	1,710.9 LC	1/111			
r.suucion.					
Materials consistency description:	Compa	cted fill or er	nbankment 0.9		
Average push gradient:	10 %				
Average site altitude:	5,900 feet				
Material weight:	2,900 lbs/LCY				
Weight description:	Decomposed rock	- 50% Rock.	50% Earth		

	Source
0.750	(AVG.)
0.900	(CAT HB))
1.000	(GEN.)
1.000	(AVG.)
0.830	(1 SHIFT/DAY)
0.800	(FND-RF)
0.786	(CAT HB)
1.000	(CAT HB)
0.793	(CAT HB)
1.000	(PAT)
	0.900 1.000 0.830 0.800 0.786 1.000 0.793

Adjusted unit production:	480.26 LCY/hr
Adjusted fleet production:	1921.04 LCY/hr

Fleet size:	4 Dozer(s)	
Unit cost:	\$0.660/LCY	

Total job time:	5.62 Hours
Total job cost:	\$7,124

SCRAPER TEAM WORK

Site: Bowie No	o. 2 Mine	<u> </u>	Perm	it Action	: <u>MT5</u>	F	Permit/Jo	b#: <u>C19</u>	996083
PROJECT	IDENTII	FICATION							
Task #:	013			Colorado			viation:	None	
Date: User:	9/30/201 ZTT	<u>9</u> Cou	inty: <u>I</u>	Delta		Fil	ename:	C083-0	13
Age	ency or org	anization name:	DRM	S					
HOURLY I	EQUIPM	ENT			COSTS	Shift basis: <u>1 per</u>	<u>day</u>		
				1 1	ent Description				
			craper: Dozer:	Cat 62 NA	7G w/push-pull				
	Support H	- Equipment -Load		NA					
	TT TT	-Dump		NA					
R	oad Mainte	enance – Motor C		NA					
		-Water	Truck:	NA					
Cost Breakdo	own:	Scraper Wor	k Team		Support Equ	ipment	М	aintenanc	e Equipment
		Scraper	Doz	zer	Load Area	Dump Area		Grader	Water Truck
%Utilization-ma	chine:	100		NA	NA	NA		NA	NA
Ownership cos	t/hour:	\$126.52		NA	NA	NA		NA	NA
Operating cos	t/hour:	\$149.69		NA	NA	NA		NA	NA
%Utilization-	ripper:	NA		NA	NA	NA		NA	NA
Ripper own. cos	t/hour:	NA		NA	NA	NA		NA	NA
Ripper op. cos	t/hour:	NA		NA	NA	NA		NA	NA
Operator cos	t/hour:	\$30.86		NA	NA	NA		NA	NA
Unit Sub	ototals:	\$307.07		NA	NA	NA		NA	NA
Number of	Units:	2		0	0	0		0	

Total work team cost/hour: <u>\$614.14</u>

MATERIAL QUANTITIES

Group Subtotals:

Initial volume: Loose volume:		CCY LCY	Swell factor:	1.165
Sourc	e of estimated volume:	Operator H	Estimate, minus 14,0	00 cy TR79/TR84 to Gob Pile

Source of estimated volume:

Work:

\$614.14

Cat Handbook

Support:

\$0.00

Maint:

\$0.00

HOURLY PRODUCTION

		Scraper Bowl (volu	me) Basis:	
Material weight:	2,900 lbs/LCY	Struck Volume:	15.70	LCY
Material description:	Decomposed rock - 50% Rock,	Heaped Volume:	22.00	LCY
	50% Earth			
Rated Payload:	52,800 pounds	Average Volume:	18.85	LCY
Payload Capacity:	18.21 LCY	Adjusted Capacity:	18.21	LCY

Cycle Time:

Scraper Loading Time: Maneuver and Spread Time:

Job Condition Correction:

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

Travel Time:

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

Haul Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	800.00	0.00	3.00	3.00	2824	0.52

Haul Time: **0.52** minutes

Return Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1 800.00		0.00	3.00	3.00	2874	0.40
				Return Time:	0.40	minutes
			Total Scraper	team cycle time:	2.42	minutes
			Adjusted for	or job conditions:	749.34	LCY/Hour
			Selected Nur	nber of Scrapers:	2	Scraper(s)
	Adjusted s	ingle scrape	r team (unit) ho	ourly production:	749.34	LCY/Hour
	Adjusted mul	tiple scraper	team (fleet) he	ourly production:	749.34	LCY/Hour
0	Unadjusted unit prod ptimal Number of Scrap		902.82	LCY/Hour		
OB TIN	ME AND COST		_		() (2	

Fleet size:	1	Team(s)	Total job time:	60.63	Hours
Unit cost:	\$0.820	/LCY	Total job cost:	\$37,237	

Site Altitude: 6750 feet

<u>0.90</u> Minutes <u>0.60</u> Minutes

TRUCK/LOADER TEAM WORK

Т	Task description	: Haul I	`ill fr Adj.	Mat'l S	Storage Area to	B-Seam Portal H	Bench			
Site:	Bowie No. 2	Mine	Pe	rmit Act	tion: MT5		Permit/Jo	b#: _	C1996083	
<u>PI</u>	ROJECT IDE	ENTIFICATION	I							
	Task #: 01	4	State:	Color	ado	Abl	previation:	Noi	Jone	
	Date: 9/	30/2019	County:	Delta		Filename: C083-014		33-014		
	User: Z	Т								
	Agency	or organization na	me: DF	RMS						
H	OURLY EQU	JIPMENT COS	<u>T</u>			Shift ba	usis: <u>1 per da</u>	<u>ay</u>		
]	Equipment Descr	iption				
		Truck Loader Te	am -Truck		773F	-				
			-Loader		Т 988Н					
	Su	pport Equipment -								
	Dood	-L Maintenance –Mo	ump Area							
	Koau		ater Truck							
		**	ater fruck	. 1971						
Co	ost Breakdown	: Truck/Lo	ader Tean	1	Support	Equipment	Ma	intena	nce Equipment	
		Truck	Loader		Load Area	Dump Area	Motor Grader		Water Truck	
%Utili	zation-machine	: 100		100	NA	NA		NA	NA	
Owne	ership cost/hou	: \$105.90		\$91.83	NA	NA		NA	NA	
Oper	rating cost/hou	:: \$93.41		\$95.52	NA	NA		NA	NA	
-	Utilization-riper			0	NA	NA		NA	NA	
	Ripper owr cost/hour	NA		\$0.00	NA	NA		NA	NA	
Ripp	er op. cost/hou	:: NA		\$0.00	NA	NA		NA	NA	
Op	erator cost/hour	:: \$33.29	5	\$40.65	NA	NA		NA	NA	
	Unit Subtotals	\$232.60	\$2	228.00	NA	NA		NA	NA	
N	umber of Units	: 2		1	0	0		0	0	

Total work team cost/hour: **<u>\$693.20</u>**

MATERIAL QUANTITIES

Group Subtotals:

Initial volume:	53,000	CCY	Swell factor:	1.165	
Loose volume:	61,745	LCY			
Sourc	e of estimated volume:	Division o	f Reclamation, Min	ing & Safety	
Source of	estimated swell factor:	Cat Handb	ook		
Ν	Aaterial Purchase Cost:	\$0.00			
	Total Cost:	\$0.00			

Support:

\$0.00

\$0.00

Maint:

\$693.20

Work:

HOURLY PRODUCTION

Material weight:	<u>is:</u>				
	2,900	Pounds			
Description:		d rock - 50% Rock, 50%			
Rated Payload:	122,520	Pounds			
Payload Capacity:	42.25	LCY			
Truck Bed (volume) Basis:					
Struck Volume:	35.00	LCY			
Heaped Volume:	46.50	LCY			
Average Volume:	40.75	LCY			
Adjusted Volume:	42.25	LCY			
Final	Truck Volume	Based on Number of L	oader Passes:	40.25	LCY
oading Tool Capacity					
			Buck	et Size Class: N.	A
Rated Capacity:	9.200	LCY (heaped)			
Bucket Fill Factor:	0.875	Loose material -	1" and over (8	5 - 90%) 0.875	
Adjusted Capacity:	8.050	LCY			
ob Condition Corrections	<u>.</u>	Site	e Altitude (ft.):	<u>6900</u> feet	
	Truck	Loader	Source		
Altitude Adj:	1.000	1.000	(CAT HE	5)	
Job Efficiency:	0.830	0.830	(CAT HE	,	
				· · · · · · · · · · · · · · · · · · ·	
Net Correction:	0.830	0.830			
Net Correction:	0.830	0.830			
Net Correction:		0.830 Number of Loading To	ol Passes Requ		5 passes
Loading Tool Cycle Time:	<u>1</u>		ol Passes Requ	ired to Fill Truck:	5 passes
Loading Tool Cycle Time: Excavators and Front Shove	<u>:</u> els:	Number of Loading To	ol Passes Requ		5 passes
Loading Tool Cycle Times Excavators and Front Shove Machine Cycle Time v	<u>:</u> els: vs. Job Condition	Number of Loading To	ol Passes Requ		5 passes
Loading Tool Cycle Times Excavators and Front Shove Machine Cycle Time Selected Value	<u>els:</u> vs. Job Condition within this Bas	Number of Loading To on Rating: <u>NA</u> sic Rating: <u>NA</u>	ol Passes Requ		5 passes
Loading Tool Cycle Times Excavators and Front Shove Machine Cycle Time v	<u>els:</u> vs. Job Condition within this Bas	Number of Loading To on Rating: <u>NA</u> sic Rating: <u>NA</u>	ol Passes Requ		5 passes
Loading Tool Cycle Time: Excavators and Front Shove Machine Cycle Time v Selected Value Track Loaders -	<u>els:</u> vs. Job Conditi within this Bas - Material Desc	Number of Loading To on Rating: <u>NA</u> sic Rating: <u>NA</u>	ol Passes Requ		5 passes
Loading Tool Cycle Times Excavators and Front Shove Machine Cycle Time Selected Value	<u>els:</u> vs. Job Condition within this Bas - Material Descont o:	Number of Loading To on Rating: <u>NA</u> sic Rating: <u>NA</u> cription:	ol Passes Requ		5 passes
Loading Tool Cycle Time: Excavators and Front Shove Machine Cycle Time v Selected Value Track Loaders -	<u>els:</u> vs. Job Condition within this Bas - Material Descont o:	Number of Loading To on Rating: <u>NA</u> sic Rating: <u>NA</u>	ol Passes Requ		5
Loading Tool Cycle Time: Excavators and Front Show Machine Cycle Time Selected Value Track Loaders - Cycle Time Elements (min.) Load: NA	<u>els:</u> vs. Job Condition within this Bas - Material Desc b:	Number of Loading To on Rating: <u>NA</u> sic Rating: <u>NA</u> cription: <u>NA</u>		Truck:	<u> </u>
Loading Tool Cycle Time: Excavators and Front Show Machine Cycle Time Selected Value Track Loaders - Cycle Time Elements (min.) Load: NA	<u>els:</u> vs. Job Condition within this Bas - Material Desc b:	Number of Loading To on Rating: <u>NA</u> sic Rating: <u>NA</u> cription:	Cycle Time (lo	Truck: Dump:0.100 pad, dump,0	
Loading Tool Cycle Time: Excavators and Front Show Machine Cycle Time Selected Value Track Loaders - Cycle Time Elements (min.) Load: NA	<u>els:</u> vs. Job Condition within this Bas - Material Desc b:	Number of Loading To on Rating: <u>NA</u> sic Rating: <u>NA</u> cription: <u>NA</u>	Cycle Time (lo	Truck: Dump:0.100	<u> </u>
Loading Tool Cycle Times Excavators and Front Shove Machine Cycle Time v Selected Value Track Loaders - Cycle Time Elements (min.) Load: <u>NA</u> Wheel and Trac	<u>els:</u> vs. Job Condition within this Bas - Material Desc p: 	Number of Loading To on Rating: <u>NA</u> sic Rating: <u>NA</u> cription: <u>NA</u>	Cycle Time (lo	Truck: Dump:0.100 pad, dump,0.	5 1 575 minutes
Loading Tool Cycle Times Excavators and Front Show Machine Cycle Time Selected Value Track Loaders - Cycle Time Elements (min.) Load: <u>NA</u> Wheel and Trac Cycle Time Factors	<u>els:</u> ys. Job Condition within this Bas - Material Desc b: 	Number of Loading To on Rating: <u>NA</u> sic Rating: <u>NA</u> cription: <u>NA</u> Maneuver: <u>NA</u> nadjusted Basic Loader	Cycle Time (lo	Truck: Dump:0.100 pad, dump,0. naneuver):0. Factor (min.)	5 minutes
Loading Tool Cycle Times Excavators and Front Show Machine Cycle Time v Selected Value Track Loaders - Cycle Time Elements (min.) Load: <u>NA</u> Wheel and Trac Cycle Time Factors Material:	E els: vs. Job Condition within this Bas - Material Desconse Mixed material Mixed material	Number of Loading To on Rating: <u>NA</u> sic Rating: <u>NA</u> cription: <u>NA</u> Maneuver: <u>NA</u> nadjusted Basic Loader erial 0.02	Cycle Time (lo	Truck: Dump:0.100 pad, dump,0. naneuver):0. Factor (min.) 0.020	5 minutes 575 Minutes 575 (Cat HB)
Loading Tool Cycle Time: Excavators and Front Show Machine Cycle Time Selected Value Track Loaders - Cycle Time Elements (min.) Load: <u>NA</u> Wheel and Trac Cycle Time Factors	E els: vs. Job Condition within this Bas - Material Desconse Mixed material Mixed material	Number of Loading To on Rating: <u>NA</u> sic Rating: <u>NA</u> cription: <u>NA</u> Maneuver: <u>NA</u> nadjusted Basic Loader	Cycle Time (lo	Truck: Dump:0.100 pad, dump,0. naneuver):0. Factor (min.)	5 minutes
Loading Tool Cycle Times Excavators and Front Show Machine Cycle Time v Selected Value Track Loaders - Cycle Time Elements (min.) Load: <u>NA</u> Wheel and Trac Cycle Time Factors <u>Material:</u> Stockpile:	E els: vs. Job Condition within this Base - Material Desconse : Ck Loaders - Un Mixed mate Conveyor of 0.01	Number of Loading To on Rating: <u>NA</u> sic Rating: <u>NA</u> cription: <u>NA</u> Maneuver: <u>NA</u> nadjusted Basic Loader erial 0.02 or dozer piled 10 ft. high	Cycle Time (lo r n or less	Truck: Dump:0.100 pad, dump,0. naneuver):0. Factor (min.) 0.020 0.010	5 minutes 575 Minutes 575 (Cat HB) (Cat HB)
Loading Tool Cycle Times Excavators and Front Show Machine Cycle Time v Selected Value Track Loaders - Cycle Time Elements (min.) Load: <u>NA</u> Wheel and Trac Cycle Time Factors Material:	E els: vs. Job Condition within this Base - Material Desconse : Ck Loaders - Un Mixed mate Conveyor of 0.01	Number of Loading To on Rating: <u>NA</u> sic Rating: <u>NA</u> cription: <u>NA</u> Maneuver: <u>NA</u> nadjusted Basic Loader erial 0.02	Cycle Time (lo r n or less	Truck: Dump:0.100 pad, dump,0. naneuver):0. Factor (min.) 0.020	5 minutes 575 Minutes 575 (Cat HB)
Loading Tool Cycle Time: Excavators and Front Show Machine Cycle Time v Selected Value Track Loaders - Cycle Time Elements (min.) Load: <u>NA</u> Wheel and Trac Cycle Time Factors <u>Material:</u> Stockpile:	E Service Conditioners Service Conditioners Service Conveyor Conve	Number of Loading To on Rating: <u>NA</u> sic Rating: <u>NA</u> cription: <u>NA</u> Maneuver: <u>NA</u> nadjusted Basic Loader erial 0.02 or dozer piled 10 ft. high	Cycle Time (lo r n or less	Truck: Dump:0.100 pad, dump,0. naneuver):0. Factor (min.) 0.020 0.010	5 minutes 575 Minutes 575 (Cat HB) (Cat HB)
Loading Tool Cycle Times Excavators and Front Show Machine Cycle Time v Selected Value Track Loaders - Cycle Time Elements (min.) Load: NA Wheel and Trac Cycle Time Factors Material: Stockpile:	E s: els: vs. Job Condition within this Bas - Material Desc - Material Desc - Mixed material Conveyor of 0.01 Common of 0.04 Constant of	Number of Loading To on Rating: <u>NA</u> sic Rating: <u>NA</u> cription: <u>NA</u> Maneuver: <u>NA</u> nadjusted Basic Loader erial 0.02 or dozer piled 10 ft. high wnership of trucks and peration -0.04	Cycle Time (lo r n or less	Truck: Dump:0.100 pad, dump,0. maneuver):0. Factor (min.) 0.020 0.010 0.040	5 minutes 575 minutes 575 (Cat HB) (Cat HB) (Cat HB)
Loading Tool Cycle Time: Excavators and Front Show Machine Cycle Time v Selected Value Track Loaders - Cycle Time Elements (min.) Load: NA Wheel and Trac Cycle Time Factors Material: Stockpile: Truck Ownership:	E s: els: vs. Job Condition within this Bas - Material Desc - Material Desc - Mixed material Conveyor of 0.01 Common of 0.04 Constant of	Number of Loading To on Rating: <u>NA</u> sic Rating: <u>NA</u> cription: <u>NA</u> Maneuver: <u>NA</u> nadjusted Basic Loader erial 0.02 or dozer piled 10 ft. high wnership of trucks and peration -0.04	Cycle Time (lo r n or less loaders -	Truck: Dump:0.100 pad, dump,0. maneuver):0. Factor (min.) 0.020 0.010 -0.040 -0.040	5 minutes 575 minutes 575 (Cat HB) (Cat HB) (Cat HB) (Cat HB)
Loading Tool Cycle Time: Excavators and Front Show Machine Cycle Time v Selected Value Track Loaders - Cycle Time Elements (min.) Load: NA Wheel and Trac Cycle Time Factors Material: Stockpile: Truck Ownership:	E s: els: vs. Job Condition within this Bas - Material Desc - Material Desc - Mixed material Conveyor of 0.01 Common of 0.04 Constant of	Number of Loading To on Rating: <u>NA</u> sic Rating: <u>NA</u> cription: <u>NA</u> Maneuver: <u>NA</u> nadjusted Basic Loader erial 0.02 or dozer piled 10 ft. high wnership of trucks and peration -0.04 rget 0.00	Cycle Time (lo r n or less loaders - Adjustment:	Truck: Dump:0.100 pad, dump,0. maneuver):0. Factor (min.) 0.020 0.010 -0.040 -0.040 0.000	575 minutes 575 Cat HB) (Cat HB) (Cat HB) (Cat HB) (Cat HB) (Cat HB)

Truck Cycle Time:

	•/								
	Truc	ck Exchange Time:	0.70	Minutes	Adju	sted for site al	titude:	0.700	Minutes
		Truck Load Time:	2.200	Minutes	Adju	sted for site al	titude:	2.200	Minutes
	Truck M	aneuver and Dump Time:	1.10	Minutes	Adju	sted for site al	titude:	1.100	Minutes
m H	aintained aul Route	:			ion: <u>Firm, smoo</u>	-		, watered,	
	Seg #	Haul Distance	Grade (%)	Roll. Res	Total Res	Velocity	Travel Time		
		(Ft)		(%)	(%)	(fpm)	(min)		
	1	600.00	0.00	3.00	3.00	2983	0.764		
R	eturn Rou	te:			Haul Time:	0.764	min	utes	
	Seg #	Haul Distance	Grade (%)	Roll. Res	Total Res	Velocity	Travel		
		(Ft)		(%)	(%)	(fpm)	Time (min)		
	1	600.00	0.00	3.00	3.00	3569	0.381	-	
			• •		Return Time:	0.381	miı	nutes	
				Total Tru	ick Cycle Time:			nutes	
Loa	ading Too	l unit							
	Produ	ction 832.76	LCY/Hou	r	Adjusted for j	ob efficiency:	691.1	9 LCY	Hour
Truck U	Jnit Produ	ction 469.39	LCY/Hou	r	Adjusted for je	ob efficiency:	389.5	9 LCY	/Hour
Optimal	No. of Tr	ucks: 2	Truck(s)		Selected Numb	oer of Trucks:	2	Truc	k(s)
			Adjuste	d hourly truck	team productio	on: 779.	18 LO	CY/Hour	
					r team productio			CY/Hour	
		A	djusted multipl	le truck/loader	r team productio	on: 691 .	<u>19</u> LO	CY/Hour	
J	OB TIM	E AND COST							
	Fleet s	size: 1	Team(s)	Т	Total job time:	89.3	3	Hours	
	Unit c	cost: \$1.003	/LCY]	Fotal job cost:	\$61,9	25		

Task description:	Backfill and Reg	rade B-Sear	n Portal Bench			
Bowie No. 2 Mine	Per	mit Action:	MT5	Permit/Job#: C199608		
PROJECT IDENTIFI	CATION					
Task #: 015 Date: 9/30/2019 User: ZTT	State: County:	Colorado Delta		Abbreviation: Filename:	None C083-015	
Agency or organ	nization name: DR	MS				
HOURLY EQUIPME	NT COST					
	t D10T - 10SU					
Horsepower: 574						
<i>•</i> • • • • • • • • • • • • • • • • • •	mi-Universal					
Attachment: 3-s	hank ripper					
Shift Basis: <u>1 p</u>	er day					
Data Source: (C	RG)					
Cost Breakdown:		1				
		¢140.c1	<u>Utilization %</u>			
Ownership Cost/Hour:		\$140.61	NA			
Operating Cost/Hour:		\$135.35	100			
Ripper own. Cost/Hour:		\$18.34	NA			
Ripper op. Cost/Hour:		\$10.80	100			
Operator Cost/Hour:		\$41.24	NA			
MATERIAL QUANT Initial Volume: <u>32,0</u> Swell factor: 1.16	000	_				
	280 LCY					
Source of estimated vol	ume: Operator	Estimate				
Source of estimated vor Source of estimated swe						
factor:		JUUK				
lactor.						
HOURLY PRODUCT	TION					
Average push distance:	150 feet					
Unadjusted hourly production:	1,243.2 LC	r⁄/hr				
Materials consistency description:	Compa	cted fill or en	nbankment 0.9			
Average push gradient:	20 %					
Average site altitude:	6,750 feet					
Material weight:	2,900 lbs/LCY					
Weight description:	Decomposed rock	- 50% Rock,	50% Earth			

Job Condition Correction Factor		Source
Operator Skill:	0.750	(AVG.)
Material consistency:	0.900	(CAT HB))
Dozing method:	1.000	(GEN.)
Visibility:	1.000	(AVG.)
Job efficiency:	0.830	(1 SHIFT/DAY)
Spoil pile:	0.800	(FND-RF)
Push gradient:	0.545	(CAT HB)
Altitude:	1.000	(CAT HB)
Material Weight:	0.793	(CAT HB)
Blade type:	1.000	(PAT)

Adjusted unit production:	240.81 LCY/hr
Adjusted fleet	963.24 LCY/hr
production:	303.24 EC 1/11

Fleet size:	4 Dozer(s)	
Unit cost:	\$1.438/LCY	

Total job time:	38.70 Hours
Total job cost:	\$53,616

Task description:	Regrade Drill Pads from M	Rs and TRs	
ite: Bowie No. 2 Mine	Permit Action:	MT5	Permit/Job#: C1996083
PROJECT IDENTIFI	CATION		
Task #: 019	State: Colorado	Abbre	eviation: None
Date: 9/30/2019	County: Delta		ilename: C083-019
User: ZTT			
Agency or organ	nization name: DRMS		
HOURLY EQUIPME	NT COST		
Basic Machine: Cat	t D10T - 10SU		
Horsepower: 574		-	
	ni-Universal	-	
Attachment: NA	1	-	
Shift Basis: 1 p	er day	-	
	RG)	-	
Cost Breakdown:		-	
		Utilization %	
Ownership Cost/Hour:	\$140.61	NA	
Operating Cost/Hour:	\$135.35	100	
Ripper own. Cost/Hour:	\$0.00	NA	
Ripper op. Cost/Hour:	\$0.00	0	
Operator Cost/Hour:	\$41.24	NA	
MATERIAL QUANT Initial Volume: <u>15,1</u> Swell factor: 1.16	73		
	77 LCY		
Source of estimated volu	/ I		
Source of estimated swe factor:			
HOURLY PRODUCT	<u>TION</u>		
Average push distance:	100 feet		
Unadjusted hourly	1,718.9 LCY/hr		
production:			
Materials consistency description:	Compacted fill or en	nbankment 0.9	
Average push	5 %		
gradient: Average site altitude:	7,500 feet		
Material weight:	2,900 lbs/LCY		
Weight description:	Decomposed rock - 50% Rock	50% Farth	
Job Condition Correction Factor		Source	
---------------------------------	-------	---------------	
Operator Skill:	0.750	(AVG.)	
Material consistency:	0.900	(CAT HB))	
Dozing method:	1.000	(GEN.)	
Visibility:	1.000	(AVG.)	
Job efficiency:	0.830	(1 SHIFT/DAY)	
Spoil pile:	0.800	(FND-RF)	
Push gradient:	0.903	(CAT HB)	
Altitude:	1.000	(CAT HB)	
Material Weight:	0.793	(CAT HB)	
Blade type:	1.000	(PAT)	

Net correction: 0.3209

Adjusted unit production:	551.60 LCY/hr
Adjusted fleet production:	2206.4 LCY/hr

JOB TIME AND COST

Fleet size:	4 Dozer(s)	
Unit cost:	\$0.575/LCY	

Total job time:	8.01 Hours
Total job cost:	\$10,165

BULLDOZER WORK

Task description:	Regrade Materia	l Storage A	rea from TR-29		
e: Bowie No. 2 Mine	Per	mit Action:	MT5	Permit/Jol	b#: <u>C1996083</u>
PROJECT IDENTIFI	CATION				
Task #: 020 Date: 9/30/2019 User: ZTT	State:County:	Colorado Delta		Abbreviation: Filename:	None C083-020
Agency or organ	nization name:	MS			
HOURLY EQUIPME	<u>NT COST</u>				
Horsepower: 574 Blade Type: Ser Attachment: NA Shift Basis: 1 p	ni-Universal				
<u>Cost Breakdown</u> :			Utilization %		
Ownership Cost/Hour: Operating Cost/Hour:		\$140.61 \$135.35	<u>NA</u> 100		
Ripper own. Cost/Hour:		\$0.00	NA		
Ripper op. Cost/Hour:		\$0.00	0		
Operator Cost/Hour:		\$41.24	NA		
MATERIAL QUANTInitial Volume:500Swell factor:1.16Loose volume:583		- -			
Source of estimated volu Source of estimated swe factor:			on, Mining & Safety		
HOURLY PRODUCT	<u>'ION</u>				
Average push distance: Unadjusted hourly production:	200 feet 946.0 LCY/h	n			
Materials consistency description:	Compac	ted fill or en	nbankment 0.9		
Average push gradient:	5 %				
Average site altitude:	6,000 feet				
Material weight:	2,900 lbs/LCY			_	
Weight description:	Decomposed rock	- 50% Rock,	50% Earth		

Job Condition Correction Factor		Source
Operator Skill:	0.750	(AVG.)
Material consistency:	0.900	(CAT HB))
Dozing method:	1.000	(GEN.)
Visibility:	1.000	(AVG.)
Job efficiency:	0.830	(1 SHIFT/DAY)
Spoil pile:	0.800	(FND-RF)
Push gradient:	0.903	(CAT HB)
Altitude:	1.000	(CAT HB)
Material Weight:	0.793	(CAT HB)
Blade type:	1.000	(PAT)

Net correction: 0.3209

Adjusted unit production:	303.57 LCY/hr
Adjusted fleet production:	1214.28 LCY/hr

JOB TIME AND COST

Fleet size:	4 Dozer(s)	
Unit cost:	\$1.045/LCY	

Total job time:	0.48 Hours
Total job cost:	\$609

BULLDOZER WORK

Task description:	Backfill and Reg	rade New P	rep Plant Bench		
Bowie No. 2 Mine	Per	mit Action:	MT5	Permit/Jo	b#: <u>C1996083</u>
PROJECT IDENTIFI	CATION				
Task #: 021 Date: 9/30/2019 User: ZTT	State: County:	Colorado Delta		Abbreviation: Filename:	None C083-021
Agency or organ	ization name: DR	MS			
HOURLY EQUIPME	NT COST				
	D10T - 10SU				
Horsepower: 574					
	ni-Universal				
Attachment: NA					
	er day				
Data Source: (CF	RG)				
Cost Breakdown:		T			
			Utilization %		
Ownership Cost/Hour:		\$140.61	NA		
Operating Cost/Hour:		\$135.35	100		
Ripper own. Cost/Hour:		\$0.00	NA		
Ripper op. Cost/Hour:		\$0.00	0		
Operator Cost/Hour:		\$41.24	NA		
MATERIAL QUANT Initial Volume: <u>61,0</u> Swell factor: 1.16	00	-			
	65 LCY	-			
Source of estimated volu	ime: Operator I	Estimate			
Source of estimated swe	L				
factor:					
HOURLY PRODUCT					
Average push distance: Unadjusted hourly production:	100 feet 1,718.9 LCY	//hr			
Materials consistency description:	Compac	ted fill or en	nbankment 0.9		
Average push gradient:	10 %				
Average site altitude:	6,050 feet				
Material weight:	2,900 lbs/LCY				
Weight description:	Decomposed rock	- 50% Rock,	50% Earth		

Job Condition Correction Factor		Source
Operator Skill:	0.750	(AVG.)
Material consistency:	0.900	(CAT HB))
Dozing method:	1.000	(GEN.)
Visibility:	1.000	(AVG.)
Job efficiency:	0.830	(1 SHIFT/DAY)
Spoil pile:	0.800	(FND-RF)
Push gradient:	0.786	(CAT HB)
Altitude:	1.000	(CAT HB)
Material Weight:	0.793	(CAT HB)
Blade type:	1.000	(PAT)

Net correction: 0.2794

Adjusted unit production:	480.26 LCY/hr
Adjusted fleet production:	1921.04 LCY/hr

JOB TIME AND COST

Fleet size:	4 Dozer(s)	
Unit cost:	\$0.660/LCY	

Total job time:	36.99 Hours
Total job cost:	\$46,936

SCRAPER TEAM WORK

Site: Bowie No. 2	Mine]	Permit Action	:: MT5	P	ermit/Job#: <u>C1</u>	996083
PROJECT IDI	ENTIFICATI	<u>ON</u>					
Task #:02		State		1	Abbrev		
	30/2019 ГТ	County	: Delta		File	ename: <u>C083-0</u>)22
Agency	or organization	name: I	ORMS				
HOURLY EQ	UIPMENT			COSTS	Shift basis: <u>1 per</u>	<u>day</u>	
			Equipm	ent Description			
		-Scrap		7G w/push-pull			
Su	pport Equipmen	-Doz t -Load Ar					
		-Dump Ar	ea: NA				
Road	Maintenance – N						
	-	Water Tru	ck: NA				
Cost Breakdown	: Scrap	er Work Te	eam	Support Equi	ipment	Maintenanc	e Equip
	Scrape		Dozer	Load Area	Dump Area	Motor Grader	Water
%Utilization-machi	ne:	100	NA	NA	NA	NA	
Ownership cost/ho	ur: \$12	6.52	NA	NA	NA	NA	
Operating cost/ho	ur: \$14	9.69	NA	NA	NA	NA	
%Utilization-ripp	er:	NA	NA	NA	NA	NA	
Ripper own. cost/ho	ur:	NA	NA	NA	NA	NA	
Ripper op. cost/ho	ur:	NA	NA	NA	NA	NA	
Operator cost/ho	ur: \$3	0.86	NA	NA	NA	NA	
Unit Subtota	uls: \$30	7.07	NA	NA	NA	NA	
Number of Uni	its:	2	0	0	0	0	
Group Subtota		ork:	\$614.14	Support:	\$0.00	Maint:	\$0

MATERIAL QUANTITIES

Initial volume:	700	CCY	Swell factor:	1.165	
Loose volume:	816	LCY			-
Sourc	e of estimated volume:	Operator E	stimate		

Source of estimated swell factor: Cat Handbook

		Scraper Bowl (volu	me) Basis:	
Material weight:	2,900 lbs/LCY	Struck Volume:	15.70	LCY
Material description:	Decomposed rock - 50% Rock,	Heaped Volume:	22.00	LCY
	50% Earth			
Rated Payload:	52,800 pounds	Average Volume:	18.85	LCY
Payload Capacity:	18.21 LCY	Adjusted Capacity:	18.21	LCY

Cycle Time:

Scraper Loading Time: Maneuver and Spread Time:

Job Condition Correction:

0.90 Minutes <u>0.60</u> Minutes

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

Travel Time:

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

Haul Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	1000.00	-15.00	5.00	-10.00	1749	0.69

Haul Time: 0.69 minutes

Return Route:

Seg #	Haul Distance (Ft)	Grade	Roll. Res	Total Res	Velocity	Travel Time (min)
1	1000.00	(%) 15.00	(%) 5.00	(%) 20.00	(fpm) 868	1.17
				Return Time:	1.17	minutes
			Total Scraper t	eam cycle time:	3.36	minutes
			Adjusted for	r job conditions:	539.70	LCY/Hour
			Selected Num	ber of Scrapers:	2	Scraper(s)
	Adjusted s	single scrape	r team (unit) ho	urly production:	539.70	LCY/Hour
	Adjusted mul	tiple scraper	team (fleet) how	urly production:	539.70	LCY/Hour
Unadjusted unit production/hour: 650.25 Optimal Number of Scrapers per push dozer:			650.25	LCY/Hour		
JOB TIN	<u>IE AND COST</u>					

Fleet size: 1 Team(s) Total job time: **1.51** Hours Unit cost: _____\$1.138 /LCY Total job cost: \$928

Site Altitude: 6750 feet

BULLDOZER WORK

Task description:	Regrade Borrov	v Area			
te: Bowie No. 2 Mine	Pe	rmit Action:	MT5	Permit/Jo	b#: <u>C1996083</u>
PROJECT IDENTIF	ICATION				
Task #: 023 Date: 9/30/2019 User: ZTT	State: County:	Colorado Delta		Abbreviation: Filename:	None C083-023
Agency or orga	nization name:	RMS			
HOURLY EQUIPME	<u>ENT COST</u>				
Basic Machine: Ca	t D10T - 10SU				
Horsepower: 57	4		-		
	mi-Universal		_		
Attachment: NA			-		
	ber day		-		
Data Source: (C	RG)		-		
Cost Breakdown:					
			Utilization %		
Ownership Cost/Hour:		\$140.61	NA		
Operating Cost/Hour:		\$135.35	100		
Ripper own. Cost/Hour:		\$0.00	NA		
Ripper op. Cost/Hour:		\$0.00	0		
Operator Cost/Hour:		\$41.24	NA		
MATERIAL QUANT Initial Volume: 25,0					
Swell factor: 1.25					
Loose volume: 32,0	000 LCY				
Source of estimated vol Source of estimated swe factor:	1				
HOURLY PRODUCT	<u> TION</u>				
Average push distance:	175 feet				
Unadjusted hourly production:	1,074.3 LC	Y/hr			
Materials consistency description:	Compa	cted fill or en	nbankment 0.9		
Average push gradient:	0 %				
Average site altitude:	6,200 feet				
Material weight:	2,650 lbs/LCY				
Weight description:	Decomposed rock	- 25% Rock,	, 75% Earth		

Job Condition Correction Factor		Source
Operator Skill:	0.750	(AVG.)
Material consistency:	0.900	(CAT HB))
Dozing method:	1.000	(GEN.)
Visibility:	1.000	(AVG.)
Job efficiency:	0.830	(1 SHIFT/DAY)
Spoil pile:	0.800	(FND-RF)
Push gradient:	1.000	(CAT HB)
Altitude:	1.000	(CAT HB)
Material Weight:	0.868	(CAT HB)
Blade type:	1.000	(PAT)

Net correction: 0.3890

Adjusted unit production:	417.90 LCY/hr
Adjusted fleet	1671.6 LCY/hr
production:	10/1.0 LC 1/11

JOB TIME AND COST

Fleet size:	4 Dozer(s)	
Unit cost:	\$0.759/LCY	

Total job time:	19.14 Hours
Total job cost:	\$24,289

HYDRAULIC EXCAVATOR WORK

	Pe	rmit Action			r ennu/J0	b#: <u>C1996083</u>
ROJECT IDENTIFIC	ATION					
Task #: 025 Date: 9/30/2019 User: ZTT	State: County:	Colorado Delta			eviation: Filename:	None C083-025
Agency or organiz	ation name: DR	RMS				
OURLY EQUIPMEN	<u>T COST</u>					
	Cat 365C L 13'-7" ROPS Cab	' Stick		Horsepower: Weight (MT): Shift Basis: Data Source:	7 1 p	404 70.51 Der day CRG)
ost Breakdown:						
Ownership Cost/Ho Operating Cost/Ho	our: \$125.	13	Utilization % NA 100			
Operator Cost/Ho Total Unit Cost/Ho			NA			
Total Fleet Cost/H	· · ·					
Loose volume: <u>1,8</u>	75 estimated volume:	_ LCY				
Source of estin	nated swell factor: ON	Cat Han				
Source of estin	nated swell factor: ON I bucket, swing loa	Cat Han	dbook bucket, swing ei			
Source of estin	nated swell factor: ON I bucket, swing loa	Cat Han ded, dump Basic Job C	dbook bucket, swing en ondition Descrij	otion: SEVER		
Source of estin	nated swell factor: <u>ON</u> I bucket, swing loa I	Cat Han ded, dump Basic Job C	dbook bucket, swing en ondition Descrij	otion: SEVER		minutes
Source of estin	nated swell factor: <u>ON</u> I bucket, swing loa I	Cat Han ded, dump Basic Job C	dbook bucket, swing er ondition Descrij in Basic Descrij	otion: SEVER otion: SEVER Value: 0.570	RE	-
Source of estin	nated swell factor: <u>ON</u> I bucket, swing loa I	Cat Han ded, dump Basic Job C adition with	dbook bucket, swing er ondition Descrij in Basic Descrij Cycle Time V	otion: SEVER otion: SEVER Value: 0.570 Bucket Size C	RE	_ minutes
Source of estin COURLY PRODUCTION Excavator Cycle Time (load Soad Bucket Capacity Rated Capacity: Bucket Fill Factor: Adjusted Capacity:	hated swell factor: <u>ON</u> <u>I bucket, swing loa</u> <u>I</u> Secondary Job Cor <u>6.90</u> <u>0.850</u> <u>5.87</u>	Cat Han ded, dump Basic Job C ndition with LCY (he Hard, to	dbook bucket, swing en ondition Descrip in Basic Descrip Cycle Time V cycle Time V eaped) ugh clay (80% -	otion: SEVER otion: SEVER Value: 0.570 Bucket Size C	RE Class: La	-
Source of estin COURLY PRODUCTIO Excavator Cycle Time (load Soad Bucket Capacity Rated Capacity: Bucket Fill Factor:	hated swell factor: <u>ON</u> <u>I bucket, swing loa</u> <u>I</u> Secondary Job Cor <u>6.90</u> <u>0.850</u> <u>5.87</u>	Cat Han ded, dump Basic Job C ndition with LCY (he Hard, to	dbook bucket, swing en ondition Descrip in Basic Descrip Cycle Time V eaped) ugh clay (80% - Si e B) ay)	otion: SEVEP otion: SEVEP Value: 0.570 Bucket Size (90%) 0.850	RE Class: La	-
Source of estin	hated swell factor: <u>ON</u> <u>I bucket, swing loa</u> <u>I</u> Secondary Job Cor <u>6.90</u> <u>0.850</u> <u>5.87</u> <u>actors</u> <u>1.00</u> <u>0.83</u>	Cat Han ded, dump Basic Job C dition with LCY (he Hard, to LCY Source (CAT H (1 shift/d multiplie Production: Production:	$\frac{\text{dbook}}{\text{bucket, swing end}}$ $\frac{\text{bucket, swing end}}{\text{ondition Description Description Description Cycle Time V}}$ $\frac{\text{cycle Time V}}{\text{cycle Time V}}$	otion: SEVEP otion: SEVEP Value: 0.570 Bucket Size (90%) 0.850	RE Class: <u>L</u> a	-
Source of estin	hated swell factor: ON bucket, swing loa bucket, swing loa I Secondary Job Cor 6.90 0.850 5.87 actors 1.00 0.83 0.83 usted Hourly Unit I usted Hourly Unit I sted Hourly Fleet I	Cat Han ded, dump Basic Job C dition with LCY (he Hard, to LCY Source (CAT H (1 shift/d multiplie Production: Production:	$\frac{\text{dbook}}{\text{bucket, swing end}}$ $\frac{\text{bucket, swing end}}{\text{ondition Description Description Description Cycle Time V}}$ $\frac{\text{cycle Time V}}{\text{cycle Time V}}$	ption: SEVER otion: SEVER 'alue: 0.570 Bucket Size (90%) 0.850 ite Altitude: <u>690</u> LCY/Hour LCY/Hour	RE Class: <u>L</u> a	-

Unit cost:	\$0.554	/LCY
------------	---------	------

Total job cost: **\$1,038**

TRUCK/LOADER TEAM WORK

Task description:	Haul Ro	ock to Vent Sl	nafts for Disposal				
Site: Bowie No. 2 Mine Permit Action: MT5					Permit/Job	o#: <u>C199</u>	96083
PROJECT IDENT	IFICATION						
Task #: 027		State: Col	orado	Abl	previation:	None	
Date: 9/30/20 User: ZTT	019 0	County: Del	ta		Filename:	C083-02	7
Agency or o	rganization nan	ne: DRMS					
HOURLY EQUIP	MENT COST	-		Shift ba	sis: <u>1 per da</u>	У	
			Equipment Desci	ription			
Tru	ick Loader Teai		eneric 10-12 cy, 6	<u>4</u>			
			AT 950H				
Suppor	t Equipment -L		IA IA				
Road Mai	ntenance – Moto		IA IA				
Road War			IA				
Cost Breakdown:	Truck/Loa	der Team	Support	Equipment	Mai		Equipment
	Truck	Loader	Load Area	Dump Area	Motor Grader	Wa	ter Truck
%Utilization-machine:	100	10	0 NA	NA	l	NA	NA
Ownership cost/hour:	\$19.51	\$27.3	7 NA	NA	l	NA	NA
Operating cost/hour:	\$46.51	\$33.8	2 NA	NA	l	NA	NA
%Utilization-riper:	NA		0 NA	NA	I	NA	NA
Ripper own. cost/hour:	NA	\$0.0	0 NA	NA	I	NA	NA
Ripper op. cost/hour:	NA	\$0.0	0 NA	NA	l	NA	NA
Operator cost/hour:	\$0.00	\$40.6	5 NA	NA	l	NA	NA
Unit Subtotals:	\$66.02	\$101.8	4 NA	NA	1	NA	NA

Total work team cost/hour: \$365.92

4

\$365.92

Work:

MATERIAL QUANTITIES

Number of Units:

Group Subtotals:

Initial volume:	2,000	CCY	Swell factor:	1.000	
Loose volume:	2,000	LCY			
Sourc	e of estimated volume:	Operator E	stimate		
Source of	estimated swell factor:	Cat Handb	ook		
Ν	Material Purchase Cost:	\$0.00			
	Total Cost:	\$0.00			

1

0

Support:

\$0.00

0

0

Maint:

\$0.00

0

Truck Capacity: Truck Payload (weight) Bas	is:				
Material weight:	2,950	Pound	s/LCY		
Description:	Traprock - bro				
Rated Payload:	35,400	Pound	s		
Payload Capacity:	12.00	LCY			
Truck Bed (volume) Basis:					
Struck Volume:	10.00	LCY			
Heaped Volume:		LCY			
Average Volume:		LCY			
Adjusted Volume:	12.00	LCY			
Final	Truck Volume I	Based on Number of	Loader Passes:	11.61	_ LCY
Loading Tool Capacity					
Rated Capacity:	4.300	LCY (heaped)	Buck	tet Size Class: NA	<u>A</u>
Bucket Fill Factor:	0.675	Blasted rock - p	oorly blasted (6	0 - 75% 0.675	
Adjusted Capacity:	2.903	LCY	oony blasted (b	0 - 1570) 0.015	
j					
Job Condition Correction	<u>s:</u>	Sit	te Altitude (ft.):	<u>7100</u> feet	
	Truck	Loader	Source		
Altitude Adj:	1.000	1.000	(CAT HE		
Job Efficiency:	0.830	0.830	(CAT HE	8)	
Net Correction:	0.830	0.830			
Loading Tool Cycle Time	<u>:</u> N	lumber of Loading T	ool Passes Requ		4 passes
Excavators and Front Shov	els:			Truck:	
Machine Cycle Time Selected Value	vs. Job Condition within this Basic				
Track Loaders	- Material Descri	ption:			
Cycle Time Elements (min.		<u> </u>			
Load: NA		aneuver: NA		Dump: 0.100	
Wheel and Tra	ck Loaders - Una	djusted Basic Loader	•	oad, dump, 0.5	500 minutes
Cycle Time Factors	5			Factor (min.)	Source
Material	: Bank or brok	en material 0.04		0.040	(Cat HB)
Stockpile	1 /			0.020	(Cat HB)
Truck Ownership	Common ow 0.04	nership of trucks and	l loaders -	-0.040	(Cat HB)
Operation				-0.040	(Cat HB)
Dump Target	: Fragile targe			0.050	(Cat HB)
		Net Cycle Time		0.030	minutes
		Adjusted Loade		0.530	minutes
		Net Load Ti	me per Truck:	1.690	minutes

	Tru	ck Excł	nange Time:	0.50	Minutes	Adju	sted for site al	titude:	0.500	Minutes
		Truck	Load Time:	1.690	Minutes	Adjusted for site altitude:		titude:	1.690	Minutes
	Truck M	aneuve	r and Dump Time:	0.90	Minutes	Adju	sted for site al	titude:	0.900	Minutes
	Truck Trav penetration Haul Route Seg #	<u>5.0</u> :	<u>ll & Return) T</u> Distance	<u>ime:</u> Grade (%)	Road Condit	tion: <u>Rutted dirt,</u>	little maintena	nce, no wat	er, 2" tire	
	SCg #	(Ft)	Distance		(%)	(%)	(fpm)	Time (min)		
	1	5280.	.00	10.00	5.00	15.00	734	7.199		
	D. (D.	4.5.5				Haul Time:	7.199	min	utes	
	Return Rou Seg #		Distance	Grade (%)	Roll. Res	Total Res	Velocity	Travel		
	505 "	(Ft)	Distance		(%)	(%)	(fpm)	Time (min)		
	1	5280.	.00	-10.00	5.00	-5.00	2938	1.853		
						Return Time:			nutes	
					Total Tr	uck Cycle Time:	12.142	2 min	nutes	
		iction	318.08	LCY/Hour	ſ	Adjusted for jo	ob efficiency:	264.0	1 LCY	//Hour
Iruck	Unit Produ	iction	57.37	LCY/Hour	[Adjusted for jo	ob efficiency:	47.62	LCY	/Hour
Optim	al No. of Ti	ucks:	6	Truck(s)		Selected Numb	er of Trucks:	4	Truc	k(s)
				Adjusted singl	e truck/loade	k team productio r team productio r team productio	on: 190.	47 LO	CY/Hour CY/Hour CY/Hour	
	JOB TIM	IE AN	D COST							
	Fleet	size:	1	Team(s)	r	Total job time:	10.50)	Hours	
	Unit	cost:	\$1.921	/LCY	1	Total job cost:	\$3,84	2		

BULLDOZER WORK

Task description:	Spread Uncomp	acted Refuse	e on Gob Pile #2		
Bowie No. 2 Mine	Pe	Permit Action: MT5			b#: <u>C1996083</u>
PROJECT IDENTIFI	ICATION				
Task #: 036 Date: $9/30/2019$	State:	Colorado		Abbreviation: Filename:	None
Date: 9/30/2019 User: ZTT	County:	Delta		rnename:	C083-036
Agency or organ	nization name:	RMS			
HOURLY EQUIPME	<u>NT COST</u>				
Basic Machine: Cat Horsepower: 574	t D10T - 10SU				
L	+ mi-Universal				
Attachment: NA					
	ber day				
1	RG)				
Cost Breakdown:		1	Utilization %		
Ownership Cost/Hour:		\$140.61	NA		
Operating Cost/Hour:		\$135.35	100		
Ripper own. Cost/Hour:		\$0.00	NA		
Ripper op. Cost/Hour:		\$0.00	0		
Operator Cost/Hour:		\$41.24	NA		
Swell factor: 1.00	,000				
Loose volume: 200	,000 LCY	_			
Source of estimated volu	ume: TR-44 Su	ibmittal Page	4		
Source of estimated swe factor:	ell Cat Hand	book			
HOURLY PRODUCT	<u>FION</u>				
Average push distance:	200 feet				
Unadjusted hourly production:	946.0 LCY	/hr			
Materials consistency description:	Partly	consolidated s	tockpile 1.1		
Average push gradient:	0 %				
Average site altitude:	6,100 feet				
Material weight:	2,667 lbs/LCY				

Job Condition Correction Factor		Source
Operator Skill:	0.750	(AVG.)
Material consistency:	1.100	(CAT HB)
Dozing method:	1.000	(GEN.)
Visibility:	1.000	(AVG.)
Job efficiency:	0.830	(1 SHIFT/DAY)
Spoil pile:	1.000	(DOZ-OC)
Push gradient:	1.000	(CAT HB)
Altitude:	1.000	(CAT HB)
Material Weight:	0.862	(CAT HB)
Blade type:	1.000	(PAT)

Net correction: 0.5903

Adjusted unit production:	558.42 LCY/hr
Adjusted fleet production:	2233.68 LCY/hr

JOB TIME AND COST

Fleet size:	4 Dozer(s)	
Unit cost:	\$0.568/LCY	-

Total job time:	89.54 Hours
Total job cost:	\$113,605

BULLDOZER WORK

Task description:	Spread Uncomp	acted Refuse	e at Gob Pile #3		
e: Bowie No. 2 Mine	Pe	rmit Action:	MT5	Permit/Jol	b#: <u>C1996083</u>
PROJECT IDENTIFI	CATION				
Task #: 037 Date: 9/30/2019 User: ZTT	State: County:	Colorado Delta		Abbreviation: Filename:	None C083-037
Agency or organ	nization name:	RMS			
HOURLY EQUIPME	NT COST				
Horsepower: 574 Blade Type: Sen Attachment: NA Shift Basis: 1 p	ni-Universal		- - - -		
<u>Cost Breakdown</u> :	(0)		Utilization %		
Ownership Cost/Hour: Operating Cost/Hour:		\$140.61 \$135.35	<u>NA</u> 100		
Ripper own. Cost/Hour:		\$0.00	NA		
Ripper op. Cost/Hour:		\$0.00	0		
Operator Cost/Hour:		\$41.24	NA		
MATERIAL QUANTInitial Volume:225.Swell factor:1.00Loose volume:225.	,000	_			
Source of estimated volu Source of estimated swe factor:	ume: TR-44 St	bmittal Page book	4		
HOURLY PRODUCT	<u>'ION</u>				
Average push distance: Unadjusted hourly production:	200 feet 946.0 LCY	/hr			
Materials consistency description:	Partly o	consolidated s	stockpile 1.1		
Average push gradient: Average site altitude:	0 %				
Material weight:	2,667 lbs/LCY				
-	. <u></u>				
Weight description:	User Provided				

Job Condition Correction Factor		Source
Operator Skill:	0.750	(AVG.)
Material consistency:	1.100	(CAT HB)
Dozing method:	1.000	(GEN.)
Visibility:	1.000	(AVG.)
Job efficiency:	0.830	(1 SHIFT/DAY)
Spoil pile:	1.000	(DOZ-OC)
Push gradient:	1.000	(CAT HB)
Altitude:	1.000	(CAT HB)
Material Weight:	0.862	(CAT HB)
Blade type:	1.000	(PAT)

Net correction: 0.5903

Adjusted unit production:	558.42 LCY/hr
Adjusted fleet production:	2233.68 LCY/hr

JOB TIME AND COST

Fleet size:	4 Dozer(s)	
Unit cost:	\$0.568/LCY	

Total job time:	100.73 Hours
Total job cost:	\$127,806

COMPACTION WORK

Task description:	Compact Materia	al Hauled to G	ob Pile #1			
te: Bowie No. 2 Mine	Perr	mit Action: <u>N</u>	4T5		Permit/Job#:	C1996083
PROJECT IDENTIFIC	CATION					
Task #: 038	State:	Colorado		Abbro	eviation: No	ne
Date: 9/30/2019	County:	Delta		F	ilename: CO	83-038
User: ZTT						
Agency or organi	zation name: DRM	MS				
HOURLY EQUIPMEN	<u>T COST</u>					
Basic Machine:	CAT 825H			Horsepower:	354	
Compactor Type:	Soil - tamping for	ot		Shift Basis:	1 per da	•
				Data Source:	(CRG)	1
Cost Breakdown:			1 .			
Owner	hip Cost/Hour:	\$113.26		Utilization % NA		
	ing Cost/Hour:	\$88.24		100		
	ator Cost/Hour:	\$25.99		NA		
Total U	Jnit Cost/Hour:	\$227.49				
Total F	leet Cost/Hour:	\$227.49				
MATERIAL QUANTI	TIFS					
Loose volume		.9	LCY	Shri	nkage factor:	0.875
Compacted volume			CCY			
Source	ce of estimated volun	ne: Total of	all material	hauled to Gob F	Pile	
	mated shrinkage fact					
HAUDI V BRADUCTI	ON		Unadinata	d havely neadya	tion - (W y S y	$\mathbf{L} = \mathbf{C} / \mathbf{D}$
HOURLY PRODUCTI			·	d hourly produc	$uon = (w \times S \times S)$	<u>LXC)/P</u>
	acted width per pass age Compactor Speed		7.34 4.00	feet		
	thickness of each lift		8.00	mph inches		
	Conversion Constant		16.3		./12in./27cu.ft.))
1	per of machine passes		3	passes		
Unadjusted	l Hourly Unit Produc	ction:	1,276.18	CCY/ho	our	
Job Condition Correction F	actors		Site Altitu	de: <u>6,400</u> feet		
	1.00	Source				
Altitude Adj: Job Efficiency:	1.00 0.83	(CAT HB)				
Net Correction:	0.8300	(1 shift/day) multiplier				
		-	1 050 22	COMM		
	usted Hourly Unit Pr 1sted Hourly Fleet Pr		1,059.23 1,059.23	CCY/Hour CCY/Hour		
Adji	usieu mourry rieet Pi		1,037.23			
JOB TIME AND COST	<u>r</u>					
JOB TIME AND COST Fleet size:1	<u>C</u> Compactor	(s)	Tota	l job time:	11.85	Hours

COMPACTION WORK

Task description:	Compact Refuse on Gob Pile	#2		
e: Bowie No. 2 Mine	Permit Action:	MT5	P	ermit/Job#: <u>C1996083</u>
PROJECT IDENTIFI	CATION			
Task #: 039 Date: 9/30/2019 User: ZTT	State: Colorado County: Delta		Abbrev File	viation: None ename: C083-039
Agency or organi	zation name: DRMS			
HOURLY EQUIPMEN	NT COST			
Basic Machine:			Horsepower:	354
Compactor Type:	Soil - tamping foot	-	Shift Basis:	1 per day
			Data Source:	(CRG)
Cost Breakdown:			Utilization %	
	ship Cost/Hour: \$113.		NA	
*	ting Cost/Hour: \$88.2 ator Cost/Hour: \$25.9		100 NA	
-	Unit Cost/Hour: \$227.4		NA	
	leet Cost/Hour: \$227.			
MATERIAL QUANTI				
Loose volume		LCY CCY	Shrin	kage factor: 0.900
Compacted volume				
		2.05-45 andbook		
Source of esti	mateu simikage factor. <u>Cat m</u>	andoook		
HOURLY PRODUCT	ON	Unadjust	ted hourly production	$on = (W \times S \times L \times C) / P$
	pacted width per pass (W):	7.34	feet	
	age Compactor Speed (S): thickness of each lift (L):	4.00 10.00	mph inches	
	Conversion Constant (C):	16.3		12in./27cu.ft.)
	per of machine passes (P):	3	passes	
Unadjuste	d Hourly Unit Production:	1,595.23	CCY/hou	r
Job Condition Correction F	actors	Site Alti	tude: <u>6,100</u> feet	
A1/1/ 1. A 11.	Source			
Altitude Adj: Job Efficiency:	1.00 (CAT HB) 0.83 (1 shift/day			
Net Correction:	0.8300 multiplier	<u>) </u>		
—	^	1 22 4 0 4	CCV/II	
	justed Hourly Unit Production: _ usted Hourly Fleet Production:	1,324.04 1,324.04		
		_, ,,		
JOB TIME AND COST	_			
Fleet size: 1	Compactor(s)	To	tal job time:	135.95 Hours
Unit cost: \$0.1	72 per CCY	То	tal job cost:	\$30,927

TRUCK/LOADER TEAM WORK

Task description:	Haul re	fuse out of Gob	Pile #2/#3 dryin	g areas for place	ment	
Site: Bowie No. 2 Min	ie	Permit Ac	tion: MT5		Permit/Job#	: <u>C1996083</u>
PROJECT IDENT	<u>FIFICATION</u>					
Task #: 040		State: Color	ado	Abb		None
Date: 9/30/2 User: ZTT	2019 0	County: Delta			Filename:	2083-040
Agency or o	organization nan	ne: DRMS				
HOURLY EQUIP	MENT COST	-		Shift ba	sis: <u>1 per day</u>	
			Equipment Descr	iption		
Tr	ruck Loader Tear		neric 10-12 cy, 6x			
			t 345D L 12'-10"	Stick		
Suppo	rt Equipment -L					
Road Ma	-Du intenance –Moto					
Road Ma		ter Truck: NA				
		I				
Cost Breakdown:	Truck/Loa	der Team		Equipment	Mainte	enance Equipment
	Truck	Excavator	Load Area	Dump Area	Motor Grader	Water Truck
%Utilization-machine:	100	100	NA	NA	NA	A NA
Ownership cost/hour:	\$19.51	\$72.53	NA	NA	NA	A NA
Operating cost/hour:	\$46.51	\$87.65	NA	NA	NA	A NA
%Utilization-riper:	NA	0	NA	NA	NA	A NA
Ripper own. cost/hour:	NA	\$0.00	NA	NA	NA	A NA
Ripper op. cost/hour:	NA	\$0.00	NA	NA	NA	A NA
Operator cost/hour:	\$0.00	\$37.27	NA	NA	NA	A NA

\$197.44 Unit Subtotals: \$66.02 NA Number of Units: 2 1 0 Group Subtotals: Work: \$329.48 Support: \$0.00

\$37.27

Total work team cost/hour: \$329.48

MATERIAL QUANTITIES

Operator cost/hour:

Initial volume:	325,000	CCY	Swell factor:	1.000
Loose volume:	325,000	LCY		
Sourc	e of estimated volume:	Vol XI, p. 4a,	Vol IX p 12-all	225k yds @ #3, 100k yds @ #2
Source of	estimated swell factor:	Cat Handbool	k	
Ν	Aaterial Purchase Cost:	\$0.00		
	Total Cost:	\$0.00		

NA

NA

0

NA

Maint:

0

\$0.00

NA

0

HOURLY PRODUCTION

Truck Capacity:					
Truck Payload (weight) Bas					
Material weight:	1,600	Pound	s/LCY		
Description:	Coal - Bitumin				
Rated Payload:	35,400	Pound	S		
Payload Capacity:	22.13	LCY			
Truck Bed (volume) Basis:					
Struck Volume:	10.00 L	.CY			
Heaped Volume:		ĊY			
Average Volume:		.CY			
Adjusted Volume:		.CY			
Final	Truck Volumo R	ased on Number of	Londor Dassas	9.18	LCY
Loading Tool Capacity	Truck volume Da	ased on Number of		9.10	LC1
<u>Bound roor Cupacity</u>			Bucke	t Size Class: N	Medium
Rated Capacity:	3.140	LCY (heaped)			
Bucket Fill Factor:	0.975		- mixed moist agg	gregates (95-1009	%) 0.975
Adjusted Capacity:	3.062	LCY			
Job Condition Corrections	<u>:</u>	Si	te Altitude (ft.): <u>6</u>	5 <u>900</u> feet	
	Truck	Loader	Source		
Altitude Adj:	1.000	0.960	(CAT HB)	1	
Job Efficiency:	0.830	0.830	(CAT HB)		
Net Correction:	0.830	0.797			
Loading Tool Cycle Time		umber of Loading T	ool Passes Requi	red to Fill	3 passes
Excavators and Front Shove	els:			Truck:	
Machine Cycle Time	vs. Job Condition	Rating: ABOVE	AVERAGE		
Selected Value	within this Basic	Rating: AVERA	GE		
Track Loaders -	- Material Descrip	tion:			
Cycle Time Elements (min.)	-				
Load: NA	Ma	neuver: NA		Dump: 0.10	0
W (1,, 1, T ,, 1, T ,	1 1 1	·		1 1	
wheel and 1 rad	K Loaders - Unad	justed Basic Loade	•	aneuver):	NA minutes
Cycle Time Factors				Factor (min.)	Source
Material:				NA	(Cat HB)
Stockpile:				NA	(Cat HB)
	NA			NA	(Cat HB)
Truck Ownership:				NA	(Cat HB)
Operation:					
				NA	(Cat HB)
Operation:		Net Cycle Tim		NA NA	(Cat HB) minutes
Operation:		Adjusted Loade		NA	(Cat HB)

Truck Cycle Time:

	True	ck Exchange Time:	0.50	Minutes	Adju	sted for site al	titude:	0.500	Minutes
		Truck Load Time:	0.646	Minutes	Adju	sted for site al	titude:	0.673	Minutes
	Truck M	aneuver and Dump Time:	0.90	Minutes	Adju	sted for site al	titude:	0.900	Minutes
	Truck Trav penetration Haul Route	:	<u>`ime:</u>		ion: <u>Rutted dirt,</u>			er, 1" tire	
	Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)		
	1	500.00	0.00	4.00	4.00	2665	0.285		
					Haul Time:	0.285	minu	ites	
	Return Rou Seg #	te: Haul Distance	Grade (%)	Roll. Res	Total Res	Velocity	Travel	7	
	Seg #	(Ft)	Glade (%)	(%)	(%)	(fpm)	Time (min)		
	1	500.00	0.00	4.00	4.00	2849	0.201		
				Total Tru	Return Time: ack Cycle Time:			utes utes	
	oading Too Produ	ction 469.83	LCY/Hour		Adjusted for jo	b efficiency:	389.96	LCY	/Hour
Truck	Unit Produ	215.35	LCY/Hour	•	Adjusted for jo	b efficiency:	178.74	LCY	/Hour
Optim	al No. of Tr	ucks: 2	Truck(s)		Selected Numb	er of Trucks:	2	Truc	k(s)
		А	Adjusted single	e truck/loade	c team productio r team productio r team productio	n: 357.4	49 LC	CY/Hour CY/Hour CY/Hour	
	JOB TIM	E AND COST							
	Fleet	size: 1	Team(s)	Т	Fotal job time:	909.1	3	Hours	
	Unit c	cost: \$0.922	/LCY	r	Total job cost:	\$299,5	39		

COMPACTION WORK

Task description:	Compact Refuse at Gob	Pile #3			
te: Bowie No. 2 Mine	Permit Actio	on: MT5		Permit/Job#:	C1996083
PROJECT IDENTIFIC	CATION				
Task #: 041 Date: 9/30/2019 User: ZTT	State: Colorad County: Delta	lo			one 083-041
Agency or organi	zation name: DRMS				
HOURLY EQUIPMEN	<u>TT COST</u>				
Basic Machine: Compactor Type:			Horsepower: Shift Basis: Data Source:	354 1 per d (CRC	ay
Cost Breakdown:			Litiliantian 0/		
Operat Opera	ing Cost/Hour: \$	113.26 88.24 25.99 227.49	Utilization % NA 100 NA	- - -	
Total F	leet Cost/Hour: \$	227.49			
MATERIAL QUANTI	TIFS				
Loose volume		LCY	Shr	inkage factor:	0.870
Compacted volume		CCY	511		
		olume XI, Page 1 at Handbook			
HOURLY PRODUCTI	ON	Unadjuste	d hourly produc	etion = (W x S	<u>x L x C) / P</u>
Avera Compacted Required numb	acted width per pass (W): age Compactor Speed (S): thickness of each lift (L): Conversion Constant (C): per of machine passes (P): Hourly Unit Production:	$ \begin{array}{r} 7.34 \\ 4.00 \\ 10.00 \\ 16.3 \\ 3 \\ 1,595.23 \\ \end{array} $	feet mph inches (5,280f passes CCY/ho	t./12in./27cu.ft our	.)
Job Condition Correction F	actors	Site Altitu	de: <u>5,900</u> feet		
	Sour 1.00 (CAT 0.83 (1 shift 0.8300 multipl usted Hourly Unit Productio usted Hourly Fleet Productio	HB) /day) ier n:1,324.04	CCY/Hour CCY/Hour		
JOB TIME AND COST	<u>[</u>				
Fleet size: 1	Compactor(s)	Tota	l job time:	147.84	Hours
Unit cost: \$0.1	72 per CCY	Tota	al job cost:	\$33,633	

SCRAPER TEAM WORK

Site: Bowie No. 2 Mine		Permit Action	: <u>MT5</u>	Per	mit/Job#: <u>C19</u>	996083
<u>PROJECT IDENTI</u>	FICATION					
Task #: 042	S	state: Colorado	•	Abbrevia	tion: None	
Date: 9/30/20	19 Cou	unty: Delta		Filena	ame: C083-0	42
User: ZTT						
Agency or org	ganization name:	DRMS				
			COST			
HOURLY EQUIPM	<u>LENI</u>		COSTS	Shift basis: <u>1 per da</u>	<u>.y</u>	
		Equipm	ent Description			
		craper: Cat 62	7G w/push-pull			
~		Dozer: NA				
Support	Equipment -Load	d Area: NA				
Road Maint	enance – Motor (
rtoud trium	-Water					
		<u> </u>				
Cost Breakdown:	Scraper Wor		Support Equi	•	Maintenanc	
	Scraper	Dozer	Load Area	Dump Area N	Motor Grader	Water '
%Utilization-machine:	100	NA	NA	NA	NA	
Ownership cost/hour:	\$126.52	NA	NA	NA	NA	
Operating cost/hour:	\$149.69	NA	NA	NA	NA	
%Utilization-ripper:	NA	NA	NA	NA	NA	
Ripper own. cost/hour:	NA	NA	NA	NA	NA	
Ripper op. cost/hour:	NA	NA	NA	NA	NA	
Operator cost/hour:	\$30.86	NA	NA	NA	NA	
Unit Subtotals:	\$307.07	NA	NA	NA	NA	
Unit Subtotals.		0	0	0	0	
Number of Units:	2	0	0	0	0	

MATERIAL QUANTITIES

Initial volume:	966	CCY	Swell factor:	1.000	
Loose volume:	966	LCY			
Source of estimated volume:		Volume IX,	Appendix A		

Source of estimated swell factor: Cat Handbook

		Scraper Bowl (volu	ime) Basis:	
Material weight:	2,900 lbs/LCY	Struck Volume:	15.70	LCY
Material description:	User Provided	Heaped Volume:	22.00	LCY
Rated Payload:	52,800 pounds	Average Volume:	18.85	LCY
Payload Capacity:		Adjusted Capacity:	18.21	LCY

Cycle Time:

Scraper Loading Time:	0.90 Minutes
Maneuver and Spread Time:	<u>0.60</u> Minutes

Job Condition Correction:

Site Altitude: 6750 feet

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

Travel Time:

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

Haul Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	3200.00	0.00	3.00	3.00	2824	1.37

Haul Time: **1.37** minutes

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	3200.00	0.00	3.00	3.00	2874	1.23
				Return Time:	1.23	minutes
			Total Scrape	r team cycle time:	4.10	minutes
			Adjusted f	for job conditions:	442.29	LCY/Hour
			Selected Nu	mber of Scrapers:	2	Scraper(s)
	Adjusted s	single scrape	r team (unit) h	ourly production:	442.29	LCY/Hour
	Adjusted mul	ltiple scraper	team (fleet) h	ourly production:	442.29	LCY/Hour
0	Unadjusted unit prod ptimal Number of Scrap			LCY/Hour		
<u>)B TIN</u>	ME AND COST					
Fleet	size: 1	Team(s)	Т	otal job time:	2.18	Hours
	cost: \$1.389	/LCY	-	Total job cost:	\$1,341	

SCRAPER TEAM WORK

Site: Bowie No. 2 Mine	Bowie No. 2 Mine Permit Action: MT5				Permit/Job#: <u>C1996083</u>		
PROJECT IDENTI	FICATION						
Task #: 043 Date: 9/30/20 User: ZTT		tate: Colorado inty: Delta		Abbrevi	ation: None name: C083-0)43	
	ganization name:	DRMS					
HOURLY EQUIPM	<u>IENT</u>		COSTS	Shift basis: <u>1 per c</u>	lay		
		Equipm	ent Description				
	-Se		7G w/push-pull				
		Dozer: NA					
Support	Equipment -Load						
Road Main	-Dump tenance –Motor C						
Roud Main	-Water						
<u>Cost Breakdown</u> :	Scraper Wor Scraper	k Team Dozer	Support Equi	Dump Area	Maintenanc Motor Grader	e Equipn Water	
				Dump Area		Water	
%Utilization-machine:	100	NA	NA	NA	NA		
Ownership cost/hour:	\$126.52	NA	NA	NA	NA		
Operating cost/hour:	\$149.69	NA	NA	NA	NA		
%Utilization-ripper:	NA	NA	NA	NA	NA		
Ripper own. cost/hour:	NA	NA	NA	NA	NA		
Ripper op. cost/hour:	NA	NA	NA	NA	NA		
Operator cost/hour:	\$30.86	NA	NA	NA	NA		
Unit Subtotals:	\$307.07	NA	NA	NA	NA		
Number of Units:	2	0	0	0	0		
Group Subtotals:	Work:	\$614.14	Support:	\$0.00	Maint:	\$0.	

MATERIAL QUANTITIES

Initial volume:	6,324	CCY	Swell factor:	1.165	
Loose volume:	7,367	LCY			
Source of estimated volume:		Volume IX	, Appendix A		

Source of estimated swell factor: <u>Cat Handbook</u>

	Scraper Bowl (volu		
2,900 lbs/LCY	Struck Volume:	15.70	LCY
Decomposed rock - 50% Rock,	Heaped Volume:	22.00	LCY
50% Earth			
52,800 pounds	Average Volume:	18.85	LCY
18.21 LCY	Adjusted Capacity:	18.21	LCY
	2,900 lbs/LCY Decomposed rock - 50% Rock, 50% Earth 52,800 pounds 18.21 LCY	2,900 lbs/LCYStruck Volume:Decomposed rock - 50% Rock, 50% EarthHeaped Volume:52,800 poundsAverage Volume:	Decomposed rock - 50% Rock, 50% EarthHeaped Volume:22.0052,800 poundsAverage Volume:18.85

Cycle Time:

Scraper Loading Time: Maneuver and Spread Time:

Job Condition Correction:

<u>0.90</u> Minutes <u>0.60</u> Minutes

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

Travel Time:

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

Haul Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	1500.00	10.00	3.00	13.00	834	1.82

Haul Time: **1.82**

minutes

Return Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	1500.00	-10.00	3.00	-7.00	2938	0.57
				Return Time:	0.57	minutes
			Total Scraper	team cycle time:	3.89	minutes
			Adjusted for	or job conditions:	466.17	LCY/Hour
			Selected Nu	mber of Scrapers:	2	Scraper(s)
	Adjusted s	single scrape	team (unit) h	ourly production:	466.17	LCY/Hour
	Adjusted mul	tiple scraper	team (fleet) h	ourly production:	466.17	LCY/Hour

Fleet size:	1	Team(s)	Total job time:	15.80	Hours
Unit cost:	\$1.317	/LCY	Total job cost:	\$9,706	

Site Altitude: 6750 feet

SCRAPER TEAM WORK

Site: Bowie No. 2 Mine	Permit Action	: <u>MT5</u>	Pe	ermit/Job#: <u>C1</u>	996083	
PROJECT IDENTI	FICATION					
Task #:044		tate: Colorado		Abbrevi		
Date: <u>9/30/20</u>	19 Cou	nty: Delta		File	name: <u>C083-0</u>)44
User: ZTT						
Agency or org	ganization name:	DRMS				
HOURLY EQUIPM	IENT_		COSTS	Shift basis: <u>1 per c</u>	lay	
		11	ent Description			
			7G w/push-pull			
Support	Equipment -Load	Dozer: NA Area: NA				
Support	-Dump-Dump					
Road Main	tenance – Motor C					
	-Water	Truck: NA				
Cost Breakdown:	Scraper Worl	k Team	Support Equ	ipment	Maintenand	e Equipa
<u></u>	Scraper	Dozer	Load Area	Dump Area	Motor Grader	Water '
%Utilization-machine:	100	NA	NA	NA	NA	
Ownership cost/hour:	\$126.52	NA	NA	NA	NA	
Operating cost/hour:	\$149.69	NA	NA	NA	NA	
%Utilization-ripper:	NA	NA	NA	NA	NA	
Ripper own. cost/hour:	NA	NA	NA	NA	NA	
Ripper op. cost/hour:	NA	NA	NA	NA	NA	
Operator cost/hour:	\$30.86	NA	NA	NA	NA	
Unit Subtotals:	\$307.07	NA	NA	NA	NA	
Number of Units:	2	0	0	0	0	
Group Subtotals:	Work:	\$614.14	Support:	\$0.00	Maint:	\$0.0

MATERIAL QUANTITIES

Initial volume: Loose volume:	92,937 108,272	CCY LCY	Swell factor:	1.165	_
Source	e of estimated volume:	Volume IX	, Appendix A		
Source of	estimated swell factor:	Cat Handb	ook		

	Scraper Bowl (volu		
2,900 lbs/LCY	Struck Volume:	15.70	LCY
Decomposed rock - 50% Rock,	Heaped Volume:	22.00	LCY
50% Earth			
52,800 pounds	Average Volume:	18.85	LCY
18.21 LCY	Adjusted Capacity:	18.21	LCY
	2,900 lbs/LCY Decomposed rock - 50% Rock, 50% Earth 52,800 pounds 18.21 LCY	2,900 lbs/LCYStruck Volume:Decomposed rock - 50% Rock, 50% EarthHeaped Volume:52,800 poundsAverage Volume:	Decomposed rock - 50% Rock, 50% EarthHeaped Volume:22.0052,800 poundsAverage Volume:18.85

Cycle Time:

Scraper Loading Time: Maneuver and Spread Time:

Job Condition Correction:

<u>0.90</u> Minutes <u>0.60</u> Minutes

Scraper **Push Dozer** Source 1.000 Altitude Adj: 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	Travel Time
		(%)	(%)	(%)	(fpm)	(min)
1	1000.00	5.00	5.00	10.00	1068	0.97

Haul Time: 0.97

minutes

Return Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	1000.00	-5.00	5.00	0.00	2921	0.44
				Return Time:	0.44	minutes
			Total Scraper	team cycle time:	2.91	minutes
		623.16	LCY/Hour			
		2	Scraper(s)			
	Adjusted s	single scrape	team (unit) ho	urly production:	623.16	LCY/Hour
	Adjusted mul	tiple scraper	team (fleet) ho	urly production:	623.16	LCY/Hour
0	Unadjusted unit prod ptimal Number of Scrap		750.80	LCY/Hour		
IOB TIN	ME AND COST					

Fleet size:	1	Team(s)	Total job time:	173.74	Hours
Unit cost:	\$0.986	/LCY	Total job cost:	\$106,704	

Site Altitude: 6750 feet

TRUCK/LOADER TEAM WORK

Task description:	Haul Co	over Materia	al fro	om Gob Pile #3	to Gob Pile #2			
Site: Bowie No. 2 Mine	e	Permit	Act	ion: MT5		Permit/Jo	b#: _	C1996083
PROJECT IDENT	IFICATION							
Task #: 045		State: Co	olora	ado	Abł	previation:	Noi	ne
Date: 9/30/2	019 (elta			Filename:		33-045
User: <u>ZTT</u>								
Agency or o	rganization nan	ne: DRMS	5					
HOURLY EQUIP	MENT COST				Shift ba	sis: <u>1 per da</u>	ay	
			I	Equipment Descr		-	•	
Truck Loader Team -Truck: Generic 10-12 cy, 6x4								
-Loader: CAT 950H								
Support Equipment -Load Area: NA								
			NA					
Road Mai	ntenance – Moto		NA					
	-Wat	ter Truck:	NA					
Cost Breakdown:	Truck/Loa	der Team		Support	Equipment	Ma	intena	nce Equipment
<u>Cost Di Cakdown</u> .	Truck	Loader		Load Area	Dump Area	Motor Grader	intene	Water Truck
%Utilization-machine:	100	1	00	NA	NA		NA	NA
Ownership cost/hour:	\$19.51	\$27.	.37	NA	NA		NA	NA
Operating cost/hour:	\$46.51	\$33.	.82	NA	NA		NA	NA
%Utilization-riper:	NA		0	NA	NA		NA	NA
Ripper own. cost/hour:	NA	\$0.	00	NA	NA		NA	NA
Ripper op. cost/hour:	NA	\$0.	.00	NA	NA		NA	NA
Operator cost/hour:	\$0.00	\$40.	.65	NA	NA		NA	NA
Unit Subtotals:	\$66.02	\$101.	.84	NA	NA		NA	NA

Total work team cost/hour: \$365.92

4

\$365.92

Work:

MATERIAL QUANTITIES

Number of Units:

Group Subtotals:

Initial volume:	58,943	CCY	Swell factor:	1.165	
Loose volume:	68,669	LCY			
Sourc	e of estimated volume:	Volume IX	K, Appendix A		
Source of	estimated swell factor:	Cat Handb	ook		
Ν	Interial Purchase Cost:	\$0.00			
	Total Cost:	\$0.00			

0

\$0.00

Support:

0

0

\$0.00

Maint:

0

1

Truck Capacity: Truck Payload (weight) Bas	ia						
Material weight:	2,900		Pounds/	ICY			
Description:		l rock - 50% Ro					
Rated Payload:	35,400		Pounds	Durth			
Payload Capacity:	12.21		LCY				
5 I 5							
Truck Bed (volume) Basis:							
Struck Volume:	10.00	LCY					
Heaped Volume:	12.00	LCY					
Average Volume:	11.00	LCY					
Adjusted Volume:	12.00	LCY					
Final	Truck Volume	Based on Num	ber of Lo	oader Passes:	10.64	LCY	
Loading Tool Capacity				Buck	et Size Class:	NA	
Dated Conscience	4 200	ICV (ha	anad	DUCK	CI 5120 Class.		
Rated Capacity: Bucket Fill Factor:	4.300 0.825	LCY (he Blasted r		g. blasted (75	- 90%) 0 825		
Adjusted Capacity:	3.548	LCY	OCK - avg	$\frac{1}{3}$. Diasted (73)	- 9070) 0.825		
Rajustea Capacity.	5.540	Lei					
Job Condition Corrections	<u>s:</u>		Site	Altitude (ft.):	<u>6300</u> feet		
	Truck	Loade	r	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	<u>.</u>	Number of Loa	ding Too	ol Passes Requ		3	passes
Excavators and Front Shove	els:				Truck:	5	
Machine Cycle Time Selected Value							
Track Loaders -	- Material Desc	ription:					
Cycle Time Elements (min.)):						
Load: NA	N	Maneuver: N	A		Dump: (0.100	_
Wheel and Trac	ck Loaders - Un	adjusted Basic	Loader (•	ad, dump, naneuver):	0.500	minutes
Cycle Time Factors					Factor (mir		
Material		4" to 6" diamete			0.000	(Cat]	HB)
Stockpile	0.01	Conveyor or dozer piled 10 ft. high or less 0.01			0.010	(Cat]	HB)
Truck Ownership:	Common ov 0.04	wnership of true	cks and l	oaders -	-0.040	(Cat]	HB)
Operation	1	peration -0.04			-0.040	(Cat]	HB)
Dump Target:	Nominal tar				0.000	(Cat]	
		•		Adjustment:	-0.070	minu	
				Cycle Time:	0.430	minu	
		Net L	oad Time	e per Truck:	0.960	minu	ites

Truck Cycle Time:

Truc	Truck Exchange Time: 0.50		Minutes	Adju	sted for site a	ltitude:	0.500	Minutes
	Truck Load Time:	0.960	Minutes	Adju	isted for site a	ltitude:	0.960	Minutes
Truck Ma	aneuver and Dump Time:	0.90	Minutes	Adjusted for site altitude:		ltitude:	0.900	Minutes
Truck Trave maintained	el (Haul & Return) T	<u>`ime:</u>	Road Conditi	on: <u>Firm, smoo</u>	th, rolling, dir	t/lt. surfaced	, watered,	
Haul Route								
Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)		
1	2000.00	0.00	3.00	3.00	2824	0.810		
2	4000.00	0.00	3.00	3.00	2824	1.416		
3	1000.00	10.00	3.00	13.00	834	0.191		
Return Rou	to			Haul Time:	2.417	minu	utes	
Seg #	Haul Distance	Grade (%)	Roll. Res	Total Res	Velocity	Travel		
~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	(Ft)		(%)	(%)	(fpm)	Time (min)		
1	1000.00	-10.00	3.00	-7.00	2938	0.410		
2	4000.00	0.00	3.00	3.00	2874	1.392	_	
3	2000.00	0.00	3.00	3.00	2874	0.696		
			Total Tru	Return Time: ck Cycle Time:	-		nutes	
Loading Too	1			2				
Produ Truck Unit Produ	ction 437.36	LCY/Hou	r	Adjusted for j	ob efficiency:	363.01	LCY	/Hour
Truck Onit i Todu	87.77	LCY/Hou	r	Adjusted for j	ob efficiency:	72.85	LCY	/Hour
Optimal No. of Tr	ucks: 5	Truck(s)		Selected Numb	per of Trucks:	4	Truc	k(s)
		Adjusted sing	le truck/loader	team production team production team production	on: 291	.41 LO	CY/Hour CY/Hour CY/Hour	
JOB TIM	E AND COST							
Fleet s	ize: 1	Team(s)	Т	otal job time:	235.0	64	Hours	
Unit c	cost: \$1.256	/LCY	Т	Total job cost:	\$86,2	27		

## SCRAPER TEAM WORK

Site: Bowie No. 2 Mine		Permit Activ	on: MT5	Per	rmit/Job#: <u>C1</u>	996083	
PROJECT IDENTI	<b>FICATION</b>						
Task #: 046	S	tate: Colorad	lo	Abbrevia	tion: None		
Date: 9/30/20 User: ZTT	19 Cou	inty: Delta		Filen	ame: C083-0	C083-046	
	ganization name:	DRMS					
HOURLY EQUIPM	-		COSTS	Shift basis: <u>1 per da</u>	<u>1y</u>		
		Equip	ment Description				
		craper: Cat 6	527G w/push-pull				
		Dozer: NA d Area: NA					
Support							
Road Main							
Koau Main	-Water						
Cost Breakdown:	Scraper Wor	k Team	Support Equi	ipment	Maintenanc		
	Scraper	Dozer	Load Area	Dump Area	Motor Grader	Water 7	
%Utilization-machine:	100	NA	NA	NA	NA		
Ownership cost/hour:	\$126.52	NA	NA	NA	NA		
Operating cost/hour:	\$149.69	NA	NA	NA	NA		
%Utilization-ripper:	NA	NA	NA	NA	NA		
Ripper own. cost/hour:	NA	NA	NA	NA	NA		
Ripper op. cost/hour:	NA	NA	NA	NA	NA		
Operator cost/hour:	\$30.86	NA	NA	NA	NA		
Unit Subtotals:	\$307.07	NA	NA	NA	NA		
	2	0	0	0	0		
Number of Units:							

# **MATERIAL QUANTITIES**

Initial volume: Loose volume:	78,050 <b>90,928</b>	CCY LCY	Swell factor:	1.165	_
Source	e of estimated volume:	Volume XI,	Appendix A		
Source of	estimated swell factor:	Cat Handboo	ok		

	Scraper Bowl (volu	me) Basis:	
2,900 lbs/LCY	Struck Volume:	15.70	LCY
Decomposed rock - 50% Rock,	Heaped Volume:	22.00	LCY
50% Earth			
52,800 pounds	Average Volume:	18.85	LCY
18.21 LCY	Adjusted Capacity:	18.21	LCY
	2,900 lbs/LCY Decomposed rock - 50% Rock, 50% Earth 52,800 pounds 18.21 LCY	2,900 lbs/LCYStruck Volume:Decomposed rock - 50% Rock, 50% EarthHeaped Volume:52,800 poundsAverage Volume:	Decomposed rock - 50% Rock, 50% EarthHeaped Volume:22.0052,800 poundsAverage Volume:18.85

Cycle Time:

Scraper Loading Time: Maneuver and Spread Time:

### Job Condition Correction:

### 0.90 Minutes 0.60 Minutes

	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	2600.00	0.00	5.00	5.00	2218	1.35

Haul Time: **1.35** minutes

#### Return Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	2600.00	0.00	5.00	5.00	2814	1.07
				Return Time:	1.07	minutes
			Total Scraper	team cycle time:	3.92	minutes
			Adjusted for	or job conditions:	462.60	LCY/Hour
			Selected Nur	nber of Scrapers:	2	Scraper(s)
	Adjusted s	single scrape	r team (unit) h	ourly production:	462.60	LCY/Hour
	Adjusted mul	tiple scraper	team (fleet) he	ourly production:	462.60	LCY/Hour
0	Unadjusted unit prod ptimal Number of Scrap		557.35	LCY/Hour		
OB TIM	ME AND COST					

Fleet size:	1	Team(s)	Total job time:	196.56	Hours
Unit cost:	\$1.328	/LCY	Total job cost:	\$120,714	

### Site Altitude: 6100 feet

## BULLDOZER WORK

Task description:	Push temp coverf	ill mat. to f	ace of Gob pile #3		
Bowie No. 2 Mine	Peri	mit Action:	MT5	Permit/Jo	b#: <u>C1996083</u>
PROJECT IDENTIFI	<b>CATION</b>				
Task #: 047	State:	Colorado		Abbreviation:	None
Date: 9/30/2019	County:	Delta		Filename:	C083-047
User: ZTT					
Agency or organ	ization name:	MS			
HOURLY EQUIPME	NT COST				
	D9T - 9SU				
Horsepower: 405					
	ni-Universal				
Attachment: NA					
Shift Basis: <u>1 pe</u> Data Source: (CR	er day				
	(0)				
Cost Breakdown:			Utilization %		
Ownership Cost/Hour:		\$121.49	NA		
Operating Cost/Hour:		\$105.84	100		
Ripper own. Cost/Hour:		\$0.00	NA		
Ripper op. Cost/Hour:		\$0.00	0		
Operator Cost/Hour:		\$41.24	NA		
MATERIAL QUANTI Initial Volume: _ 5,50		_			
Swell factor: 1.00	0	-			
Loose volume: <b>5,50</b>	0 LCY	-			
Source of estimated volu	me: MR199 ap	p.			
Source of estimated swell					
factor:					
HOURLY PRODUCT	ION				
Average push distance: Unadjusted hourly production:	200 feet 700.0 LCY/h	r			
Materials consistency description:	Loose st	ockpile 1.2			
Average push gradient:	5 %				
Average site altitude:	5,900 feet				
Material weight:	2,650 lbs/LCY				
Weight description:	Decomposed rock -	25% Rock.	75% Earth		
0 1	· · · · · ·				
Job Condition Correction Factor		Source			
---------------------------------	-------	---------------			
Operator Skill:	0.750	(AVG.)			
Material consistency:	1.200	(CAT HB)			
Dozing method:	1.000	(GEN.)			
Visibility:	0.800	(POOR)			
Job efficiency:	0.830	(1 SHIFT/DAY)			
Spoil pile:	1.000	(DOZ-OC)			
Push gradient:	0.903	(CAT HB)			
Altitude:	1.000	(CAT HB)			
Material Weight:	0.868	(CAT HB)			
Blade type:	1.000	(PAT)			

Net correction: 0.4684

Adjusted unit production:	327.88 LCY/hr			
Adjusted fleet production:	327.88 LCY/hr			

## JOB TIME AND COST

Fleet size:	1 Dozer(s)	
Unit cost:	\$0.819/LCY	_

Total job time:	<b>16.77</b> Hours
Total job cost:	\$4,505

Task description:	And the scription: Compact Backfilled D-Portal Bench, Roads, & Utility Corridor					
te: Bowie No. 2 Mine	Pe	rmit Action:	MT5	Permit/Job#: C1996		
PROJECT IDENTIFI	<u>CATION</u>					
Task #: 050	State:	Colorado		Abbi	eviation:	None
Date: 9/30/2019	County:	Delta		H	Filename:	C083-050
User: ZTT						
Agency or organ	ization name:	RMS				
HOURLY EQUIPME	NT COST					
Basic Machine	: CAT 825H			Horsepower:	35	54
Compactor Type	-	foot		Shift Basis:	1 per	r day
				Data Source:	(CF	RG)
Cost Breakdown:						
				Utilization %		
	ship Cost/Hour:	\$113.2		NA	-	
	ating Cost/Hour:	\$88.24 \$25.99		100 NA	-	
1 I I I I I I I I I I I I I I I I I I I	Unit Cost/Hour:	\$23.95		NA	-	
	—					
Total I	Fleet Cost/Hour:	\$227.4	9			
MATERIAL QUANT	TIES					
Loose volum		112	LCY	Shr	inkage factor	r: 0.875
Compacted volum			CCY		8	
Sour	ce of estimated volu	ime: Total o	- f All Backfi	lling Tasks		
	imated shrinkage fa		ndbook	ing Tasks		
	6					
HOURLY PRODUCT	ION		Unadjust	ed hourly produc	ction = (W x)	<u>S x L x C) / P</u>
Com	pacted width per pas	ss (W):	7.34	feet		
	age Compactor Spe		4.00	mph		
Compacted	d thickness of each l		8.00	inches		
	Conversion Consta		16.3	(5,280f	t./12in./27cu	.ft.)
	ber of machine pass		3	passes		
Job Condition Correction	ed Hourly Unit Produ	uction:	1,276.18 Site Altit	CCY/h ude: 6,500 feet	our	
Job Condition Concetion		C	Site Alui	uue. <u>0,500</u> reet		
Altitude Adj:	1.00	Source (CAT HB)				
Job Efficiency:	0.83	(1 shift/day)				
Net Correction:	0.8300	multiplier				
=	justed Hourly Unit	-	1,059.23	CCY/Hour		
	justed Hourly Fleet		1,059.23	CC1/Hour		
Au			1,007,20			
JOB TIME AND COS	<u>T</u>					
Fleet size: 1	Compacto	or(s)	Tot	al job time:	511.43	Hours
Unit cost: \$0.2	215 per CCY		To	tal job cost:	\$116,345	

Task description.	description: Compact Backfilled Material at Truck Loadout/Coal Stockpile						
te: Bowie No. 2 Mine	Р	ermit Action: _1	MT5	Permit/Job#: <u>C1996083</u>			
PROJECT IDENTIFIC	CATION						
Task #: 051	State:	Colorado		Abbr	eviation:	None	
Date: 9/30/2019	County:			F	ilename:	C083-051	
User: ZTT							
Agency or organiz	zation name: D	RMS					
HOURLY EQUIPMEN	T COST						
Basic Machine:	CAT 825H			Horsepower:		354	
Compactor Type:	Soil - tamping	foot		Shift Basis:		er day	
				Data Source:	(0	CRG)	
Cost Breakdown:							
		<b>.</b>	-	Utilization %			
	hip Cost/Hour: ing Cost/Hour:	\$113.20 \$88.24		NA 100			
	ator Cost/Hour:	\$25.99		NA			
-	Jnit Cost/Hour:	\$227.49					
<b>T</b> . 1 <b>T</b>	-						
I otal Fl	leet Cost/Hour: _	\$227.49	)				
MATERIAL QUANTI	ГIES						
Loose volume		,920	LCY	Shr	inkage fact	or: 0.875	
Compacted volume		,430	CCY		ininge iner		
Sourc	e of estimated vo	lume: Operato	or Estimate				
	mated shrinkage f						
HOURLY PRODUCTI	<u>ON</u>		Unadjust	ed hourly produc	tion = (W)	$\underline{x S x L x C} / P$	
	acted width per pa		7.34	feet			
	ige Compactor Sp		4.00	mph			
1	thickness of each Conversion Const	· · ·	8.00	inches	t./12in./27c	suft)	
	er of machine pas		3	passes		.u.n.)	
-	l Hourly Unit Pro		1,276.18	CCY/ho	our		
Job Condition Correction Factor	actors		Site Altit	ude: <u>6,000</u> feet			
		Source					
	1	(CAT IID)					
Altitude Adj:	1.00	(CAT HB)					
Job Efficiency:	0.83	(1 shift/day)					
Job Efficiency: Net Correction: Adju	0.83 0.8300 usted Hourly Unit	(1 shift/day) multiplier Production:	1,059.23	CCY/Hour			
Job Efficiency: Net Correction: Adju	0.83 0.8300	(1 shift/day) multiplier Production:	1,059.23 <b>1,059.23</b>	CCY/Hour CCY/Hour			
Job Efficiency: Net Correction: Adju	0.83 0.8300 usted Hourly Unit usted Hourly Fleet	(1 shift/day) multiplier Production:					
Job Efficiency: Net Correction: Adju Adju	0.83 0.8300 usted Hourly Unit usted Hourly Fleet	(1 shift/day) multiplier Production:	1,059.23		56.11	Hours	

Task description:	Compact Backfilled	Train Loadou	ut			
te: Bowie No. 2 Mine	Permit .	Action: MT	5	<u> </u>	Permit/Job#:	C1996083
PROJECT IDENTIFI	CATION					
Task #:         052           Date:         9/30/2019           User:         ZTT	County: De	lorado lta				None 2083-052
Agency or organ	ization name: DRMS					
HOURLY EQUIPME						
Basic Machine Compactor Type				Horsepower: Shift Basis: Data Source:	354 1 per (CR	day
Cost Breakdown:			1	Utilization %		
Opera Oper	ship Cost/Hour: ting Cost/Hour: ator Cost/Hour: Unit Cost/Hour:	\$113.26 \$88.24 \$25.99 \$227.49		NA 100 NA		
Total I	Fleet Cost/Hour:	\$227.49				
MATERIAL QUANTI	TIES					
Loose volum		L	CY	Shri	nkage factor:	0.875
Compacted volum	e: 202,558	C	CY			
	ce of estimated volume: imated shrinkage factor:	Operator E Cat Handbe				
HOURLY PRODUCT	ION	τ	Jnadjusted	hourly produc	$tion = (W \times S)$	<u>S x L x C) / P</u>
	pacted width per pass (W		7.34	feet		
	age Compactor Speed (S l thickness of each lift (L		4.00 8.00	mph inches		
Compacted	Conversion Constant (C	·	16.3		./12in./27cu.f	ft.)
Required num	ber of machine passes (P	·	3	passes		,
Unadjuste	d Hourly Unit Production	n: 1,	276.18	CCY/ho	our	
Job Condition Correction			Site Altituc	le: <u>5,900</u> feet		
		Source				
Altitude Adj:		CAT HB) shift/day)	-			
Net Correction:		ultiplier	_			
Ad	justed Hourly Unit Produ usted Hourly Fleet Produ	uction: <u>1</u>	,059.23 , <b>059.23</b>	CCY/Hour CCY/Hour		
		<u> </u>	,007.43			
JOB TIME AND COS Fleet size: 1	<u>T</u> Compactor(s)		Total	job time:	191.23	Hours
Unit cost: \$0.2	per CCY		Tota	l job cost:	\$43,503	

Task description:	Compact B-Sean	a Portal Bench	1				
te: Bowie No. 2 Mine	Permit Action: MT5			Permit/Job#: C1996083			
PROJECT IDENTIF	<b>ICATION</b>						
Task #: 053	State:	Colorado		Abbi	reviation: N	lone	
Date: 9/30/2019	County:	Delta		H	Filename: C	083-053	
User: ZTT							
Agency or orga	nization name: DR	MS					
HOURLY EQUIPME	NT COST						
Basic Machin	e: CAT 825H			Horsepower:	354	1	
Compactor Type	e: Soil - tamping fo	oot		Shift Basis:	1 per o		
				Data Source:	(CRC	G)	
Cost Breakdown:							
				Utilization %			
	ership Cost/Hour:	\$113.26		NA	-		
	ating Cost/Hour:	\$88.24		100	-		
-	erator Cost/Hour: Unit Cost/Hour:	\$25.99		NA	-		
Total		\$227.49	9				
Total	Fleet Cost/Hour:	\$227.49	)				
MATERIAL QUANT	<u>TTIES</u>						
Loose volum	ne: 138,0	000	LCY	Shr	inkage factor:	0.875	
Compacted volum	ne: 120,7	/50	CCY		C		
Sou	rce of estimated volu	me: Operato	or Estimate				
	timated shrinkage fac						
			<b>XX 1</b>				
HOURLY PRODUCT	ION		Unadjust	ed hourly produc	$\underline{\text{tion}} = (W \times S)$	(x L x C) / P	
	pacted width per pass		7.34	feet			
	erage Compactor Spee		4.00	mph			
Compacte	ed thickness of each lit Conversion Constan		8.00	inches (5,280ft./12in./27cu.ft.)			
Required nur	nber of machine passe		3	(3,2801 passes	t./12111./2/cu.1	)	
-	ed Hourly Unit Produ	· · ·	1,276.18	CCY/h	our		
Job Condition Correction	-			ude: <u>6,750</u> feet			
		Source					
Altitude Adj:	1.00	(CAT HB)					
Job Efficiency:	0.83	(1 shift/day)					
Net Correction:	0.8300	multiplier					
А	djusted Hourly Unit P	roduction:	1,059.23	CCY/Hour			
	ljusted Hourly Fleet P		1,059.23	CCY/Hour			
JOB TIME AND COS	ST						
Fleet size:	1 Compactor	r(s)	Tot	al job time:	114.00	Hours	
		~ /					
Unit cost: \$0.	.215 per CCY		10	tal job cost:	\$25,933		

	Task descr	iption:	<b>Rip Utility Benc</b>	h					
Site	: Bowie N	lo. 2 Mine	Pe	rmit Action:	MT5	]	Permit/Job#:	C199608	3
	<b>PROJECT</b>	<u>IDENTIFIC</u>	ATION						
	Task #: Date: User:	060 9/30/2019 ZTT	State: County:	Colorado Delta				Ione 2083-060	
	Ag	gency or organiz	ation name: DR	RMS					
	HOURLY	EQUIPMEN	T COST						
	F	Basic Machine:	Cat D10T - 10S	U		Horsepower:	574	ł	
	Ripp	er Attachment:	3-Shank Ripper			Shift Basis:	1 per 0 (CR0		
	Cost Breakd	own:					(CRC	<u>-)</u>	
		Oumoral	hip Cost/Hour:		\$140.61	Utilization % NA			
			ing Cost/Hour:		\$135.35	100			
		Ripper Owners			\$18.34	NA			
		Ripper Operation			\$10.80	100			
		-	tor Cost/Hour:		\$41.24 \$346.33	NA			
			eet Cost/Hour:	¢1 30					
	матері	Total FI		\$1,38					
	Alternate M			Selec	ted estimating	g method: Area			_
		ettious.	D	1 37 1	NT A	DOV		NT A	
Seismic Area		acr		nk Volume: Depth (ft):	NA 2.63	BCY Volume:	3,182	NA	BCY or CCY
		Source o	f estimated quantit	· · ·	-2				
	HOURLY	PRODUCTI	_	<u></u>					
	Seismic:	INODUCII							
	<u>Belsinic.</u>		Seismic Velo	city:	NA	feet/seco	nd		
	Area:								
			verage Ripping De		2.88	feet/pass			
			verage Ripping Wi		8.67	feet/pass			
			erage Ripping Len	•	50.00	feet/pass			
			Average Dozer Sp erage Maneuver Ti		88.00 0.25	feet/minutes/			
			oduction per unit a		0.23	acres/hou	L		
	Job Conditio	on Correction Fa	•						
		Unadjusted H	ourly Unit Product	tion:	0.730	Acres/hr			
			Site Altit	ude:	6,800	feet			
			Altitude	Adj:	1.00	(CAT HI	B)		
			Job Efficie	ncy:	0.83	(1 shift/d	lay)		
			Net Correct	tion:	0.83	multiplie	r		
			usted Hourly Unit l		0.61	Acres/hr			
		Adju	sted Hourly Fleet l	Production:	2.42	Acres/hr			
	JOB TIMI	E AND COST	- -						
	Fleet si	ze: 4	Grader(s)		Total job tim	ne: 0.	.31	Hours	

Unit cost:	\$571.754	Per acre	Total job cost:	\$429

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Task description	Rip D-Portal Bench	1			
Site: Bowie No. 2	Mine Permi	t Action: MT5	P	ermit/Job#: <u>C1996</u>	5083
PROJECT IDE	ENTIFICATION				
Task #: 06	51 State: C	olorado	Abbrev	iation: None	
		elta		ename: C083-061	
User: Z					
Agency	or organization name: DRMS	5			
HOURLY EQU	JIPMENT COST				
Basic	Machine: Cat D10T - 10SU		Horsepower:	574	
Ripper Att	tachment: 3-Shank Ripper		Shift Basis:	1 per day	
			Data Source:	(CRG)	
Cost Breakdown:					
		¢140.c1	Utilization %		
	Ownership Cost/Hour:	\$140.61	NA		
Dian	Operating Cost/Hour:	\$135.35	100		
	er Ownership Cost/Hour: per Operating Cost/Hour:	\$18.34 \$10.80	NA 100		
Кірр	Operator Cost/Hour:	\$10.80	NA		
	Total Unit Cost/Hour:	\$346.33	INA		
			-		
	Total Fleet Cost/Hour:	\$1,385.33	-		
<u>MATERIAL Q</u>	UANTITIES	Selected estimatin	g method: Area		
Alternate Method	<u>s:</u>				
mic: NA	Bank	Volume: NA	BCY	NA	
rea: 9.00	acres Rip De	epth (ft): 2.63		38,188	BCY or C
	Source of estimated quantity:	Man 15-2			
		Widp 15-2			
HOURLY PRO	DUCTION				
Seismic:	Seismic Velocity	: NA	feet/secon	d	
	Seisinie Velocity	. <u> </u>		u	
Area:					
	Average Ripping Depth		feet/pass		
	Average Ripping Width		feet/pass		
	Average Ripping Length		feet/pass		
	Average Dozer Speed		feet/minut		
	Average Maneuver Time Production per unit area		minutes/p acres/hour		
Job Condition Co	-		00100,1100	-	
	adjusted Hourly Unit Production	: 0.730	Acres/hr		
Cin					
	Site Altitude Altitude Adj		feet (CAT HB	)	
	Job Efficiency		(CAT HB) (1 shift/da		
	Net Correction		(1 sint/da multiplier	-	
	Adjusted Hourly Unit Pro		Acres/hr		
	Adjusted Hourly Fleet Pro		Acres/hr		
JOB TIME AN	D COST				
Fleet size:	4 Grader(s)	Total job tir	ne: <b>3.7</b>	<b>'1</b> Hou	rs
				- 1100	<b></b>

Unit cost:	\$571.754	Per acre	Total job cost:	\$5,146
-		_		

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	Task description:	<b>Rip Truck Loa</b>	dout/Coal Sto	ockpile Area				
Site:	Bowie No. 2 M	ine Po	ermit Action:	MT5	I	Permit/Jo	b#: <u>C19960</u>	83
Ī	PROJECT IDEN	TIFICATION						
	Task #: 062	State:	Colorado		Abbre	viation:	None	
		/2019 County:	Delta			ename:	C083-062	
	User: ZTT		Denta			ename.		
	Agency of	r organization name: D	RMS					
T	HOURLY EQUI	<u> </u>						-
-	Basic M				Horsepower:		574	
	Ripper Attac				Shift Basis:		ber day	-
	Ripper Attac	milent. <u>5-5hank Rippe</u>	1	_	Data Source:		CRG)	-
(	Cost Breakdown:						/	-
_					Utilization %			
		Ownership Cost/Hour:		\$140.61	NA			
		Operating Cost/Hour:		\$135.35	100			
		Ownership Cost/Hour:		\$18.34	NA			
	Ripper	Operating Cost/Hour:		\$10.80	100			
		Operator Cost/Hour:		\$41.24	NA			
		Total Unit Cost/Hour:		\$346.33				
		Total Fleet Cost/Hour:	\$1,38	5.33				
N	MATERIAL QU	ANTITIES	Selec	ted estimating	g method: Area			
_	Alternate Methods:		Selec	icu estimating	, method. <u>Area</u>			
Seismic:			ank Volume:	NA	BCY		NA	
Area:	5.00	acres Ri	p Depth (ft):	2.63	Volume:	21,215		BCY or CCY
	S	Source of estimated quanti	ty: <u>Map 15</u>	-1				_
I	HOURLY PROL	DUCTION						
_	Seismic:							
2	<u>bershille.</u>	Seismic Velo	ocity.	NA	feet/seco	nd		
		Seisinie ver		1.11		iiu		
<u> </u>	Area:	A D' ' D	.1	2 00	C /			
		Average Ripping D		2.88	feet/pass			
		Average Ripping W Average Ripping Le		<u>8.67</u> 50.00	feet/pass feet/pass			
		Average Ripping Le		88.00	feet/minu	ito		
		Average Maneuver		0.25	ninutes/j			
		Production per unit		0.23	acres/hou			
J	ob Condition Corre	ection Factors						
_		justed Hourly Unit Produc	ction:	0.730	Acres/hr			
		Site Alti		6,000	feet			
		Altitude		1.00	(CAT HI	3)		
		Job Effici		0.83	(1 shift/d			
		Net Correc		0.83	(1 shift/d multiplie	•		
		Adjusted Hourly Unit		0.61	Acres/hr			
		Adjusted Hourly Fleet		2.42	Acres/hr			
	IOB TIME AND	COST	-					
<u>u</u>				Total ish tim	<b>2</b>	04	TT	
	Fleet size:	4 Grader(s)		Total job tim	ie. <u> </u>	06	Hours	

Unit cost:	\$571.754	Per acre	Total job cost:	\$2,859
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Task description:	<b>Rip Regraded Mine</b>	Area Pri	or to Topsoil	Replacement			
Site: Bowie No. 2 M	ine Permit	Action:	MT5		Permit/Jo	b#: <u>C199608</u>	33
PROJECT IDEN	TIFICATION						
Task #: 063	State: Co	olorado		Abbre	eviation:	None	
		elta		Fi	ilename:	C083-063	
User: <u>ZTT</u>	·						
Agency of	organization name: DRMS						
HOURLY EQUI	PMENT COST						
Basic M	achine: Cat D10T - 10SU			Horsepower:		574	
Ripper Attac			-	Shift Basis:		ber day	
				Data Source:	()	CRG)	
Cost Breakdown:			1				
	Original the Constant		¢140.61	Utilization %			
	Ownership Cost/Hour: Operating Cost/Hour:		\$140.61 \$135.35	<u>NA</u> 100			
Rinner	Ownership Cost/Hour:		\$133.33	 NA			
	Operating Cost/Hour:		\$10.80	100			
11	Operator Cost/Hour:		\$41.24	NA			
	Total Unit Cost/Hour:		\$346.33				
	Total Fleet Cost/Hour:	\$1,385	.33				
MATERIAL QU							
	ANTILLS	Select	ed estimating	method: Area	L		
Alternate Methods:							
mic: NA	Bank V		NA	BCY		NA	
rea: 169.00	acres Rip Dep	oth (ft): $_$	2.63	Volume:	717,078	8	BCY or C
S	Source of estimated quantity:	Total Re	graded Area (	Ripping per Pag	e 2.05-48)	)	
HOURLY PROI	DUCTION						
Seismic:							
<u>Seisinic.</u>	Seismic Velocity:		NA	feet/seco	ond		
<u>Area:</u>	Average Ripping Depth:		2.88	feet/pass	-		
	Average Ripping Width:		8.67	feet/pass			
	Average Ripping Length:		100.00	feet/pass			
	Average Dozer Speed:		88.00	feet/min			
	Average Maneuver Time:		0.25	minutes			
	Production per unit area:		0.861	acres/ho	-		
Job Condition Corr	ection Factors						
Unad	justed Hourly Unit Production:		0.861	Acres/h	ſ		
	Site Altitude: Altitude Adj:		6,500 1.00	feet (CAT H	B)		
	Job Efficiency:		0.83	(CAT H (1 shift/			
	Net Correction:		0.83	(1 shift) multipli	•		
		uction	0.71	Acres/hr			
	Adjusted Hourly Unit Prod Adjusted Hourly Fleet Prod		2.86	Acres/hr Acres/hr			
JOB TIME AND		_					
			Tetel '-1 -'		0.00	TT	
Fleet size:	4 Grader(s)		Total job time	e: 5	9.09	Hours	

Unit cost:	\$484.403	Per acre	Total job cost:	\$81,865	
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Task description:	<b>Rip Train Loadout</b>	i demines un	u Kanocu I	Jenenes			
Site: Bowie No. 2 Min	ne Permi	t Action: <u>M</u>	IT5		Permit/Jo	b#: <u>C19960</u>	83
PROJECT IDEN	<b>TIFICATION</b>						
Task #: 064	State: C	olorado		Abbre	viation:	None	
Date: $9/30/2$		)elta			lename:	C083-064	
User: ZTT	<u>2017</u> County. <u>D</u>	, citu			iename.		
	organization name: DRMS	S					
HOURLY EQUI	-	<u> </u>					-
Basic Ma				Horsepower:		574	
Ripper Attach				Shift Basis:		ber day	-
11	11			Data Source:		CRG)	-
Cost Breakdown:				=			-
			1	Utilization %			
	Ownership Cost/Hour:		\$140.61	NA			
	Operating Cost/Hour:		\$135.35	100			
	Ownership Cost/Hour:		\$18.34	NA			
Ripper	Operating Cost/Hour:		\$10.80	100			
	Operator Cost/Hour:		\$41.24	NA			
,	Total Unit Cost/Hour:		\$346.33				
Ţ	Fotal Fleet Cost/Hour:	\$1,385.33	3				
MATERIAL QUA	ANTITIES	Selected	estimating r	nethod: Area			
Alternate Methods:					·		
nic: NA	Bank	Volume: N	JA	BCY		NA	
rea: $22.00$			.63	Volume:	93,347	NA	BCY or
		· · ·		volume.	75,547		Deror
Se	ource of estimated quantity:	Division Es	stimate				-
HOURLY PROD	UCTION						
Seismic:							
	Seismic Velocity	:	NA	feet/seco	ond		
Area:							
<u>mea.</u>	Average Ripping Depth	1:	2.88	feet/pass			
	Average Ripping Width		8.67	feet/pass			
	Average Ripping Length		100.00	feet/pass			
	Average Dozer Speed			reed publ			
		•	88.00	feet/min			
	Average Maneuver Time		0.25		ute		
	Average Maneuver Time Production per unit area	:		feet/min	ute pass		
Job Condition Correct	Production per unit area	:	0.25	feet/min minutes/	ute pass		
	Production per unit area	::	0.25	feet/min minutes/	ute 'pass ur		
	Production per unit area	:: ::	0.25 0.861	feet/min minutes/ acres/ho	ute 'pass ur		
	Production per unit area <u>ction Factors</u> usted Hourly Unit Production	x u u	0.25 0.861 0.861	feet/min minutes/ acres/ho Acres/hr	ute /pass ur		
	Production per unit area <u>ction Factors</u> usted Hourly Unit Production Site Altitude	:: :: ::	0.25 0.861 0.861 5,900	feet/min minutes/ acres/ho Acres/hr feet	ute 'pass ur B)		
	Production per unit area <u>ction Factors</u> usted Hourly Unit Production Site Altitude Altitude Adj	2:	0.25 0.861 0.861 5,900 1.00	feet/min minutes/ acres/ho Acres/hr feet (CAT H	ute /pass ur B) lay)		
	Production per unit area <u>ction Factors</u> usted Hourly Unit Production Site Altitude Altitude Adj Job Efficiency		0.25 0.861 0.861 5,900 1.00 0.83	feet/min minutes/ acres/ho Acres/hi feet (CAT H (1 shift/o	ute /pass ur B) lay)		
	Production per unit area <u>ction Factors</u> usted Hourly Unit Production Site Altitude Altitude Adj Job Efficiency Net Correction	:: :: :: :: duction:	0.25 0.861 0.861 5,900 1.00 0.83 0.83	feet/min minutes/ acres/ho Acres/hr feet (CAT H (1 shift/c multiplic	ute /pass ur B) lay)		
	Production per unit area <u>ction Factors</u> usted Hourly Unit Production Site Altitude Altitude Adj Job Efficiency Net Correction Adjusted Hourly Unit Pro- Adjusted Hourly Fleet Pro-	:: :: :: :: duction:	0.25 0.861 0.861 5,900 1.00 0.83 0.83 0.71	feet/min minutes/ acres/ho Acres/hr feet (CAT H (1 shift/o multiplio Acres/hr	ute /pass ur B) lay)		

Unit cost:	\$484.403	Per acre	Total job cost:	\$10,657	
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Task description:	Rip B-Seam	Portal Bench					
Site: Bowie No. 2 M	<u> 1ine</u>	Permit Action:	MT5	I	Permit/Job	o#: <u>C19960</u>	83
PROJECT IDE	<b>NTIFICATION</b>						
Task #:       065         Date:       9/3         User:       ZT	0/2019 Cour	ate: Colorado aty: Delta			viation: ename:	None C083-065	
	or organization name:	DRMS					
Ç .	<b>IPMENT COST</b>	DRWIS					-
	Machine: Cat D10T -	. 10511		Horsepower:	4	574	
Ripper Atta			_	Shift Basis:		er day	_
		••		Data Source:		CRG)	-
Cost Breakdown:			1				
	Ownership Cost/Hour		\$140.61	Utilization % NA			
	Operating Cost/Hour		\$135.35	100			
Rippe	r Ownership Cost/Hour		\$18.34	NA			
	er Operating Cost/Hour		\$10.80	100			
	Operator Cost/Hour		\$41.24	NA			
	Total Unit Cost/Hour	:	\$346.33				
	Total Fleet Cost/Hour	: \$1,38	5.33				
MATERIAL Q		Selec	ted estimating	method: Area			
Alternate Methods	<u>::</u>						
smic: NA		Bank Volume:	NA	BCY		NA	
Area: 9.00	acres	Rip Depth (ft):	2.63	Volume:	38,188		BCY or C
	Source of estimated qu	antity: Operato	or Estimate				_
HOURLY PRO	DUCTION						
Seismic:							
<u>seisine.</u>	Seismic	Velocity:	NA	feet/seco	nd		
A			`				
<u>Area:</u>	Average Rippin	a Denth:	2.88	feet/pass			
	Average Rippin		8.67	feet/pass			
	Average Ripping		50.00	feet/pass			
	Average Doze		88.00	feet/minu	ite		
	Average Maneuv		0.25	minutes/			
	Production per u		0.730	acres/hou	-		
Job Condition Cor	rection Factors						
Una	djusted Hourly Unit Pro	oduction:	0.730	Acres/hr			
	Site	Altitude:	6,750	feet			
		ude Adj:	1.00	(CAT HI	3)		
		ficiency:	0.83	(1 shift/d			
		prrection:	0.83	multiplie	-		
	Adjusted Hourly U	Jnit Production:	0.61	Acres/hr			
	Adjusted Hourly F		2.42	Acres/hr			
JOB TIME AN	D COST						
Fleet size:	4 Grade	er(s)	Total job time	e. 3	71	Hours	
1 1000 5120.	- Orau	· \ 9/	i stan job unit		· •	inours	

Unit cost:	\$571.754	Per acre	Total job cost:	\$5,146
-		_		

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	Task descr	iption:	Rip Rock Laydo	wn Pad Top	soil				_
Site	Bowie N	lo. 2 Mine	Pe	rmit Action:	MT5	I	Permit/Job#:	C199608	3
	<b>PROJECT</b>	<u>IDENTIFIC</u>	ATION						
	Task #: Date: User:	066 9/30/2019 ZTT	State: County:	Colorado Delta				one 083-066	
	Ag	gency or organiz	ation name: DR	RMS					
	HOURLY	EQUIPMEN	T COST						
	H	Basic Machine:	Cat D10T - 10S	U		Horsepower:	574	Ļ	
	Ripp	er Attachment:	3-Shank Ripper		_	Shift Basis:	1 per o (CRO		
	Cost Breakd	<u>own:</u>					(CRC	<u>, , , , , , , , , , , , , , , , , , , </u>	
		Owners	hip Cost/Hour:		\$140.61	Utilization % NA			
			ing Cost/Hour:		\$135.35	100			
		Ripper Ownersl	hip Cost/Hour:		\$18.34	NA			
		Ripper Operati			\$10.80	100			
		-	tor Cost/Hour:		\$41.24 \$346.33	NA			
			eet Cost/Hour:	\$346					
	матері	L QUANTI				.1 1 4			
	Alternate M			Selec	ted estimating	g method: Area			_
Seismic		<u>ettious.</u>	Da	nk Volume:	NI A	BCY		NI A	
Area		acr		Depth (ft):	NA 2.00	Volume:	645	NA	BCY or CCY
		Source of	f estimated quantit	y: Operato	or Estimate				
	HOURLY	PRODUCTI	_	<u> </u>					
	Seismic:	11020011							
	<u>Belsinic.</u>		Seismic Velo	city:	NA	feet/seco	nd		
	Area:								
		A	verage Ripping De	pth:	2.88	feet/pass			
			verage Ripping Wi		8.67	feet/pass			
			erage Ripping Len	•	25.00	feet/pass			
			Average Dozer Sp		88.00	feet/minu			
			erage Maneuver Ti oduction per unit a		0.25 0.559	minutes/j acres/hou	-		
	Job Conditio	on Correction Fa	1						
			ourly Unit Product	ion:	0.559	Acres/hr			
		-	Site Altit		7,100	feet			
			Altitude		1.00	(CAT HI	B)		
			Job Efficie	· · · · · · · · · · · · · · · · · · ·	0.83	(1 shift/d	,		
			Net Correct	ion:	0.83	multiplie	r		
		Adjı	isted Hourly Unit l	Production:	0.46	Acres/hr			
		Adju	sted Hourly Fleet I	Production:	0.46	Acres/hr			
	JOB TIMI	E AND COST							
	Fleet si	ze: 1	Grader(s)		Total job tim	ne: <b>0.</b>	.43	Hours	

Unit cost:	\$746.457	Per acre	Total job cost:	\$149

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Task description:	<b>Rip Haul Roads</b> (1	Portion Being Reclaim	ed) & Old Truck	Loadout		
Site: Bowie No. 2 M	ine Pern	nit Action: MT5		Permit/Jol	b#: <u>C199608</u>	83
PROJECT IDEN	NTIFICATION					
Task #: 070	State:	Colorado	Abbr	reviation:	None	
		Delta		Filename:	C083-070	
User: ZTT		2 •110			0000 010	<u> </u>
	r organization name: DRM	15				
HOURLY EQUI						-
Basic M			Horsepower:		574	
Ripper Atta			Shift Basis:	-	er day	
Ripper / Rid			Data Source:	-	CRG)	
Cost Breakdown:			Dutu Source.	(		
<u></u>			Utilization %			
	Ownership Cost/Hour:	\$140.61	NA			
	Operating Cost/Hour:	\$135.35	100	-		
	Ownership Cost/Hour:	\$20.29	NA	_		
Rippe	r Operating Cost/Hour:	\$11.54	100	_		
	Operator Cost/Hour:	\$41.24	NA	_		
	Total Unit Cost/Hour:	\$349.03				
	Total Fleet Cost/Hour:	\$1,396.11				
MATERIAL QU		φ1,570.11	_			
	acres Rip I Source of estimated quantity:	X Volume:     260,481       Depth (ft):     NA       Operator Estimate	BCY Volume:	NA	Adverse	BCY or 0
HOURLY PROI	DUCTION					
Seismic:		<b>5</b> 000	<b>S</b>			
	Seismic Velocit	ty:5,000	feet/sec	cond		
Area:						
	Average Ripping Dept		feet/pas			
	Average Ripping Wide		feet/pas			
	Average Ripping Lengt		feet/pas			
	Average Dozer Spee		feet/min			
	Average Maneuver Tim		minutes	-		
	Production per unit are	ea: NA	acres/he	our		
Job Condition Corr						
Unad	justed Hourly Unit Production		Cu. yds	s./hr		
	Site Altitud		feet			
	Altitude A	•	(CAT H			
	Job Efficienc		(1 shift	-		
	Net Correctio		multipl			
	Adjusted Hourly Unit Pr Adjusted Hourly Fleet Pr					
JOB TIME AND						
Fleet size:	4 Grader(s)	Total job ti	me: 1	16.48	Hours	
		10101 j00 ll		10.10	nouis	

Unit cost: \$0.624 Per cu. yd.

Total job cost: \$162,613

### SCRAPER TEAM WORK

Site:	Bowie No. 2 Mine	2	Permit	Action	: <u>MT5</u>	F	Permit/Jo	b#: <u>C1</u>	996083
<u>PI</u>	ROJECT IDENT	IFICATION							
	Task #: 071			olorado			viation:	None	
	Date: <u>9/30/20</u> User: <u>ZTT</u>	019 Cou	nty: De	elta		Fil	ename:	C083-0	)71
	Agency or o	rganization name:	DRMS						
H	OURLY EQUIP	MENT_			COSTS	Shift basis: <u>1 per</u>	<u>day</u>		
			E	Equipme	ent Description				
					/G w/push-pull				
	Suppor	ا۔ t Equipment -Load		NA NA					
	Suppor	-Dump		NA					
	Road Main	ntenance – Motor G		NA					
		-Water	Truck:	NA					
Co	st Breakdown:	Scraper Work	k Team		Support Equi	ipment	M	aintenanc	e Equipmer
		Scraper	Doze	r	Load Area	Dump Area		Grader	Water Tr
%Uti	lization-machine:	100		NA	NA	NA		NA	
Ow	hership cost/hour:	\$126.52		NA	NA	NA		NA	
Op	erating cost/hour:	\$149.69		NA	NA	NA		NA	
%	Utilization-ripper:	NA		NA	NA	NA		NA	
Rippe	er own. cost/hour:	NA		NA	NA	NA		NA	
Rip	per op. cost/hour:	NA		NA	NA	NA		NA	
0	perator cost/hour:	\$30.86		NA	NA	NA		NA	
	Unit Subtotals:	\$307.07		NA	NA	NA		NA	
	Number of Units:	2		0	0	0		0	
	Group Subtotals:	Work:	\$614.1	4	Support:	\$0.00		Maint:	\$0.00

Total work team cost/hour: <u>\$614.14</u>

#### **MATERIAL QUANTITIES**

Initial volume: Loose volume:	7,484 <b>7,484</b>	CCY LCY	Swell factor:	1.000
Sourc	e of estimated volume:	Division of	Reclamation, Min	ng & Safety
Source of estimated swell factor:		Cat Handbo	ook	

## HOURLY PRODUCTION

		Scraper Bowl (volu	me) Basis:	
Material weight:	2,850 lbs/LCY	Struck Volume:	15.70	LCY
Material description:	Gravel - Dry (1/4""-2""diam.)	Heaped Volume:	22.00	LCY
Rated Payload:	52,800 pounds	Average Volume:	18.85	LCY
Payload Capacity:	18.53 LCY	Adjusted Capacity:	18.53	LCY

Cycle Time:

Scraper Loading Time: Maneuver and Spread Time: 0.90 Minutes 0.60 Minutes

#### Job Condition Correction:

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

Travel Time:

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

Haul Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	6850.00	-6.00	3.00	-3.00	2938	2.40

Haul Time: 2.40 minutes

Return Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	6850.00	6.00	3.00	9.00	1930	3.63
				Return Time:	3.63	minutes

Total Scraper team cycle time:	<b>7.53</b>	minutes
Adjusted for job conditions:	245.05	LCY/Hour
Selected Number of Scrapers: Adjusted single scraper team (unit) hourly production: Adjusted multiple scraper team (fleet) hourly production:	245.05 245.05	Scraper(s) LCY/Hour LCY/Hour

Unadjusted unit production/hour: 295.24 LCY/Hour Optimal Number of Scrapers per push dozer:

#### JOB TIME AND COST

Fleet size:	1	Team(s)	Total job time:	30.54	Hours
Unit cost:	\$2.506	/LCY	Total job cost:	\$18,756	

Site Altitude: 6750 feet

Task description:	Rip Truc	k Loadout Road					
Site: Bowie No. 2 M	ine	Permit Action:	MT5		Permit/Jo	ob#: <u>C19960</u>	83
PROJECT IDEN	<b>TIFICATION</b>						
Task #: 072		State: Colorado		Abbre	viation:	None	
		unty: Delta			lename:	C083-072	
User: ZTT		<u> </u>				0000 012	
Agency o	r organization name	DRMS					
HOURLY EQUI	PMENT COST						_
Basic M		Г - 10 <b>S</b> U		Horsepower:		574	
Ripper Atta				Shift Basis:	11	per day	_
11				Data Source:		CRG)	_
Cost Breakdown:				_			_
				Utilization %			
	Ownership Cost/Ho		\$140.61	NA			
	Operating Cost/Ho		\$135.35	100			
	Ownership Cost/Ho		\$20.29	NA			
Rippe	r Operating Cost/Ho		\$11.54	100			
	Operator Cost/Ho		\$41.24	NA			
	Total Unit Cost/Ho	ur:	\$349.03				
	Total Fleet Cost/Ho	ur: <b>\$1,39</b>	6.11				
MATERIAL QU	ANTITIES	Selec	ted estimating	method: Seisr	nic		
Alternate Methods:							
mic: 4,800	BCY	Bank Volume:	4,800	BCY		Adverse	
area: NA	acres	Rip Depth (ft):	NA	Volume:	NA		BCY or (
	Source of estimated	quantity: Divisio	n Estimate				_
							_
HOURLY PROI	JUCTION						
<u>Seismic:</u>	G		5 000	C /	. 1		
	Seismi	c Velocity:	5,000	feet/seco	na		
Area:							
	Average Ripp	oing Depth:	NA	feet/pass			
	Average Ripp		NA	feet/pass			
	Average Rippi		NA	feet/pass			
	Average Do		NA	feet/min			
	Average Mane		NA	minutes/			
	Production pe	r unit area:	NA	acres/ho	ur		
Job Condition Corr							
Unad	justed Hourly Unit l	Production:	673.60	Cu. yds./	hr		
		te Altitude:	6,000	feet			
		titude Adj:	1.00	(CAT H			
		Efficiency:	0.83	(1 shift/c	•		
	Net	Correction:	0.83	multiplie	er		
		V Unit Production: Fleet Production:	559.09 2,236.35	Cu. yds./hr Cu. yds./hr			
			4,430.33				
JOB TIME AND	<u>COST</u>						
Fleet size:	4 Gra	der(s)	Total job time	e: 2	.15	Hours	5

 Unit cost:
 \$0.624
 Per cu. yd.
 Total job cost:
 \$2,997

### SCRAPER TEAM WORK

Task description:	Haul Tru	ck Loadout Sub	base to Gob Pile	#1			
Site: Bowie No. 2 Mi	ne	Permit Actio	on: MT5	I	Permit/Job#:	C1996083	
PROJECT IDEN	<b>TIFICATION</b>						
Task #: 073 Date: 9/30/		State: <u>Colorad</u> ounty: Delta	0		viation: <u>Non</u> ename: C08	e 3-073	
User: ZTT							
Agency or	organization name	: DRMS					
HOURLY EQUI	HOURLY EQUIPMENT COSTShift basis: <u>1 per day</u>						
	_(		nent Description 27G w/push-pull				
		-Dozer: NA	270 w/pusii-puii				
Suppo	ort Equipment -Loa						
Dood M	-Dum aintenance –Motor	p Area: NA Grader: NA					
Koau Ma		r Truck: NA					
Cost Breakdown:	Scraper Wo		Support Equ			ance Equipment r Water Truck	
	Scraper	Dozer	Load Area	Dump Area	Motor Grade	r water Truck	
%Utilization-machine:	100	NA	NA	NA	NA	A NA	
Ownership cost/hour:	\$126.52	NA	NA	NA	NA	A NA	
Operating cost/hour:	\$149.69	NA	NA	NA	NA	A NA	
%Utilization-ripper:	NA	NA	NA	NA	NA	A NA	
Ripper own. cost/hour:	NA	NA	NA	NA	NA	A NA	
Ripper op. cost/hour:	NA	NA	NA	NA	NA	A NA	
Operator cost/hour:	\$30.86	NA	NA	NA	NA	A NA	
Unit Subtotals:	\$307.07	NA	NA	NA	NA	A NA	
Number of Units:	2	0	0	0	(	0 0	
Group Subtotals:	Work:	\$614.14	Support:	\$0.00	Maint	: \$0.00	

Total work team cost/hour: <u>\$614.14</u>

### **MATERIAL QUANTITIES**

Initial volume:	6,000	CCY	Swell factor:	1.000	
Loose volume:	6,000	LCY			
Source of estimated volume:		Page 2.08-18			
Source of estimated swell factor:		Cat Handbook	-		

#### **HOURLY PRODUCTION**

		Scraper Bowl (volu	me) Basis:	
Material weight:	2,850 lbs/LCY	Struck Volume:	15.70	LCY
Material description:	Gravel - Dry (1/4""-2""diam.)	Heaped Volume:	22.00	LCY
Rated Payload:	52,800 pounds	Average Volume:	18.85	LCY
Payload Capacity:	18.53 LCY	Adjusted Capacity:	18.53	LCY

Cycle Time:

Scraper Loading Time:	0.90 Minutes
Maneuver and Spread Time:	<u>0.60</u> Minutes

#### Job Condition Correction:

#### Site Altitude: 6750 feet

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

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#### Travel Time:

Road Condition: <u>Rutted dirt, little maintenance, no water, 2" tire penetration 5.0</u>

#### Haul Route:

Return Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	2600.00	0.00	5.00	5.00	2218	1.35

Haul Time: **1.35** minutes

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	2600.00	0.00	5.00	5.00	2814	1.07
				Return Time:	1.07	minutes
			Total Scraper	team cycle time:	3.92	minutes
			Adjusted for	r job conditions:	470.72	LCY/Hour
			Selected Num	ber of Scrapers:	2	Scraper(s)
	Adjusted s	ingle scrape	r team (unit) ho	urly production:	470.72	LCY/Hour
	Adjusted mul	tiple scraper	team (fleet) ho	urly production:	470.72	LCY/Hour
0	Unadjusted unit produ ptimal Number of Scrap		567.13	LCY/Hour		
JOB TIN	ME AND COST					
Fleet	size: 1	Team(s)	То	tal job time:	12.75	Hours
Unit	cost: \$1.305	/LCY	Тс	tal job cost:	\$7,828	

Task description:	<b>Rip Upper Haul Road As</b>	phalt Prior to Ro	ad Narrowing		
Site: Bowie No. 2 M	ine Permit Actio	on: MT5		Permit/Job#:	C1996083
PROJECT IDE	NTIFICATION				
Task #:       074         Date:       9/30         User:       ZT	0/2019 County: Delta	lo		eviation: Non lename: C08	e 3-074
Agency of	r organization name: DRMS				
HOURLY EQU	IPMENT COST				
Basic N	Iachine: Cat D10T - 10SU		Horsepower:	574	
Ripper Atta	chment: 1-Shank Ripper		Shift Basis:	1 per day	1
Cost Breakdown:			Data Source:	(CRG)	
<u>Cost Breakdown.</u>			Utilization %		
	Ownership Cost/Hour:	\$140.61	NA 100		
Pinnor	Operating Cost/Hour: Ownership Cost/Hour:	\$135.35 \$20.29	100 NA		
	r Operating Cost/Hour:	\$11.54	100		
Tappe	Operator Cost/Hour:	\$41.24	NA		
	Total Unit Cost/Hour:	\$349.03			
	Total Fleet Cost/Hour: \$1	,396.11			
MATERIAL QU	J <b>ANTITIES</b> Se	elected estimating	method: Seisr	nic	
Alternate Methods:		6			
Seismic: 6,600	BCY Bank Volum	ne: 6,600	BCY	Adv	erse
Area: NA	acres Rip Depth (f		Volume:	NA	BCY or CCY
	Source of estimated quantity: Divi	ision Estimate			
HOURLY PRO	DUCTION				
Seismic:					
<u>seisinic.</u>	Seismic Velocity:	5,000	feet/seco	ond	
A.r.o.	<u> </u>	,			
<u>Area:</u>	Average Ripping Depth:	NA	feet/pass	1	
	Average Ripping Width:	NA	feet/pass		
	Average Ripping Length:	NA	feet/pass		
	Average Dozer Speed:	NA	feet/min		
	Average Maneuver Time:	NA	minutes/	pass	
	Production per unit area:	NA	acres/ho	ur	
Job Condition Corr	ection Factors				
Unac	ljusted Hourly Unit Production:	673.60	Cu. yds.	/hr	
	Site Altitude:	6,800	feet		
	Altitude Adj:			B)	
	Job Efficiency:	0.83	(1 shift/c	lay)	
	Net Correction:	0.83	multiplie	er	
	Adjusted Hourly Unit Production		Cu. yds./hr		
	Adjusted Hourly Fleet Production	n: <b>2,236.35</b>	Cu. yds./hr		
JOB TIME ANI	<u>D COST</u>				
Fleet size:	4 Grader(s)	Total job time	. 2	.95	Hours

 Unit cost:
 \$0.624
 Per cu. yd.
 Total job cost:
 \$4,120

### TRUCK/LOADER TEAM WORK

Task description:	Pull Ba	ck/Haul Fil	l Ma	t'l from Upper H	Iaul Rd Narrow	ing		
Site: Bowie No. 2 Mine	e	Perm	it Act	tion: <u>MT5</u>		Permit/Jo	b#: _	C1996083
PROJECT IDENT	TIFICATION							
Task #: 075		State: 0	Colora	ado	Abl	previation:	Noi	ne
Date: 9/30/2 User: ZTT	019 0	County: I	Delta			Filename:	C08	33-075
Agency or o	organization nan	ne: DRM	S					
HOURLY EQUIP	MENT COST	-			Shift ba	sis: <u>1 per da</u>	a <u>y</u>	
				Equipment Descr	iption			
Tru	uck Loader Tea			773F				
C	· E	-Loader:		365C L 13'-7" S	Stick			
Suppor	t Equipment -L	oad Area: mp Area:	NA NA					
Road Mai	ntenance – Moto		NA					
100001110		ter Truck:	NA					
Cost Breakdown:	Truck/Loa				Equipment		intena	nce Equipment
	Truck	Excavator	r	Load Area	Dump Area	Motor Grader		Water Truck
%Utilization-machine:	100		100	NA	NA		NA	NA
Ownership cost/hour:	\$105.90	\$12	1.37	NA	NA		NA	NA
Operating cost/hour:	\$93.41	\$125	5.13	NA	NA		NA	NA
%Utilization-riper:	NA		0	NA	NA		NA	NA
Ripper own. cost/hour:	NA	\$0	0.00	NA	NA		NA	NA
Ripper op. cost/hour:	NA	\$0	0.00	NA	NA		NA	NA
Operator cost/hour:	\$33.29	\$37	7.27	NA	NA		NA	NA
Unit Subtotals:	\$232.60	\$283	3.77	NA	NA		NA	NA

Total work team cost/hour: \$748.97

2

Work:

\$748.97

### **MATERIAL QUANTITIES**

Number of Units:

Group Subtotals:

Initial volume:	60,564	CCY	Swell factor:	1.165	
Loose volume:	70,557	LCY			-
Source	e of estimated volume:	Operator E	stimate		
Source of estimated swell factor:		Cat Handb	ook		
Material Purchase Cost:		\$0.00			
	Total Cost:	\$0.00			

0

\$0.00

Support:

0

0

\$0.00

Maint:

0

1

# HOURLY PRODUCTION

<u>Truck Capacity:</u>					
Truck Payload (weight) Basi Material weight:	<u>s:</u> 2,900	Doun	ds/LCY		
Description:		rock - 50% Rock, 50			
Rated Payload:	122,520	Poun			
Payload Capacity:	42.25	LCY	45		
Tuyloud Cupucity.	12.23				
Truck Bed (volume) Basis:					
Struck Volume:		LCY			
Heaped Volume:		LCY			
Average Volume:		LCY			
Adjusted Volume:	42.25	LCY			
Final	Truck Volume I	Based on Number of	f Loader Passes:	42.26	LCY
Loading Tool Capacity					
Det 1 Constitut	C 000		Buck	tet Size Class: La	arge
Rated Capacity: Bucket Fill Factor:	<u>6.900</u> 0.875	LCY (heaped)	- 1" and over (8	25 000() 0 975	
		Loose material	- 1 and over (a	5 - 90%) 0.875	
Adjusted Capacity:	6.038				
Job Condition Corrections	<u>:</u>		ite Altitude (ft.):		
	Truck	Loader	Source		
Altitude Adj:	1.000	1.000	(CAT HE	,	
Job Efficiency:	0.830	0.830	(CAT HE	3)	
Net Correction:	0.830	0.830			
Loading Tool Cycle Time:	Ν	Number of Loading	Tool Passes Requ		7 passes
Excavators and Front Shove	<u>ls:</u>			Truck:	
Machine Cycle Time v		U			
Selected Value		<u> </u>	E		
Track Loaders –	Material Descri	ption:			
Cycle Time Elements (min.)	:				
Load: NA	M	aneuver: NA		Dump: 0.100	)
Wheel and Trac	k Loaders - Una	djusted Basic Load	•	bad, dump, naneuver):	NA minutes
Cycle Time Factors				Factor (min.)	Source
Material:	NA			NA	(Cat HB)
Stockpile:	NA			NA	(Cat HB)
Truck Ownership:	NA			NA	(Cat HB)
Operation:	NA			NA	(Cat HB)
Dump Target:	NA			NA	(Cat HB)
	- ·	Net Cycle Tin	ne Adjustment:	NA	minutes
		Adjusted Load	er Cycle Time:	0.570	minutes
		Net Load T	ime per Truck:	3.520	minutes

#### Truck Cycle Time:

	Truck Cy		ו							
	Tru	ck Exch	ange Time:	0.70	Minutes	Adju	sted for site a	ltitude:	0.700	Minute
		Truck I	Load Time:	3.520	Minutes	Adju	sted for site a	ltitude:	3.520	Minute
	Truck M	laneuver	and Dump Time:	1.10	Minutes	Adju	sted for site a	ltitude:	1.100	Minute
	<u>Truck Trav</u> maintained Haul Route	13.0	& Return) T	<u>'ime:</u>	Road Conditi	on: <u>Firm, smoo</u>	th, rolling, dir	t/lt. surfaced	d, watered	2
	Seg #		Distance	Grade (%)	Roll. Res	Total Res	Velocity	Travel		
	505 "	(Ft)	Jistunee		(%)	(%)	(fpm)	Time (min)		
	1	750.00	)	10.00	3.00	13.00	678	1.135		
	D ( D					Haul Time:	1.135	min	nutes	
	Return Rou Seg #		Distance	Grade (%)	Roll. Res	Total Res	Velocity	Travel		
	Seg #	(Ft)	Jistanee	Grade (70)	(%)	(%)	(fpm)	Time (min)		
	1	750.00	)	-10.00	3.00	-7.00	3512	0.267		
					Total Tru	Return Time: ick Cycle Time:			nutes	
						lek Cycle Tille.	0.722	<u> </u>	nucs	
		uction	600.89	LCY/Hou	r	Adjusted for j	ob efficiency:	498.7	24 L	CY/Hour
Iruck	Unit Produ		377.23	LCY/Hou	r	Adjusted for j	ob efficiency:	313.1	<u>.0</u> L	CY/Hour
Optim	al No. of T	rucks:	2	Truck(s)		Selected Numb	er of Trucks:	2	T	ruck(s)
						team production			CY/Hour CY/Hour	
				<i>, ,</i>		team productio			CY/Hour	
								<u> </u>	01/11001	
	JOB TIM	IE ANI	O COST							
	Fleet	size:	1	Team(s)	Т	otal job time:	141.4	<b>1</b> 7	Hours	
						•				

 Unit cost:
 \$1.502
 /LCY
 Total job cost:
 \$105,958

## BULLDOZER WORK

Task description:	egrade Narrowed Section	of Haul Road		
te: Bowie No. 2 Mine	Permit Action:	MT5	Permit/Jo	b#: <u>C1996083</u>
PROJECT IDENTIFICAT	ΓΙΟΝ			
Task #: 076	State: Colorado		Abbreviation:	None
Date: 9/30/2019	County: Delta		Filename:	C083-076
User: ZTT				
Agency or organizati	on name: DRMS			
HOURLY EQUIPMENT	<u>COST</u>			
Basic Machine: Cat D10	)T - 10SU			
Horsepower: 574		-		
Blade Type: Semi-U	niversal	=		
Attachment: NA		_		
Shift Basis: <u>1 per da</u>	У	_		
Data Source: (CRG)		_		
Cost Breakdown:				
		Utilization %		
Ownership Cost/Hour:	\$140.61	NA		
Operating Cost/Hour:	\$135.35	100		
Ripper own.	\$0.00	NA		
Cost/Hour:				
Ripper op. Cost/Hour:	\$0.00	0		
Operator Cost/Hour:	\$41.24	NA		
Total unit Cost/Hour: \$3	17.20			
	,268.79			
	,200.17			
MATERIAL QUANTITI	E <u>S</u>			
Initial Volume: 60,564				
Swell factor: 1.165				
Loose volume: 70,557 L	CY			
Source of estimated volume:	Operator Estimate			
Source of estimated swell factor:	Cat Handbook			
HOURLY PRODUCTION	<u>1</u>			
Average push distance:	75 feet			
Unadjusted hourly production:	2,105.3 LCY/hr			

Materials consistency description:		Compacted fill or e	embankment 0.9
Average push gradient:	5 %		
Average site altitude:	6,500 1	feet	
Material weight:	2,900 1	lbs/LCY	
Weight description:	Decom	nposed rock - 50% Rocl	k, 50% Earth
Job Condition Correction F	actor		Source
Operator S	kill:	0.750	(AVG.)
Material consister	ncy:	0.900	(CAT HB))
Dozing met	nod:	1.000	(GEN.)
Visibi	lity:	1.000	(AVG.)
Job efficient	ncy:	0.830	(1 SHIFT/DAY)
Spoil j	oile:	0.800	(FND-RF)
Push gradi	ent:	0.903	(CAT HB)
Altit	ude:	1.000	(CAT HB)
Material Wei	ght:	0.793	(CAT HB)
Blade type:		1.000	(PAT)
Net correct	ion:	0.3209	
Adjusted unit production:	675.	59 LCY/hr	
Adjusted fleet		2.36 LCY/hr	

### JOB TIME AND COST

Fleet size:	4 Dozer(s)
Unit cost:	\$0.470/LCY

Total job time:	26.11 Hours
Total job cost:	\$33,127

Task description:	Rip Gob Pile #	f1 Road					
Site: Bowie No. 2 Mine	]	Permit Action:	MT5		Permit/Jo	ob#: <u>C19960</u>	83
PROJECT IDENTIFIC	CATION						
Task #:       077         Date:       9/30/2019         User:       ZTT	County				eviation: Filename:	None C083-077	
Agency or organi	zation name:	ORMS					_
HOURLY EQUIPMEN	NT COST						
Basic Machine:	10SU		Horsepower:	574		_	
Ripper Attachment:	1-Shank Ripp	per		Shift Basis: Data Source:		per day CRG)	_
Cost Breakdown:						=/	_
			¢140.c1	Utilization %			
	ship Cost/Hour: ting Cost/Hour:		\$140.61 \$135.35	NA 100			
	ship Cost/Hour:		\$20.29	NA			
	ting Cost/Hour:		\$11.54	100			
	ator Cost/Hour:		\$41.24	NA			
-	Unit Cost/Hour:		\$349.03		-		
Total F	leet Cost/Hour:	\$1,390	5.11				
MATERIAL QUANTI	TIES	Selec	ted estimating	g method: Seis	mic		
Alternate Methods:							
Seismic: 5,277 BC	CY I	Bank Volume:	5,277	BCY		Adverse	
Area: NA act	res F	Cip Depth (ft):	NA	Volume:	NA		BCY or CCY
Source of	of estimated quan	tity: Page 3.0	02-2				_
HOURLY PRODUCTI	ION						
<u>Seismic:</u>	Seismic Ve	locity:	5,000	feet/sec	ond		

Area:

	Average	e Ripping Depth:		NA	feet/pass	
		e Ripping Width:		NA	feet/pass	
		Ripping Length:		NA	feet/pass	
		age Dozer Speed:		NA	feet/minute	
		Maneuver Time:		NA	minutes/pass	
	Product	ion per unit area:		NA	acres/hour	
ob Condition Correction	on Factors					
Unadjuste	ed Hourly	Unit Production:		673.60	Cu. yds./hr	
		Site Altitude:		6,000	feet	
		Altitude Adj:		1.00	(CAT HB)	
		Job Efficiency:		0.83	(1 shift/day)	
		Net Correction:		0.83	multiplier	
	Adjusted l	Hourly Unit Prod	luction:	559.09	Cu. yds./hr	
		Hourly Fleet Prod		2,236.35	Cu. yds./hr	
OB TIME AND CO	<b>DST</b> 4	Grader(s)		Total job time:	2.36	Hours
Unit cost: \$	0.624	Per cu. yd.		Total job cost:	\$3,294	
Task description:	Reg	<u>BUI</u> rade Gob Pile #1				
Task description: Bowie No. 2 Mine	Reg	rade Gob Pile #1		MT5	Permit/	Job#: <u>C1996083</u>
Bowie No. 2 Mine		rade Gob Pile #	1 Road	MT5		
Bowie No. 2 Mine PROJECT IDENTI Task #: 078	FICATIO	rade Gob Pile #1 Permit	1 Road	MT5	Permit/	
Bowie No. 2 Mine           PROJECT IDENTI           Task #:         078           Date:         9/30/202	FICATIO	rade Gob Pile #1 Permit DN State:Co	<b>1 Road</b> Action:	MT5		: None
Bowie No. 2 Mine PROJECT IDENTI Task #: 078	FICATIO	rade Gob Pile #1 Permit DN State:Co	<b>1 Road</b> Action:	<u>MT5</u>	Abbreviation	: None
Bowie No. 2 Mine           PROJECT IDENTI           Task #:         078           Date:         9/30/202           User:         ZTT	<b>FICATI(</b>	rade Gob Pile #1 Permit DN State:Co	<b>1 Road</b> Action: blorado elta	MT5	Abbreviation	: None
Bowie No. 2 Mine PROJECT IDENTI Task #: 078 Date: 9/30/202 User: ZTT Agency or org	FICATIO	rade Gob Pile #2 Permit ON State: <u>Co</u> County: <u>Do</u> name: <u>DRMS</u>	<b>1 Road</b> Action: blorado elta	MT5	Abbreviation	: None
Bowie No. 2 Mine PROJECT IDENTI Task #: 078 Date: 9/30/202 User: ZTT Agency or org HOURLY EQUIPM	FICATIO	rade Gob Pile #2 Permit ON State: <u>Co</u> County: <u>Do</u> name: <u>DRMS</u>	<b>1 Road</b> Action: blorado elta	 	Abbreviation	: None
Bowie No. 2 Mine PROJECT IDENTI Task #: 078 Date: 9/30/202 User: ZTT Agency or org HOURLY EQUIPM Basic Machine:	FICATIO 19 ganization IENT CO Cat D10T -	rade Gob Pile #2 Permit ON State: <u>Co</u> County: <u>Do</u> name: <u>DRMS</u>	<b>1 Road</b> Action: blorado elta		Abbreviation	: None
Bowie No. 2 Mine PROJECT IDENTI Task #: 078 Date: 9/30/201 User: ZTT Agency or org HOURLY EQUIPM Basic Machine: 0 Horsepower: 5	FICATIO 19 ganization IENT CO Cat D10T - 574	rade Gob Pile #2 Permit ON State: <u>Co</u> County: <u>Do</u> name: <u>DRMS</u> OST - 10SU	<b>1 Road</b> Action: blorado elta		Abbreviation	: None
Bowie No. 2 Mine PROJECT IDENTI Task #: 078 Date: 9/30/201 User: ZTT Agency or org HOURLY EQUIPM Basic Machine: 0 Horsepower: 5 Blade Type: 5	FICATIO 19 ganization ENT CO Cat D10T - 574 Semi-Univ	rade Gob Pile #2 Permit <u>ON</u> State: <u>Ca</u> County: <u>Da</u> name: <u>DRMS</u> <u>DST</u> - 10SU rersal	<b>1 Road</b> Action: blorado elta		Abbreviation	: None
Bowie No. 2 Mine PROJECT IDENTI Task #: 078 Date: 9/30/201 User: ZTT Agency or org HOURLY EQUIPM Basic Machine: 0 Horsepower: 5 Blade Type: 5 Attachment: 3	FICATIO FICATIO Sanization ENT CO Cat D10T Cat D10T Cat D10T Semi-Univ S-shank rip	rade Gob Pile #2 Permit <u>ON</u> State: <u>Ca</u> County: <u>Da</u> name: <u>DRMS</u> <u>DST</u> - 10SU rersal	<b>1 Road</b> Action: blorado elta		Abbreviation	: None
Bowie No. 2 Mine PROJECT IDENTI Task #: 078 Date: 9/30/201 User: ZTT Agency or org HOURLY EQUIPM Basic Machine: 0 Horsepower: 5 Blade Type: 5 Attachment: 3 Shift Basis: 1	FICATIO 19 ganization ENT CO Cat D10T - 574 Semi-Univ	rade Gob Pile #2 Permit <u>ON</u> State: <u>Ca</u> County: <u>Da</u> name: <u>DRMS</u> <u>DST</u> - 10SU rersal	<b>1 Road</b> Action: blorado elta		Abbreviation	: None
Bowie No. 2 Mine PROJECT IDENTI Task #: 078 Date: 9/30/201 User: ZTT Agency or org HOURLY EQUIPM Basic Machine: 0 Horsepower: 5 Blade Type: 5 Attachment: 3 Shift Basis: 1	FICATIO FICATIO ISP ISP ISP ISP ISP ISP ISP ISP	rade Gob Pile #2 Permit <u>ON</u> State: <u>Ca</u> County: <u>Da</u> name: <u>DRMS</u> <u>DST</u> - 10SU rersal	<b>1 Road</b> Action: blorado elta		Abbreviation	: None
Bowie No. 2 Mine PROJECT IDENTI Task #: 078 Date: 9/30/201 User: ZTT Agency or org HOURLY EQUIPM Basic Machine: 0 Horsepower: 5 Blade Type: 5 Attachment: 3 Shift Basis: 1 Data Source: 0 Cost Breakdown:	FICATIO FICATIO ISP ISP ISP ISP ISP ISP ISP ISP	rade Gob Pile #1 Permit ON State: Cc County: De name: DRMS OST - 10SU Persal Oper	1 Road Action: blorado elta	    <u>Utilization</u>	Abbreviation Filename	: None
Bowie No. 2 Mine PROJECT IDENTI Task #: 078 Date: 9/30/201 User: ZTT Agency or org HOURLY EQUIPM Basic Machine: 0 Horsepower: 5 Blade Type: 5 Attachment: 3 Shift Basis: 1 Data Source: 0 Cost Breakdown: Ownership Cost/Hou	FICATIO FICATIO IP ganization IENT CC Cat D10T - 574 Semi-Univ Semi-Univ S-shank rip per day CRG) r:	rade Gob Pile #1 Permit ON State: Cc County: De name: DRMS OST - 10SU Persal Oper \$1	1 Road Action: blorado elta	      <u>Utilization</u>  NA	Abbreviation Filename	: None
Bowie No. 2 Mine PROJECT IDENTT Task #: 078 Date: 9/30/201 User: ZTT Agency or org HOURLY EQUIPM Basic Machine: 0 Horsepower: 5 Blade Type: 5 Blade Type: 5 Attachment: 3 Shift Basis: 1 Data Source: 0 Cost Breakdown: Ownership Cost/Hou Operating Cost/Hou	FICATIO	rade Gob Pile #1 Permit ON State: Cc County: De name: DRMS OST - 10SU Persal Oper \$1	1 Road Action: blorado elta	    <u>Utilization</u>	Abbreviation Filename	: None
Bowie No. 2 Mine PROJECT IDENTI Task #: 078 Date: 9/30/202 User: ZTT Agency or org HOURLY EQUIPM Basic Machine: 0 Horsepower: 5 Blade Type: 5 Blade Type: 5 Blade Type: 5 Attachment: 3 Shift Basis: 1 Data Source: 0 Cost Breakdown: Ownership Cost/Hou Operating Cost/Hou Ripper own	FICATIO	rade Gob Pile #1 Permit ON State: Co County: Do name: DRMS OST - 10SU Persal Oper \$1 \$1 \$1	1 Road Action: blorado elta	      <u>Utilization</u>  NA	Abbreviation Filename	: None
Bowie No. 2 Mine PROJECT IDENTI Task #: 078 Date: 9/30/201 User: ZTT Agency or org HOURLY EQUIPM Basic Machine: 0 Horsepower: 5 Blade Type: 5 Blade Type: 5 Blade Type: 5 Blade Type: 5 Cost Breakdown: Ownership Cost/Hou Ripper own Cost/Hou	FICATIO	rade Gob Pile #1 Permit ON State: Co County: De name: DRMS OST - 10SU ersal oper \$1 \$1 \$1 \$1 \$	<b>1 Road</b> Action: blorado elta		Abbreviation Filename	: None
Bowie No. 2 Mine PROJECT IDENTI Task #: 078 Date: 9/30/202 User: ZTT Agency or org HOURLY EQUIPM Basic Machine: 0 Horsepower: 5 Blade Type: 5 Blade Type: 5 Blade Type: 5 Attachment: 3 Shift Basis: 1 Data Source: 0 Cost Breakdown: Ownership Cost/Hou Operating Cost/Hou Ripper own	FICATIO	rade Gob Pile #1 Permit ON State: Co County: De name: DRMS OST - 10SU rersal oper \$1 \$1 \$1 \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$	1 Road Action: olorado elta	<u>Utilization</u> NA 100	Abbreviation Filename	: None

### **MATERIAL QUANTITIES**
Initial Volume:5,9Swell factor:1.1Loose volume:6,9			
Source of estimated vo Source of estimated sw factor:		Page 3.02-2 Cat Handbook	
HOURLY PRODUC	<u>FION</u>		
Average push distance: Unadjusted hourly production:		200 feet 946.0 LCY/hr	
Materials consistency description:		Compacted fill or en	nbankment 0.9
Average push gradient:	0 %		
Average site altitude:	6,00	0 feet	
Material weight:	2,90	0 lbs/LCY	
Weight description:	Deco	omposed rock - 50% Rock,	50% Earth
Job Condition Correction	Factor		Source
Operator		0.750	(AVG.)
Material consis	-	0.900	(CAT HB))
Dozing m		1.000	(GEN.)
	ibility:	1.000	(AVG.)
Job effic	iency:	0.830	(1 SHIFT/DAY)
Spo	il pile:	0.800	(FND-RF)
Push gra	adient:	1.000	(CAT HB)
. 1		1 000	

Operator Skill:	0.750	(AVG.)
Material consistency:	0.900	(CAT HB))
Dozing method:	1.000	(GEN.)
Visibility:	1.000	(AVG.)
Job efficiency:	0.830	(1 SHIFT/DAY)
Spoil pile:	0.800	(FND-RF)
Push gradient:	1.000	(CAT HB)
Altitude:	1.000	(CAT HB)
Material Weight:	0.793	(CAT HB)
Blade type:	1.000	(PAT)
Net correction:	0.3554	

Adjusted unit production:	336.21 LCY/hr
Adjusted fleet	<b>1344.84</b> LCY/hr
production:	1344:04 LC 1/III

# JOB TIME AND COST

Fleet size:	4 Dozer(s)
Unit cost:	\$1.030/LCY

Total job time:5.17 HoursTotal job cost:\$7,156

# BULLDOZER RIPPING WORK

r	Fask descrip	tion:	Rip Access Roa	d			
Site:	Bowie No.	. 2 Mine	Pe	ermit Action:	MT5	Permit/Jo	ob#: <u>C1996083</u>
<u>P</u>	ROJECT I	DENTIFICA	TION				
	Task #: Date: User:	079 9/30/2019 ZTT	State: County:	Colorado Delta		Abbreviation: Filename:	None C083-079
	Age	ncy or organiza	tion name: DI	RMS			
Н	OURLY E	QUIPMENT	COST				
		sic Machine: Attachment:	Cat D10T - 10S 1-Shank Ripper	-	_		574 per day CRG)
<u>C</u>	ost Breakdov	wn:			1		
			p Cost/Hour: g Cost/Hour:		\$140.61 \$135.35	Utilization % <u>NA</u> 100	
	Ri	ipper Ownershi			\$20.29	NA	
	F	Ripper Operatin	-		\$11.54	100	
		-	or Cost/Hour:		\$41.24 \$349.03	NA	

		Fotal Fleet Cost/	Hour: \$1,39	6.11				
M	IATERIAL QU	<u>ANTITIES</u>	Selec	cted estimating me	ethod: Seisi	nic		
A	lternate Methods:							
mic:	1,648	BCY	Bank Volume:	1,648	BCY		Adverse	
rea:	NA	acres	Rip Depth (ft):	NA	Volume:	NA		BCY
	S	ource of estimate	ed quantity: Divisio	n Estimate				_
H	OURLY PROD	UCTION						
<u>Se</u>	eismic:							
		Seis	mic Velocity:	5,000	feet/seco	ond		
A	rea:	A years on D	inning Donth	NT A	fact/mag			
			ipping Depth:	NA NA	feet/pass			
			pping Width:	NA NA	feet/pass feet/pass			
			Dozer Speed:	NA NA	feet/pass			
			neuver Time:	NA NA				
			per unit area:	NA NA	minutes/ acres/ho			
Ŧ			per unit area:	NA		ur		
<u>J0</u>	b Condition Corre	<u>etion Factors</u> usted Hourly Un	it Production	673.60	Cu. yds.	/hr		
	Ullauj	-				/111		
			Site Altitude:	6,500	feet			
			Altitude Adj:	1.00	(CAT H			
			b Efficiency:	0.83	(1 shift/o	-		
		N	et Correction:	0.83	multiplie	er		
		Adjusted Hou	rly Unit Production:	559.09	Cu. yds./hr			
			rly Fleet Production:	2,236.35	Cu. yds./hr			
J	OB TIME AND	COST						
	Fleet size:	4 0	Grader(s)	Total job time:	0	.74	Hour	8
	Unit cost:	\$0.624 F	Per cu. yd.	Total job cost:	\$1	,029		
			SCRAPER TI	EAM WORK				
-	Task description:	Haul A	ccess Road Surface t	o Gob Pile #1				
	Bowie No. 2 Mi		Permit Action:			Permit/J	ob#: C19960	)83
			-					
<u>P</u>	ROJECT IDEN	TIFICATION						
	Task #:080		State: Colorado		Abbre	eviation:	None	
	Date: 9/30/ User: ZTT	2019	County: Delta		Fi	lename:	C083-080	
		organization nar	ne: DRMS					
TT		-		COSTSI	ift basis 1	# do		
H	OURLY EQUI				ift basis: <u>1 pe</u>	<u>r uay</u>		
				nt Description G w/push-pull				_
			-Neraner   Lot h					

Support Equipment -Load Area:	NA
-Dump Area:	NA
Road Maintenance – Motor Grader:	NA
-Water Truck:	NA

Cost Breakdown:	Scraper Work Team Support Equipment		ipment	Maintenance Equipment		
	Scraper	Dozer	Load Area	Dump Area	Motor Grader	Water Truck
%Utilization-machine:	100	NA	NA	NA	NA	NA
Ownership cost/hour:	\$126.52	NA	NA	NA	NA	NA
Operating cost/hour:	\$149.69	NA	NA	NA	NA	NA
%Utilization-ripper:	NA	NA	NA	NA	NA	NA
Ripper own. cost/hour:	NA	NA	NA	NA	NA	NA
Ripper op. cost/hour:	NA	NA	NA	NA	NA	NA
Operator cost/hour:	\$30.86	NA	NA	NA	NA	NA
Unit Subtotals:	\$307.07	NA	NA	NA	NA	NA
Number of Units:	2	0	0	0	0	0
Group Subtotals:	Work:	\$614.14	Support:	\$0.00	Maint:	\$0.00

Total work team cost/hour: <u>\$614.14</u>

#### **MATERIAL QUANTITIES**

Initial volume: Loose volume: 1,928

Swell factor: 1.000

ne: **1,928** 

Source of estimated volume:Division of Reclamation, Mining & SafetySource of estimated swell factor:Cat Handbook

CCY

LCY

#### **HOURLY PRODUCTION**

	Scraper Bowl (volu	me) Basis:	
2,900 lbs/LCY	Struck Volume:	15.70	LCY
Decomposed rock - 50% Rock,	Heaped Volume:	22.00	LCY
50% Earth			
52,800 pounds	Average Volume:	18.85	LCY
18.21 LCY	Adjusted Capacity:	18.21	LCY
	2,900 lbs/LCY Decomposed rock - 50% Rock, 50% Earth 52,800 pounds 18.21 LCY	2,900 lbs/LCYStruck Volume:Decomposed rock - 50% Rock, 50% EarthHeaped Volume:52,800 poundsAverage Volume:	Decomposed rock - 50% Rock, 50% EarthHeaped Volume:22.0052,800 poundsAverage Volume:18.85

Cycle Time:

Scraper Loading Time: Maneuver and Spread Time: 0.90 Minutes 0.60 Minutes

Job Condition Correction:

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

Travel Time:

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

Site Altitude: 6750 feet

Haul Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	3900.00	-2.50	3.00	0.50	2921	1.50

Haul Time: **1.50** minutes

Seg #	Haul Distance (Ft)	Grade	Roll. Res	Total Res	Velocity	Travel Time
C		(%)	(%)	(%)	(fpm)	(min)
1	3900.00	2.50	3.00	5.50	2736	1.57
				Return Time:	1.57	minutes
			Total Scrape	r team cycle time:	4.57	minutes
			Adjusted f	for job conditions:	396.81	LCY/Hour
			Selected Nu	mber of Scrapers:	2	Scraper(s)
	Adjusted s	single scrape	r team (unit) h	nourly production:	396.81	LCY/Hour
	Adjusted mu	ltiple scraper	team (fleet) h	nourly production:	396.81	LCY/Hour
O	Unadjusted unit prod ptimal Number of Scrap		478.08	LCY/Hour		
OB TIN	IE AND COST					
Elect	size: 1	Team(s)	Т	otal job time:	4.86	Hours
Fleet						

Task description:		on: R	Regrade Access Road					
Site:	Site: Bowie No. 2 Mine		Pe	rmit Action:	MT5	Permit/Jo	o#: C1996083	
<u>P</u> ]	Task #:	DENTIFICA 081 9/30/2019	<u>FION</u> State: County:	Colorado Delta		Abbreviation: Filename:	None C083-081	

Agency or organization name: DRMS

#### HOURLY EQUIPMENT COST

Cat D10T - 10SU
574
Semi-Universal
NA
1 per day
(CRG)

#### Cost Breakdown:

<u>cost Dicurdo wii</u> .		Utilization %
Ownership Cost/Hour:	\$140.61	NA
Operating Cost/Hour:	\$135.35	100
Ripper own. Cost/Hour:	\$0.00	NA
Ripper op. Cost/Hour:	\$0.00	0
Operator Cost/Hour:	\$41.24	NA
Total unit Cost/Hour:	\$317.20	

Total unit Cost/Hour.	\$517.20
Total Fleet Cost/Hour:	\$1,268.79

## **MATERIAL QUANTITIES**

Initial Volume:	3,296	
Swell factor:	1.330	
Loose volume:	<b>4,384</b> LCY	
Source of estimate	ed volume:	Division of Reclamation, Mining & Safety
Source of estimated swell		Cat Handbook

#### **HOURLY PRODUCTION**

factor:

Average push distance: Unadjusted hourly production:		100 feet 1,718.9 LCY/hr	_	
Materials consistency description:		Compacted fill or emb	ankment 0.9	
Average push gradient:	0 %			
Average site altitude:	6,500	feet		
Material weight:	2,900	lbs/LCY		
Weight description: De		nposed rock - 50% Rock, 50	0% Earth	
Job Condition Correction	Factor		Source	
Operator Skill:		0.750	(AVG.)	
Material consistency:		0.900	(CAT HB))	
Dozing method:		1.000	(GEN.)	
Visibility:		1.000	(AVG.)	
Job efficiency:		0.830	(1 SHIFT/DAY)	
Spoil	pile:	0.800	(FND-RF)	

Push gradient: Altitude: Material Weight: Blade type:		1.000	(CAT HB)
		1.000	(CAT HB)
		0.793	(CAT HB)
		1.000	(PAT)
Net correc Adjusted unit production:	_	0.3554 0.90 LCY/hr	
Adjusted fleet production:	244	<b>3.6</b> LCY/hr	
	T		

Fleet size:	4 Dozer(s)
Unit cost:	\$0.519/LCY

Total job time:	<b>1.79</b> Hours
Total job cost:	\$2,276

Bowie No. 2 Mine	Permit Action:	MT5	Permit/Jo	b#: <u>C1996083</u>
PROJECT IDENTIFI	<b>ICATION</b>			
Task #: 083	State: Colorado		Abbreviation:	None
Date: <u>9/30/2019</u>	County: Delta		Filename:	C083-083
User: <u>ZTT</u>				
Agency or organ	nization name: DRMS			
HOURLY EQUIPME	NT COST			
Basic Machine: Cat	t D10T - 10SU			
Horsepower: 574		-		
<b>•</b> 1	mi-Universal	_		
	hank ripper	-		
ł	er day RG)	-		
Cost Breakdown:				
0 11 7 77	****	Utilization %		
Ownership Cost/Hour:	\$140.61	<u>NA</u>		
Operating Cost/Hour: Ripper own.	\$135.35	100		
Cost/Hour:	\$18.34	NA		
Ripper op. Cost/Hour:	\$10.80	100		
Operator Cost/Hour:	\$41.24	NA		
Total unit Cost/Hour: Total Elect Cost/Hour:	\$346.33 \$1 385 33			
Total Fleet Cost/Hour: MATERIAL QUANT Initial Volume: 600 Swell factor: 1.16 Loose volume: 699 Source of estimated volu Source of estimated swe	\$1,385.33 ITIES 55 LCY ume:			
Total Fleet Cost/Hour: MATERIAL QUANT Initial Volume: 600 Swell factor: 1.16 Loose volume: 699 Source of estimated volu Source of estimated swe factor:	\$1,385.33 ITIES 55 LCY ume: Division of Reclamati ell Cat Handbook			
Total Fleet Cost/Hour: MATERIAL QUANT Initial Volume: 600 Swell factor: 1.16 Loose volume: 699 Source of estimated volu Source of estimated swe factor: HOURLY PRODUCT	\$1,385.33         ITIES         55         LCY         ume:       Division of Reclamati         ell       Cat Handbook         CION			
Total Fleet Cost/Hour: MATERIAL QUANT Initial Volume: 600 Swell factor: 1.16 Loose volume: 699 Source of estimated volu Source of estimated swe factor:	\$1,385.33 ITIES 55 LCY ume: Division of Reclamati ell Cat Handbook			
Total Fleet Cost/Hour: MATERIAL QUANT Initial Volume: 600 Swell factor: 1.16 Loose volume: 699 Source of estimated volu Source of estimated swe factor: HOURLY PRODUCT Average push distance: Unadjusted hourly	\$1,385.33         ITIES         55         LCY         ume:       Division of Reclamati         ell       Cat Handbook         CION         150 feet	 on, Mining & Safety 		
Total Fleet Cost/Hour: MATERIAL QUANT Initial Volume: 600 Swell factor: 1.16 Loose volume: 699 Source of estimated volu Source of estimated volu Source of estimated swe factor: HOURLY PRODUCT Average push distance: Unadjusted hourly production: Materials consistency description: Average push gradient:	\$1,385.33         ITIES         55         LCY         ume:       Division of Reclamati         cat Handbook         Cat Handbook	 on, Mining & Safety 		
Total Fleet Cost/Hour: MATERIAL QUANT Initial Volume: 600 Swell factor: 1.16 Loose volume: 699 Source of estimated volu Source of estimated swe factor: HOURLY PRODUCT Average push distance: Unadjusted hourly production: Materials consistency description: Average push	\$1,385.33         ITIES         55         LCY         ume:       Division of Reclamati         Cat Handbook         Cat Handbook         TION         150 feet         1,243.2 LCY/hr         Compacted fill or end	 on, Mining & Safety 		

weight description:	ecomposed rock - 50% Rock	, 50% Earth
Job Condition Correction Fac	tor_	Source
Operator Skil	1: 0.750	(AVG.)
Material consistency	y: 0.900	(CAT HB))
Dozing method	d: 1.000	(GEN.)
Visibilit	y: 1.000	(AVG.)
Job efficienc	y: 0.830	(1 SHIFT/DAY)
Spoil pil	e: 0.800	(FND-RF)
Push gradien	t: 0.903	(CAT HB)
Altitud	e: 1.000	(CAT HB)
Material Weigh	t: 0.793	(CAT HB)
Blade type	e: 1.000	(PAT)
Net correction	n: 0.3209	
Adjusted unit production:	398.94 LCY/hr	
Adjusted fleet production:	1595.76 LCY/hr	

# JOB TIME AND COST

Fleet size:	4 Dozer(s)
Unit cost:	\$0.868/LCY

Total job time:	<b>0.44</b> Hours
Total job cost:	\$607

#### Weight description: Decomposed rock - 50% Rock, 50% Earth

# BULLDOZER RIPPING WORK

Task description:	<b>Rip Lower Haul Road</b>					
Site: Bowie No. 2 Mine	Permit Action:	MT5	I	Permit/Job	o#: <u>C19960</u>	83
PROJECT IDENTIFI	CATION					
Task #: 084	State: Colorado		Abbre	viation:	None	
Date: $9/30/2019$	County: Delta			lename:	C083-084	
User: ZTT				-		
Agency or organ	ization name: DRMS					_
HOURLY EQUIPME	<u>NT COST</u>					
Basic Machine	: Cat D10T - 10SU		Horsepower:	4	574	
Ripper Attachment			Shift Basis:		er day	_
	<b>^</b>		Data Source:	(C	CRG)	_
Cost Breakdown:						
			Utilization %			
	ship Cost/Hour:	\$140.61	NA			
	ting Cost/Hour:	\$135.35	100			
	ship Cost/Hour:	\$18.34	NA			
	ting Cost/Hour: ator Cost/Hour:	\$10.80 \$41.24	100 NA			
-	Unit Cost/Hour:	\$346.33	INA			
Total I	Fleet Cost/Hour: \$1,38	5.33				
MATERIAL QUANTI	TIES Selec	cted estimating	g method: Area			
Alternate Methods:						
Seismic: NA	Bank Volume:	NA	BCY		NA	
	res Rip Depth (ft):	2.00	Volume:	9,680	INA	BCY or CCY
	of estimated quantity: Divisio	-		- ,		
	· · ·					_
HOURLY PRODUCT	ION					
Seismic:						
	Seismic Velocity:	NA	feet/seco	nd		
Area:						
	Average Ripping Depth:	2.88	feet/pass			
	Average Ripping Width:	8.67	feet/pass			
А	verage Ripping Length:	200.00	feet/pass			
	Average Dozer Speed:	88.00	feet/minu			
	verage Maneuver Time:	0.25	minutes/j			
	Production per unit area:	0.947	acres/hou	11		
Job Condition Correction 1	Factors					
Unadjusted 1	Hourly Unit Production:	0.947	Acres/hr			
	Site Altitude:	6,500	feet			
	Altitude Adj:	1.00	(CAT HI			
	Job Efficiency:	0.83	(1 shift/d			
	Net Correction:	0.83	multiplie	r		
Ad	justed Hourly Unit Production:	0.79	Acres/hr			
Adj	usted Hourly Fleet Production:	3.14	Acres/hr			

Fleet size:	4	Grader(s)	Total job time:	0.95	Hours
Unit cost:	\$440.727	Per acre	Total job cost:	\$1,322	

Basic Machine:       Cat D10T         Horsepower:       574         Blade Type:       Semi-Univ         Attachment:       3-shank rij         Shift Basis:       1 per day         Data Source:       (CRG)         Cost Breakdown:       Ownership Cost/Hour:         Ownership Cost/Hour:	State: <u>Colorado</u> County: <u>Delta</u> name: <u>DRMS</u> <u><b>DST</b></u> - 10SU		Abbreviation: Filename:	None C083-085
Date:       9/30/2019         User:       ZTT         Agency or organization         HOURLY EQUIPMENT CO         Basic Machine:       Cat D10T         Horsepower:       574         Blade Type:       Semi-Univ         Attachment:       3-shank rij         Shift Basis:       1 per day         Data Source:       (CRG)         Cost Breakdown:       Ownership Cost/Hour:         Operating Cost/Hour:       Ripper own.         Cost/Hour:       Cost/Hour:         Operator Cost/Hour:       \$346         Total unit Cost/Hour:       \$1,33         MATERIAL QUANTITIES       Initial Volume:         Swell factor:       1.165         Loose volume:       44,268 LCY         Source of estimated volume:       Source of estimated swell factor:         HOURLY PRODUCTION       Average push distance:         Materials consistency       Materials consistency	County: <u>Delta</u> name: <u>DRMS</u> <u><b>DST</b></u> - 10SU			
User: ZTT Agency or organization HOURLY EQUIPMENT CO Basic Machine: Cat D10T Horsepower: 574 Blade Type: Semi-Univ Attachment: 3-shank rij Shift Basis: 1 per day Data Source: (CRG) Cost Breakdown: Ownership Cost/Hour: Operating Cost/Hour: Ripper own. Cost/Hour: Sigper own. Cost/Hour: Sigper op. Cost/Hour: Total unit Cost/Hour: \$346 Total Fleet Cost/Hour: \$346 Total Fleet Cost/Hour: \$1,33 MATERIAL QUANTITIES Initial Volume: 37,998 Swell factor: 1.165 Loose volume: 44,268 LCY Source of estimated volume: Source of estimated swell factor: HOURLY PRODUCTION Average push distance: Unadjusted hourly production: Materials consistency	name: <u>DRMS</u> - 10SU		Filename:	<u>C083-085</u>
Agency or organization          HOURLY EQUIPMENT CO         Basic Machine:       Cat D10T         Horsepower:       574         Blade Type:       Semi-Univ         Attachment:       3-shank rij         Shift Basis:       1 per day         Data Source:       (CRG)         Cost Breakdown:       Ownership Cost/Hour:         Ownership Cost/Hour:       Ripper own.         Cost/Hour:       Cost/Hour:         Operating Cost/Hour:       346         Total unit Cost/Hour:       \$346         Total unit Cost/Hour:       \$1,33         MATERIAL QUANTITIES       \$1,33         MATERIAL QUANTITIES       Swell factor:         Initial Volume:       37,998         Swell factor:       1.165         Loose volume:       44,268 LCY         Source of estimated volume:       Source of estimated swell factor:         HOURLY PRODUCTION       Average push distance:         Materials consistency       Materials consistency	<b>)ST</b> - 10SU			
HOURLY EQUIPMENT CO         Basic Machine:       Cat D10T         Horsepower:       574         Blade Type:       Semi-Univ         Attachment:       3-shank rij         Shift Basis:       1 per day         Data Source:       (CRG)         Cost Breakdown:       Ownership Cost/Hour:         Operating Cost/Hour:       Ripper own.         Cost/Hour:       Cost/Hour:         Operator Cost/Hour:       \$346         Total unit Cost/Hour:       \$1,33         MATERIAL QUANTITIES       \$1,135         Initial Volume:       37,998         Swell factor:       1.165         Loose volume:       44,268 LCY         Source of estimated volume:       Source of estimated swell         factor:       HOURLY PRODUCTION         Average push distance:       Unadjusted hourly         production:       Materials consistency	<b>)ST</b> - 10SU			
Basic Machine:       Cat D10T         Horsepower:       574         Blade Type:       Semi-Univ         Attachment:       3-shank rij         Shift Basis:       1 per day         Data Source:       (CRG)         Cost Breakdown:       (CRG)         Ownership Cost/Hour:       (CRG)         Ownership Cost/Hour:       (CRG)         Operating Cost/Hour:       (CRG)         Operating Cost/Hour:       (CRG)         Operating Cost/Hour:       (CRG)         Operating Cost/Hour:       (CRG)         Operator Cost/Hour:       (Cost/Hour:         Operator Cost/Hour:       \$346         Total unit Cost/Hour:       \$346         Total Fleet Cost/Hour:       \$1,33         MATERIAL QUANTITIES       Swell factor:         Initial Volume:       37,998         Swell factor:       1.165         Loose volume:       44,268 LCY         Source of estimated volume:       Source of estimated swell         factor:       HOURLY PRODUCTION         Average push distance:       Unadjusted hourly         production:       Materials consistency	- 10SU			
Horsepower:       574         Blade Type:       Semi-Univ         Attachment:       3-shank rij         Shift Basis:       1 per day         Data Source:       (CRG)         Cost Breakdown:       Ownership Cost/Hour:         Operating Cost/Hour:       Ripper own.         Cost/Hour:       Cost/Hour:         Ripper op. Cost/Hour:       Operator Cost/Hour:         Total unit Cost/Hour:       \$346         Total Init Cost/Hour:       \$346         Total Init Cost/Hour:       \$346         Total Fleet Cost/Hour:       \$1,33         MATERIAL QUANTITIES       Initial Volume:         Swell factor:       1.165         Loose volume:       44,268 LCY         Source of estimated volume:       Source of estimated swell factor:         HOURLY PRODUCTION       Average push distance:         Unadjusted hourly production:       Materials consistency				
Blade Type:       Semi-Univ         Attachment:       3-shank rij         Shift Basis:       1 per day         Data Source:       (CRG)         Cost Breakdown:       (CRG)         Ownership Cost/Hour:       (CRG)         Ownership Cost/Hour:       (CRG)         Ownership Cost/Hour:       (CRG)         Operating Cost/Hour:       (CRG)         Operating Cost/Hour:       (CRG)         Ripper own.       Cost/Hour:         Cost/Hour:       (Cost/Hour:         Total unit Cost/Hour:       \$346         Total Ifleet Cost/Hour:       \$346         Total Fleet Cost/Hour:       \$1,33         MATERIAL QUANTITIES       Initial Volume:         Swell factor:       1.165         Loose volume:       44,268 LCY         Source of estimated volume:       Source of estimated swell         factor:       HOURLY PRODUCTION         Average push distance:       Unadjusted hourly         production:       Materials consistency	ersal			
Attachment:       3-shank rij         Shift Basis:       1 per day         Data Source:       (CRG)         Cost Breakdown:       (CRG)         Ownership Cost/Hour:       (CRG)         Ownership Cost/Hour:       (CRG)         Ownership Cost/Hour:       Ripper own.         Cost/Hour:       Cost/Hour:         Ripper op. Cost/Hour:       (CRG)         Operating Cost/Hour:       (CRG)         Operating Cost/Hour:       (CRG)         Operating Cost/Hour:       (CRG)         Operator Cost/Hour:       (CRG)         Total unit Cost/Hour:       (Sa46)         Total unit Cost/Hour:       \$\$346         Total I fleet Cost/Hour:       \$\$1,33         MATERIAL QUANTITIES       1.165         Loose volume:       1.165         Loose volume:       44,268 LCY         Source of estimated volume:       Source of estimated swell         factor:       HOURLY PRODUCTION         Average push distance:       Unadjusted hourly         production:       Materials consistency	ersal			
Shift Basis:       1 per day (CRG)         Cost Breakdown:       (CRG)         Ownership Cost/Hour:				
Data Source:       (CRG)         Cost Breakdown:       (CRG)         Ownership Cost/Hour:       (Operating Cost/Hour:         Operating Cost/Hour:       Ripper own.         Cost/Hour:       (Cost/Hour:         Ripper op. Cost/Hour:       (Operator Cost/Hour:         Operator Cost/Hour:       \$346         Total unit Cost/Hour:       \$346         Total Init Cost/Hour:       \$1,33         MATERIAL QUANTITIES         Initial Volume:       37,998         Swell factor:       1.165         Loose volume:       44,268 LCY         Source of estimated volume:       Source of estimated swell         factor:       HOURLY PRODUCTION         Average push distance:       Unadjusted hourly         production:       Materials consistency	oper			
Cost Breakdown:         Ownership Cost/Hour:         Operating Cost/Hour:         Ripper own.         Cost/Hour:         Ripper op. Cost/Hour:         Operator Cost/Hour:         Operator Cost/Hour:         Total unit Cost/Hour:         Total unit Cost/Hour:         \$346         Total Unit Cost/Hour:         Swell Fleet Cost/Hour:         \$1,33         MATERIAL QUANTITIES         Initial Volume:         37,998         Swell factor:         1.165         Loose volume:         44,268 LCY         Source of estimated volume:         Source of estimated swell         factor:         HOURLY PRODUCTION         Average push distance:         Unadjusted hourly         production:         Materials consistency				
Ownership Cost/Hour:         Operating Cost/Hour:         Ripper own.         Cost/Hour:         Ripper op. Cost/Hour:         Operator Cost/Hour:         Operator Cost/Hour:         Total unit Cost/Hour:         \$346         Total Init Cost/Hour:         \$1,33         MATERIAL QUANTITIES         Initial Volume:         37,998         Swell factor:         1.165         Loose volume:         44,268 LCY         Source of estimated volume:         Source of estimated swell         factor:         HOURLY PRODUCTION         Average push distance:         Unadjusted hourly         production:         Materials consistency				
Operating Cost/Hour:         Ripper own.         Cost/Hour:         Ripper op. Cost/Hour:         Operator Cost/Hour:         Operator Cost/Hour:         Total unit Cost/Hour:         Total I fleet Cost/Hour:         \$346         Total Fleet Cost/Hour:         \$1,33         MATERIAL QUANTITIES         Initial Volume:         \$37,998         Swell factor:         1.165         Loose volume:         44,268 LCY         Source of estimated volume:         Source of estimated swell         factor:         HOURLY PRODUCTION         Average push distance:         Unadjusted hourly         production:         Materials consistency				
Operating Cost/Hour:         Ripper own.         Cost/Hour:         Ripper op. Cost/Hour:         Operator Cost/Hour:         Operator Cost/Hour:         Total unit Cost/Hour:         Total I fleet Cost/Hour:         \$346         Total Fleet Cost/Hour:         \$1,33         MATERIAL QUANTITIES         Initial Volume:         \$37,998         Swell factor:         1.165         Loose volume:         44,268 LCY         Source of estimated volume:         Source of estimated swell         factor:         HOURLY PRODUCTION         Average push distance:         Unadjusted hourly         production:         Materials consistency	¢1.10.51	<u>Utilization %</u>		
Ripper own.         Cost/Hour:         Ripper op. Cost/Hour:         Operator Cost/Hour:         Total unit Cost/Hour:         Total unit Cost/Hour:         \$346         Total Unit Cost/Hour:         State         MATERIAL QUANTITIES         Initial Volume:         37,998         Swell factor:         1.165         Loose volume:         44,268 LCY         Source of estimated volume:         Source of estimated swell         factor:         HOURLY PRODUCTION         Average push distance:         Unadjusted hourly         production:         Materials consistency	\$140.61	NA		
Cost/Hour: Ripper op. Cost/Hour: Operator Cost/Hour: Total unit Cost/Hour: Total Ileet Cost/Hour: <b>\$346</b> Total Fleet Cost/Hour: <b>\$1,33</b> <b>MATERIAL QUANTITIES</b> Initial Volume: Swell factor: Loose volume: <b>37,998</b> 1.165 Loose volume: <b>44,268</b> LCY Source of estimated volume: Source of estimated swell factor: <b>HOURLY PRODUCTION</b> Average push distance: Unadjusted hourly production: Materials consistency	\$135.35	100		
Ripper op. Cost/Hour:         Operator Cost/Hour:         Total unit Cost/Hour:         Total unit Cost/Hour:         State         MATERIAL QUANTITIES         Initial Volume:         37,998         Swell factor:         1.165         Loose volume:         44,268 LCY         Source of estimated volume:         Source of estimated swell         factor:         HOURLY PRODUCTION         Average push distance:         Unadjusted hourly         production:         Materials consistency	\$18.34	NA		
Operator Cost/Hour: Total unit Cost/Hour: \$346 Total Fleet Cost/Hour: \$1,33 MATERIAL QUANTITIES Initial Volume: 37,998 Swell factor: 1.165 Loose volume: 44,268 LCY Source of estimated volume: Source of estimated swell factor: HOURLY PRODUCTION Average push distance: Unadjusted hourly production: Materials consistency	\$10.80	100		
Total unit Cost/Hour:       \$346         Total Fleet Cost/Hour:       \$1,33         MATERIAL QUANTITIES         Initial Volume:       37,998         Swell factor:       1.165         Loose volume:       44,268 LCY         Source of estimated volume:       Source of estimated swell         factor:       HOURLY PRODUCTION         Average push distance:       Unadjusted hourly         production:       Materials consistency	\$41.24	NA		
factor: HOURLY PRODUCTION Average push distance: Unadjusted hourly production: Materials consistency		n, Mining & Safety		
Average push distance: Unadjusted hourly production: Materials consistency				
Average push distance: Unadjusted hourly production: Materials consistency				
Unadjusted hourly production: Materials consistency				
Unadjusted hourly production: Materials consistency	200 feet			
	946.0 LCY/hr	_		
	Compacted fill or em	bankment 0.9		
Average push 5 % gradient:				
Material weight: 2,900	) feet			

Weight description: Dec	composed rock - 50% Rock	, 50% Earth
Job Condition Correction Factor		Source
Operator Skill:	0.750	(AVG.)
Material consistency:	0.900	(CAT HB))
Dozing method:	1.000	(GEN.)
Visibility:	1.000	(AVG.)
Job efficiency:	0.830	(1 SHIFT/DAY)
Spoil pile:	0.800	(FND-RF)
Push gradient:	0.903	(CAT HB)
Altitude:	1.000	(CAT HB)
Material Weight:	0.793	(CAT HB)
Blade type:	1.000	(PAT)
Net correction:	0.3209	
Adjusted unit3	03.57 LCY/hr	
Adjusted fleet 1 production:	214.28 LCY/hr	

Fleet size:	4 Dozer(s)	
Unit cost:	\$1.141/LCY	

Total job time:	<b>36.46</b> Hours
Total job cost:	\$50,503

Task description:	Regrade Light	U <b>se Roads fro</b> r	n MRs and TRs		
Site: Bowie No. 2 Mine	Pe	rmit Action:	MT5	Permit/Jo	b#: C1996083
PROJECT IDENTIF	ICATION				
Task #: 086	State:	Colorado		Abbreviation:	None
Date: $9/30/2019$		Delta		Filename:	C083-086
User: ZTT	County.	Delta		i nename.	0003 000
Agency or orga	nization name: DI	RMS			
HOURLY EQUIPME	ENT COST				
Basic Machine: Ca	ut D10T - 10SU				
Horsepower: 57					
	mi-Universal				
51	shank ripper				
	ber day				
*	RG)				
Cost Breakdown:		I.	<b>TT</b> .111 .1 .0/		
		¢1.40.c1	<u>Utilization %</u>		
Ownership Cost/Hour:		\$140.61	NA		
Operating Cost/Hour:		\$135.35	100		
Ripper own.		\$18.34	NA		
Cost/Hour:					
Ripper op. Cost/Hour:		\$10.80	100		
Operator Cost/Hour:		\$41.24	NA		
Total unit Cost/Hour:	\$346.33				
Total Fleet Cost/Hour:	\$1,385.33				
Total Preet Cost/Hour.	φ1,303.33				
MATERIAL QUANT	TTIFS				
MATERIAL QUANT					
Initial Volume: 115	5,458				
Swell factor: 1.16	55				
Loose volume: 134	<b>,509</b> LCY				
	46.71	1 5 1 4			
Source of estimated vol		res, 1.5' depth			
Source of estimated swe	ell Cat Hand	lbook			
factor:	. <u> </u>				
HOURLY PRODUCT	<u>FION</u>				
Average push distance:	100 feet				
Unadjusted hourly	1,718.9 LC	V/hr			
production:	1,/10.9 LC	1/111			
production.			<u> </u>		
Matarials consistence	Comm	otod fill or amb	ankmant () ()		
Materials consistency	Compa	icted fill or emb	Jankinenii 0.9		
description:	. <u> </u>				
Average nuch	5 %				
Average push	J 70				
gradient:	7 500 frat				
Average site altitude:	7,500 feet				
Material weight:	2,900 lbs/LCY				
waterial weight.	2,700 108/LC I				

Weight description: Dec	omposed rock - 50% Rock,	50% Earth
Job Condition Correction Factor	_	Source
Operator Skill:	0.750	(AVG.)
Material consistency:	0.900	(CAT HB))
Dozing method:	1.000	(GEN.)
Visibility:	1.000	(AVG.)
Job efficiency:	0.830	(1 SHIFT/DAY)
Spoil pile:	0.800	(FND-RF)
Push gradient:	0.903	(CAT HB)
Altitude:	1.000	(CAT HB)
Material Weight:	0.793	(CAT HB)
Blade type:	1.000	(PAT)
Net correction:	0.3209	
Adjusted unit 55	51.60 LCY/hr	
Adjusted fleet 22 production:	206.4 LCY/hr	

Fleet size:	4 Dozer(s)	
Unit cost:	\$0.628/LCY	-

Total job time:	60.96 Hours
Total job cost:	\$84,454

# MOTOR GRADER WORK

	Finish Grade Dis	sturbed Min	e Area		
e: Bowie No. 2 Mine	Per	mit Action:	MT5	P	ermit/Job#: <u>C1996083</u>
PROJECT IDENTIFI	CATION				
Task #: 090	State:	Colorado		Abbrev	iation: None
Date: 9/30/2019	County:	Delta			ename: C083-090
User: ZTT					
Agency or organ	ization name: DR	MS			
HOURLY EQUIPMEN	NT COST				
Basic Machine:	: CAT 14M			Horsepower:	259
Ripper Attachment:		oper		Shift Basis:	1 per day
	*	1		Data Source:	(CRG)
Cost Prostedoum					
Cost Breakdown:				Utilization %	
Owner	ship Cost/Hour:		\$64.10	NA	
	ting Cost/Hour:		\$56.17	100	
Ripper Owner	ship Cost/Hour:		\$4.44	NA	
	ting Cost/Hour:		\$0.00	0	
-	ator Cost/Hour:		\$28.52	NA	
Total	Unit Cost/Hour:		\$153.22		
Total F	Fleet Cost/Hour:	\$153	22		
MATERIAL QUANTI	TIES				
	TIES to be graded or ripped	1: <u>169.00</u>			acres
Total Area to			all disturbed	areas	acres
Total Area to	b be graded or ripped of estimated acreage		all disturbed	areas	acres
Total Area to Source	b be graded or ripped of estimated acreage ION	e: Total of	all disturbed		acres
Total Area to Source	b be graded or ripped of estimated acreage	e: <u>Total of</u>	1.25	areas mph luction Deration - 1	
Total Area to Source	o be graded or ripped of estimated acreage ION Average Grader Spe Selected Applicati Selected Blade An	e: <u>Total of</u> eed: jon: gle:	1.25 Prod 30	mph	
Total Area to Source	o be graded or ripped of estimated acreage ION Average Grader Spe Selected Applicati Selected Blade An Effective Blade Leng	e: <u>Total of</u> eed: ion: gle: gth:	1.25 Prod 30 12.10	mph luction Deration - 1	
Total Area to Source HOURLY PRODUCT	o be graded or ripped of estimated acreage <b>ION</b> Average Grader Spe Selected Applicati Selected Blade An Effective Blade Leng f blade overlap per p	eed: ion: gle: gth: ass:	1.25 Prod 30 12.10 2.00	mph luction Deration - 1 degrees feet feet feet	
Total Area to Source HOURLY PRODUCT Width of Net grading or	o be graded or ripped of estimated acreage ION Average Grader Spe Selected Applicati Selected Blade An Effective Blade Leng f blade overlap per par	eed: ion: gle: gth: ass:	1.25 Prod 30 12.10 2.00 10.10	mph luction Deration - 1 degrees feet feet feet feet	.25
Total Area to Source HOURLY PRODUCT Width of Net grading or	o be graded or ripped of estimated acreage <b>ION</b> Average Grader Spe Selected Applicati Selected Blade An Effective Blade Leng f blade overlap per p	eed: ion: gle: gth: ass:	1.25 Prod 30 12.10 2.00	mph luction Deration - 1 degrees feet feet feet	.25
Total Area to Source HOURLY PRODUCT Width of Net grading or	o be graded or ripped of estimated acreage <b>ION</b> Average Grader Spe Selected Applicati Selected Blade An Effective Blade Leng f blade overlap per par ripping width per p Hourly Unit Producti	e: Total of eed: gle: gth: ass: ion:	1.25 Prod 30 12.10 2.00 10.10 1.5303	mph luction Deration - 1 degrees feet feet feet feet	.25
Total Area to Source HOURLY PRODUCT Width of Net grading or Unadjusted I Job Condition Correction H	o be graded or ripped of estimated acreage <b>ION</b> Average Grader Spe Selected Applicati Selected Blade An Effective Blade Leng f blade overlap per pa ripping width per p Hourly Unit Producti Factors	e: Total of eed: gle: gth: ass: ion: Source	1.25 Prod 30 12.10 2.00 10.10 1.5303 S	mph luction Deration - 1 degrees feet feet feet feet acres/hour	.25
Total Area to Source HOURLY PRODUCT Width of Net grading or Unadjusted I Job Condition Correction H Altitude Adj:	o be graded or ripped of estimated acreage <b>ION</b> Average Grader Spe Selected Applicati Selected Blade An Effective Blade Leng f blade overlap per par ripping width per p Hourly Unit Producti Factors 1.00	eed: gle: gth: ass: ion: Source (CAT HB	1.25 Prod 30 12.10 2.00 10.10 1.5303 S	mph luction Deration - 1 degrees feet feet feet feet acres/hour	.25
Total Area to Source HOURLY PRODUCT Width of Net grading or Unadjusted I Job Condition Correction H Altitude Adj: Job Efficiency:	o be graded or ripped of estimated acreage ION Average Grader Spe Selected Applicati Selected Blade An Effective Blade Leng f blade overlap per par ripping width per par Hourly Unit Producti Factors 1.00 0.85	eed: gle: gth: ass: ion: Source (CAT HB (1sh/d, mod	1.25 Prod 30 12.10 2.00 10.10 1.5303 S	mph luction Deration - 1 degrees feet feet feet feet acres/hour	.25
Total Area to Source HOURLY PRODUCT Width of Net grading or Unadjusted I Job Condition Correction H Altitude Adj: Job Efficiency: Net Correction:	o be graded or ripped of estimated acreage ION Average Grader Spe Selected Applicati Selected Blade An Effective Blade Leng f blade overlap per par ripping width per par Hourly Unit Producti Factors 1.00 0.85 0.8500	eed: gle: gth: ass: ion: Source (CAT HB (1sh/d, moc multiplier	1.25 Prod 30 12.10 2.00 10.10 1.5303 S ) 1.)	mph luction Deration - 1 degrees feet feet feet acres/hour ite Altitude: <u>6500</u> f	.25
Total Area to Source HOURLY PRODUCT Width of Net grading or Unadjusted I Job Condition Correction H Altitude Adj: Job Efficiency: Net Correction:	o be graded or ripped of estimated acreage ION Average Grader Spe Selected Applicati Selected Blade An Effective Blade Leng f blade overlap per par ripping width per par Hourly Unit Producti Factors 1.00 0.85 0.8500 justed Hourly Unit P	e:Total of eed: gle: gth: ass: ion: (CAT HB (1sh/d, mod multiplier Production:	1.25 Prod 30 12.10 2.00 10.10 1.5303 S ) 1.) 1.3008	mph luction Deration - 1 degrees feet feet feet acres/hour ite Altitude: <u>6500</u> f	.25
Total Area to Source HOURLY PRODUCT Width of Net grading or Unadjusted I Job Condition Correction H Altitude Adj: Job Efficiency: Net Correction:	o be graded or ripped of estimated acreage ION Average Grader Spe Selected Applicati Selected Blade An Effective Blade Leng f blade overlap per par ripping width per par Hourly Unit Producti Factors 1.00 0.85 0.8500	e:Total of eed: gle: gth: ass: ion: (CAT HB (1sh/d, mod multiplier Production:	1.25 Prod 30 12.10 2.00 10.10 1.5303 S ) 1.)	mph luction Deration - 1 degrees feet feet feet acres/hour ite Altitude: <u>6500</u> f	.25
Total Area to Source HOURLY PRODUCT Width of Net grading or Unadjusted I Job Condition Correction H Altitude Adj: Job Efficiency: Net Correction: Adj Adj	o be graded or ripped of estimated acreage <b>ION</b> Average Grader Spe Selected Applicati Selected Blade An, Effective Blade Leng f blade overlap per par ripping width per par Hourly Unit Producti Factors 1.00 0.85 0.8500 justed Hourly Unit P usted Hourly Fleet P	e:Total of eed: gle: gth: ass: ion: (CAT HB (1sh/d, mod multiplier Production:	1.25 Prod 30 12.10 2.00 10.10 1.5303 S ) 1.) 1.3008	mph luction Deration - 1 degrees feet feet feet acres/hour ite Altitude: <u>6500</u> f	.25
Total Area to Source HOURLY PRODUCT Width of Net grading or Unadjusted I Job Condition Correction H Altitude Adj: Job Efficiency: Net Correction: Ad Adj	o be graded or ripped of estimated acreage <b>ION</b> Average Grader Spe Selected Applicati Selected Blade An, Effective Blade Leng f blade overlap per par ripping width per par Hourly Unit Producti Factors 1.00 0.85 0.8500 justed Hourly Unit P usted Hourly Fleet P	e: Total of eed: ion: gth: ass: ion: (CAT HB (1sh/d, moc multiplier Production:	1.25 Prod 30 12.10 2.00 10.10 1.5303 S ) 1.) 1.3008	mph luction Deration - 1 degrees feet feet feet acres/hour ite Altitude: <u>6500</u> f	.25

 Unit cost:
 \$117.79
 per acre
 Total job cost:
 \$19,907

# MOTOR GRADER WORK

Task description:	Finish Grade Train Load	out		
e: Bowie No. 2 Mine	Permit Actio	n: MT5	Pe	ermit/Job#: <u>C1996083</u>
PROJECT IDENTIFI	CATION			
Task #: 091	State: Colorad	0	Abbrev	iation: None
Date: 9/30/2019	County: Delta		File	name: C083-091
User: ZTT				
Agency or organ	ization name: DRMS			
HOURLY EQUIPMEN	NT COST			
Basic Machine	: CAT 14M		Horsepower:	259
Ripper Attachment			Shift Basis:	1 per day
11			Data Source:	(CRG)
Cost Breakdown:				
COSt Dieakdown.			Utilization %	
Owner	ship Cost/Hour:	\$64.10	NA	
Opera	ating Cost/Hour:	\$56.17	100	
	ship Cost/Hour:	\$4.44	NA	
	ating Cost/Hour:	\$0.00	0	
-	rator Cost/Hour:	\$28.52	NA	
Iotai	Unit Cost/Hour:	\$153.22		
Total H	Fleet Cost/Hour: \$1	53.22		
MATERIAL QUANTI	ITIES			
		0		acres
Total Area to	o be graded or ripped:22.0			acres
Total Area to Source	o be graded or ripped:22.00 e of estimated acreage:Oper	0 rator estimate		acres
Total Area to	o be graded or ripped: 22.00 of estimated acreage: Oper	rator estimate		acres
Total Area to Source	o be graded or ripped:22.00 of estimated acreage:Oper <u>ION</u> Average Grader Speed:	rator estimate	mph	
Total Area to Source	o be graded or ripped:22.00 of estimated acreage:Oper HON Average Grader Speed: Selected Application:	rator estimate 1.25 Prod	luction Deration - 1	
Total Area to Source	o be graded or ripped:22.00 of estimated acreage:Oper ION Average Grader Speed: Selected Application: Selected Blade Angle:	rator estimate 1.25 Prod 30	luction Deration - 1 degrees	
Total Area to Source	o be graded or ripped:22.00 of estimated acreage:Oper ION Average Grader Speed: Selected Application: Selected Blade Angle: Effective Blade Length:	1.25           Prod           30           12.10	luction Deration - 1	
Total Area to Source HOURLY PRODUCT	o be graded or ripped:22.00 of estimated acreage:Oper ION Average Grader Speed: Selected Application: Selected Blade Angle:	rator estimate 1.25 Prod 30	luction Deration - 1 degrees feet	
Total Area to Source HOURLY PRODUCT Width of Net grading on	o be graded or ripped:22.00 of estimated acreage:Oper ION Average Grader Speed: Selected Application: Selected Blade Angle: Effective Blade Length: f blade overlap per pass:	rator estimate 1.25 Prod 30 12.10 2.00	luction Deration - 1 degrees feet feet	.25
Total Area to Source HOURLY PRODUCT Width of Net grading on	o be graded or ripped:22.00 of estimated acreage:Oper ION Average Grader Speed: Selected Application: Selected Blade Angle: Effective Blade Length: f blade overlap per pass: r ripping width per pass: Hourly Unit Production:	1.25         Prod         30         12.10         2.00         10.10         1.5303	uction Deration - 1       degrees       feet       feet       feet	.25
Total Area to Source HOURLY PRODUCT Width of Net grading of Unadjusted I	o be graded or ripped:22.00 of estimated acreage:Oper ION Average Grader Speed: Selected Application: Selected Blade Angle: Effective Blade Length: f blade overlap per pass: r ripping width per pass: Hourly Unit Production: Factors Source	1.25           Prod           30           12.10           2.00           10.10           1.5303           S           ce	uction Deration - 1       degrees       feet       feet       feet       acres/hour	.25
Total Area to Source HOURLY PRODUCT Width of Net grading of Unadjusted I Job Condition Correction I Altitude Adj:	o be graded or ripped:22.00 of estimated acreage:Oper ION Average Grader Speed: Selected Application: Selected Blade Angle: Effective Blade Length: f blade overlap per pass: r ripping width per pass: Hourly Unit Production: Factors Sourc 1.00 (CAT 1	1.25         Prod         30         12.10         2.00         10.10         1.5303         S         ce         HB)	uction Deration - 1       degrees       feet       feet       feet       acres/hour	.25
Total Area to Source HOURLY PRODUCT Width of Net grading of Unadjusted I Job Condition Correction I Altitude Adj: Job Efficiency:	o be graded or ripped:22.00 of estimated acreage:Oper ION Average Grader Speed: Selected Application: Selected Blade Angle: f blade overlap per pass: f blade overlap per pass: r ripping width per pass: Hourly Unit Production: Factors Source 1.00 (CAT I 0.85 (1sh/d, r	1.25         Prod         30         12.10         2.00         10.10         1.5303         S         HB)         nod.)	uction Deration - 1       degrees       feet       feet       feet       acres/hour	.25
Total Area to Source HOURLY PRODUCT Width of Net grading of Unadjusted I Job Condition Correction I Altitude Adj:	o be graded or ripped:22.00 of estimated acreage:Oper ION Average Grader Speed: Selected Application: Selected Blade Angle: Effective Blade Length: f blade overlap per pass: r ripping width per pass: Hourly Unit Production: Factors Sourc 1.00 (CAT 1	1.25         Prod         30         12.10         2.00         10.10         1.5303         S         HB)         nod.)	uction Deration - 1       degrees       feet       feet       feet       acres/hour	.25
Total Area to Source HOURLY PRODUCT Width of Net grading of Unadjusted I Job Condition Correction I Altitude Adj: Job Efficiency: Net Correction:	o be graded or ripped:22.00 of estimated acreage:Oper ION Average Grader Speed: Selected Application: Selected Blade Angle: f blade overlap per pass: f blade overlap per pass: r ripping width per pass: Hourly Unit Production: Factors Source 1.00 (CAT I 0.85 (1sh/d, r	1.25         Prod         30         12.10         2.00         10.10         1.5303         S         ce         HB)         nod.)         ier	uction Deration - 1       degrees       feet       feet       feet       acres/hour	.25
Total Area to Source HOURLY PRODUCT Width of Net grading of Unadjusted I Job Condition Correction I Altitude Adj: Job Efficiency: Net Correction:	o be graded or ripped:22.00 o f estimated acreage:Oper ION Average Grader Speed: Selected Application: Selected Blade Angle: Effective Blade Length: f blade overlap per pass: r ripping width per pass: Hourly Unit Production: Factors Source 1.00 (CAT I 0.85 (1sh/d, r 0.8500 multipli	1.25         Prod         30         12.10         2.00         10.10         1.5303         S         ce         HB)         nod.)         ier         1.3008	luction Deration - 1 degrees feet feet feet acres/hour ite Altitude: <u>5900</u> f	.25
Total Area to Source HOURLY PRODUCT Width of Net grading of Unadjusted I Job Condition Correction I Altitude Adj: Job Efficiency: Net Correction: Add	o be graded or ripped:22.00 o of estimated acreage:Oper ION Average Grader Speed: Selected Application: Selected Blade Angle: Effective Blade Length: f blade overlap per pass: f blade overlap per pass: Hourly Unit Production: Factors Source 1.00 (CAT I 0.85 (1sh/d, r 0.8500 multipli Ijusted Hourly Unit Production justed Hourly Fleet Production	1.25         Prod         30         12.10         2.00         10.10         1.5303         S         ce         HB)         nod.)         ier         1.3008	uction Deration - 1         degrees         feet         feet         feet         ite Altitude: 5900 f	.25
Total Area to Source HOURLY PRODUCT Width of Net grading of Unadjusted I Job Condition Correction I Altitude Adj: Job Efficiency: Net Correction:	o be graded or ripped:22.00 o of estimated acreage:Oper ION Average Grader Speed: Selected Application: Selected Blade Angle: Effective Blade Length: f blade overlap per pass: f blade overlap per pass: Hourly Unit Production: Factors Source 1.00 (CAT I 0.85 (1sh/d, r 0.8500 multipli Ijusted Hourly Unit Production justed Hourly Fleet Production	1.25         Prod         30         12.10         2.00         10.10         1.5303         S         ce         HB)         nod.)         ier         1.3008	uction Deration - 1         degrees         feet         feet         feet         acres/hour         acres/Hour         acres/Hour	.25

 Unit cost:
 \$117.79
 per acre
 Total job cost:
 \$2,591

# MOTOR GRADER WORK

-		rtal Bench		
e: Bowie No. 2 Mine	Permit Actio	on: MT5	Pe	ermit/Job#: <u>C1996083</u>
PROJECT IDENTIFI	CATION			
Task #: 092	State: Colorad	0	Abbrevi	ation: None
Date: 9/30/2019	County: Delta		File	name: C083-092
User: ZTT				
Agency or organ	nization name: DRMS			
HOURLY EQUIPME	NT COST			
Basic Machine	e: CAT 14M		Horsepower:	259
Ripper Attachment			Shift Basis:	1 per day
••	<b>^</b>		Data Source:	(CRG)
Cost Breakdown:				
Cost Dicardown.			Utilization %	
Owner	rship Cost/Hour:	\$64.10	NA	
	ating Cost/Hour:	\$56.17	100	
	rship Cost/Hour:	\$4.44	NA	
	ating Cost/Hour:	\$0.00	0	
-	rator Cost/Hour:	\$28.52	NA	
Total	Unit Cost/Hour:	\$153.22		
Total	Fleet Cost/Hour: \$1	153.22		
	ITIES			
MATERIAL QUANT				agrae
MATERIAL QUANT	to be graded or ripped:9.00			acres
MATERIAL QUANT	to be graded or ripped:9.00	rator Estimate		acres
MATERIAL QUANT Total Area t Source	to be graded or ripped:9.00 e of estimated acreage:Oper			acres
MATERIAL QUANT	to be graded or ripped:9.00 e of estimated acreage:Oper		mph	acres
MATERIAL QUANT Total Area t Source	to be graded or ripped:9.00 e of estimated acreage:Oper CION Average Grader Speed: Selected Application:	rator Estimate	mph uction Deration - 1	
MATERIAL QUANT Total Area t Source	to be graded or ripped:9.00 e of estimated acreage:Oper CION Average Grader Speed: Selected Application: Selected Blade Angle:	1.25 Prod 30	uction Deration - 1 degrees	
MATERIAL QUANT Total Area t Source HOURLY PRODUCT	to be graded or ripped:9.00 e of estimated acreage:Oper TION Average Grader Speed: Selected Application: Selected Blade Angle: Effective Blade Length:	1.25 Prod 30 12.10	uction Deration - 1 degrees feet	
MATERIAL QUANT Total Area t Source HOURLY PRODUCT Width o	to be graded or ripped:9.00 e of estimated acreage:Oper <b>TON</b> Average Grader Speed: Selected Application: Selected Blade Angle: Effective Blade Length: of blade overlap per pass:	1.25           Prod           30           12.10           2.00	uction Deration - 1 degrees feet feet	
MATERIAL QUANT Total Area t Source HOURLY PRODUCT Width o Net grading o	to be graded or ripped:9.00 e of estimated acreage:Oper <u>YION</u> Average Grader Speed: Selected Application: Selected Blade Angle: Effective Blade Length: of blade overlap per pass: pr ripping width per pass:	1.25           Prod           30           12.10           2.00           10.10	uction Deration - 1       degrees       feet       feet       feet	25
MATERIAL QUANT Total Area t Source HOURLY PRODUCT Width o Net grading o Unadjusted	to be graded or ripped:9.00 e of estimated acreage:Oper <b>TON</b> Average Grader Speed: Selected Application: Selected Blade Angle: Effective Blade Length: of blade overlap per pass: Hourly Unit Production:	1.25           Prod           30           12.10           2.00	uction Deration - 1 degrees feet feet	25
MATERIAL QUANT Total Area t Source HOURLY PRODUCT Width o Net grading o	to be graded or ripped:9.00 e of estimated acreage:Oper CION Average Grader Speed: Selected Application: Selected Blade Angle: Effective Blade Length: of blade overlap per pass: Hourly Unit Production: Factors	1.25           Prod           30           12.10           2.00           10.10           1.5303	uction Deration - 1       degrees       feet       feet       feet	.25
MATERIAL QUANT Total Area t Source HOURLY PRODUCT Width o Net grading o Unadjusted Job Condition Correction	to be graded or ripped:9.00 e of estimated acreage:Oper TION Average Grader Speed: Selected Application: Selected Blade Angle: Effective Blade Length: of blade overlap per pass: for ripping width per pass: Hourly Unit Production: Factors Sour	1.25           Prod           30           12.10           2.00           10.10           1.5303           S           ce	uction Deration - 1       degrees       feet       feet       feet       acres/hour	.25
MATERIAL QUANT Total Area t Source HOURLY PRODUCT Width o Net grading o Unadjusted Job Condition Correction Altitude Adj:	to be graded or ripped:9.00 e of estimated acreage:Oper <u>YION</u> Average Grader Speed: Selected Application: Selected Blade Angle: Effective Blade Length: of blade overlap per pass: or ripping width per pass: Hourly Unit Production: <u>Factors</u> Sour 1.00 (CAT )	1.25           Prod           30           12.10           2.00           10.10           1.5303           S           ce           HB)	uction Deration - 1       degrees       feet       feet       feet       acres/hour	.25
MATERIAL QUANT Total Area t Source HOURLY PRODUCT Width o Net grading o Unadjusted Job Condition Correction Altitude Adj: Job Efficiency:	to be graded or ripped:9.00 e of estimated acreage:Oper <u>YION</u> Average Grader Speed: Selected Application: Selected Blade Angle: Effective Blade Length: of blade overlap per pass: for ripping width per pass: Hourly Unit Production: <u>Factors</u> Sour <u>1.00 (CAT 1</u> 0.85 (1sh/d, 1	rator Estimate         1.25         Prod         30         12.10         2.00         10.10         1.5303         S         ce         HB)         nod.)	uction Deration - 1       degrees       feet       feet       feet       acres/hour	.25
MATERIAL QUANT Total Area t Source HOURLY PRODUCT Width o Net grading o Unadjusted Job Condition Correction Altitude Adj: Job Efficiency: Net Correction:	to be graded or ripped:9.00 e of estimated acreage:Oper <u>YION</u> Average Grader Speed: Selected Application: Selected Blade Angle: Effective Blade Length: of blade overlap per pass: for ripping width per pass: Hourly Unit Production: <u>Factors</u> Sour <u>1.00 (CAT 10.85 (1sh/d, 10.8500)</u> multiplice	rator Estimate         1.25         Prod         30       12.10         2.00       10.10         1.5303       S         s         ce         HB)	uction Deration - 1         degrees         feet         feet         feet         acres/hour         ite Altitude: 6750 f	.25
MATERIAL QUANT Total Area t Source HOURLY PRODUCT Width o Net grading o Unadjusted Job Condition Correction Altitude Adj: Job Efficiency: Net Correction: Attice Adj:	to be graded or ripped: 9.00 e of estimated acreage: Oper <u>YION</u> Average Grader Speed: Selected Application: Selected Blade Angle: Effective Blade Length: of blade overlap per pass: or ripping width per pass: Hourly Unit Production: <u>Factors</u> Sour <u>1.00 (CAT 1</u> <u>0.85 (1sh/d, 1</u> <u>0.8500</u> multiplied Jjusted Hourly Unit Production	rator Estimate         1.25         Prod         30         12.10         2.00         10.10         1.5303         S         Ce         HB)       S         nod.)	uction Deration - 1         degrees         feet         feet         ite Altitude: 6750 f	.25
MATERIAL QUANT Total Area t Source HOURLY PRODUCT Width o Net grading o Unadjusted Job Condition Correction Altitude Adj: Job Efficiency: Net Correction: Attice Adj:	to be graded or ripped:9.00 e of estimated acreage:Oper <u>YION</u> Average Grader Speed: Selected Application: Selected Blade Angle: Effective Blade Length: of blade overlap per pass: for ripping width per pass: Hourly Unit Production: <u>Factors</u> Sour <u>1.00 (CAT 10.85 (1sh/d, 10.8500)</u> multiplice	rator Estimate         1.25         Prod         30         12.10         2.00         10.10         1.5303         S         Ce         HB)       S         nod.)	uction Deration - 1         degrees         feet         feet         feet         acres/hour         ite Altitude: 6750 f	.25
MATERIAL QUANT Total Area t Source HOURLY PRODUCT Width o Net grading o Unadjusted Job Condition Correction Altitude Adj: Job Efficiency: Net Correction: Add	to be graded or ripped:9.00 e of estimated acreage:Oper <b>CION</b> Average Grader Speed: Selected Application: Selected Blade Angle: Effective Blade Length: of blade overlap per pass: for ripping width per pass: Hourly Unit Production: Factors Sour 1.00 (CAT i 0.85 (1sh/d, 1 0.8500 multiplication djusted Hourly Unit Production justed Hourly Fleet Production	rator Estimate         1.25         Prod         30         12.10         2.00         10.10         1.5303         S         Ce         HB)       S         nod.)	uction Deration - 1         degrees         feet         feet         ite Altitude: 6750 f	.25
MATERIAL QUANT Total Area t Source HOURLY PRODUCT Width o Net grading o Unadjusted Job Condition Correction Altitude Adj: Job Efficiency: Net Correction: Add JOB TIME AND COS	to be graded or ripped:9.00 e of estimated acreage:Oper <b>CION</b> Average Grader Speed: Selected Application: Selected Blade Angle: Effective Blade Length: of blade overlap per pass: for ripping width per pass: Hourly Unit Production: Factors Sour 1.00 (CAT i 0.85 (1sh/d, 1 0.8500 multiplication djusted Hourly Unit Production justed Hourly Fleet Production	rator Estimate         1.25         Prod         30         12.10         2.00         10.10         1.5303         S         Ce         HB)       S         nod.)	uction Deration - 1         degrees         feet         feet         acres/hour         acres/Hour         acres/Hour	.25

 Unit cost:
 \$117.79
 per acre
 Total job cost:
 \$1,060

# MOTOR GRADER WORK

		/	2, #3, and #4			
e: Bowie No. 2 Mine	Perm	nit Action:	MT5	Pe	ermit/Job#:	C1996083
PROJECT IDENTIFI	CATION					
Task #: 093		Colorado		Abbrev		lone
Date: <u>9/30/2019</u> User: ZTT	County:	Delta		File	name: 0	2083-093
		10				
Agency or organ	ization name: <u>DRM</u>	48				
HOURLY EQUIPME	NT COST					
Basic Machine				Horsepower:	25	)
Ripper Attachment	: Multi-Shank Ripp	ber	_	Shift Basis:	1 per	
				Data Source:	(CR	G)
Cost Breakdown:						
0			<b></b>	Utilization %		
	ship Cost/Hour:		\$64.10 \$56.17	<u>NA</u>		
	tting Cost/Hour:		\$56.17	100 NA		
	ting Cost/Hour:		\$0.00	$\frac{\mathbf{NA}}{0}$		
	rator Cost/Hour:		\$28.52	NA		
-	Unit Cost/Hour:		\$153.22			
Total I	Fleet Cost/Hour:	\$153.	.22			
100001						
MATERIAL QUANTI						
MATERIAL QUANTI	TIES	`			а	cres
MATERIAL QUANTI Total Area to	( <b>TIES</b> o be graded or ripped:	65.88			a	cres
MATERIAL QUANTI Total Area to	TIES	65.88	Volume IX		a	cres
MATERIAL QUANTI Total Area to	TTIES o be graded or ripped: of estimated acreage:	65.88			a	cres
MATERIAL QUANTI Total Area to Source	TTIES o be graded or ripped: of estimated acreage: ION	65.88 Permit V		mph	a	cres
MATERIAL QUANTI Total Area to Source	TTIES o be graded or ripped: of estimated acreage: ION Average Grader Spee Selected Applicatio	65.88 Permit V ed: on:	Volume IX 1.25	mph luction Deration - 1		cres
MATERIAL QUANTI Total Area to Source HOURLY PRODUCT	TTIES o be graded or ripped: of estimated acreage: ION Average Grader Spee Selected Applicatio Selected Blade Angl	65.88 Permit V ed: bn: le:	Volume IX 1.25 Prod 30	luction Deration - 1 degrees		cres
MATERIAL QUANTI Total Area to Source HOURLY PRODUCT	TTIES o be graded or ripped: of estimated acreage: ION Average Grader Spee Selected Applicatio Selected Blade Angl Effective Blade Lengt	65.88 Permit V ed: bn: le: th:	Volume IX 1.25 Prod 30 12.10	luction Deration - 1 degrees feet		cres
MATERIAL QUANTI Total Area to Source HOURLY PRODUCT Width o	TTIES o be graded or ripped: of estimated acreage: ION Average Grader Spee Selected Applicatio Selected Blade Angl Effective Blade Lengt f blade overlap per pas	65.88 Permit V ed: le: th: ss:	Volume IX 1.25 Prod 30 12.10 2.00	luction Deration - 1 degrees feet feet		cres
MATERIAL QUANTI Total Area to Source HOURLY PRODUCT Width of Net grading on	TTIES o be graded or ripped: of estimated acreage: ION Average Grader Spee Selected Applicatio Selected Blade Angl Effective Blade Lengt f blade overlap per pas r ripping width per pas	65.88 Permit V ed: le: ss: ss: ed:	Volume IX 1.25 Prod 30 12.10 2.00 10.10	luction Deration - 1 degrees feet feet feet feet	.25	cres
MATERIAL QUANTI Total Area to Source HOURLY PRODUCT Width of Net grading of Unadjusted	TTIES o be graded or ripped: of estimated acreage: ION Average Grader Spee Selected Applicatio Selected Blade Angl Effective Blade Lengt f blade overlap per pas r ripping width per pas Hourly Unit Productio	65.88 Permit V ed: le: ss: ss: ed:	Volume IX 1.25 Prod 30 12.10 2.00 10.10 1.5303	luction Deration - 1 degrees feet feet feet feet acres/hour	.25	cres
MATERIAL QUANTI Total Area to Source HOURLY PRODUCT Width of Net grading on	TTIES o be graded or ripped: of estimated acreage: ION Average Grader Spee Selected Applicatio Selected Blade Angl Effective Blade Lengt f blade overlap per pas r ripping width per pas Hourly Unit Productio	65.88 Permit V ed: le: th: ss: ss:	Volume IX 1.25 Prod 30 12.10 2.00 10.10 1.5303	luction Deration - 1 degrees feet feet feet feet	.25	cres
MATERIAL QUANTI Total Area to Source HOURLY PRODUCT Width of Net grading of Unadjusted 1 Job Condition Correction 1	TTIES o be graded or ripped: of estimated acreage: ION Average Grader Spee Selected Applicatio Selected Blade Angl Effective Blade Lengt f blade overlap per pas r ripping width per pas Hourly Unit Productio Factors	65.88 Permit V ed: le: th: ss: ss: on: Source	Volume IX 1.25 Prod 30 12.10 2.00 10.10 1.5303 S	luction Deration - 1 degrees feet feet feet feet acres/hour	.25	cres
MATERIAL QUANTI Total Area to Source HOURLY PRODUCT Width of Net grading of Unadjusted	TIES o be graded or ripped: of estimated acreage: ION Average Grader Spee Selected Applicatio Selected Blade Angl Effective Blade Lengt f blade overlap per pas r ripping width per pas Hourly Unit Productio Factors 1.00	65.88 Permit V ed: le: th: ss: ss:	Volume IX 1.25 Prod 30 12.10 2.00 10.10 1.5303 S	luction Deration - 1 degrees feet feet feet feet acres/hour	.25	cres
MATERIAL QUANTI Total Area to Source HOURLY PRODUCT Width of Net grading of Unadjusted I Job Condition Correction I Altitude Adj:	TIES o be graded or ripped: of estimated acreage: ION Average Grader Spee Selected Applicatio Selected Blade Angl Effective Blade Lengt f blade overlap per pas r ripping width per pas Hourly Unit Productio Factors	65.88 Permit V ed: le: th: ss: ss: ss: on: Source (CAT HB)	Volume IX 1.25 Prod 30 12.10 2.00 10.10 1.5303 S	luction Deration - 1 degrees feet feet feet feet acres/hour	.25	cres
MATERIAL QUANTI Total Area to Source HOURLY PRODUCT Width of Net grading of Unadjusted I Job Condition Correction I Altitude Adj: Job Efficiency: Net Correction:	ITIES         o be graded or ripped:         of estimated acreage:         ION         Average Grader Speed         Selected Application         Selected Blade Angle         Effective Blade Length         f blade overlap per pase         Hourly Unit Production         Factors         1.00         0.85         0.8500	65.88 Permit V ed: on: le: ss: Source (CAT HB) (1sh/d, mod multiplier	Volume IX 1.25 Prod 30 12.10 2.00 10.10 1.5303 S	luction Deration - 1 degrees feet feet feet det det det det feet acres/hour	.25	cres
MATERIAL QUANTI Total Area to Source HOURLY PRODUCT Width of Net grading of Unadjusted I Job Condition Correction I Altitude Adj: Job Efficiency: Net Correction: Add	ITIES         o be graded or ripped:         of estimated acreage:         ION         Average Grader Speed         Selected Application         Selected Blade Angle         Effective Blade Length         f blade overlap per pass         r ripping width per pass         Hourly Unit Production         Factors         1.00         0.85         0.8500	65.88 Permit V ed: le: th: ss: ss: on: Source (CAT HB) (1sh/d, mod multiplier oduction:	Volume IX 1.25 Prod 30 12.10 2.00 10.10 1.5303 S ) 1.3008	luction Deration - 1         degrees         feet         feet         feet         acres/Hour	.25	cres
MATERIAL QUANTI Total Area to Source HOURLY PRODUCT Width of Net grading of Unadjusted I Job Condition Correction I Altitude Adj: Job Efficiency: Net Correction: Add	ITIES         o be graded or ripped:         of estimated acreage:         ION         Average Grader Speed         Selected Application         Selected Blade Angle         Effective Blade Length         f blade overlap per pase         Hourly Unit Production         Factors         1.00         0.85         0.8500	65.88 Permit V ed: le: th: ss: ss: on: Source (CAT HB) (1sh/d, mod multiplier oduction:	Volume IX 1.25 Prod 30 12.10 2.00 10.10 1.5303 S	luction Deration - 1 degrees feet feet feet det det det det feet acres/hour	.25	cres
MATERIAL QUANTI Total Area to Source HOURLY PRODUCT Width of Net grading of Unadjusted I Job Condition Correction I Altitude Adj: Job Efficiency: Net Correction: Add	ITIES         o be graded or ripped:         of estimated acreage:         ION         Average Grader Speed         Selected Application         Selected Blade Angle         Effective Blade Length         f blade overlap per past         ripping width per past         Hourly Unit Production         Factors         1.00         0.8500         ijusted Hourly Unit Preduction	65.88 Permit V ed: le: th: ss: ss: on: Source (CAT HB) (1sh/d, mod multiplier oduction:	Volume IX 1.25 Prod 30 12.10 2.00 10.10 1.5303 S ) 1.3008	luction Deration - 1         degrees         feet         feet         feet         acres/Hour	.25	cres

 Unit cost:
 \$117.79
 per acre
 Total job cost:
 \$7,760

Bowie No. 2 Mine	Pe	Permit Action: <u>MT5</u>			Permit/Job#: <u>C1996083</u>		
PROJECT IDENTIFI           Task #:         095           Date:         9/30/2019           User:         ZTT	CATION State: County:	Colorado Delta		Abbreviation: Filename:	None C083-095		
Agency or organ	ization name:	RMS					
HOURLY EQUIPME	NT COST						
Horsepower: 574 Blade Type: Sen Attachment: 3-sl	ni-Universal nank ripper er day						
Cost Breakdown:			Utilization %				
Ownership Cost/Hour:		\$140.61	NA				
Operating Cost/Hour: Ripper own.		\$135.35 \$18.34	100 NA				
Cost/Hour:		\$10.80	100				
Ripper op. Cost/Hour: Operator Cost/Hour:		\$10.80	NA				
Total unit Cost/Hour: Total Fleet Cost/Hour: MATERIAL QUANTI Initial Volume: 4,29 Swell factor: 1.33 Loose volume: 5,70	0						
Source of estimated volu Source of estimated swell factor:	<b>L</b>	; Operator Es book	timate				
HOURLY PRODUCT Average push distance:	<b>ION</b> 75 feet						
Unadjusted hourly production:	2,105.3 LC	Y/hr					
Materials consistency description:	Compa	cted fill or en	nbankment 0.9				
Average push gradient:	0 %						
Average site altitude:	6,000 feet						
Material weight:	2.900 lbs/LCY						

Weight description: De	ecomposed rock - 50% Rock,	50% Earth
Job Condition Correction Factor	or	Source
Operator Skill	: 0.750	(AVG.)
Material consistency	: 0.900	(CAT HB))
Dozing method	: 1.000	(GEN.)
Visibility	: 1.000	(AVG.)
Job efficiency	: 0.830	(1 SHIFT/DAY)
Spoil pile	: 0.800	(FND-RF)
Push gradient	: 1.000	(CAT HB)
Altitude	: 1.000	(CAT HB)
Material Weight	: 0.793	(CAT HB)
Blade type	: 1.000	(PAT)
Net correction	: 0.3554	
Adjusted unit production:	748.22 LCY/hr	
Adjusted fleet production:	748.22 LCY/hr	

Fleet size:	1 Dozer(s)	
Unit cost:	\$0.463/LCY	

Total job time:	7.63 Hours
Total job cost:	\$2,641

Bowie No. 2 Mine	Permit Act	ion: MT5	Permit/Jo	ob#: <u>C199608</u>
PROJECT IDENTIFI	<u>CATION</u>			
Task #: 096	State: Colora	ado	Abbreviation:	None
Date: <u>9/30/2019</u>	County: Delta		Filename:	C083-096
User: ZTT Agency or organ	ization name: DRMS			
HOURLY EQUIPME Basic Machine: Cat	1 COST 2 D10T - 10SU			
Horsepower: 574				
	ni-Universal			
	hank ripper			
	er day			
Data Source: (CF	<i>v</i>			
Cost Breakdown:				
		Utilization %		
Ownership Cost/Hour:	\$140.6			
Operating Cost/Hour:	\$135.3	35 100		
Ripper own. Cost/Hour:	\$18.3	34 NA		
Ripper op. Cost/Hour:	\$0.0	0 00		
Operator Cost/Hour:	\$41.2	24 NA		
Total unit Cost/Hour:	\$335.53			
Total Fleet Cost/Hour:	\$335.53 \$335.53			
MATERIAL QUANT	ITIES			
Initial Volume: 5,33				
Swell factor: 1.33				
	4 LCY			
Source of estimated volu	<u> </u>	or Estimate		
Source of estimated swe factor:	ll Cat Handbook			
lactor.				
HOURLY PRODUCT	ION			
Average push distance:	100 feet			
Unadjusted hourly production:	1,718.9 LCY/hr			
Materials consistency description:	Compacted fill	or embankment 0.9		
Average push gradient:	0 %			
Average site altitude:	6,000 feet			
Matarial waight	2 000 lbs/I CV			
Material weight:	2,900 lbs/LCY			

Weight description:	ecomposed rock - 50% Rock	, 50% Earth
Job Condition Correction Factor	or	Source
Operator Skill	: 0.750	(AVG.)
Material consistency	: 0.900	(CAT HB))
Dozing method	: 1.000	(GEN.)
Visibility	: 1.000	(AVG.)
Job efficiency	: 0.830	(1 SHIFT/DAY)
Spoil pile	: 0.800	(FND-RF)
Push gradient	: 1.000	(CAT HB)
Altitude	: 1.000	(CAT HB)
Material Weight	: 0.793	(CAT HB)
Blade type	: 1.000	(PAT)
Net correction	: 0.3554	
production:	610.90 LCY/hr	
Adjusted fleet production:	610.9 LCY/hr	

Fleet size:	1 Dozer(s)	
Unit cost:	\$0.549/LCY	

Total job time:	11.61 Hours
Total job cost:	\$3,896

Task description:	Backfi	ll and Reg	rade Gob P	ile Pond D		
Site: Bowie No. 2 Mine		Permit Action: <u>MT5</u>			Permit/Jo	ob#: <u>C1996083</u>
PROJECT IDENTIF	CATION	<u>N</u>				
Task #:       097         Date:       9/30/2019         User:       ZTT		State: County:	Colorado Delta		Abbreviation: Filename:	None C083-097
Agency or organ	nization na	me: DR	MS			
HOURLY EQUIPME	NT COS	<u>T</u>				
Horsepower: 57- Blade Type: Ser Attachment: 3-s Shift Basis: 1 p	t D10T - 10 4 mi-Univers hank rippe her day RG)	sal				
Cost Breakdown:			1	-		
Ownership Cost/Hour: Operating Cost/Hour:			\$140.61 \$135.35	Utilization % NA 100		
Ripper own.			\$18.34	NA		
Cost/Hour: Ripper op. Cost/Hour:			\$0.00	0		
Operator Cost/Hour:			\$41.24	NA		
Total unit Cost/Hour: Total Fleet Cost/Hour: <u>MATERIAL QUANT</u> Initial Volume: <u>3,75</u> Swell factor: <u>1.33</u> Loose volume: <b>4,99</b>	59					
Source of estimated vol Source of estimated swe factor:		Map 9526 Cat Handl	6-04; Opera book	tor Estimate		
HOURLY PRODUCT	TION					
Average push distance: Unadjusted hourly production:		00 feet ,718.9 LCY	ℓ/hr			
Materials consistency description:		Compac	cted fill or er	nbankment 0.9		
Average push gradient:	0 %					
Average site altitude:	6,000 fe	et				
Material weight:	2,900 lb	os/LCY				

Weight description:	ecomposed rock - 50% Roc	k, 50% Earth
Job Condition Correction Fac	tor	Source
Operator Skil	1: 0.750	(AVG.)
Material consistency	y: 0.900	(CAT HB))
Dozing method	1: 1.000	(GEN.)
Visibilit	y: <u>1.000</u>	(AVG.)
Job efficiency	y: 0.830	(1 SHIFT/DAY)
Spoil pile	e: 0.800	(FND-RF)
Push gradien	t: 1.000	(CAT HB)
Altitude	e: 1.000	(CAT HB)
Material Weigh	t: 0.793	(CAT HB)
Blade type	e: 1.000	(PAT)
Net correction	n: 0.3554	
Adjusted unit production:	610.90 LCY/hr	
Adjusted fleet production:	610.9 LCY/hr	

Fleet size:	1 Dozer(s)	
Unit cost:	\$0.549/LCY	

Total job time:	8.18 Hours
Total job cost:	\$2,746

	Permit Action:	MT5	Permit/Job#: C19960	
PROJECT IDENTIFI           Task #:         098           Date:         9/30/2019           User:         ZTT	State: Colorado County: Delta		Abbreviation: Filename:	None C083-098
Agency or organ				
Horsepower: 574 Blade Type: Sen Attachment: 3-sl	D10T - 10SU ni-Universal nank ripper er day	- - - - -		
Ownership Cost/Hour:	\$140.61	<u>Utilization %</u> NA		
Operating Cost/Hour:	\$135.35	100		
Ripper own. Cost/Hour:	\$18.34	NA		
Ripper op. Cost/Hour:	\$0.00	0		
Operator Cost/Hour:	\$41.24	NA		
	0 5 1 LCY			
	·	on Estimate		
Source of estimated volu Source of estimated swe factor:				
Source of estimated swell				
Source of estimated swell factor:				
Source of estimated swe factor: HOURLY PRODUCT Average push distance: Unadjusted hourly	<u>ION</u> 100 feet	  nbankment 0.9		
Source of estimated swelfactor: <b>HOURLY PRODUCT</b> Average push distance: Unadjusted hourly production: Materials consistency description: Average push gradient:	<u>100 feet</u> 1,718.9 LCY/hr	nbankment 0.9		
Source of estimated swelfactor: <b>HOURLY PRODUCT</b> Average push distance: Unadjusted hourly production: Materials consistency description: Average push	ION 100 feet 1,718.9 LCY/hr Compacted fill or en	nbankment 0.9		

Weight description: Dec	composed rock - 50% Rock,	50% Earth
Job Condition Correction Facto	<u>r</u>	Source
Operator Skill:	0.750	(AVG.)
Material consistency:	0.900	(CAT HB))
Dozing method:	1.000	(GEN.)
Visibility:	1.000	(AVG.)
Job efficiency:	0.830	(1 SHIFT/DAY)
Spoil pile:	0.800	(FND-RF)
Push gradient:	1.000	(CAT HB)
Altitude:	1.000	(CAT HB)
Material Weight:	0.793	(CAT HB)
Blade type:	1.000	(PAT)
Net correction:	0.3554	
Adjusted unit for the formation of the f	510.90 LCY/hr	
Adjusted fleet fleet 6	510.9 LCY/hr	

Fleet size:	1 Dozer(s)	
Unit cost:	\$0.549/LCY	

Total job time:	10.87 Hours
Total job cost:	\$3,647

Bowie No. 2 Mine	Per	Permit Action: <u>MT5</u>		Permit/Job#: C199608	
PROJECT IDENTIFI	CATION				
Task #: 099	State:	Colorado		Abbreviation:	None
Date: <u>9/30/2019</u>	County:	Delta		Filename:	C083-099
User: <u>ZTT</u> Agency or organ	nization name: DR	MS			
HOURLY EQUIPME					
Basic Machine: Cat Horsepower: 574	t D10T - 10SU				
1	+ ni-Universal				
VI	hank ripper				
	er day				
	RG)				
Cost Breakdown:					
			<u>Utilization %</u>		
Ownership Cost/Hour:		\$140.61	NA		
Operating Cost/Hour:		\$135.35	100		
Ripper own. Cost/Hour:		\$18.34	NA		
Ripper op. Cost/Hour:		\$0.00	0		
Operator Cost/Hour:		\$41.24	NA		
Total unit Cost/Hour:	\$335.53				
Total Fleet Cost/Hour:	\$335.53 \$335.53				
MATERIAL QUANT	ITIES				
Initial Volume: 11,3	20				
Swell factor: 1.33		-			
	56 LCY	_			
Source of estimated volu		– On anoton Esti	imata		
Source of estimated voit Source of estimated swe		Operator Esti	Imate		
factor:		JOOK			
nuctor.	. <u></u>				
HOURLY PRODUCT	ION				
Average push distance:	100 feet				
Unadjusted hourly	1,718.9 LC	//hr			
production:	1,710.7 LC	1/111			
-			-		
Materials consistency description:	Compa	cted fill or en	bankment 0.9		
ucsemption.					
Average push	0 %				
gradient:					
Average site altitude:	5,900 feet				
	2,900 lbs/LCY				
Material weight:					

Weight description:	Decomposed rock - 50% Roc	k, 50% Earth
Job Condition Correction Fac	tor	Source
Operator Skil	1: 0.750	(AVG.)
Material consistence	y: 0.900	(CAT HB))
Dozing metho	d: 1.000	(GEN.)
Visibilit	y:1.000	(AVG.)
Job efficienc	y: 0.830	(1 SHIFT/DAY)
Spoil pil	e: 0.800	(FND-RF)
Push gradien	t: 1.000	(CAT HB)
Altitud	e: 1.000	(CAT HB)
Material Weigh	t: 0.793	(CAT HB)
Blade typ	e: 1.000	(PAT)
Net correction	n: 0.3554	
Adjusted unit production:	610.90 LCY/hr	
Adjusted fleet production:	610.9 LCY/hr	

Fleet size:	1 Dozer(s)	
Unit cost:	\$0.549/LCY	-

Total job time:	<b>24.64</b> Hours
Total job cost:	\$8,269

Bowie No. 2 Mine			Permit/Jo	ermit/Job#: <u>C1996083</u>	
PROJECT IDENTIFIC         Task #:       100         Date:       9/30/2019         User:       ZTT         Agency or organ	State: Colorado County: Delta		Abbreviation: Filename:	None C083-100	
HOURLY EQUIPMEN					
Basic Machine: Cat Horsepower: 574 Blade Type: Sen Attachment: 3-sh Shift Basis: 1 pe Data Source: (CR <u>Cost Breakdown</u> : Ownership Cost/Hour: Operating Cost/Hour:	D10T - 10SU ni-Universal nank ripper er day				
Ripper own. Cost/Hour: Ripper op. Cost/Hour: Operator Cost/Hour:	\$18.34 \$0.00 \$41.24	NA 0 NA			
Total unit Cost/Hour: Total Fleet Cost/Hour: <u>MATERIAL QUANTI</u> Initial Volume: 700 Swell factor: 1.330 Loose volume: 931	)				
Source of estimated volu Source of estimated swel factor:	1 Cat Handbook	stimate			
HOURLY PRODUCT: Average push distance: Unadjusted hourly production:	<u>100 feet</u> 1,718.9 LCY/hr				
Materials consistency description:	Compacted fill or en	mbankment 0.9			
Average push gradient:	0 %				
Average site altitude:	5,900 feet				
Material weight:	2,900 lbs/LCY				

Weight description: De	ecomposed rock - 50% Roc	ck, 50% Earth
Job Condition Correction Factor	<u>)r</u>	Source
Operator Skill	0.750	(AVG.)
Material consistency:	0.900	(CAT HB))
Dozing method:	1.000	(GEN.)
Visibility	1.000	(AVG.)
Job efficiency:	0.830	(1 SHIFT/DAY)
Spoil pile	. 0.800	(FND-RF)
Push gradient	1.000	(CAT HB)
Altitude	1.000	(CAT HB)
Material Weight	0.793	(CAT HB)
Blade type:	1.000	(PAT)
Net correction	0.3554	
Adjusted unit production:	610.90 LCY/hr	
Adjusted fleet production:	610.9 LCY/hr	

Fleet size:	1 Dozer(s)
Unit cost:	\$0.549/LCY

Total job time:	1.52 Hours
Total job cost:	\$511

# HYDRAULIC EXCAVATOR WORK

Excavate for Pos	t-mining (	Channel at B-Se	am Portals		
Per	mit Action	: MT5		Permit/Job#: C1996083	
CATION					
County:	Colorado Delta			reviation: None Filename: C083-101	
	MS				
	Stick		Horsepower: Weight (MT): Shift Basis: Data Source:	404 70.51 1 per day (CRG)	
	I	TT:'1' 0/			
		NA	_		
our: \$37.27		NA			
our: \$283.7	7				
lour: \$567.	54				
0 8 estimated volume:		n of Reclamation		ety	
	Cat Han	Iddook			
	led. dump	bucket, swing er	npty):		
-	-	•		2F	
		in Basic Descrip	otion: SEVER	RE	
		Cycle Time V	alue: 0.570	minutes	
			Bucket Size (	Class: Small	
			DUCKET SIZE		
3.61 0.850 <b>3.07</b>		eaped) ough clay (80% -			
0.850 <b>3.07</b>	_	ough clay (80% -	90%) 0.850	0 feet	
0.850	Hard, to LCY	ough clay (80% - Si		<u>0</u> feet	
0.850 3.07 actors	Hard, to LCY Source (CAT H	ough clay (80% - Si e (B)	90%) 0.850	<u>0</u> feet	
0.850 3.07 actors	Hard, to LCY Source	si e B) lay)	90%) 0.850	<u>0</u> feet	
0.850 3.07 actors 1.00 0.83	Hard, to LCY Source (CAT H (1 shift/d multiplie Production:	Si e (B) (ay) er 323.00	90%) 0.850		
	Per CATION  Cat 365C L 13'-7" Cat 365C L 13'-7" Cat 365C L 13'-7" COPS Cab  DUT: \$125.1 DUT: \$125.1 DUT: \$125.1 DUT: \$37.2 DUT: \$283.7 Cour: \$567.  CIES D 8 estimated volume: nated swell factor: CN 1 bucket, swing load B	Permit Action Pe	Permit Action: <u>MT5</u> <u>ATION</u> <u>State: Colorado</u> <u>County: Delta</u> <u>ation name: DRMS</u> <u>T COST</u> <u>Cat 365C L 13'-7" Stick</u> <u>AOPS Cab</u> <u>Utilization % NA Dur: \$125.13 100 Dur: \$37.27 NA Dur: \$283.77 Dur: \$283.77 Cour: \$567.54 <u>CIES</u> <u>O</u> CCY Swell fac <u>Basic Job Condition Descrip</u> Secondary Job Condition within Basic Descrip</u>	CATION         State:       Colorado       Abbr         County:       Delta       H         zation name:       DRMS       H         zation name:       DRMS       Horsepower:         Cat 365C L 13'-7" Stick       Horsepower:       Weight (MT):         Cat 365C L 13'-7" Stick       Horsepower:       Weight (MT):         Shift Basis:       Data Source:       Data Source:         Dur:       \$125.13       100         pur:       \$125.13       100         pur:       \$283.77       NA         pur:       \$567.54       E         CY       Swell factor:       1.165         8       CY       Swell factor:       1.165         8       LCY       Stafe       E         Match Swell factor:       Division of Reclamation, Mining & Safe       Safe         nated swell factor:       Division of Reclamation, Mining & Safe       Safe         Match Swing loaded, dump bucket, swing empty):       Basic Job Condition Description:       SEVEH	
Fleet size:	2	Excavator	Total job time:	0.63	Hours
-------------	---------	-----------	-----------------	-------	-------
Unit cost:	\$1.058	/LCY	Total job cost:	\$358	

### Post-Mining Drainage Channel Construction (Ditches)

Task descrip	Task description:       Install Riprap, Gravel, and Geotextile in B-Seam Channel						
Site: Bowie No	ite: Bowie No. 2 Mine		Permit Action: <u>MT5</u> Permit/Jo			b#: <u>C1996083</u>	
<b>PROJECT</b>	<b>IDENTIFIC</b>	ATION					
Task #:	102	State	: Colorado			Abbreviation:	None
Date:	9/30/2019	County	: Delta			Filename:	C083-102
User:	ZTT						
Channel	Length	Depth (ft)	Width (bottom) (ft)	Side Slopes (XH:1V)	Width (top) (ft)	Excavated Vol./LF (CY)	Excavated Vol. (total)
	()		()	()	()	()	(CY)
C/F	150	6.00	5.00	5.00	65.00	7.7778	1,167
Totals:	150						1,167

	(2xD50) (ft)		anchor trenches)	
			(sf)	
	0.00	66.19	9,928	0
Totals:			9,928	0

#### Materials Needed:

		wastage):         1,26           orap (CY):         0           tion (CY):         1,16					
Costs:							
	Material Costs: Labor Cost: Equipment Cost: Means Reference	Geotextile (SY):	\$1.77 \$0.27 \$0.00	Riprap (CY):	\$31.50 \$12.70 \$14.65	Excavation (CY): 31 23 1642 0310	\$0.00 \$2.46 \$1.39
<u>Totals:</u>							
	Geotextile (SY): Riprap (CY): Excavation (CY):	\$2,587.96 \$0.00 \$4,491.67					
Hours:							
	Geotextile (SY): 87.50 SY/HR	14.50					
	Riprap (CY): 7.75 CY/HR	0.00					
	Excavation (CY): 40.00 CY/HR	29.17					
	Total Post-Mining C	Channel Reconstruction	n hours:	43.67	Hours		

Total Post-Mining Channel Reconstruction hours:	43.67	Hour
Total Post-Mining Channel Reconstruction Cost:	\$7,080	_

#### BOREHOLE SEALING WORK

Task description:

Plug and seal AW-15

Site: Bowie No. 2 Mine

Permit Action: MT5

#### **PROJECT IDENTIFICATION**

Task #:	106AG	State:	Colorado	Abbreviation:	None
Date:	9/30/2019	County:	Delta	Filename:	C083-106ag
User:	ZTT	-		-	

Agency or organization name: DRMS

### **UNIT COSTS**

Borehole Description	Sealing/Item Method	Diameter	Length	Quantity	Unit	Unit Cost	Total Cost
Fill holes with cement	Portland cement grout ( Bag, material cost only94 lb. bag)	3	86	3.58	bag	\$13.40	\$47.97
Cut casings	Exposed casing removal - Calculate Circumference in Linear Feet	3	NA	0.30	LF	\$3.26	\$0.98
Borehole markers	Borehole location/identification marker (EA, material cost only)	NA	NA	1.00	EA	\$32.00	\$32.00
Drill Rig time	Truck Mounted - 3.0 in. - 1,700 ft. capy.	NA	NA	6.00	EA	\$131.35	\$788.10
WaterTruck	Water Tanker, 3,500 Gal.	NA	NA	6.00	EA	\$63.55	\$381.30

Job Hours: 6.00

Total Cost: \$1,250.00

#### BOREHOLE SEALING WORK

	Task description:	Plug and seal AW16		
Site:	Bowie No. 2 Mine	Permit Action: MT5	Permit/Job#:	C1996083
PROJE	ECT IDENTIFICATION	<u>N</u>		

Task #:	106AH	State:	Colorado	Abbreviation:	None
Date:	9/30/2019	County:	Delta	Filename:	C083-106ah
User:	ZTT	_			

Agency or organization name: DRMS

#### **UNIT COSTS**

Borehole Description	Sealing/Item Method	Diameter	Length	Quantity	Unit	Unit Cost	Total Cost
Fill holes with cement	Portland cement grout ( Bag, material cost only94 lb. bag)	3	75	3.12	bag	\$13.40	\$41.81
Cut casings	Exposed casing removal - Calculate Circumference in Linear Feet	3	NA	0.30	LF	\$3.26	\$0.98
Borehole markers	Borehole location/identification marker (EA, material cost only)	NA	NA	1.00	EA	\$32.00	\$32.00
Drill Rig time	Truck Mounted - 3.0 in. - 1,700 ft. capy.	NA	NA	6.00	EA	\$131.35	\$788.10
WaterTruck	Water Tanker, 3,500 Gal.	NA	NA	6.00	EA	\$63.55	\$381.30

Job Hours: 6.00

Total Cost: \$1,244.00

#### BOREHOLE SEALING WORK

Site: Bowie No. 2 Mine

Permit Action: MT5

Plug and seal AW-17

Permit/Job#: C1996083

#### **PROJECT IDENTIFICATION**

Task description:

Task #:	106AI	State:	Colorado	Abbreviation:	None
Date:	9/30/2019	County:	Delta	Filename:	C083-106ai

Agency or organization name: DRMS

### **UNIT COSTS**

Borehole Description	Sealing/Item Method	Diameter	Length	Quantity	Unit	Unit Cost	Total Cost
Fill holes with cement	Portland cement grout ( Bag, material cost only94 lb. bag)	3	62	2.58	bag	\$13.40	\$34.57
Cut casings	Exposed casing removal - Calculate Circumference in Linear Feet	3	NA	0.30	LF	\$3.26	\$0.98
Borehole markers	Borehole location/identification marker (EA, material cost only)	NA	NA	1.00	EA	\$32.00	\$32.00
Drill Rig time	Truck Mounted - 3.0 in. - 1,700 ft. capy.	NA	NA	6.00	EA	\$131.35	\$788.10
WaterTruck	Water Tanker, 3,500 Gal.	NA	NA	6.00	EA	\$63.55	\$381.30

Job Hours: 6.00

Total Cost: \$1,237.00

#### BOREHOLE SEALING WORK

ite: <u>B</u>	owie No. 2 Mine	Permit Action: MT5	Permit/Job#: <u>C1996083</u>
OJECT	<u> IDENTIFICATI</u>	<u>ON</u>	
Task #:	106AJ	State: Colorado	Abbreviation: None
Date:	9/30/2019	County: Delta	Filename: C083-106aj
Date.			

# UNIT COSTS

Borehole Description	Sealing/Item Method	Diameter	Length	Quantity	Unit	Unit Cost	Total Cost
Fill holes with cement	Portland cement grout ( Bag, material cost only94 lb. bag)	2	16.5	0.31	bag	\$13.40	\$4.15
Cut casings	Exposed casing removal - Calculate Circumference in Linear Feet	2	NA	0.20	LF	\$3.26	\$0.65
Borehole markers	Borehole location/identification marker (EA, material cost only)	NA	NA	1.00	EA	\$32.00	\$32.00
Drill Rig time	Truck Mounted - 3.0 in. - 1,700 ft. capy.	NA	NA	4.00	EA	\$131.35	\$525.40
WaterTruck	Water Tanker, 3,500 Gal.	NA	NA	4.00	EA	\$63.55	\$254.20

Job Hours: 4.00

Total Cost: \$816.00

#### BOREHOLE SEALING WORK

Tas	k description:	Plug and seal BD-103			
Site: B	owie No. 2 Mine	Permit Action:	MT5	Permit	/Job#: <u>C1996083</u>
<u>ROJECI</u>	<u>IDENTIFICAT</u>	ION			
Task #:	106AK 9/30/2019	State: <u>Colorado</u>		Abbreviation: 	None C083-106ak
Date: User:	2019 ZTT	County: Delta		Filename:	C083-100ak

Borehole Description	Sealing/Item Method	Diameter	Length	Quantity	Unit	Unit Cost	Total Cost
Fill holes with cement	Portland cement grout ( Bag, material cost only94 lb. bag)	2	53	0.98	bag	\$13.40	\$13.13
Cut casings	Exposed casing removal - Calculate Circumference in Linear Feet	2	NA	0.50	LF	\$3.26	\$1.63
Borehole markers	Borehole location/identification marker (EA, material cost only)	NA	NA	1.00	EA	\$32.00	\$32.00
Drill Rig time	Truck Mounted - 3.0 in. - 1,700 ft. capy.	NA	NA	6.00	EA	\$131.35	\$788.10
WaterTruck	Water Tanker, 3,500 Gal.	NA	NA	6.00	EA	\$63.55	\$381.30

Job Hours: 6.00

Total Cost: \$1,216.00

#### BOREHOLE SEALING WORK

Tas	k description:	Plug and se	al BD-105					
Site: B	owie No. 2 Mine		Permit Action:	MT5		Permit	t/Job#:	C1996083
<b>PROJECT</b>	<u>IDENTIFICATIO</u>	<u>DN</u>						
Task #: Date: User:	106AL 9/30/2019 ZTT	State: County:	Colorado Delta			eviation: Filename:	None C083-1	06al
	Agency or organiz	ation name:	DRMS					
<u>UNIT CO</u>	<u>STS</u>							
Borehole Descriptio	0	em Method	Diameter	Length	Quantity	Unit		Total Cost

						Unit Cost	
Fill holes with	Portland cement grout (	2	107	1.98	bag	\$13.40	\$26.53
cement	Bag, material cost						
	only94 lb. bag)						
Cut casings	Exposed casing removal	2	NA	0.50	LF	\$3.26	\$1.63
	- Calculate						
	Circumference in Linear						
	Feet						
Borehole markers	Borehole	NA	NA	1.00	EA	\$32.00	\$32.00
	location/identification						
	marker (EA, material						
	cost only)						
Drill Rig time	Truck Mounted - 3.0 in.	NA	NA	7.00	EA	\$131.35	\$919.45
	- 1,700 ft. capy.						
WaterTruck	Water Tanker, 3,500	NA	NA	7.00	EA	\$63.55	\$444.85
	Gal.						

Job Hours: 7.00

Total Cost: \$1,424.00

#### BOREHOLE SEALING WORK

Т	ask description:	Plug and seal B	3D-105A		
Site:	Bowie No. 2 Mine	Per	mit Action: MT5	Permi	t/Job#: <u>C1996083</u>
<u>PROJEC</u>	T IDENTIFICATI	<u>ON</u>			
Task #: Date: User:	9/30/2019		Colorado Delta	Abbreviation: Filename:	None C083-106am
	Agency or organ	ization name: DR	MS		
<u>UNIT C</u>	<u>OSTS</u>				
Borehol	e Sealing/	Item Method			

Borehole	Sealing/Item Method						
Description	-	Diameter	Length	Ouantity	Unit	Unit	Total Cost
···· <b>·</b> · · ·			. 8.			Cost	

Fill holes with cement	Portland cement grout ( Bag, material cost only94 lb. bag)	2	38.5	0.71	bag	\$13.40	\$9.51
Cut casings	Exposed casing removal - Calculate Circumference in Linear Feet	2	NA	0.50	LF	\$3.26	\$1.63
Borehole markers	Borehole location/identification marker (EA, material cost only)	NA	NA	1.00	EA	\$32.00	\$32.00
Drill Rig time	Truck Mounted - 3.0 in. - 1,700 ft. capy.	NA	NA	6.00	EA	\$131.35	\$788.10
WaterTruck	Water Tanker, 3,500 Gal.	NA	NA	6.00	EA	\$63.55	\$381.30

Job Hours: 6.00

Total Cost: \$1,213.00

### BOREHOLE SEALING WORK

Site: B	owie No. 2 Mine		Permit Action:	MT5	Permit	/Job#:	C1996083
ROJECT	<u> IDENTIFICATI</u>	ON					
Task #:	106AN	State:	Colorado		Abbreviation:	None	
Date:	9/30/2019	County:	Delta		Filename:	C083	-106an
User:	ZTT						

Borehole Description	Sealing/Item Method	Diameter	Length	Quantity	Unit	Unit Cost	Total Cost
Fill holes with cement	Portland cement grout ( Bag, material cost only94 lb. bag)	2	30	0.55	bag	\$13.40	\$7.37

Cut casings	Exposed casing removal - Calculate Circumference in Linear Feet	2	NA	0.50	LF	\$3.26	\$1.63
Borehole markers	Borehole location/identification marker (EA, material cost only)	NA	NA	1.00	EA	\$32.00	\$32.00
Drill Rig time	Truck Mounted - 3.0 in. - 1,700 ft. capy.	NA	NA	6.00	EA	\$131.35	\$788.10
WaterTruck	Water Tanker, 3,500 Gal.	NA	NA	6.00	EA	\$63.55	\$381.30

 Job Hours:
 6.00
 Total Cost:
 \$1,210.00

### BOREHOLE SEALING WORK

r	Task description:	Plug and seal BL-101A		
Site:	Bowie No. 2 Mine	Permit Action: <u>M</u>	T5         Permit/Job#:         C1996083	
<u>PROJE</u>	CT IDENTIFICATION	<u>1</u>		
Task ‡	#: 106AO	State: Colorado	Abbreviation: None	

$1 ask \pi$ .	IUUAO	State.	Colorado	AUDIEVIATION.	NONE
Date:	9/30/2019	County:	Delta	Filename:	C083-106ao
User:	ZTT				

Agency or organization name: DRMS

Borehole	Sealing/Item Method					<b>T</b> T <b>1</b> /	
Description		Diameter	Length	Quantity	Unit	Unit Cost	Total Cost
Fill holes with	Portland cement grout (	2	29	0.54	bag	\$13.40	\$7.24
cement	Bag, material cost						
	only94 lb. bag)						
Cut casings	Exposed casing removal	2	NA	0.50	LF	\$3.26	\$1.63
	- Calculate						

	Circumference in Linear Feet						
Borehole markers	Borehole location/identification marker (EA, material cost only)	NA	NA	1.00	EA	\$32.00	\$32.00
Drill Rig time	Truck Mounted - 3.0 in. - 1,700 ft. capy.	NA	NA	6.00	EA	\$131.35	\$788.10
WaterTruck	Water Tanker, 3,500 Gal.	NA	NA	6.00	EA	\$63.55	\$381.30

Job Hours: 6.00

Total Cost: \$1,210.00

#### BOREHOLE SEALING WORK

Ta	sk description:	Plug and seal BL-102				
Site: B	owie No. 2 Mine	Permit Action:	MT5	Permit	/Job#:	C1996083
PROJECT	<u> IDENTIFICATION</u>	<u>1</u>				
Task #: Date: User:	106AP 9/30/2019 ZTT	State:ColoradoCounty:Delta		Abbreviation: Filename:	None C083-	106ap
0.0011	Agency or organizat	tion name: DRMS				

Borehole Description	Sealing/Item Method	Diameter	Length	Quantity	Unit	Unit Cost	Total Cost
Fill holes with cement	Portland cement grout ( Bag, material cost only94 lb. bag)	2	34	0.63	bag	\$13.40	\$8.44
Cut casings	Exposed casing removal - Calculate Circumference in Linear Feet	2	NA	0.50	LF	\$3.26	\$1.63

Borehole markers	Borehole	NA	NA	1.00	EA	\$32.00	\$32.00
	location/identification						
	marker (EA, material						
	cost only)						
Drill Rig time	Truck Mounted - 3.0 in.	NA	NA	6.00	EA	\$131.35	\$788.10
	- 1,700 ft. capy.						
WaterTruck	Water Tanker, 3,500	NA	NA	6.00	EA	\$63.55	\$381.30
	Gal.						

Job Hours: 6.00 Te

Total Cost: \$1,211.00

#### BOREHOLE SEALING WORK

Та	sk description:	Plug and sea	al BL-102A			
Site: B	Bowie No. 2 Mine		Permit Action:	MT5	Permit	/Job#: <u>C1996083</u>
PROJEC ⁷	<u> TIDENTIFICATION</u>	<u>1</u>				
Task #:	106AQ	State:	Colorado		Abbreviation:	None
Date:	9/30/2019	County:	Delta		Filename:	C083-106aq
User:	ZTT					
	Agency or organization	tion name:	DRMS			

Borehole Description	Sealing/Item Method	Diameter	Length	Quantity	Unit	Unit Cost	Total Cost
Fill holes with cement	Portland cement grout ( Bag, material cost only94 lb. bag)	2	29	0.54	bag	\$13.40	\$7.24
Cut casings	Exposed casing removal - Calculate Circumference in Linear Feet	2	NA	0.50	LF	\$3.26	\$1.63
Borehole markers	Borehole location/identification	NA	NA	1.00	EA	\$32.00	\$32.00

	marker (EA, material cost only)						
Drill Rig time	Truck Mounted - 3.0 in. - 1,700 ft. capy.	NA	NA	6.00	EA	\$131.35	\$788.10
WaterTruck	Water Tanker, 3,500 Gal.	NA	NA	6.00	EA	\$63.55	\$381.30

Job Hours: 6.00

Total Cost: \$1,210.00

#### BOREHOLE SEALING WORK

Т	Task description:	Plug and sea	al GVB-6A				
Site:	Bowie No. 2 Mine		Permit Action:	MT5	Permit	/Job#: <u>C1996083</u>	
<u>PROJEC</u>	CT IDENTIFICATION	<u>N</u>					
Task # Date User	: 9/30/2019	State: County:	Colorado Delta		Abbreviation: Filename:	None C083-106bb	
	Agency or organiza	tion name:	DRMS				

Borehole Description	Sealing/Item Method	Diameter	Length	Quantity	Unit	Unit Cost	Total Cost
Bottom Plug	PVC plug - 8 in. diameter borehole	7.625	NA	1.00	EA	\$80.77	\$80.77
Fill holes with cement	Portland cement grout ( Bag, material cost only94 lb. bag)	7.625	700	188.11	bag	\$13.40	\$2,520.67
Cut casings	Exposed casing removal - Calculate Circumference in Linear Feet	7.625	NA	2.00	LF	\$3.26	\$6.52
Borehole markers	Borehole location/identification	NA	NA	1.00	EA	\$32.00	\$32.00

	marker (EA, material cost only)						
Drill Rig time	Truck Mounted - 3.0 in. - 1,700 ft. capy.	NA	NA	11.00	EA	\$131.35	\$1,444.85
WaterTruck	Water Tanker, 3,500 Gal.	NA	NA	11.00	EA	\$63.55	\$699.05

Job Hours: 11.00

Total Cost: \$4,784.00

#### BOREHOLE SEALING WORK

Site: B	owie No. 2 Mine	Permit Action:	MT5	Permit	/Job#:	C1996083
<u>ROJEC</u>	<u> IDENTIFICATI</u>	<u>ON</u>				
Task #:	106CN	State: Colorado		Abbreviation:	None	
Date:	9/30/2019	County: Delta		Filename:	C083	-106cn
	ZTT					

Borehole Description	Sealing/Item Method	Diameter	Length	Quantity	Unit	Unit Cost	Total Cost
Bottom Plug	PVC plug - 10 in. diameter borehole	10	NA	1.00	EA	\$110.66	\$110.66
Fill holes with cement	Portland cement grout ( Bag, material cost only94 lb. bag)	10	520	240.35	bag	\$13.40	\$3,220.69
Cut casings	Exposed casing removal - Calculate Circumference in Linear Feet	10	NA	2.50	LF	\$3.26	\$8.15
Borehole markers	Borehole location/identification marker (EA, material cost only)	NA	NA	1.00	EA	\$32.00	\$32.00

Drill Rig time	Truck Mounted - 3.0 in. - 1.700 ft. capy.	NA	NA	10.00	EA	\$131.35	\$1,313.50
WaterTruck	Water Tanker, 3,500	NA	NA	10.00	EA	\$63.55	\$635.50
	Gal.						

Job Hours:	10.00	Total Cost:	\$5,320.00
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	Task description:	Plug and seal MR133 Utilit	y Hole #2			
Site:	Bowie No. 2 Mine	Permit Action:	MT5	Permit/Job#:	C1996083	
<u>PROJI</u>	ECT IDENTIFICATION	<u>N</u>				

Task #:	106CO	State:	Colorado	Abbreviation:	None
Date:	9/30/2019	County:	Delta	Filename:	С083-106со
User:	ZTT				

Agency or organization name: DRMS

Borehole Description	Sealing/Item Method	Diameter	Length	Quantity	Unit	Unit Cost	Total Cost
Bottom Plug	PVC plug - 10 in. diameter borehole	10	NA	1.00	EA	\$110.66	\$110.66
Fill holes with cement	Portland cement grout ( Bag, material cost only94 lb. bag)	10	520	240.35	bag	\$13.40	\$3,220.69
Cut casings	Exposed casing removal - Calculate Circumference in Linear Feet	10	NA	2.50	LF	\$3.26	\$8.15
Borehole markers	Borehole location/identification marker (EA, material cost only)	NA	NA	1.00	EA	\$32.00	\$32.00
Drill Rig time	Truck Mounted - 3.0 in. - 1,700 ft. capy.	NA	NA	10.00	EA	\$131.35	\$1,313.50

WaterTruck	Water Tanker, 3,500 Gal.	NA	NA	10.00	EA	\$63.55	\$635.50

Job Hours:	10.00	Total Cost:	\$5,320.00
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	Task description:   Plug and seal MR133 Utility Hole #3							
Site:	Bowie No. 2 Mine	Permit Actio	on: MT5	Permit/J	ob#: <u>C1996083</u>			
<u>PROJE</u>	<u>CT IDENTIFICATI</u>	<u>ON</u>						
Task	#: 106CP	State: Colorado		Abbreviation:	None			
Dat	e: 9/30/2019	County: Delta		Filename:	С083-106ср			
Use	er: ZTT							

Agency or organization name: DRMS

Borehole Description	Sealing/Item Method	Diameter	Length	Quantity	Unit	Unit Cost	Total Cost
Bottom Plug	PVC plug - 10 in. diameter borehole	10	NA	1.00	EA	\$110.66	\$110.66
Fill holes with cement	Portland cement grout ( Bag, material cost only94 lb. bag)	10	540	240.35	bag	\$13.40	\$3,220.69
Cut casings	Exposed casing removal - Calculate Circumference in Linear Feet	10	NA	2.50	LF	\$3.26	\$8.15
Borehole markers	Borehole location/identification marker (EA, material cost only)	NA	NA	1.00	EA	\$32.00	\$32.00
Drill Rig time	Truck Mounted - 3.0 in. - 1,700 ft. capy.	NA	NA	10.00	EA	\$131.35	\$1,313.50
WaterTruck	Water Tanker, 3,500 Gal.	NA	NA	10.00	EA	\$63.55	\$635.50

Job Hours: 10.00

#### BOREHOLE SEALING WORK

Та	ask description:	Plug and sea	l MR133 Utilit	y Hole #4			
Site: _]	Bowie No. 2 Mine	]	Permit Action:	MT5	Permit	/Job#: <u>C1996083</u>	
<b>PROJEC</b>	T IDENTIFICATION	<u>1</u>					
Task #: Date: User:	9/30/2019	State: County:	Colorado Delta		Abbreviation: Filename:	None C083-106cq	

Agency or organization name: DRMS

#### **UNIT COSTS**

Borehole Description	Sealing/Item Method	Diameter	Length	Quantity	Unit	Unit Cost	Total Cost
Bottom Plug	PVC plug - 10 in. diameter borehole	10	NA	1.00	EA	\$110.66	\$110.66
Fill holes with cement	Portland cement grout ( Bag, material cost only94 lb. bag)	10	520	240.35	bag	\$13.40	\$3,220.69
Cut casings	Exposed casing removal - Calculate Circumference in Linear Feet	10	NA	2.50	LF	\$3.26	\$8.15
Borehole markers	Borehole location/identification marker (EA, material cost only)	NA	NA	1.00	EA	\$32.00	\$32.00
Drill Rig time	Truck Mounted - 3.0 in. - 1,700 ft. capy.	NA	NA	10.00	EA	\$131.35	\$1,313.50
WaterTruck	Water Tanker, 3,500 Gal.	NA	NA	10.00	EA	\$63.55	\$635.50

Job Hours: 10.00

Total Cost: \$5,320.00

,	Task description:	Plug and seal GVB-D-3A (	Plug and seal GVB-D-3A (aka GVB-D3-A)				
Site:	Bowie No. 2 Mine	Permit Action:	MT5	Permit	/Job#: <u>C1996083</u>		
<u>PROJE</u>	<u>CT IDENTIFICATIO</u>	<u>N</u>					
Task #	#: 106CY	State: Colorado		Abbreviation:	None		

Task #:	106CY	State:	Colorado	Abbreviation:	None
Date:	9/30/2019	County:	Delta	Filename:	C083-106cy
User:	ZTT				
	Agency or organiz	vation name:	DRMS		

# UNIT COSTS

Borehole Description	Sealing/Item Method	Diameter	Length	Quantity	Unit	Unit Cost	Total Cost
Bottom Plug	PVC plug - 8 in. diameter borehole	7.625	NA	1.00	EA	\$80.77	\$80.77
Fill holes with cement	Portland cement grout ( Bag, material cost only94 lb. bag)	7.625	870	133.56	bag	\$13.40	\$1,789.70
Cut casings	Exposed casing removal - Calculate Circumference in Linear Feet	7.625	NA	2.00	LF	\$3.26	\$6.52
Borehole markers	Borehole location/identification marker (EA, material cost only)	NA	NA	1.00	EA	\$32.00	\$32.00
Drill Rig time	Truck Mounted - 3.0 in. - 1,700 ft. capy.	NA	NA	12.00	EA	\$131.35	\$1,576.20
WaterTruck	Water Tanker, 3,500 Gal.	NA	NA	12.00	EA	\$63.55	\$762.60

Job Hours: 12.00

Total Cost: \$4,248.00

Tas	sk description:	Plug and sea	al GVB-D-7A (a	aka GVB-D7-A)		
Site: <b>B</b>	Site: Bowie No. 2 Mine		Permit Action: MT5			/Job#: <u>C1996083</u>
PROJEC1	<u>IDENTIFICATIO</u>	N				
Task #: Date: User:	106DB 9/30/2019 ZTT	State: County:	Colorado Delta		Abbreviation: Filename:	None 106db
	Agency or organiza	tion name:	DRMS			

### **UNIT COSTS**

Borehole Description	Sealing/Item Method	Diameter	Length	Quantity	Unit	Unit Cost	Total Cost
Bottom Plug	PVC plug - 6 in. diameter borehole	5.5	NA	1.00	EA	\$58.97	\$58.97
Fill holes with cement	Portland cement grout ( Bag, material cost only94 lb. bag)	5.5	465	65.02	bag	\$13.40	\$871.27
Cut casings	Exposed casing removal - Calculate Circumference in Linear Feet	5.5	NA	1.50	LF	\$3.26	\$4.89
Borehole markers	Borehole location/identification marker (EA, material cost only)	NA	NA	1.00	EA	\$32.00	\$32.00
Drill Rig time	Truck Mounted - 3.0 in. - 1,700 ft. capy.	NA	NA	10.00	EA	\$131.35	\$1,313.50
WaterTruck	Water Tanker, 3,500 Gal.	NA	NA	10.00	EA	\$63.55	\$635.50

Job Hours: 10.00

Total Cost: \$2,916.00

Т	Task description:	Plug and seal	GVB-D-5A				
Site:	Bowie No. 2 Mine	F	Permit Action:	MT5	Permit	Job#:	C1996083
<u>PROJE(</u>	CT IDENTIFICATION	N					
Task # Date User	: 9/30/2019	State: County:	Colorado Delta		Abbreviation: Filename:	None C083	-106dd

Agency or organization name: DRMS

### **UNIT COSTS**

Borehole Description	Sealing/Item Method	Diameter	Length	Quantity	Unit	Unit Cost	Total Cost
Bottom Plug	PVC plug - 6 in. diameter borehole	5.5	NA	1.00	EA	\$58.97	\$58.97
Fill holes with cement	Portland cement grout ( Bag, material cost only94 lb. bag)	5.5	332	46.42	bag	\$13.40	\$622.03
Cut casings	Exposed casing removal - Calculate Circumference in Linear Feet	5.5	NA	1.50	LF	\$3.26	\$4.89
Borehole markers	Borehole location/identification marker (EA, material cost only)	NA	NA	1.00	EA	\$32.00	\$32.00
Drill Rig time	Truck Mounted - 3.0 in. - 1,700 ft. capy.	NA	NA	9.00	EA	\$131.35	\$1,182.15
WaterTruck	Water Tanker, 3,500 Gal.	NA	NA	9.00	EA	\$63.55	\$571.95

Job Hours: 9.00

Total Cost: \$2,472.00

,	Task description:	Plug and seal GVB-D-6.	A (aka GVB-D6-	A)	
Site:	Bowie No. 2 Mine	Permit Actio	on: MT5	Permit	t/Job#: <u>C1996083</u>
<u>PROJE</u>	CT IDENTIFICATI	<u>ON</u>			
Task # Date		State: <u>Colorado</u> County: Delta		Abbreviation: 	None C083-106do
Use	r: ZTT	_ •			
	Agency or organ	ization name: DRMS			

#### **UNIT COSTS**

Borehole Description	Sealing/Item Method	Diameter	Length	Quantity	Unit	Unit Cost	Total Cost
Bottom Plug	PVC plug - 6 in. diameter borehole	5.5	NA	1.00	EA	\$58.97	\$58.97
Fill holes with cement	Portland cement grout ( Bag, material cost only94 lb. bag)	5.5	461	64.46	bag	\$13.40	\$863.76
Cut casings	Exposed casing removal - Calculate Circumference in Linear Feet	5.5	NA	1.50	LF	\$3.26	\$4.89
Borehole markers	Borehole location/identification marker (EA, material cost only)	NA	NA	1.00	EA	\$32.00	\$32.00
Drill Rig time	Truck Mounted - 3.0 in. - 1,700 ft. capy.	NA	NA	10.00	EA	\$131.35	\$1,313.50
WaterTruck	Water Tanker, 3,500 Gal.	NA	NA	10.00	EA	\$63.55	\$635.50

Job Hours: 10.00 Tota

Total Cost: \$2,909.00

Task description:		Plug and sea	Plug and seal GVB-D-6B (aka GVB-D6-B)			
Site: <b>B</b>	owie No. 2 Mine		Permit Action:	MT5	Permit	t/Job#: <u>C1996083</u>
PROJECT	<u> IDENTIFICATIO</u>	<u>N</u>				
Task #:	106DP	State:	Colorado		Abbreviation:	None
Date:	9/30/2019	County:	Delta		Filename:	C083-106dp
User:	ZTT					

Agency or organization name: DRMS

# UNIT COSTS

Borehole Description	Sealing/Item Method	Diameter	Length	Quantity	Unit	Unit Cost	Total Cost
Bottom Plug	PVC plug - 6 in. diameter borehole	5.5	NA	1.00	EA	\$58.97	\$58.97
Fill holes with cement	Portland cement grout ( Bag, material cost only94 lb. bag)	5.5	900	125.84	bag	\$13.40	\$1,686.26
Cut casings	Exposed casing removal - Calculate Circumference in Linear Feet	5.5	NA	1.50	LF	\$3.26	\$4.89
Borehole markers	Borehole location/identification marker (EA, material cost only)	NA	NA	1.00	EA	\$32.00	\$32.00
Drill Rig time	Truck Mounted - 3.0 in. - 1,700 ft. capy.	NA	NA	12.00	EA	\$131.35	\$1,576.20
WaterTruck	Water Tanker, 3,500 Gal.	NA	NA	12.00	EA	\$63.55	\$762.60

Job Hours: 6.00

Total Cost: \$4,121.00

Т	ask description:	Plug and seal GVB-D-7B	(aka GVB-D7-B)		
Site:	Bowie No. 2 Mine	Permit Action:	MT5	Permit/Job#:	C1996083
<u>PROJEC</u>	CT IDENTIFICATIO	<u>ON</u>			
Task # Date User:	: 9/30/2019	State: Colorado County: Delta		Abbreviation:Non-Filename:C08.	e 3-106dq
	Agency or organi	zation name: DRMS			

### **UNIT COSTS**

Borehole Description	Sealing/Item Method	Diameter	Length	Quantity	Unit	Unit Cost	Total Cost
Bottom Plug	PVC plug - 6 in. diameter borehole	5.5	NA	1.00	EA	\$58.97	\$58.97
Fill holes with cement	Portland cement grout ( Bag, material cost only94 lb. bag)	5.5	720	100.67	bag	\$13.40	\$1,348.98
Cut casings	Exposed casing removal - Calculate Circumference in Linear Feet	5.5	NA	1.50	LF	\$3.26	\$4.89
Borehole markers	Borehole location/identification marker (EA, material cost only)	NA	NA	1.00	EA	\$32.00	\$32.00
Drill Rig time	Truck Mounted - 3.0 in. - 1,700 ft. capy.	NA	NA	11.00	EA	\$131.35	\$1,444.85
WaterTruck	Water Tanker, 3,500 Gal.	NA	NA	11.00	EA	\$63.55	\$699.05

 Job Hours:
 11.00
 Total Cost:
 \$3,589.00

Та	ask description:	Plug and sea	al GVB-D-8C (aka GVB-D8-	C)		
Site:	Bowie No. 2 Mine	Permit Action: MT5		Permit/Job#: <u>C1996083</u>		
PROJEC'	T IDENTIFICATI	<u>ON</u>				
Task #:	106DU	State:	Colorado	Abbreviation:	None	
Date:	9/30/2019	County:	Delta	Filename:	C083-106du	
User:	ZTT					

#### **UNIT COSTS**

Borehole Description	Sealing/Item Method	Diameter	Length	Quantity	Unit	Unit Cost	Total Cost
Bottom Plug	PVC plug - 6 in. diameter borehole	5.5	NA	1.00	EA	\$58.97	\$58.97
Fill holes with cement	Portland cement grout ( Bag, material cost only94 lb. bag)	5.5	1000	139.82	bag	\$13.40	\$1,873.59
Cut casings	Exposed casing removal - Calculate Circumference in Linear Feet	5.5	NA	1.50	LF	\$3.26	\$4.89
Borehole markers	Borehole location/identification marker (EA, material cost only)	NA	NA	1.00	EA	\$32.00	\$32.00
Drill Rig time	Truck Mounted - 3.0 in. - 1,700 ft. capy.	NA	NA	12.00	EA	\$131.35	\$1,576.20
WaterTruck	Water Tanker, 3,500 Gal.	NA	NA	12.00	EA	\$63.55	\$762.60

Job Hours: 12.00

Total Cost: \$4,308.00

#### BOREHOLE SEALING WORK

Task description:

Plug and seal P-TC-03-01 (aka TC-03-01)

Site: Bowie No. 2 Mine

Permit Action: MT5

#### **PROJECT IDENTIFICATION**

Task #:	106ED	State:	Colorado	Abbreviation:	None
Date:	9/30/2019	County:	Delta	Filename:	C083-106ed
User:	ZTT				

Agency or organization name: DRMS

#### **UNIT COSTS**

Borehole Description	Sealing/Item Method	Diameter	Length	Quantity	Unit	Unit Cost	Total Cost
Bottom Plug	PVC plug - 6 in. diameter borehole	6	NA	1.00	EA	\$58.97	\$58.97
Fill holes with cement	Portland cement grout ( Bag, material cost only94 lb. bag)	6	580	96.51	bag	\$13.40	\$1,293.23
Cut casings	Exposed casing removal - Calculate Circumference in Linear Feet	6	NA	1.50	LF	\$3.26	\$4.89
Borehole markers	Borehole location/identification marker (EA, material cost only)	NA	NA	1.00	EA	\$32.00	\$32.00
Drill Rig time	Truck Mounted - 3.0 in. - 1,700 ft. capy.	NA	NA	10.00	EA	\$131.35	\$1,313.50
WaterTruck	Water Tanker, 3,500 Gal.	NA	NA	10.00	EA	\$63.55	\$635.50

Job Hours: 10.00

Total Cost: \$3,338.00

#### BOREHOLE SEALING WORK

Task description: Site: Bowie No. 2 Mine Plug and seal P-TC-03-02 (aka TC-03-02) Permit Action: MT5

Permit/Job#: C1996083

**PROJECT IDENTIFICATION** 

Task #:	106EE	State:	Colorado	Abbreviation:	None
Date:	9/30/2019	County:	Delta	Filename:	C083-106ee
User:	ZTT				

Agency or organization name: DRMS

#### **UNIT COSTS**

Borehole Description	Sealing/Item Method	Diameter	Length	Quantity	Unit	Unit Cost	Total Cost
Bottom Plug	PVC plug - 6 in. diameter borehole	6	NA	1.00	EA	\$58.97	\$58.97
Fill holes with cement	Portland cement grout ( Bag, material cost only94 lb. bag)	6	580	96.51	bag	\$13.40	\$1,293.23
Cut casings	Exposed casing removal - Calculate Circumference in Linear Feet	6	NA	1.50	LF	\$3.26	\$4.89
Borehole markers	Borehole location/identification marker (EA, material cost only)	NA	NA	1.00	EA	\$32.00	\$32.00
Drill Rig time	Truck Mounted - 3.0 in. - 1,700 ft. capy.	NA	NA	10.00	EA	\$131.35	\$1,313.50
WaterTruck	Water Tanker, 3,500 Gal.	NA	NA	10.00	EA	\$63.55	\$635.50

Job Hours: 10.00

Total Cost: \$3,338.00

#### BOREHOLE SEALING WORK

Plug and seal GVB-17C (aka GVB-B17C)

Site: Bowie No. 2 Mine

Task description:

Permit Action: MT5

Permit/Job#: C1996083

#### **PROJECT IDENTIFICATION**

Task #:	106GB	State:	Colorado	Abbreviation:	None
Date:	9/30/2019	County:	Delta	Filename:	C083-106gb

Agency or organization name: DRMS

#### **UNIT COSTS**

Borehole Description	Sealing/Item Method	Diameter	Length	Quantity	Unit	Unit Cost	Total Cost
Bottom Plug	PVC plug - 10 in. diameter borehole	9.375	NA	1.00	EA	\$110.66	\$110.66
Fill holes with cement	Portland cement grout ( Bag, material cost only94 lb. bag)	9.375	1090	442.81	bag	\$13.40	\$5,933.65
Cut casings	Exposed casing removal - Calculate Circumference in Linear Feet	9.375	NA	2.50	LF	\$3.26	\$8.15
Borehole markers	Borehole location/identification marker (EA, material cost only)	NA	NA	1.00	EA	\$32.00	\$32.00
Drill Rig time	GENERIC 3.0 in 1, 700 ft. capy.	NA	NA	12.00	EA	\$128.48	\$1,541.76
WaterTruck	Water Tanker, 3,500 Gal.	NA	NA	12.00	EA	\$63.55	\$762.60

Job Hours: 12.00

___

Total Cost: \$8,389.00

#### BOREHOLE SEALING WORK

-	Task description:	Plug and seal GVB-17D (al	a GVB-B17D)		
Site:	Bowie No. 2 Mine	Permit Action:	MT5	Permit/Job#: C1996083	
PROJE	CT IDENTIFICATI	<u>ON</u>			
Task ‡ Date		State: <u>Colorado</u> County: Delta		Abbreviation:	None C083-106gc
Use		County:Delta		Filename:	C085-100gc
	Agency or organ	ization name: DRMS			

# UNIT COSTS

Borehole Description	Sealing/Item Method	Diameter	Length	Quantity	Unit	Unit Cost	Total Cost
Bottom Plug	PVC plug - 10 in. diameter borehole	9.375	NA	1.00	EA	\$110.66	\$110.66
Fill holes with cement	Portland cement grout ( Bag, material cost only94 lb. bag)	9.375	1300	528.12	bag	\$13.40	\$7,076.81
Cut casings	Exposed casing removal - Calculate Circumference in Linear Feet	9.375	NA	2.50	LF	\$3.26	\$8.15
Borehole markers	Borehole location/identification marker (EA, material cost only)	NA	NA	1.00	EA	\$32.00	\$32.00
Drill Rig time	Truck Mounted - 3.0 in. - 1,700 ft. capy.	NA	NA	12.00	EA	\$131.35	\$1,576.20
WaterTruck	Water Tanker, 3,500 Gal.	NA	NA	12.00	EA	\$63.55	\$762.60

 Job Hours:
 12.00
 Total Cost:
 \$9,566.00

#### BOREHOLE SEALING WORK

sk description:	Plug and seal GVB-17E (al	a GVB-B17E)			
owie No. 2 Mine	Permit Action:	MT5	Permit	/Job#:	C1996083
<u> IDENTIFICATI</u>	<u>ON</u>				
106GD	State: Colorado		Abbreviation:		
9/30/2019 ZTT	County: Delta		Filename:	C083	-106gd
	owie No. 2 Mine	owie No. 2 Mine     Permit Action: <b>IDENTIFICATION</b> 106GD       State:     Colorado	owie No. 2 Mine     Permit Action: MT5       IDENTIFICATION       106GD     State: Colorado	owie No. 2 Mine     Permit Action:     MT5     Permit <b>IDENTIFICATION</b> 106GD     State:     Colorado     Abbreviation:	owie No. 2 Mine     Permit Action:     MT5     Permit/Job#: <b>IDENTIFICATION</b>

Borehole Description	Sealing/Item Method	Diameter	Length	Quantity	Unit	Unit Cost	Total Cost
Bottom Plug	PVC plug - 10 in. diameter borehole	9.375	NA	1.00	EA	\$110.66	\$110.66
Fill holes with cement	Portland cement grout ( Bag, material cost only94 lb. bag)	9.375	1620	658.12	bag	\$13.40	\$8,818.81
Cut casings	Exposed casing removal - Calculate Circumference in Linear Feet	9.375	NA	2.50	LF	\$3.26	\$8.15
Borehole markers	Borehole location/identification marker (EA, material cost only)	NA	NA	1.00	EA	\$32.00	\$32.00
Drill Rig time	Truck Mounted - 3.0 in. - 1,700 ft. capy.	NA	NA	12.00	EA	\$131.35	\$1,576.20
WaterTruck	Water Tanker, 3,500 Gal.	NA	NA	12.00	EA	\$63.55	\$762.60

# Job Hours: 12.00

Total Cost: \$11,308.00

#### BOREHOLE SEALING WORK

Tas	k description:	Plug and sea	al GVB-17F (a	ka GVB-B17	<b>F</b> )			
Site: B	owie No. 2 Mine		Permit Action:	MT5		Permi	t/Job#: <u>C1996083</u>	
PROJECT	<u>IDENTIFICATIO</u>	<u>DN</u>						
Task #: Date: User:	106GI 9/30/2019 ZTT	State: County:	Colorado Delta			eviation: Filename:	None C083-106gi	
	Agency or organiz	zation name:	DRMS					
<u>UNIT COSTS</u>								
Borehole Descriptio	0	tem Method	Diameter	Length	Quantity	Unit	Total Co	ost

						Unit Cost	
Bottom Plug	PVC plug - 10 in. diameter borehole	9.375	NA	1.00	EA	\$110.66	\$110.66
Fill holes with cement	Portland cement grout ( Bag, material cost only94 lb. bag)	9.375	1660	674.37	bag	\$13.40	\$9,036.56
Cut casings	Exposed casing removal - Calculate Circumference in Linear Feet	9.375	NA	2.50	LF	\$3.26	\$8.15
Borehole markers	Borehole location/identification marker (EA, material cost only)	NA	NA	1.00	EA	\$32.00	\$32.00
Drill Rig time	Truck Mounted - 3.0 in. - 1,700 ft. capy.	NA	NA	12.00	EA	\$131.35	\$1,576.20
WaterTruck	Water Tanker, 3,500 Gal.	NA	NA	12.00	EA	\$63.55	\$762.60

Job Hours:

12.00

Total Cost:

\$11,526.00

### BOREHOLE SEALING WORK

Tas	sk description:	Plug and sea	al AW-1			
Site: <b>B</b>	owie No. 2 Mine		Permit Action:	MT5	Permit	/Job#: <u>C1996083</u>
PROJECT	<u> IDENTIFICATION</u>	Ī				
Task #: Date: User:	106GN 9/30/2019 ZTT	State: County:	Colorado Delta		Abbreviation: Filename:	None C083-106gn
	Agency or organizat	ion name:	DRMS			
UNIT CC	<u>DSTS</u>					

# Borehole<br/>DescriptionSealing/Item Method<br/>DiameterDiameterLengthQuantityUnitUnit<br/>CostTotal Cost

Fill holes with cement	Portland cement grout ( Bag, material cost only94 lb. bag)	4	120	8.87	bag	\$13.40	\$118.86
Cut casings	Exposed casing removal - Calculate Circumference in Linear Feet	4	NA	1.00	LF	\$3.26	\$3.26
Borehole markers	Borehole location/identification marker (EA, material cost only)	NA	NA	1.00	EA	\$32.00	\$32.00
Drill Rig time	Truck Mounted - 3.0 in. - 1,700 ft. capy.	NA	NA	7.00	EA	\$131.35	\$919.45
WaterTruck	Water Tanker, 3,500 Gal.	NA	NA	7.00	EA	\$63.55	\$444.85

Job Hours: 7.00

Total Cost: \$1,518.00

### BOREHOLE SEALING WORK

2 Mine	Permit Action:	MT5	<b>D</b>	
	1 011110 1 10010111	WIT 5	Permit	/Job#: <u>C1996083</u>
<b>TIFICATION</b>				
			Abbreviation: Filename:	None C083-106go
)	State	State: Colorado 019 County: Delta	State: <u>Colorado</u> 019 County: <u>Delta</u>	State:ColoradoAbbreviation:019County:DeltaFilename:

Borehole Description	Sealing/Item Method	Diameter	Length	Quantity	Unit	Unit Cost	Total Cost
Fill holes with cement	Portland cement grout ( Bag, material cost only94 lb. bag)	4	60	4.43	bag	\$13.40	\$59.36

Cut casings	Exposed casing removal - Calculate Circumference in Linear Feet	4	NA	1.00	LF	\$3.26	\$3.26
Borehole markers	Borehole location/identification marker (EA, material cost only)	NA	NA	1.00	EA	\$32.00	\$32.00
Drill Rig time	Truck Mounted - 3.0 in. - 1,700 ft. capy.	NA	NA	6.00	EA	\$131.35	\$788.10
WaterTruck	Water Tanker, 3,500 Gal.	NA	NA	6.00	EA	\$63.55	\$381.30

Job Hours: 6.00 Total Cost: \$1,264.00

### BOREHOLE SEALING WORK

	Task description:	Plug and seal AW-3			
Site:	Bowie No. 2 Mine	Permit Action:	MT5	Permit/Job#:	C1996083
<u>PROJE</u>	CCT IDENTIFICATIO	N			
Task	#: 106GP	State: Colorado		Abbreviation: None	

Date:	9/30/2019	County:	Delta	Filename:	C083-106gp
User:	ZTT				
	Agency or organiz	ation name:	DRMS		

Borehole Description	Sealing/Item Method	Diameter	Length	Quantity	Unit	Unit Cost	Total Cost
Fill holes with	Portland cement grout (	4	150	11.09	bag	\$13.40	\$148.61
cement	Bag, material cost						
	only94 lb. bag)						
Cut casings	Exposed casing removal	4	NA	1.00	LF	\$3.26	\$3.26
	- Calculate						

	Circumference in Linear Feet						
Borehole markers	Borehole location/identification marker (EA, material cost only)	NA	NA	1.00	EA	\$32.00	\$32.00
Drill Rig time	Truck Mounted - 3.0 in. - 1,700 ft. capy.	NA	NA	7.00	EA	\$131.35	\$919.45
WaterTruck	Water Tanker, 3,500 Gal.	NA	NA	7.00	EA	\$63.55	\$444.85

Job Hours: 7.00

Total Cost: \$1,548.00

# BOREHOLE SEALING WORK

	Task description:	Plug and seal AW-4			
Site:	Bowie No. 2 Mine	Permit Acti	on: MT5	Permit	/Job#: C1996083
<u>PROJE</u>	CT IDENTIFICATION	<u>1</u>			
Task Dat Use	e: 9/30/2019	State: Colorado County: Delta		Abbreviation: Filename:	None C083-106gq

Agency or organization name: DRMS

Borehole Description	Sealing/Item Method	Diameter	Length	Quantity	Unit	Unit Cost	Total Cost
Fill holes with cement	Portland cement grout ( Bag, material cost only94 lb. bag)	4	60	4.44	bag	\$13.40	\$59.50
Cut casings	Exposed casing removal - Calculate Circumference in Linear Feet	4	NA	1.00	LF	\$3.26	\$3.26

Borehole markers	Borehole	NA	NA	1.00	EA	\$32.00	\$32.00
	location/identification						
	marker (EA, material						
	cost only)						
Drill Rig time	Truck Mounted - 3.0 in.	NA	NA	6.00	EA	\$131.35	\$788.10
	- 1,700 ft. capy.						
WaterTruck	Water Tanker, 3,500	NA	NA	6.00	EA	\$63.55	\$381.30
	Gal.						

Job Hours: 6.00

Total Cost: \$1,264.00

## BOREHOLE SEALING WORK

Ta	ask description:	Plug and sea	al AW-5			
Site: _	Bowie No. 2 Mine		Permit Action:	MT5	Permit	/Job#: <u>C1996083</u>
PROJEC	T IDENTIFICATION	<u>1</u>				
Task #: Date: User:	106GR 9/30/2019 ZTT	State: County:	Colorado Delta		Abbreviation: Filename:	None C083-106gr
	Agency or organization	tion name:	DRMS			

Borehole Description	Sealing/Item Method	Diameter	Length	Quantity	Unit	Unit Cost	Total Cost
Fill holes with cement	Portland cement grout ( Bag, material cost only94 lb. bag)	4	100	7.40	bag	\$13.40	\$99.16
Cut casings	Exposed casing removal - Calculate Circumference in Linear Feet	4	NA	1.00	LF	\$3.26	\$3.26
Borehole markers	Borehole location/identification	NA	NA	1.00	EA	\$32.00	\$32.00

	marker (EA, material cost only)						
Drill Rig time	Truck Mounted - 3.0 in. - 1,700 ft. capy.	NA	NA	6.00	EA	\$131.35	\$788.10
WaterTruck	Water Tanker, 3,500 Gal.	NA	NA	6.00	EA	\$63.55	\$381.30

Job Hours: 6.00

Total Cost: \$1,304.00

#### BOREHOLE SEALING WORK

Та	ask description:	Plug and sea	l AW-6			
Site:	Bowie No. 2 Mine		Permit Action:	MT5	Permit	/Job#: <u>C1996083</u>
<u>PROJEC</u>	T IDENTIFICATIO	N				
Task #: Date: User:	106GS 9/30/2019 ZTT	State: County:	Colorado Delta		Abbreviation: Filename:	None C083-106gs
	Agency or organiza	tion name:	DRMS			

Borehole Description	Sealing/Item Method	Diameter	Length	Quantity	Unit	Unit Cost	Total Cost
Fill holes with cement	Portland cement grout ( Bag, material cost only94 lb. bag)	4	112	8.28	bag	\$13.40	\$110.95
Cut casings	Exposed casing removal - Calculate Circumference in Linear Feet	4	NA	1.00	LF	\$3.26	\$3.26
Borehole markers	Borehole location/identification marker (EA, material cost only)	NA	NA	1.00	EA	\$32.00	\$32.00

Drill Rig time	Truck Mounted - 3.0 in. - 1,700 ft. capy.	NA	NA	7.00	EA	\$131.35	\$919.45
WaterTruck	Water Tanker, 3,500 Gal.	NA	NA	7.00	EA	\$63.55	\$444.85

 Job Hours:
 7.00
 Total Cost:
 \$1,511.00

#### BOREHOLE SEALING WORK

Site: E	Bowie No. 2 Mine	Permit Action:	Permit	/Job#: <u>C1996083</u>	
<u>ROJEC'</u>	<u>I IDENTIFICATI</u>	<u>ON</u>			
Task #:	106GT	State: Colorado		Abbreviation:	None
Date:	9/30/2019	County: Delta		Filename:	C083-106gt
User:	ZTT				

Borehole Description	Sealing/Item Method	Diameter	Length	Quantity	Unit	Unit Cost	Total Cost
Fill holes with cement	Portland cement grout ( Bag, material cost only94 lb. bag)	2.5	193	5.58	bag	\$13.40	\$74.77
Cut casings	Exposed casing removal - Calculate Circumference in Linear Feet	2.5	NA	0.50	LF	\$3.26	\$1.63
Borehole markers	Borehole location/identification marker (EA, material cost only)	NA	NA	1.00	EA	\$32.00	\$32.00
Drill Rig time	Truck Mounted - 3.0 in. - 1,700 ft. capy.	NA	NA	8.00	EA	\$131.35	\$1,050.80
WaterTruck	Water Tanker, 3,500 Gal.	NA	NA	8.00	EA	\$63.55	\$508.40
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	Job I	Hours:	8.00		Total	Cost:	\$1,668.00

- -	Fask description:	Plug and sea	al AW-8				
Site: Bowie No. 2 Mine			Permit Action:	MT5	Permit/Job#: <u>C1996083</u>		
PROJE	CT IDENTIFICATIO	<u>DN</u>					
Task #	#: 106GU	State:	Colorado		Abbreviation:	None	
Date	e: 9/30/2019	County:	Delta		Filename:	C083-106gu	
User	r: ZTT						

Agency or organization name: DRMS

Borehole Description	Sealing/Item Method	Diameter	Length	Quantity	Unit	Unit Cost	Total Cost
Fill holes with cement	Portland cement grout ( Bag, material cost only94 lb. bag)	2.5	60	1.73	bag	\$13.40	\$23.18
Cut casings	Exposed casing removal - Calculate Circumference in Linear Feet	2.5	NA	0.50	LF	\$3.26	\$1.63
Borehole markers	Borehole location/identification marker (EA, material cost only)	NA	NA	1.00	EA	\$32.00	\$32.00
Drill Rig time	Truck Mounted - 3.0 in. - 1,700 ft. capy.	NA	NA	6.00	EA	\$131.35	\$788.10
WaterTruck	Water Tanker, 3,500 Gal.	NA	NA	6.00	EA	\$63.55	\$381.30

Job Hours: 6.00

### BOREHOLE SEALING WORK

1	Task description:	Plug and sea	al AW-9			
Site:	Bowie No. 2 Mine		Permit Action:	MT5	Permit	/Job#: <u>C1996083</u>
<u>PROJE</u>	<u>CT IDENTIFICATIO</u>	N				
Task :	#: 106GV	State:	Colorado		Abbreviation:	None
Dat	e: 9/30/2019	County:	Delta		Filename:	C083-106gv
Use	er: ZTT					

Agency or organization name: DRMS

## **UNIT COSTS**

Borehole Description	Sealing/Item Method	Diameter	Length	Quantity	Unit	Unit Cost	Total Cost
Fill holes with cement	Portland cement grout ( Bag, material cost only94 lb. bag)	2.5	80	2.31	bag	\$13.40	\$30.95
Cut casings	Exposed casing removal - Calculate Circumference in Linear Feet	2.5	NA	0.50	LF	\$3.26	\$1.63
Borehole markers	Borehole location/identification marker (EA, material cost only)	NA	NA	1.00	EA	\$32.00	\$32.00
Drill Rig time	Truck Mounted - 3.0 in. - 1,700 ft. capy.	NA	NA	6.00	EA	\$131.35	\$788.10
WaterTruck	Water Tanker, 3,500 Gal.	NA	NA	6.00	EA	\$63.55	\$381.30

Job Hours: 6.00

Total Cost: \$1,234.00

Т	ask description:	Plug and seal A	W-11			
Site:	Bowie No. 2 Mine	Per	mit Action:	MT5	Permit	/Job#: <u>C1996083</u>
<u>PROJEC</u>	CT IDENTIFICATIO	N				
Task #	: 106GW	State: C	Colorado		Abbreviation:	None
Date	: 9/30/2019	County: D	Delta		Filename:	C083-106gw
User	: ZTT					
	Agency or organiza	tion name: DR	MS			

# UNIT COSTS

Borehole Description	Sealing/Item Method	Diameter	Length	Quantity	Unit	Unit Cost	Total Cost
Fill holes with cement	Portland cement grout ( Bag, material cost only94 lb. bag)	2	80	1.48	bag	\$13.40	\$19.83
Cut casings	Exposed casing removal - Calculate Circumference in Linear Feet	2	NA	0.50	LF	\$3.26	\$1.63
Borehole markers	Borehole location/identification marker (EA, material cost only)	NA	NA	1.00	EA	\$32.00	\$32.00
Drill Rig time	Truck Mounted - 3.0 in. - 1,700 ft. capy.	NA	NA	6.00	EA	\$131.35	\$788.10
WaterTruck	Water Tanker, 3,500 Gal.	NA	NA	6.00	EA	\$63.55	\$381.30

Job Hours:6.00

Total Cost: \$1,223.00

Permit/Job#: C1996083
Abbreviation: None
Filename: C083-106gx

## **UNIT COSTS**

Borehole Description	Sealing/Item Method	Diameter	Length	Quantity	Unit	Unit Cost	Total Cost
Fill holes with cement	Portland cement grout ( Bag, material cost only94 lb. bag)	2	60	1.11	bag	\$13.40	\$14.87
Cut casings	Exposed casing removal - Calculate Circumference in Linear Feet	2	NA	0.50	LF	\$3.26	\$1.63
Borehole markers	Borehole location/identification marker (EA, material cost only)	NA	NA	1.00	EA	\$32.00	\$32.00
Drill Rig time	Truck Mounted - 3.0 in. - 1,700 ft. capy.	NA	NA	6.00	EA	\$131.35	\$788.10
WaterTruck	Water Tanker, 3,500 Gal.	NA	NA	6.00	EA	\$63.55	\$381.30

Job Hours: 6.00

Total Cost: \$1,218.00

k description:	Plug and sea	al AW-13				
wie No. 2 Mine		Permit Action:	MT5	Permit	/Job#:	C1996083
<b>IDENTIFICATIO</b>	<u>N</u>					
106GY 9/30/2019	State: County:	Colorado Delta		Abbreviation: Filename:		-106gy
ZTT						
•	wie No. 2 Mine <u>IDENTIFICATIO</u> <u>106GY</u> <u>9/30/2019</u>	wie No. 2 Mine         IDENTIFICATION         106GY       State:         9/30/2019       County:	Image: No. 2 Mine     Permit Action:       IDENTIFICATION     State:     Colorado       106GY     State:     Colorado       9/30/2019     County:     Delta	IDENTIFICATION     Permit Action: MT5       106GY     State: Colorado       9/30/2019     County: Delta	Image: No. 2 Mine     Permit Action:     MT5     Permit       IDENTIFICATION     State:     Colorado     Abbreviation:       106GY     State:     Colorado     Abbreviation:       9/30/2019     County:     Delta     Filename:	IDENTIFICATION     Permit Action: MT5     Permit/Job#:       106GY     State:     Colorado     Abbreviation:     None       9/30/2019     County:     Delta     Filename:     C083

## **UNIT COSTS**

Borehole Description	Sealing/Item Method	Diameter	Length	Quantity	Unit	Unit Cost	Total Cost
Fill holes with cement	Portland cement grout ( Bag, material cost only94 lb. bag)	2	80	1.48	bag	\$13.40	\$19.83
Cut casings	Exposed casing removal - Calculate Circumference in Linear Feet	2	NA	0.50	LF	\$3.26	\$1.63
Borehole markers	Borehole location/identification marker (EA, material cost only)	NA	NA	1.00	EA	\$32.00	\$32.00
Drill Rig time	Truck Mounted - 3.0 in. - 1,700 ft. capy.	NA	NA	6.00	EA	\$131.35	\$788.10
WaterTruck	Water Tanker, 3,500 Gal.	NA	NA	6.00	EA	\$63.55	\$381.30

Job Hours: 6.00

Total Cost: \$1,223.00

,	Task description:	Plug and sea	l AW-14			
Site:	Bowie No. 2 Mine	]	Permit Action:	MT5	Permit	/Job#: <u>C1996083</u>
<u>PROJE</u>	CT IDENTIFICATION	<u>N</u>				
Task #	#: 106GZ	State:	Colorado		Abbreviation:	None
Date	e: 9/30/2019	County:	Delta		Filename:	C083-106gz

User: ZTT Agency or organization name: DRMS

## **UNIT COSTS**

Borehole Description	Sealing/Item Method	Diameter	Length	Quantity	Unit	Unit Cost	Total Cost
Fill holes with cement	Portland cement grout ( Bag, material cost only94 lb. bag)	2	30	0.55	bag	\$13.40	\$7.37
Cut casings	Exposed casing removal - Calculate Circumference in Linear Feet	2	NA	0.50	LF	\$3.26	\$1.63
Borehole markers	Borehole location/identification marker (EA, material cost only)	NA	NA	1.00	EA	\$32.00	\$32.00
Drill Rig time	Truck Mounted - 3.0 in. - 1,700 ft. capy.	NA	NA	6.00	EA	\$131.35	\$788.10
WaterTruck	Water Tanker, 3,500 Gal.	NA	NA	6.00	EA	\$63.55	\$381.30

 Job Hours:
 6.00
 Total Cost:
 \$1,210.00

r.	Task description:	Plug and seal DH-13					
Site:	Bowie No. 2 Mine		Permit Action:	MT5	Permit	/Job#:	C1996083
<u>PROJE</u>	CT IDENTIFICATIO	<u>N</u>					
Task #	#: 106HD	State:	Colorado		Abbreviation:	None	
Date	e: <u>9/30/2019</u>	County:	Delta		Filename:	C083-	106hd
User	r: ZTT						

Agency or organization name: DRMS

## UNIT COSTS

Borehole Description	Sealing/Item Method	Diameter	Length	Quantity	Unit	Unit Cost	Total Cost
Bottom Plug	PVC plug - 4 in. diameter borehole	4	NA	1.00	EA	\$32.62	\$32.62
Fill holes with cement	Portland cement grout ( Bag, material cost only94 lb. bag)	4	1000	73.95	bag	\$13.40	\$990.93
Cut casings	Exposed casing removal - Calculate Circumference in Linear Feet	4	NA	1.00	LF	\$3.26	\$3.26
Borehole markers	Borehole location/identification marker (EA, material cost only)	NA	NA	1.00	EA	\$32.00	\$32.00
Drill Rig time	Truck Mounted - 3.0 in. - 1,700 ft. capy.	NA	NA	12.00	EA	\$131.35	\$1,576.20
WaterTruck	Water Tanker, 3,500 Gal.	NA	NA	12.00	EA	\$63.55	\$762.60

 Job Hours:
 12.00
 Total Cost:
 \$3,398.00

Т	Task description:	Plug and seal l	DH-15			
Site:	Bowie No. 2 Mine	Pe	rmit Action:	MT5	Permit	/Job#: <u>C1996083</u>
<u>PROJEC</u>	CT IDENTIFICATIO	N				
Task #	: 106HE	State:	Colorado		Abbreviation:	None
Date	: 9/30/2019	County:	Delta		Filename:	C083-106he
User	: ZTT					
	Agency or organiza	tion name: DF	RMS			

## **UNIT COSTS**

Borehole Description	Sealing/Item Method	Diameter	Length	Quantity	Unit	Unit Cost	Total Cost
Fill holes with cement	Portland cement grout ( Bag, material cost only94 lb. bag)	4	216	15.97	bag	\$13.40	\$214.00
Cut casings	Exposed casing removal - Calculate Circumference in Linear Feet	4	NA	1.00	LF	\$3.26	\$3.26
Borehole markers	Borehole location/identification marker (EA, material cost only)	NA	NA	1.00	EA	\$32.00	\$32.00
Drill Rig time	Truck Mounted - 3.0 in. - 1,700 ft. capy.	NA	NA	8.00	EA	\$131.35	\$1,050.80
WaterTruck	Water Tanker, 3,500 Gal.	NA	NA	8.00	EA	\$63.55	\$508.40

 Job Hours:
 8.00
 Total Cost:
 \$1,808.00

<b>T</b> 1	1	
Task	description:	
I uon	uesemption.	

Plug and seal DH-15

Site: Bowie No. 2 Mine

Permit Action: MT5

Permit/Job#: C1996083

### **PROJECT IDENTIFICATION**

Task #:	106HF	State:	Colorado	Abbreviation:	None
Date:	9/30/2019	County:	Delta	Filename:	C083-106hf
User:	ZTT				

Agency or organization name: DRMS

### **UNIT COSTS**

Borehole Description	Sealing/Item Method	Diameter	Length	Quantity	Unit	Unit Cost	Total Cost
Bottom Plug	PVC plug - 4 in. diameter borehole	4	NA	1.00	EA	\$32.62	\$32.62
Fill holes with cement	Portland cement grout ( Bag, material cost only94 lb. bag)	4	395	29.21	bag	\$13.40	\$391.41
Cut casings	Exposed casing removal - Calculate Circumference in Linear Feet	4	NA	1.00	LF	\$3.26	\$3.26
Borehole markers	Borehole location/identification marker (EA, material cost only)	NA	NA	1.00	EA	\$32.00	\$32.00
Drill Rig time	Truck Mounted - 3.0 in. - 1,700 ft. capy.	NA	NA	9.00	EA	\$131.35	\$1,182.15
WaterTruck	Water Tanker, 3,500 Gal.	NA	NA	9.00	EA	\$63.55	\$571.95

Job Hours: 9.00

Total Cost: \$2,213.00

Та	ask description:	Plug and seal DH-25			
Site: 1	Bowie No. 2 Mine	Permit Action:	MT5	Permit	/Job#: <u>C1996083</u>
<u>PROJEC</u>	T IDENTIFICATION	<u>N</u>			
Task #: Date: User:	9/30/2019	State:ColoradoCounty:Delta		Abbreviation: Filename:	None C083-106hg
	Agency or organiza	tion name: DRMS			

## **UNIT COSTS**

Borehole Description	Sealing/Item Method	Diameter	Length	Quantity	Unit	Unit Cost	Total Cost
Bottom Plug	PVC plug - 4 in. diameter borehole	4	NA	1.00	EA	\$32.62	\$32.62
Fill holes with cement	Portland cement grout ( Bag, material cost only94 lb. bag)	4	333	24.63	bag	\$13.40	\$330.04
Cut casings	Exposed casing removal - Calculate Circumference in Linear Feet	4	NA	1.00	LF	\$3.26	\$3.26
Borehole markers	Borehole location/identification marker (EA, material cost only)	NA	NA	1.00	EA	\$32.00	\$32.00
Drill Rig time	Truck Mounted - 3.0 in. - 1,700 ft. capy.	NA	NA	9.00	EA	\$131.35	\$1,182.15
WaterTruck	Water Tanker, 3,500 Gal.	NA	NA	9.00	EA	\$63.55	\$571.95

 Job Hours:
 9.00

Total Cost: \$2,152.00

]	Fask description:	Plug and sea	al DH-34C			
Site:	Bowie No. 2 Mine		Permit Action:	MT5	Permit	/Job#: <u>C1996083</u>
<u>PROJE</u>	CT IDENTIFICATIO	<u>N</u>				
Task #	t: 106HQ	State:	Colorado		Abbreviation:	None
Date	e: 9/30/2019	County:	Delta		Filename:	C083-106hq
User	r: ZTT					
	Agency or organization	ation name:	DRMS			

## UNIT COSTS

Borehole Description	Sealing/Item Method	Diameter	Length	Quantity	Unit	Unit Cost	Total Cost
Bottom Plug	PVC plug - 4 in. diameter borehole	4	NA	1.00	EA	\$32.62	\$32.62
Fill holes with cement	Portland cement grout ( Bag, material cost only94 lb. bag)	4	124	9.17	bag	\$13.40	\$122.88
Cut casings	Exposed casing removal - Calculate Circumference in Linear Feet	4	NA	1.00	LF	\$3.26	\$3.26
Borehole markers	Borehole location/identification marker (EA, material cost only)	NA	NA	1.00	EA	\$32.00	\$32.00
Drill Rig time	Truck Mounted - 3.0 in. - 1,700 ft. capy.	NA	NA	7.00	EA	\$131.35	\$919.45
WaterTruck	Water Tanker, 3,500 Gal.	NA	NA	7.00	EA	\$63.55	\$444.85

 Job Hours:
 7.00
 Total Cost:
 \$1,555.00

## BOREHOLE SEALING WORK

Plug and seal DH-38

Permit Action: MT5

Permit/Job#: C1996083

### **PROJECT IDENTIFICATION**

Task #:	106HR	State:	Colorado	Abbreviation:	None
Date:	9/30/2019	County:	Delta	Filename:	C083-106hr
User:	ZTT				
	Agency or organiz	zation name:	DRMS		

### **UNIT COSTS**

Borehole Description	Sealing/Item Method	Diameter	Length	Quantity	Unit	Unit Cost	Total Cost
Fill holes with cement	Portland cement grout ( Bag, material cost only94 lb. bag)	4	454	33.58	bag	\$13.40	\$449.97
Cut casings	Exposed casing removal - Calculate Circumference in Linear Feet	4	NA	1.00	LF	\$3.26	\$3.26
Borehole markers	Borehole location/identification marker (EA, material cost only)	NA	NA	1.00	EA	\$32.00	\$32.00
Drill Rig time	Truck Mounted - 3.0 in. - 1,700 ft. capy.	NA	NA	10.00	EA	\$131.35	\$1,313.50
WaterTruck	Water Tanker, 3,500 Gal.	NA	NA	10.00	EA	\$63.55	\$635.50

Job Hours: 10.00

Total Cost: \$2,434.00

### BOREHOLE SEALING WORK

Task description:

Plug and seal DH-39

Site: Bowie No. 2 Mine

Permit Action: MT5

Permit/Job#: C1996083

### **PROJECT IDENTIFICATION**

Task #:	106HS	State:	Colorado	Abbreviation:	None
Date:	9/30/2019	County:	Delta	Filename:	C083-106hs
User:	ZTT				

Agency or organization name: DRMS

### **UNIT COSTS**

Borehole Description	Sealing/Item Method	Diameter	Length	Quantity	Unit	Unit Cost	Total Cost
Fill holes with cement	Portland cement grout ( Bag, material cost only94 lb. bag)	4	180	13.31	bag	\$13.40	\$178.35
Cut casings	Exposed casing removal - Calculate Circumference in Linear Feet	4	NA	1.00	LF	\$3.26	\$3.26
Borehole markers	Borehole location/identification marker (EA, material cost only)	NA	NA	1.00	EA	\$32.00	\$32.00
Drill Rig time	Truck Mounted - 3.0 in. - 1,700 ft. capy.	NA	NA	8.00	EA	\$131.35	\$1,050.80
WaterTruck	Water Tanker, 3,500 Gal.	NA	NA	8.00	EA	\$63.55	\$508.40

Job Hours: 8.00

Total Cost: \$1,773.00

### BOREHOLE SEALING WORK

Task description:

Plug and seal CWI-DH-47

_____

Site: Bowie No. 2 Mine

Permit Action: MT5

Permit/Job#: C1996083

**PROJECT IDENTIFICATION** 

Task #:	106HV	State:	Colorado	Abbreviation:	None
Date:	9/30/2019	County:	Delta	Filename:	C083-106hv
User:	ZTT	_		_	

Agency or organization name: DRMS

## **UNIT COSTS**

Borehole Description	Sealing/Item Method	Diameter	Length	Quantity	Unit	Unit Cost	Total Cost
Fill holes with cement	Portland cement grout ( Bag, material cost only94 lb. bag)	4	1800	133.12	bag	\$13.40	\$1,783.81
Cut casings	Exposed casing removal - Calculate Circumference in Linear Feet	4	NA	1.00	LF	\$3.26	\$3.26
Borehole markers	Borehole location/identification marker (EA, material cost only)	NA	NA	1.00	EA	\$32.00	\$32.00
Drill Rig time	Truck Mounted - 3.0 in. - 1,700 ft. capy.	NA	NA	12.00	EA	\$131.35	\$1,576.20
WaterTruck	Water Tanker, 3,500 Gal.	NA	NA	12.00	EA	\$63.55	\$762.60

Job Hours: 12.00

Total Cost: \$4,158.00

### BOREHOLE SEALING WORK

	Task description:	Plug and seal CV	NI-DH-48				
Site:	Bowie No. 2 Mine	Pern	nit Action:	MT5	Permit	/Job#:	C1996083
<u>PROJE</u>	CT IDENTIFICATIO	<u>N</u>					
Task	#: 106HW	State: Co	olorado		Abbreviation:	None	
Dat	te: 9/30/2019	County: De	elta		Filename:	C083-	-106hw
Use	er: ZTT						

## **UNIT COSTS**

Borehole Description	Sealing/Item Method	Diameter	Length	Quantity	Unit	Unit Cost	Total Cost
Fill holes with cement	Portland cement grout ( Bag, material cost only94 lb. bag)	4	2200	162.70	bag	\$13.40	\$2,180.18
Cut casings	Exposed casing removal - Calculate Circumference in Linear Feet	4	NA	1.00	LF	\$3.26	\$3.26
Borehole markers	Borehole location/identification marker (EA, material cost only)	NA	NA	1.00	EA	\$32.00	\$32.00
Drill Rig time	Truck Mounted - 3.0 in. - 1,700 ft. capy.	NA	NA	12.00	EA	\$131.35	\$1,576.20
WaterTruck	Water Tanker, 3,500 Gal.	NA	NA	12.00	EA	\$63.55	\$762.60

Job Hours: 12.00

Total Cost: \$4,554.00

## BOREHOLE SEALING WORK

Site: B	owie No. 2 Mine		Permit Action: MT5	Permit	/Job#: <u>C1996083</u>
ROJEC ¹	<u>IDENTIFICAT</u>	ION			
Task #:	106HX	State:	Colorado	Abbreviation:	None
Date:	9/30/2019	County:	Delta	Filename:	C083-106hx
User:	ZTT				

## **UNIT COSTS**

Borehole Description	Sealing/Item Method	Diameter	Length	Quantity	Unit	Unit Cost	Total Cost
Fill holes with cement	Portland cement grout ( Bag, material cost only94 lb. bag)	4	323	23.89	bag	\$13.40	\$320.13
Cut casings	Exposed casing removal - Calculate Circumference in Linear Feet	4	NA	1.00	LF	\$3.26	\$3.26
Borehole markers	Borehole location/identification marker (EA, material cost only)	NA	NA	1.00	EA	\$32.00	\$32.00
Drill Rig time	Truck Mounted - 3.0 in. - 1,700 ft. capy.	NA	NA	9.00	EA	\$131.35	\$1,182.15
WaterTruck	Water Tanker, 3,500 Gal.	NA	NA	9.00	EA	\$63.55	\$571.95

 Job Hours:
 9.00
 Total Cost:
 \$2,109.00

## BOREHOLE SEALING WORK

Site: B	owie No. 2 Mine	Permit Action:	MT5	Permit	/Job#: <u>C1996083</u>
DJECT	<b>FIDENTIFICAT</b>	ION			
Task #:	106IF	State: Colorado		Abbreviation:	None
Date:	9/30/2019	County: Delta		Filename:	C083-106if
User:	ZTT				

Borehole Description	Sealing/Item Method	Diameter	Length	Quantity	Unit	Unit Cost	Total Cost
Bottom Plug	PVC plug - 4 in. diameter borehole	3	NA	1.00	EA	\$32.62	\$32.62
Fill holes with cement	Portland cement grout ( Bag, material cost only94 lb. bag)	3	1512	62.90	bag	\$13.40	\$842.86
Cut casings	Exposed casing removal - Calculate Circumference in Linear Feet	3	NA	0.50	LF	\$3.26	\$1.63
Borehole markers	Borehole location/identification marker (EA, material cost only)	NA	NA	1.00	EA	\$32.00	\$32.00
Drill Rig time	Truck Mounted - 3.0 in. - 1,700 ft. capy.	NA	NA	12.00	EA	\$131.35	\$1,576.20
WaterTruck	Water Tanker, 3,500 Gal.	NA	NA	12.00	EA	\$63.55	\$762.60

# Job Hours: 12.00 Total Cost: \$3,248.00

### BOREHOLE SEALING WORK

Site: <u>B</u>	owie No. 2 Mine	Permit Action	: <u>MT5</u>	Permit	/Job#: <u>C199608</u>
)JEC]	<u> IDENTIFICATI</u>	ON			
'ask #:	106II	State: Colorado		Abbreviation:	None
Date:	9/30/2019	County: Delta		Filename:	C083-106ii
User:	ZTT				

Borehole Description	Sealing/Item Method	Diameter	Length	Quantity	Unit	Unit Cost	Total Cost
Bottom Plug	PVC plug - 4 in. diameter borehole	3	NA	1.00	EA	\$32.62	\$32.62
Fill holes with cement	Portland cement grout ( Bag, material cost only94 lb. bag)	3	1634	67.97	bag	\$13.40	\$910.80
Cut casings	Exposed casing removal - Calculate Circumference in Linear Feet	3	NA	0.50	LF	\$3.26	\$1.63
Borehole markers	Borehole location/identification marker (EA, material cost only)	NA	NA	1.00	EA	\$32.00	\$32.00
Drill Rig time	Truck Mounted - 3.0 in. - 1,700 ft. capy.	NA	NA	12.00	EA	\$131.35	\$1,576.20
WaterTruck	Water Tanker, 3,500 Gal.	NA	NA	12.00	EA	\$63.55	\$762.60

Job Hours: 12.00

Total Cost: \$3,316.00

## BOREHOLE SEALING WORK

	Task description:	Plug and seal CWI-DH-60	(aka Mon Well)		
Site:	Bowie No. 2 Mine	Permit Action:	MT5	Permi	t/Job#: <u>C1996083</u>
PROJE	CCT IDENTIFICATION	N			
Task Da Use	te: 9/30/2019	State: <u>Colorado</u> County: <u>Delta</u>		Abbreviation: Filename:	None C083-106ij
	Agency or organiza	tion name: DRMS			
UNIT	<u>COSTS</u>				

### Borehole Sealing/Item Method Unit Cost **Total Cost** Unit Description Length Quantity Diameter

Fill holes with cement	Portland cement grout ( Bag, material cost only94 lb. bag)	2	1073	19.84	bag	\$13.40	\$265.86
Cut casings	Exposed casing removal - Calculate Circumference in Linear Feet	2	NA	0.50	LF	\$3.26	\$1.63
Borehole markers	Borehole location/identification marker (EA, material cost only)	NA	NA	1.00	EA	\$32.00	\$32.00
Drill Rig time	Truck Mounted - 3.0 in. - 1,700 ft. capy.	NA	NA	12.00	EA	\$131.35	\$1,576.20
WaterTruck	Water Tanker, 3,500 Gal.	NA	NA	12.00	EA	\$63.55	\$762.60

Job Hours: 12.00

Total Cost: \$2,638.00

## BOREHOLE SEALING WORK

Site: I	Bowie No. 2 Mine	Permit Action:	MT5	Permit	/Job#:	C1996083
OJEC	<u>T IDENTIFICATI</u>	ON				
Task #:	106IP	State: Colorado		Abbreviation:	None	
	0.00.0000	County: Delta		Filename:	C083-	-106ip
Date:	9/30/2019	Dena			0000	

Borehole Description	Sealing/Item Method	Diameter	Length	Quantity	Unit	Unit Cost	Total Cost
Fill holes with cement	Portland cement grout ( Bag, material cost only94 lb. bag)	2.75	594	20.76	bag	\$13.40	\$278.18

Cut casings	Exposed casing removal - Calculate Circumference in Linear Feet	2.75	NA	0.50	LF	\$3.26	\$1.63
Borehole markers	Borehole location/identification marker (EA, material cost only)	NA	NA	1.00	EA	\$32.00	\$32.00
Drill Rig time	Truck Mounted - 3.0 in. - 1,700 ft. capy.	NA	NA	10.00	EA	\$131.35	\$1,313.50
WaterTruck	Water Tanker, 3,500 Gal.	NA	NA	10.00	EA	\$63.55	\$635.50

Total Cost: \$2,261.00 Job Hours: 10.00

## BOREHOLE SEALING WORK

	Task description:	Plug and seal DH-67-D				
Site:	Bowie No. 2 Mine	Permit Action:	MT5	Permit/Job#:	C1996083	
<u>PROJE</u>	CCT IDENTIFICATION	<u>N</u>				
Task	#· 106IO	State: Colorado		Abbreviation: None		

1 ask #:	1001Q	State:	Colorado	Abbreviation:	None
Date:	9/30/2019	County:	Delta	Filename:	C083-106iq
User:	ZTT				
	Agency or organization	on name: 1	DRMS		

Borehole	Sealing/Item Method						
Description		Diameter	Length	Quantity	Unit	Unit Cost	Total Cost
Fill holes with	Portland cement grout (	2.75	325	11.36	bag	\$13.40	\$152.22
cement	Bag, material cost						
	only94 lb. bag)						
Cut casings	Exposed casing removal	2.75	NA	0.50	LF	\$3.26	\$1.63
	- Calculate						

	Circumference in Linear Feet						
Borehole markers	Borehole location/identification marker (EA, material cost only)	NA	NA	1.00	EA	\$32.00	\$32.00
Drill Rig time	Truck Mounted - 3.0 in. - 1,700 ft. capy.	NA	NA	9.00	EA	\$131.35	\$1,182.15
WaterTruck	Water Tanker, 3,500 Gal.	NA	NA	9.00	EA	\$63.55	\$571.95

Job Hours: 9.00

Total Cost: \$1,940.00

## BOREHOLE SEALING WORK

Т	Task description:		Plug and seal DH-67-Abv				
Site:	Bowie No. 2 Mine	Permit Action:		MT5	Permit	/Job#: <u>C1996083</u>	
PROJEC Task # Date User	:: 10/2/2019	<u>N</u> State: County:	Colorado Delta		Abbreviation: Filename:	None C083-106ir	

Agency or organization name: DRMS

Borehole Description	Sealing/Item Method	Diameter	Length	Quantity	Unit	Unit Cost	Total Cost
Fill holes with cement	Portland cement grout ( Bag, material cost only94 lb. bag)	2.75	193	6.75	bag	\$13.40	\$90.45
Cut casings	Exposed casing removal - Calculate Circumference in Linear Feet	2.75	NA	0.50	LF	\$3.26	\$1.63

Borehole markers	Borehole	NA	NA	1.00	EA	\$32.00	\$32.00
	location/identification						
	marker (EA, material						
	cost only)						
Drill Rig time	Truck Mounted - 3.0 in.	NA	NA	8.00	EA	\$131.35	\$1,050.80
	- 1,700 ft. capy.						
WaterTruck	Water Tanker, 3,500	NA	NA	8.00	EA	\$63.55	\$508.40
	Gal.						

Job Hours: 8.00

Total Cost: \$1,683.00

### BOREHOLE SEALING WORK

-	Task description:	Plug and sea	l DH-67-Blw			
Site:	Bowie No. 2 Mine		Permit Action:	MT5	Permit	/Job#: <u>C1996083</u>
Task ‡ Date	e: 10/2/2019	<u>J</u> State: County:	Colorado Delta		Abbreviation: Filename:	None C083-106is
Use	r: <u>ZTT</u>					

Agency or organization name: DRMS

Borehole Description	Sealing/Item Method	Diameter	Length	Quantity	Unit	Unit Cost	Total Cost
Fill holes with cement	Portland cement grout ( Bag, material cost only94 lb. bag)	2.5	360	10.40	bag	\$13.40	\$139.36
Cut casings	Exposed casing removal - Calculate Circumference in Linear Feet	2.5	NA	0.50	LF	\$3.26	\$1.63
Borehole markers	Borehole location/identification	NA	NA	1.00	EA	\$32.00	\$32.00

	marker (EA, material cost only)						
Drill Rig time	Truck Mounted - 3.0 in. - 1,700 ft. capy.	NA	NA	9.00	EA	\$131.35	\$1,182.15
WaterTruck	Water Tanker, 3,500 Gal.	NA	NA	9.00	EA	\$63.55	\$571.95

Job Hours: 9.00

Total Cost: \$1,927.00

### BOREHOLE SEALING WORK

Та	sk description:	Plug and sea	d CWI-DH-69	(aka B-1 Mon Well)			
Site: <b>E</b>	Bowie No. 2 Mine		Permit Action:	MT5	Permit	Job#:	C1996083
PROJEC'	T IDENTIFICATION	N					
Task #: Date: User:	106IT 10/2/2019 ZTT	State: County:	Colorado Delta		Abbreviation: Filename:	None C083	-106it
	Agency or organiza	tion name:	DRMS				

Borehole Description	Sealing/Item Method	Diameter	Length	Quantity	Unit	Unit Cost	Total Cost
Fill holes with cement	Portland cement grout ( Bag, material cost only94 lb. bag)	2	1950	36.05	bag	\$13.40	\$483.07
Cut casings	Exposed casing removal - Calculate Circumference in Linear Feet	2	NA	0.50	LF	\$3.26	\$1.63
Borehole markers	Borehole location/identification marker (EA, material cost only)	NA	NA	1.00	EA	\$32.00	\$32.00

Drill Rig time	Truck Mounted - 3.0 in. - 1,700 ft. capy.	NA	NA	12.00	EA	\$131.35	\$1,576.20
WaterTruck	Water Tanker, 3,500 Gal.	NA	NA	12.00	EA	\$63.55	\$762.60

Job Hours:         12.00         Total Cost:         \$2,856.00	• /	Job Hours:	12.00	Total Cost:	\$2,856.00
-----------------------------------------------------------------	-----	------------	-------	-------------	------------

ite: Bo	owie No. 2 Mine	Permit Action:	MT5	Permit	/Job#: <u>C1996083</u>
DJECT	<u>'IDENTIFICAT</u>	ION			
Task #:	106IU	State: Colorado		Abbreviation:	None
Date:	10/2/2019	County: Delta		Filename:	C083-106iu
User:	ZTT				

Borehole Description	Sealing/Item Method	Diameter	Length	Quantity	Unit	Unit Cost	Total Cost
Fill holes with cement	Portland cement grout ( Bag, material cost only94 lb. bag)	4	695	51.40	bag	\$13.40	\$688.76
Cut casings	Exposed casing removal - Calculate Circumference in Linear Feet	4	NA	1.00	LF	\$3.26	\$3.26
Borehole markers	Borehole location/identification marker (EA, material cost only)	NA	NA	1.00	EA	\$32.00	\$32.00
Drill Rig time	Truck Mounted - 3.0 in. - 1,700 ft. capy.	NA	NA	11.00	EA	\$131.35	\$1,444.85

		Job J	Hours:	11.00		Total	Cost.	\$2,868.00
WaterTr	uck	Water Tanker, 3,500 Gal.	NA	NA	11.00	EA	\$63.55	\$699.05

Task description: Plug and seal 2010-1B Site: Bowie No. 2 Mine Permit Action: MT5 Permit/Job#: C1996083 **PROJECT IDENTIFICATION** Task #: 106IY State: Colorado Abbreviation: None Date: 10/2/2019 County: Delta Filename: C083-106iy User: ZTT

Agency or organization name: DRMS

Borehole Description	Sealing/Item Method	Diameter	Length	Quantity	Unit	Unit Cost	Total Cost
Fill holes with cement	Portland cement grout ( Bag, material cost only94 lb. bag)	4	1220	90.22	bag	\$13.40	\$1,208.95
Cut casings	Exposed casing removal - Calculate Circumference in Linear Feet	4	NA	1.00	LF	\$3.26	\$3.26
Borehole markers	Borehole location/identification marker (EA, material cost only)	NA	NA	1.00	EA	\$32.00	\$32.00
Drill Rig time	Truck Mounted - 3.0 in. - 1,700 ft. capy.	NA	NA	12.00	EA	\$131.35	\$1,576.20
WaterTruck	Water Tanker, 3,500 Gal.	NA	NA	12.00	EA	\$63.55	\$762.60

Job Hours: 12.00

### BOREHOLE SEALING WORK

,	Task description:	Plug and sea	al 2010-1SS				
Site:	Bowie No. 2 Mine	Permit Action: MT5		MT5	Permit/Job#:C1996083		
<u>PROJE</u>	CT IDENTIFICATION	N					
Task <del>i</del>	#: 106IZ	State:	Colorado		Abbreviation:	None	
Date	e: 10/2/2019	County:	Delta		Filename:	C083-106iz	
Use	r: ZTT						

Agency or organization name: DRMS

## **UNIT COSTS**

Borehole Description	Sealing/Item Method	Diameter	Length	Quantity	Unit	Unit Cost	Total Cost
Fill holes with cement	Portland cement grout ( Bag, material cost only94 lb. bag)	4	1140	84.31	bag	\$13.40	\$1,129.75
Cut casings	Exposed casing removal - Calculate Circumference in Linear Feet	4	NA	1.00	LF	\$3.26	\$3.26
Borehole markers	Borehole location/identification marker (EA, material cost only)	NA	NA	1.00	EA	\$32.00	\$32.00
Drill Rig time	Truck Mounted - 3.0 in. - 1,700 ft. capy.	NA	NA	12.00	EA	\$131.35	\$1,576.20
WaterTruck	Water Tanker, 3,500 Gal.	NA	NA	12.00	EA	\$63.55	\$762.60

Job Hours: 12.00 Total Cost: \$3,504.00

### SCRAPER TEAM WORK

Replace Topsoil from Stockpile A to Portal/Utility Bench

Task description:

Site: Bowie No. 2 Mine	it Action: <u>M</u>	T5		Permit/Job#: C1996083						
PROJECT IDENTIFI	CATION									
Task #: 110	Sta	te: Colorad	0		Abbrev	iation: None				
Date: 10/2/201 User: ZTT	9 Coun	ty: Delta			File	ename: <u>C85110</u>				
Agency or	organization name:	DRMS								
HOURLY EQUIPME	<u>NT</u>			COSTShift basis: <u>1</u>	per day					
		Equipment De	escri	ption						
		-	276	w/push-pull						
Sun	-L port Equipment -Load	Oozer: NA Area: NA								
Sup)	-Dump									
Road M	Aaintenance –Motor Gr -Water T									
Cost Breakdown:	Scraper Work Team	S	upp	ort Equipment	Maintena	nce Equipment				
	Scraper	Dozer		Load Area	Dump Area	Motor Grader	Water Truck			
%Utilization-machine:	100	N	A	NA	NA	NA	Ν			
Ownership cost/hour:	\$126.52	N	A	NA	NA	NA	N			
Operating cost/hour:	\$149.69	N	A	NA	NA	NA	N			
%Utilization-ripper:	NA	N	A	NA	NA	NA	N			
Ripper own. cost/hour:	NA	N	A	NA	NA	NA	N			
Ripper op. cost/hour:	NA	N	A	NA	NA	NA	N			
Operator cost/hour:	\$30.86	N	A	NA	NA	NA	N			
 Unit Subtotals:	\$307.07	N	A	NA	NA	NA	N			
 Number of Units:	2		0	0	0	0				
Group Subtotals:	Work:	\$614.14		Support:	\$0.00	Maint:	\$0.00			

### **MATERIAL QUANTITIES**

Initial volume:	91,800	CCY	Swell factor:	1.125	
Loose volume:	103,275	LCY			
Se	ource of estimated volume:	Page 2.05-35			
Source	e of estimated swell factor:	Cat Handbook			

Scraper Bowl (volume) Basis:

### **HOURLY PRODUCTION**

Material weight:	2,550 lbs/LCY	Struck Volume:	15.70	LCY
Material description:	Earth - Dry packed	Heaped Volume:	22.00	LCY
Rated Payload:	52,800 pounds	Average Volume:	18.85	LCY
Payload Capacity:	20.71 LCY	Adjusted Capacity:	18.85	LCY

### Cycle Time:

Scraper Loading Time: Maneuver and Spread Time:

# 0.90 Minutes 0.60 Minutes

### Job Condition Correction:

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

### Travel Time:

Road Condition: <u>Rutted dirt</u>, little maintenance, no water, 2" tire penetration 5.0

### Haul Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	8000.00	5.00	5.00	10.00	1068	7.53

Haul Time: **7.53** minutes

### Return Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	8000.00	-5.00	5.00	0.00	2921	2.83
			R	eturn Time:	2.83 minutes	5
			Total Scrape	er team cycle time:	11.86	minutes
			Adjusted	for job conditions:	158.30	LCY/Hour
			Selected Nu	umber of Scrapers:	2	Scraper(s)
					1	

Selected Number of Scrapers:2Scraper(s)Adjusted single scraper team (unit) hourly production:158.30LCY/HourAdjusted multiple scraper team (fleet) hourly production:158.30LCY/Hour

## Unadjusted unit production/hour: 190.73 LCY/Hour

Optimal Number of Scrapers per push dozer:

### JOB TIME AND COST

Fleet size:	1	Team(s)	Total job time:	652.39	Hours
Unit cost:	\$3.880	/LCY	Total job cost:	\$400,661	

Site Altitude: 6750 feet

### SCRAPER TEAM WORK

	Task description:			-	o Truck Loadout/C	-			
Site	e: Bowie No. 2 Mine	Pern	nit Actio	on: MT5		Permit/Job#: C	1996083	_	
	PROJECT IDENTIFI	CATION							
	Task #: 111	St	ate: (	Colorado		Abbrev	iation: None		
	Date: 10/2/201 User: ZTT	9 Cou	nty: I	Delta		File	ename: C083-111		
	Agency or	organization name:	DRMS	8					
	HOURLY EQUIPME	<u>NT</u>			COSTShift basis: <u>1</u>	per day			
				nent Descri					
			craper:	Cat 627G w/push-pull NA					
	-Dozer: Support Equipment -Load Area:								
		-Dump	Area:	NA NA					
	Road N	Iaintenance – Motor C		NA					
		-Water	Truck:	NA					
	Cost Breakdown:	Scraper Work Team		Supp	ort Equipment	Maintena	nce Equipment		
		Scraper	D	ozer	Load Area	Dump Area	Motor Grader	Water Truck	
	%Utilization-machine:	100		NA	NA	NA	NA	1	
	Ownership cost/hour:	\$126.52		NA	NA	NA	NA	1	
	Operating cost/hour:	\$149.69		NA	NA	NA	NA	1	
	%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	1	
	Operator cost/hour:	\$30.86		NA	NA	NA	NA	1	
	Unit Subtotals:	\$307.07		NA	NA	NA	NA	1	
	Number of Units:	2		0	0	0	0		
	Group Subtotals:	Work:	\$6	14.14	Support:	\$0.00	Maint:	\$0.00	

Total work team cost/hour: <u>\$614.14</u>

### **MATERIAL QUANTITIES**

Initial volume: 21,722

_____ CCY Swell factor: <u>1.125</u>

LCY 24,437

Source of estimated volume: Source of estimated swell factor: Page 2.05-35, plus 800 yds MR151, 710 yds MR153 Cat Handbook

Scraper Bowl (volume) Basis:

### **HOURLY PRODUCTION**

Material weight:	2,550 lbs/LCY	Struck Volume:	15.70	LCY
Material description:	Earth - Dry packed	Heaped Volume:	22.00	LCY
Rated Payload:	52,800 pounds	Average Volume:	18.85	LCY
Payload Capacity:	20.71 LCY	Adjusted Capacity:	18.85	LCY

Cycle Time:

Scraper Loading Time: Maneuver and Spread Time:

Job Condition Correction:

Site Altitude: 6750 feet

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

### Travel Time:

Road Condition: <u>Rutted dirt</u>, little maintenance, no water, 2" tire penetration 5.0

Haul Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	2000.00	-5.00	5.00	0.00	2921	0.83

<u>0.90</u> Minutes

 $\overline{0.60}$  Minutes

Haul Time: 0.83 minutes

Return Route.

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	2000.00	5.00	5.00	10.00	1768	1.20

Return Time:	1.20 minutes	
Total Scraper team cycle time:	3.53	minutes
Adjusted for job conditions:	531.86	LCY/Hour
Selected Number of Scrapers:	2	Scraper(s)
Adjusted single scraper team (unit) hourly production:	531.86	LCY/Hour
Adjusted multiple scraper team (fleet) hourly production:	531.86	LCY/Hour
Unadjusted unit production/hour: 640.79 LCY/Hour Optimal Number of Scrapers per push dozer:		
JOB TIME AND COST		

Fleet size:	1	Team(s)	Total job time:	45.95	Hours
Unit cost:	\$1.155	/LCY	Total job cost:	\$28,218	

## SCRAPER TEAM WORK

Task descripti	ion:	Replace Topsoil from	Stockpile F to Train L	oadout	
Site: Bowie No.	2 Mine	Permit Ac	tion: MT5	Permit/Job#: C1	996083
PROJECT II	DENTIFIC	CATION			
Task #:	112	State:	Colorado	Abbrevia	tion: None
Date:	10/2/2019	County:	Delta	Filen	ame: <u>C083-112</u>
User:	ZTT				
	Agency or o	organization name: DR	MS		
-	_				
HOURLY E	QUIPMEN	T	COSTSh	ift basis: <u>1 per day</u>	

Equipment Description			
-Scraper:	Cat 627G w/push-pull		
-Dozer:	NA		
Support Equipment -Load Area:	NA		
-Dump Area:	NA		
Road Maintenance – Motor Grader:	NA		
-Water Truck:	NA		

Cost Breakdown:	Scraper Work Team	suppo	ort Equipment	Maintena	nce Equipment	
	Scraper	Dozer	Load Area	Dump Area	Motor Grader	Water Truck
%Utilization-machine:	100	NA	NA	NA	NA	N
Ownership cost/hour:	\$126.52	NA	NA	NA	NA	Ν
Operating cost/hour:	\$149.69	NA	NA	NA	NA	N
%Utilization-ripper:	NA	NA	NA	NA	NA	N
Ripper own. cost/hour:	NA	NA	NA	NA	NA	N
Ripper op. cost/hour:	NA	NA	NA	NA	NA	Ν
Operator cost/hour:	\$30.86	NA	NA	NA	NA	Ν
Unit Subtotals:	\$307.07	NA	NA	NA	NA	N
Number of Units:	2	0	0	0	0	
Group Subtotals:	Work:	\$614.14	Support:	\$0.00	Maint:	\$0.00

Total work team cost/hour: <u>\$614.14</u>

### **MATERIAL QUANTITIES**

Initial volume:	24,000	CCY Swell fac	or: 1.125
Loose volume:	27,000	LCY	
S	ource of estimated volume:	Page 2.05-36; Page 2.05-48; I	Лар 32
Source	e of estimated swell factor:	Cat Handbook	

### **HOURLY PRODUCTION**

Scraper Bowl (volume) Basis:

Material weight:	2,550 lbs/LCY
Material description:	Earth - Dry packed
Rated Payload:	52,800 pounds
Payload Capacity:	20.71 LCY

Struck Volume:	15.70	LCY
Heaped Volume:	22.00	LCY
Average Volume:	18.85	LCY
Adjusted Capacity:	18.85	LCY

### Cycle Time:

Scraper Loading Time: Maneuver and Spread Time:  $\frac{0.90}{0.60}$  Minutes

### Job Condition Correction:

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

### Travel Time:

Road Condition: <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	1200.00	0.00	5.00	5.00	2218	0.71

Haul Time: **0.71** minutes

### Return Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	1200.00	0.00	5.00	5.00	2814	0.57
				Return Time:	0.57 minute	s
			Total Scra	per team cycle time:	2.78	minutes
			Adjuste	d for job conditions:	675.35	LCY/Hour
			Selected N	Number of Scrapers:	2	Scraper(s)
	Ad	djusted single s	craper team (unit	) hourly production:	675.35	LCY/Hour
	Adju	sted multiple sc	raper team (fleet	) hourly production:	675.35	LCY/Hour
0	Unadjusted unit p ptimal Number of Scrapers			LCY/Hour		
OB TIN	IE AND COST					
Fle	eet size: 1	Team(s)		Total job time:	39.98	Hours
U	nit cost: \$0.909	/LCY		Total job cost:	\$24,553	

Site Altitude: 6750 feet

### SCRAPER TEAM WORK

te: Bowie No. 2 Mine	Permit Ac	ction: MT5		Permit/Job#: C	1996083	
PROJECT IDENTIFI	CATION					
Task #: 113	State:	Colorado		Abbrev	iation: None	
Date: 10/2/201 User: ZTT	9 County:	Delta		File	name: C083-113	
		MC				
Agency of	organization name: <u>DR</u>	MS				
HOURLY EQUIPME	<u>NT</u>	C	COSTShift basis: 1	per day		
	Equ	ipment Descrip	tion			
	-Scrape		w/push-pull			
Sup	-Doze port Equipment -Load Area					
	-Dump Area	a: NA				
Road M	Aaintenance – Motor Grade					
	-Water Truck	: NA				
Cost Breakdown:	Scraper Work Team	Suppor	rt Equipment	Maintenar	ce Equipment	
	Scraper	Dozer	Load Area	Dump Area	Motor Grader	Water Tru
%Utilization-machine:	100	NA	NA	NA	NA	
Ownership cost/hour:	\$126.52	NA	NA	NA	NA	
Operating cost/hour:	\$149.69	NA	NA	NA	NA	
%Utilization-ripper:	NA	NA	NA	NA	NA	
Ripper own. cost/hour:	NA	NA	NA	NA	NA	
Ripper op. cost/hour:	NA	NA	NA	NA	NA	
Operator cost/hour:	\$30.86	NA	NA	NA	NA	
Unit Subtotals:	\$307.07	NA	NA	NA	NA	
Number of Units:	2	0	0	0	0	
Group Subtotals:	Work:	\$614.14	Support:	\$0.00	Maint:	\$0.00
Total work team cost/hour	: <u>\$614.14</u>					
	TIES					
MATERIAL QUANT						
Initial volume: Loose volume:	20,489 23,050	CCY LCY	Swell facto	r: <u>1.125</u>		
		_				
	ource of estimated volume: e of estimated swell factor:	Operator Es Cat Handbo				
Source	or commated swem factor.		UK			
HOURLY PRODUCT	ION					
		Scr	aper Bowl (volume)	Basis:		
Material weight: 2,	550 lbs/LCY	<u></u>	• · · ·	15.70	LCY	
	irth - Dry packed			22.00	LCY	
-	,800 pounds			18.85	- LCY	
			ljusted Capacity:	18.85	LCY	

Cycle Time:

Scraper Loading Time: Maneuver and Spread Time:

### Job Condition Correction:

0.90 Minutes 0.60 Minutes

Site Altitude: 6750 feet

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

### Travel Time:

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

### Haul Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	3900.00	9.00	3.00	12.00	918	4.27

Haul Time: 4.27 minutes

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	3900.00	-9.00	3.00	-6.00	2938	1.37
			F	Return Time:	<b>1.37</b> minute	S
			Total Scrap	er team cycle time:	7.14	minutes
			Adjusted	for job conditions:	262.95	LCY/Hour
			Selected N	umber of Scrapers:	2	Scraper(s)
	А	djusted single s	scraper team (unit)	hourly production:	262.95	LCY/Hour
	Adju	sted multiple s	craper team (fleet)	hourly production:	262.95	LCY/Hour
Ol	Unadjusted unit p ptimal Number of Scrapers			LCY/Hour		
OB TIM	IE AND COST					
Fle	et size: 1	Team(s)	,	Total job time:	87.66	Hours
Un	it cost: \$2.336	/LCY		Total job cost:	\$53,835	

,	Task description:	Replace Topsoil f	n Stock	xpiles C/D to	Pond C and Gob	Pond D			
Site:	Bowie No. 2 Mine	Perm	it Actio	on: MT5		Permit/Job#: <u>C1</u>	99608	3	
<u>P</u>	ROJECT IDENTIFIC	CATION							
	Task #:       115         Date:       10/2/2019         User:       ZTT			Colorado Delta		Abbrevia	ation: name:	None C083-113	
	Agency or	organization name:	DRMS	5					
H	OURLY EQUIPMEN	<u>NT</u>		C	COSTShift basis: <u>1</u>	per day			
_		~	<u> </u>	nent Descrip					
			raper: Dozer:	Cat 62/G	w/push-pull				
_	Supp	oort Equipment -Load		NA					
		-Dump		NA					
	Road M	Iaintenance – Motor G		NA					
		-Water	ruck:	NA					
С	ost Breakdown:	Scraper Work Team		Suppor	rt Equipment	Maintenan	ce Equi	ipment	
		Scraper	D	ozer	Load Area	Dump Area		or Grader	Water Truck
	%Utilization-machine:	100		NA	NA	NA		NA	Ň
	Ownership cost/hour:	\$126.52		NA	NA	NA		NA	N
	Operating cost/hour:	\$149.69		NA	NA	NA		NA	N
	%Utilization-ripper:	NA		NA	NA	NA		NA	N
	Ripper own. cost/hour:	NA		NA	NA	NA		NA	N
	Ripper op. cost/hour:	NA		NA	NA	NA		NA	N
	Operator cost/hour:	\$30.86		NA	NA	NA		NA	N
	Unit Subtotals:	\$307.07		NA	NA	NA		NA	N

Total work team cost/hour: <u>\$614.14</u>

### **MATERIAL QUANTITIES**

Number of Units:

Group Subtotals:

Initial volume:	5,300	CCY	Swell factor:	1.125	
Loose volume:	5,963	LCY			
Se	ource of estimated volume:	Page 2.05-35			
Source	e of estimated swell factor:	Cat Handbook			

0

\$614.14

0

Support:

0

\$0.00

0

\$0.00

Maint:

### **HOURLY PRODUCTION**

		Scraper Bowl (volum	e) Basis:	
Material weight:	2,550 lbs/LCY	Struck Volume:	15.70	LCY
Material description:	Earth - Dry packed	Heaped Volume:	22.00	LCY
Rated Payload:	52,800 pounds	Average Volume:	18.85	LCY
Payload Capacity:	20.71 LCY	Adjusted Capacity:	18.85	LCY

2

Work:

Scraper Loading Time: Maneuver and Spread Time:  $\frac{0.90}{0.60}$  Minutes

Job Condition Correction:

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

### Travel Time:

Road Condition: <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	1500.00	10.00	5.00	15.00	734	2.06

Haul Time: 2.06 minutes

Total job cost: **\$8,055** 

Site Altitude: 6750 feet

### Return Route:

Unit cost: \$1.351 /LCY

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	1500.00	-10.00	5.00	-5.00	2938	0.57
			F	Return Time:	0.57 minute	s
			Total Scrap	er team cycle time:	4.13	minutes
	Adjusted for job conditions:				454.59	LCY/Hour
Selected Number of Scrapers: Adjusted single scraper team (unit) hourly production: Adjusted multiple scraper team (fleet) hourly production: Unadjusted unit production/hour: <u>547.70</u> LCY/Hour Optimal Number of Scrapers per push dozer:					2	_ Scraper(s) LCY/Hour
					454.59	
					454.59	LCY/Hour
OB TIM	IE AND COST					
Fle	et size: 1	Team(s)		Total job time:	13.12	Hours

### BULLDOZER WORK

 Task description:
 Replace topsoil from Stockpile to Pond F

 Site:
 Bowie No. 2 Mine
 Permit Action: MT5
 Permit/Job#: C1996083
## **PROJECT IDENTIFICATION**

Task #:	116	State:	Colorado	Abbreviation:	None
Date:	10/2/2019	County:	Delta	Filename:	C083-116
User:	ZTT	_			

_____

Agency or organization name: DRMS

## HOURLY EQUIPMENT COST

Basic Machine:	Cat D10T - 10SU
Horsepower:	574
Blade Type:	Semi-Universal
Attachment:	3-shank ripper
Shift Basis:	1 per day
Data Source:	(CRG)

#### Cost Breakdown:

eost Dicardo wii.		Utilization %
Ownership Cost/Hour:	\$140.61	NA
Operating Cost/Hour:	\$135.35	100
Ripper own. Cost/Hour:	\$18.34	NA
Ripper op. Cost/Hour:	\$10.80	100
Operator Cost/Hour:	\$41.24	NA
Total unit Cost/Hour:	\$346.33	

rotar anni Costi riotar.	45 10:55
Total Fleet Cost/Hour:	\$346.33

#### **MATERIAL QUANTITIES**

Initial Volume: Swell factor: Loose volume:	
Source of estimated v Source of estimated s	Division of Reclamation, Mining & Safety Cat Handbook

## **HOURLY PRODUCTION**

Average push distance: Unadjusted hourly production:		300 feet 633.3 LCY/hr	_	
Materials consistency descrip	ption:	Consolidated stockpile 1.0	1	
Average push gradient: Average site altitude:	0 % 6,100	feet		
Material weight:	2,550	lbs/LCY		
Weight description:	Earth	- Dry packed		
Job Condition Correction Factor Source				
Operator	Skill:	0.750	(AVG.)	
Material consist	tency:	1.000	(CAT HB)	
Dozing method:		1.000	(GEN.)	
Visibility:		1.000	(AVG.)	
Job effici	iency:	0.830	(1 SHIFT/DAY)	
Spoi	l pile:	0.800	(FND-RF)	
Push gra	dient:	1.000	(CAT HB)	
Altitude:		1.000	(CAT HB)	
Material W	eight:	0.902	(CAT HB)	
Blade	type:	1.000	(PAT)	

Net correction: 0.4492

Adjusted unit production:	284.48 LCY/hr
Adjusted fleet production:	284.48 LCY/hr

## JOB TIME AND COST

Fleet size:	1 Dozer(s)
Unit cost:	\$1.217/LCY

Total job time:	<b>3.95</b> Hours
Total job cost:	\$1,370

## SCRAPER TEAM WORK

Task description: <b>Replace</b>		Replace topsoil from S	topsoil from Stockpile F to Pond J					
Site: Bowie No. 2 Mine		Permit Ac	Permit Action: MT5		Permit/Job#: C1996083			
PROJECT II	DENTIFIC	CATION						
Task #: Date: User:	117 10/2/2019 ZTT	State: County:	Colorado Delta		Abbrev File	riation: _ ename: _	None C083-117	
	Agency or o	organization name:	MS					
HOURLY E	QUIPMEN	<u> T</u>		COSTShift basis: <u>1 per o</u>	<u>day</u>			

-Scraper:	Cat 627G w/push-pull
-Dozer:	NA
Support Equipment -Load Area:	NA
-Dump Area:	NA
Road Maintenance – Motor Grader:	NA
-Water Truck:	NA

Cost Breakdown:	Scraper Work Team	Support Equipment		Maintena		
	Scraper	Dozer	Load Area	Dump Area	Motor Grader	Water Truck
%Utilization-machine:	100	NA	NA	NA	NA	N
Ownership cost/hour:	\$126.52	NA	NA	NA	NA	N
Operating cost/hour:	\$149.69	NA	NA	NA	NA	N
%Utilization-ripper:	NA	NA	NA	NA	NA	N
Ripper own. cost/hour:	NA	NA	NA	NA	NA	Ν
Ripper op. cost/hour:	NA	NA	NA	NA	NA	Ν
Operator cost/hour:	\$30.86	NA	NA	NA	NA	N
Unit Subtotals:	\$307.07	NA	NA	NA	NA	N
Number of Units:	2	0	0	0	0	
Group Subtotals:	Work:	\$614.14	Support:	\$0.00	Maint:	\$0.00

Total work team cost/hour: <u>\$614.14</u>

#### **MATERIAL QUANTITIES**

Initial volume:	1,190	CCY	Swell factor:	1.125	
Loose volume:	1,339	LCY			
Se	ource of estimated volume:	Page 2.05-36	; Page 2.05-48 and Ma	ap 32	
Source	e of estimated swell factor:	Cat Handboo	k		

#### **HOURLY PRODUCTION**

Material weight:	2,550 lbs/LCY	Struck Volume:	15.70	LCY
Material description:	Earth - Dry packed	Heaped Volume:	22.00	LCY
Rated Payload:	52,800 pounds	Average Volume:	18.85	LCY
Payload Capacity:	20.71 LCY	Adjusted Capacity:	18.85	LCY

#### Cycle Time:

Scraper Loading Time: Maneuver and Spread Time: <u>0.90</u> Minutes <u>0.60</u> Minutes

Site Altitude: 6750 feet

#### Job Condition Correction:

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

#### Travel Time:

Road Condition: <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)
		(%)				

## Scraper Bowl (volume) Basis:

Struck Volume:	15.70	LCY
Heaped Volume:	22.00	LCY
Average Volume:	18.85	LCY
Adjusted Capacity:	18.85	LCY

1	2700.00	0.00	5.00	5.00	2218	1.39
				Haul Time:	1.39 minutes	
eturn Ro	oute:					
Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	2700.00	0.00	5.00	5.00	2814	1.11
			F	Return Time:	1.11 minutes	
			Total Scrap	er team cycle time:	4.00	minutes
			Adjusted	for job conditions:	469.37	LCY/Hour
			Selected N	umber of Scrapers:	2	Scraper(s)
	A	Adjusted single s	craper team (unit)	hourly production:	469.37	LCY/Hour
	Adj	usted multiple so	craper team (fleet)	hourly production:	469.37	LCY/Hour
(	Unadjusted unit Optimal Number of Scraper			LCY/Hour		
OB TI	ME AND COST					
F	leet size: 1	Team(s)	,	Total job time:	2.85	Hours
U	Init cost: \$1.308	/LCY		Total job cost:	\$1,752	

## SCRAPER TEAM WORK

Task description: R	eplace topsoil from Sto	ckpile F to Pond K		
Site: Bowie No. 2 Mine	Permit Actio	on: MT5	Permit/Job#: C199608	3
PROJECT IDENTIFICAT	TION			
Task #: 118	State: 0	Colorado	Abbreviation:	None
Date: 10/2/2019	County: 1	Delta	Filename:	C083-118
User: <u>ZTT</u>				
Agency or orga	anization name: DRM	S		
HOURLY EQUIPMENT		COSTShift basis:	<u>1 per day</u>	
	Equip	ment Description		
	-Scraper:	Cat 627G w/push-pull		
	-Dozer:	NA		
	E	NA		
Support	Equipment -Load Area:			
Support 1	Equipment -Load Area: -Dump Area:	NA		

-Water Tru	ck: NA

Cost Breakdown:	Scraper Work Team	Suppo	ort Equipment	Maintena	nce Equipment	
	Scraper	Dozer	Load Area	Dump Area	Motor Grader	Water Truck
%Utilization-machine:	100	NA	NA	NA	NA	N
Ownership cost/hour:	\$126.52	NA	NA	NA	NA	Ν
Operating cost/hour:	\$149.69	NA	NA	NA	NA	N
%Utilization-ripper:	NA	NA	NA	NA	NA	Ν
Ripper own. cost/hour:	NA	NA	NA	NA	NA	Ν
Ripper op. cost/hour:	NA	NA	NA	NA	NA	Ν
Operator cost/hour:	\$30.86	NA	NA	NA	NA	Ν
Unit Subtotals:	\$307.07	NA	NA	NA	NA	Ν
Number of Units:	2	0	0	0	0	
Group Subtotals:	Work:	\$614.14	Support:	\$0.00	Maint:	\$0.00

Total work team cost/hour: <u>\$614.14</u>

#### **MATERIAL QUANTITIES**

Initial volume: Loose volume:	800 <b>900</b>	CCY LCY	Swell factor:	1.125	_
Se	ource of estimated volume:	Page 2.05-36	; Page 2.05-48; Map 3	32	
Source	e of estimated swell factor:	Cat Handboo	k		

#### **HOURLY PRODUCTION**

Scraper Bowl (volume) Basis:

Material weight:	2,550 lbs/LCY	Struck Volume:	15.70	LCY
Material description:	Earth - Dry packed	Heaped Volume:	22.00	LCY
Rated Payload:	52,800 pounds	Average Volume:	18.85	LCY
Payload Capacity:	20.71 LCY	Adjusted Capacity:	18.85	LCY

Cycle Time:

Scraper Loading Time: Maneuver and Spread Time: <u>0.90</u> Minutes <u>0.60</u> Minutes

#### Job Condition Correction:

Site Altitude: 6750 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	2700.00	0.00	5.00	5.00	2218	1.39

Haul Time: **1.39** minutes

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	2700.00	0.00	5.00	5.00	2814	1.11
			J	Return Time:	<b>1.11</b> minute	s
			Total Scrap	per team cycle time:	4.00	minutes
			Adjusted	l for job conditions:	469.37	LCY/Hour
			Selected N	Number of Scrapers:	2	Scraper(s)
	Ad	ljusted single	scraper team (unit)	) hourly production:	469.37	LCY/Hour
	Adju	sted multiple s	craper team (fleet)	) hourly production:	469.37	LCY/Hour
0	Unadjusted unit p ptimal Number of Scrapers			LCY/Hour		
IOB TIN	IE AND COST					
Fle	eet size: 1	Team(s)		Total job time:	1.92	Hours
U	nit cost: \$1.308	/LCY		Total job cost:	\$1,178	

## BULLDOZER WORK

Task description:   Replace top     Site:   Bowie No. 2 Mine		ace topsoil fm sto	ckpile to MR/TR Light	-Use Roads	
		Permit A	ction: <u>MT5</u>	Permit/Job#: C199608	3
PROJECT I	DENTIFICATIO	<u>N</u>			
Task #:	119	State:	Colorado	Abbreviation:	None
Date:	10/2/2019	County:	Delta	Filename:	C083-119
User:	ZTT				
	Agency or organization	ation name: DR	RMS		
HOURLY E	QUIPMENT CO	<u>ST</u>			
Basic M	Iachine: Cat D10	Γ - 10SU			
Horse	epower: 574				
Blad	le Type: Semi-Un	iversal			

	Horsepower:	5/4
	Blade Type:	Semi-Universal
	Attachment:	3-shank ripper
	Shift Basis:	1 per day
	Data Source:	(CRG)
_		

#### Cost Breakdown:

a Breakdown:	1	
		<u>Utilization %</u>
Ownership Cost/Hour:	\$140.61	NA
Operating Cost/Hour:	\$135.35	100
Ripper own. Cost/Hour:	\$18.34	NA

	\$10.80	100	
	\$41.24	NA	
\$346.33 <b>\$1 385 33</b>			
	\$346.33 <b>\$1,385.33</b>	\$41.24	\$41.24 NA \$346.33

## **MATERIAL QUANTITIES**

Initial Volume: Swell factor:	· · · · ·		
Loose volume:	72,390 LCY		
Source of estimated v	volume:	53.18 acres, 0.75' depth	
Source of estimated s	well factor:	Cat Handbook	

## **HOURLY PRODUCTION**

Average push distance: Unadjusted hourly production	100  fe on: 1,718.	eet 9 LCY/hr	
Materials consistency descr	iption: <u>C</u>	Consolidated stockpi	le 1.0
Average push gradient: Average site altitude:	5 % 7,500 feet		
Material weight:	2,550 lbs/LC	Y	
Weight description:	Earth - Dry pa	acked	
Job Condition Correction Fac	tor_		Source
Operato	r Skill:	0.750	(AVG.)
Material consis	•	1.000	(CAT HB)
Dozing m		1.000	(GEN.)
	ibility:	1.000	(AVG.)
Job effic	ciency:	0.830	(1 SHIFT/DAY)
Spo	oil pile:	0.800	(FND-RF)
Push gr		0.903	(CAT HB)
Al	ltitude:	1.000	(CAT HB)
Material V	Veight:	0.902	(CAT HB)
	e type:	1.000	(PAT)
Net corr	ection: 0.4056	5	
Adjusted unit production:	697.19 LC	Y/hr	
Adjusted fleet production:	2788.76 LO	CY/hr	
JOB TIME AND COST	2700.70 E	2 1/111	

# Fleet size:4 Dozer(s)Unit cost:\$0.497/LCYTotal job time:**25.96** HoursTotal job cost:\$35,960

## BULLDOZER WORK

Task description:	Replace topsoil from st	tockpiles to MR	/TR drill pads			
Site: Bowie No. 2 Mine	Permit Ac	Permit Action: MT5		Permit/Job#: <u>C1996083</u>		
PROJECT IDENTIFICA	ATION					
Task #: 120	State:	Colorado		Abbreviation:	None	
Date: 10/2/2019	County:	Delta		Filename:	C083-120	
User: ZTT						
Agency or or	rganization name: DR	MS				
HOURLY EQUIPMENT	T COST					
	tt D10T - 10SU					
Horsepower: 574						
51	mi-Universal					
Attachment: 3-s	shank ripper					
	ber day					
Data Source: (C	RG)					
Cost Breakdown:						
			Utilization %			
Ownership Cost/Hour:	:	\$140.61	NA			
Operating Cost/Hour:	:	\$135.35	100			
Ripper own. Cost/Hour:		\$18.34	NA			
Ripper op. Cost/Hour:		\$0.00	0			
Operator Cost/Hour:		\$41.24	NA			
Total unit Cost/Hour:	\$335.53					
Total Fleet Cost/Hour:	\$1,342.13					

## **MATERIAL QUANTITIES**

Initial Volume:	58,650
Swell factor:	1.125

Loose volume: 65,	981 LCY		
Source of estimated volum	ne:	DRMS Estimate	
Source of estimated swell		Cat Handbook	
HOURLY PRODUCTION	<u>ON</u>		
Average push distance:	_	120 feet	
Unadjusted hourly product	tion:	1,503.8 LCY/hr	
Materials consistency desc	cription:	Consolidated stockpile 1	.0
Average push gradient:	5 %		
Average site altitude:	7,500	feet	
Material weight:	2,550	lbs/LCY	
Weight description:	Earth -	Dry packed	
Job Condition Correction Fa	actor		Source
Operat	or Skill:	0.750	(AVG.)
Material cons	sistency:	1.000	(CAT HB)
Dozing	method:	1.000	(GEN.)
V	isibility:	1.000	(AVG.)
Job eff	ficiency:	0.830	(1 SHIFT/DAY)
Sp	oil pile:	0.800	(FND-RF)
Push g	gradient:	0.903	(CAT HB)
I	Altitude:	1.000	(CAT HB)
Material	Weight:	0.902	(CAT HB)
Bla	de type:	1.000	(PAT)
Net co	rrection:	0.4056	
Adjusted unit production:	609	.94 LCY/hr	
Adjusted fleet production:	243	9.76 LCY/hr	
v I			
JOB TIME AND COST			
	•		

Fleet size:	4 Dozer(s)
Unit cost:	\$0.550/LCY
Total job time:	<b>27.04</b> Hours
Total job cost:	\$36,297
-	

## SCRAPER TEAM WORK

Site: <b>Bowie</b>	cription: e No. 2 Mine	Replace topsoil fr		n: <u>MT5</u>	•	Permit/Job#:	1996083	-
<u>PROJE(</u>	CT IDENTIFI	CATION						
D	k #: 121 Date: 10/2/201 Jser: ZTT	9 Cour	nty: D	Colorado Delta		Abbrev File	iation: <u>None</u> ename: <u>C083-121</u>	
	Agency or	organization name:	DRMS	)				
HOURL	Y EQUIPMEN	<u>NT</u>			COSTShift basis: <u>1</u>	per day		
			1 1	nent Descri				
			raper:		w/push-pull			
	Supi	-I port Equipment -Load	Dozer: Area:	NA NA				
	Dup	-Dump		NA				
	Road M	laintenance – Motor G	rader:	NA				
		-Water	Fruck:	NA				
Cost Brea	akdown:	Scraper Work Team		Suppo	ort Equipment	Maintena	nce Equipment	
0050 010		Scraper	Do	ozer	Load Area	Dump Area	Motor Grader	Water Truck
%Utiliz	ation-machine:	100		NA	NA	NA	NA	Ň
Owner	rship cost/hour:	\$126.52		NA	NA	NA	NA	N
Oper	ating cost/hour:	\$149.69		NA	NA	NA	NA	Ň
%Ut	ilization-ripper:	NA		NA	NA	NA	NA	N
Ripper	own. cost/hour:	NA		NA	NA	NA	NA	N
Rippe	er op. cost/hour:	NA		NA	NA	NA	NA	N
Ope	rator cost/hour:	\$30.86		NA	NA	NA	NA	N
	Unit Subtotals:	\$307.07		NA	NA	NA	NA	N
N	umber of Units:	2		0	0	0	0	
G	roup Subtotals:	Work:	\$61	4.14	Support:	\$0.00	Maint:	\$0.00

Total work team cost/hour: <u>\$614.14</u>

## **MATERIAL QUANTITIES**

Initial volume:	11,000	CCY
Loose volume:	12,375	LCY

Swell factor: 1.125

Source of estimated volume:	Operator Estimate
Source of estimated swell factor:	Cat Handbook

Scraper Bowl (volume) Basis:

#### **HOURLY PRODUCTION**

Material weight:	2,550 lbs/LCY	Struck Volume:	15.70	LCY
Material description:	Earth - Dry packed	Heaped Volume:	22.00	LCY
Rated Payload:	52,800 pounds	Average Volume:	18.85	LCY
Payload Capacity:	20.71 LCY	Adjusted Capacity:	18.85	LCY

Cycle Time:

Scraper Loading Time:	<u>0.90</u> Minutes
Maneuver and Spread Time:	0.60 Minutes

#### Job Condition Correction:

Site Altitude: 6750 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	800.00	-20.00	5.00	-15.00	1295	0.77

Haul Time: 0.77 minutes

#### **Return Route:**

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	800.00	20.00	5.00	25.00	712	1.13
			R	eturn Time:	<b>1.13</b> minute	s
			Total Scrap	er team cycle time:	3.40	minutes
			Adjusted	for job conditions:	552.19	LCY/Hour
			Selected N	umber of Scrapers:	2	Scraper(s)
	A	djusted single s	scraper team (unit)	hourly production:	552.19	LCY/Hour
	Adju	sted multiple s	craper team (fleet)	hourly production:	552.19	LCY/Hour
Oj	Unadjusted unit p ptimal Number of Scrapers			LCY/Hour		
OB TIN	IE AND COST					
Fle	et size: 1	Team(s)	]	Fotal job time:	22.41	Hours

Unit cost: \$1.112 /LCY

Total job cost: \$13,763

## BULLDOZER WORK

Bowie No. 2 Mine       Permit Action: MT5       Permit/Job#: C1990083         PROJECT IDENTIFICATION       Task #: 122       State: Colonado       Abbreviation: None         Dat:       10/22019       County: Delta       Filename: C083-122         Dat:       10/22019       County: Delta       Filename: C083-122         Dat:       10/22019       County: Delta       Filename: C083-122         Agency or organization name:       DRMS         DOURLY EOUIPMENT COSE         Basic Machine:       Cat D107 - 108U         Horspower:       574         Bladci Type:       Semi-Universal         Attachment:       3-shank fripper         Shift Basis:       1 per day         Data Source:       (CRG)         Cost Breakdown:       \$143.53         Operating Cost/Hour:       \$143.53         Shift Basis:       1 per day         Data Source:       (CRG)         Operating Cost/Hour:       \$143.53         Shift Basis       1 per day         Operator Cost/Hour:       \$143.64         Na Piper Operator Cost/Hour:       \$135.35         Total unit Cost/Hour:       \$13.85.33         Source of estimated swell factor:       Cat Handbook         <	Task description:	Replace topsoil from stockpile to Ma	terial Storage Area		
Task #:       122       State:       Colorado       Abbreviation:       None         Dar::       TT       County:       Delta       CO83-122         Ageney or organization name:       DRMS         DIMENTIONST         Basic Machine:       Car D107 : 10SU         Horsepower:       574         Bilade Type:       Semi-Universal         Attachment:       3-shank ripper         Shifi Basis:       1 per day         Data Source:       CRG5         Cost Breakdown:       \$140.61         Nemership Cost/Hour:       \$140.61         Nemership Cost/Hour:       \$143.53         Shifi Basis:       1 per day         Data Source:       CRG5         Overstring Cost/Hour:       \$140.61         Nance       \$135.35         Operating Cost/Hour:       \$143.63         Total Pred Cost/Hour:       \$143.63         Total Unit Cost/Hour:       \$135.35         Loose volume:       \$143.63         Total Pred Cost/Hour:       \$143.63         Total Pred Cost/Hour:       \$143.63         Total Fred Cost/Hour:       \$143.63         Total Pred Cost/Hour:       \$143.61         Loose volume:	Site: Bowie No. 2 Mine	Permit Action: MT5	Permit/	Job#: <u>C199608</u>	3
Date:       1022019       County:       Delta       Filename:       C083-122         Agency or organization name:       DRMS         HOURLY EQUIPMENT COST         Basic Machine:       Cat D107 - 108U         Horsepower:       574         Blade Type:       Semi-Universal         Attachment:       3-shank ripper         Shili Basis:       1 per day         Data Source:       (CRG)         Cost Breakdown:       \$140.61         Ownership Cost/Hour:       \$140.61         Na       \$153.35         Odo       \$18.34         Ripper own, Cost/Hour:       \$18.33         Store Cost/Hour:       \$135.35         Operating Cost/Hour:       \$135.35         Operator Cost/Hour:       \$140.61         Na       Na         Operator Cost/Hour:       \$14.24         NA       Na         Total unit Cost/Hour:       \$135.35         Swelf factor:       1.125         Loose volume:       281.24         Source of estimated swell factor:       Cat Handbook         HOURLY PRODUCTION       946.0 LCY/hr         Materials consistency description:       Consolidated stockpile 1.0         M	PROJECT IDENTIFICA	ATION			
User:       ZTT         Agency or organization name:       DRMS         HOURLY EQUIPMENT COST       Basic Machine:       Cat D107 - 10SU         Horsepower:       574       Biade Type:       Semi-Universal         Attachment:       3-shank ripper       Biade Type:       Semi-Universal         Attachment:       3-shank ripper       Biade Type:       Semi-Universal         Matachment:       3-shank ripper       Biade Type:       Semi-Universal         Matachment:       3-shank ripper       Biade Type:       Semi-Universal         Ownership Cost/Hour:       \$140.61       NA       Dopation %         Operating Cost/Hour:       \$140.61       NA       NA         Operating Cost/Hour:       \$140.61       NA       NA         Operator Cost/Hour:       \$1435.53       100       Na         Operator Cost/Hour:       \$346.33       Total unit Cost/Hour:       \$345.33         Total unit Cost/Hour:       \$140.51       NA       Na         Swelf factor:       1.125       Lose volume:       B1LCY         Lose volume:       250       Cat Handbook       Cat Handbook         HOURLY PRODUCTION       946.0 LCY/hr       Materials consistency description:       Consolidated stockpile 1.0					
Agency or organization name:       DEMS         Agency or organization name:       DEMS         Basic Machine:       Cat D107 - 10.8U         Horsepower:       574         Blade Type:       Semi-Universal         Short Machine:       Cat D107 - 10.8U         Blade Type:       Semi-Universal         Short Machine:       Short Niversal         Data Source:       CCG)         Data Source:       CCG)         Ownership Cost/Hour:       \$1135.35         Dotata Source:       Shift Basis:         Apper own. Cost/Hour:       \$1135.35         Orgenatio Cost/Hour:       \$1135.30         Operation Cost/Hour:       \$1135.30         Operator Cost/Hour:       \$1135.30         Operator Cost/Hour:       \$112.80         Operator Cost/Hour:       \$138.34         Mail Piele Cost/Hour:       \$138.34         Dial Piele Cost/Hour:       \$138.36         Surger of cost/Hour:       \$138.36         Surger of cost/Hour:       \$138.36         Surger of estimated swell factor:       Cat Handbook         Surger of estimated swell factor:       Cat Handbook         Division of Reclamation, Mining & Safety       Safety         Gareer of estimated swell fa		County: Delta		Filename:	C083-122
HOURLY COUPENENT COST         Basic Machine:       Cat D107 - 10SU         Harsepower:       574         Blade Type:       Semi-Universal         Attachment:       3-shank ripper         Shift Basis:       Jper day         Data Source:       (CRG)         Cost Breakdown         Ownership Cost/Hour:       \$140.61       NA         Operating Cost/Hour:       \$135.35       100         Ripper op. Cost/Hour:       \$18.34       NA         Ripper op. Cost/Hour:       \$18.34       NA         Ripper op. Cost/Hour:       \$18.33       100         Operator Cost/Hour:       \$18.33       NA         Ripper op. Cost/Hour:       \$138.5.33       100         Operator Cost/Hour:       \$14.24       NA         Sild Fleet Cost/Hour:       \$138.5.33       100         Data Unit Cost/Hour:       \$138.5.33       100         Dose volume:       281 LCY       NA         Source of estimated volume:       Division of Reclamation, Mining & Safety         Source of estimated swell factor:       Cat Handbook         Merage push distance:       200 feet         Unadjusted hourly production:       946.0 LCY/hr         Materials consisten					
Basic Machine:       Cat D10T - 10SU         Horsepower:       574         Blade Type:       Semi-Universal         Attachment:       S-shank ripper         Shift Basis:       1 per day         Data Source:       (CRG)         Cost Breakdown:       Utilization %         Ownership Cost/Hour:       \$140.61         Namership Cost/Hour:       \$135.35         Operating Cost/Hour:       \$135.35         Ripper own.Cost/Hour:       \$18.34         Napper op.Cost/Hour:       \$18.34         NA       Ripper op.Cost/Hour:         \$140.80       100         Operator Cost/Hour:       \$141.24         NA       NA         Potal unit Cost/Hour:       \$14.385.33         Total Inited Volume:       \$20         Swell factor:       1.125         Loose volume:       281 LCY         Source of estimated swell factor:       Cat Handbook         Dutuet bourdy production:       946.0 LCY/hr         Materials consistency description:       Consolidated stockpile 1.0         Materials consistency description:       Consolidated stockpile 1.0         Average pash distance:       5 %         Average site altitude:       6.000 feet	Agency or or	ganization name: DRMS			
Horsepower:       574         Blade Type:       Semi-Universal         Attachment:       Sshink Fipper         Shift Basis:       1 per day         Data Source:       (CRG)         Cost Breakdown:          Ownership Cost/Hour:       \$140.61         Nata Source:       (CRG)         Ownership Cost/Hour:       \$140.61         Nata Source:       (CRG)         Ownership Cost/Hour:       \$135.35         1000       Singper own. Cost/Hour:         Slix.34       NA         Ripper op. Cost/Hour:       \$18.34         Naternation       Na         Operator Cost/Hour:       \$346.33         Total unit Cost/Hour:       \$346.33         Total Fleet Cost/Hour:       \$1385.33         MATERIAL OUANTITIES       Initial Volume:         Source of estimated swell factor:	HOURLY EQUIPMENT	<u>COST</u>			
Blade Type:       Semi-Universal         Attachment:       3-shank ripper         Shift Basis:       1 per day         Data Source:       (CRG)         Cost Breakdown:         Ownership Cost/Hour:       \$140.61         NA       NA         Operating Cost/Hour:       \$135.35         Operating Cost/Hour:       \$138.34         NA       Ripper own. Cost/Hour:         \$10.80       100         Operator Cost/Hour:       \$10.80         Operator Cost/Hour:       \$138.34         Total unit Cost/Hour:       \$138.33         Total Pleet Cost/Hour:       \$1,385.33         MATERIAL OUANTITIES       Initial Volume:         Source of estimated volume:       Division of Reclamation, Mining & Safety         Source of estimated swell factor:       Cat Handbook         HOURLY PRODUCTION       946.0 LCY/hr         Materials consistency description:       Consolidated stockpile 1.0         Average push gradient:       5 %         Average site altitude:       6,000 feet					
Attachment:       3-shank ripper         Shift Basis:       1 per day         Data Source:       (CRG)         Cost Breakdown:       1 utilization %         Ownership Cost/Hour:       \$140.61       NA         Operating Cost/Hour:       \$135.35       100         Ripper own. Cost/Hour:       \$18.34       NA         Ripper op. Cost/Hour:       \$10.80       100         Operator Cost/Hour:       \$10.80       100         Operator Cost/Hour:       \$14.24       NA         Total unit Cost/Hour:       \$135.33       100         Operator Cost/Hour:       \$14.24       NA         Total unit Cost/Hour:       \$1385.33       100         MATERIAL OUANTITIES       Initial Volume:       250         Source of estimated volume:       Division of Reclamation, Mining & Safety         Source of estimated swell factor:       Cat Handbook         HOURLY PRODUCTION       Materials consistency description:       200 feet         Unadjusted hourly production:       946.0 LCY/hr	1				
Shift Basis: $1 \text{ per day}$ Data Source:       (CRG)         Cost Breakdown:       Utilization %         Ownership Cost/Hour:       \$140.61       NA         Operating Cost/Hour:       \$135.35       100         Ripper own. Cost/Hour:       \$18.33       NA         Ripper own. Cost/Hour:       \$10.80       100         Operator Cost/Hour:       \$346.33       Total unit Cost/Hour:       \$346.33         Total Pleet Cost/Hour:       \$135.33       NA         MATERIAL QUANTITIES       Initial Volume:       281 LCY         Loose volume:       281 LCY       Source of estimated volume:       Division of Reclamation, Mining & Safety         Source of estimated swell factor:       Cat Handbook       Cat Handbook         HOURLY PRODUCTION       946.0 LCY/hr       Materials consistency description:       Consolidated stockpile 1.0         Average push distance:       5 %       4.0000 feet       1.0000 feet	•••				
Data Source:       (CRG)         Cost Breakdown:       Utilization %         Ownership Cost/Hour:       \$140.61       NA         Operating Cost/Hour:       \$135.35       100         Ripper own. Cost/Hour:       \$138.34       NA         Ripper op. Cost/Hour:       \$10.80       100         Operator Cost/Hour:       \$13.83.4       NA         Ripper op. Cost/Hour:       \$14.24       NA         Total unit Cost/Hour:       \$346.33       Total Unit Cost/Hour:       \$13.85.33         Total Unit Cost/Hour:       \$13.85.33       Surger of Cost/Hour:       \$1.25         Loose volume:       250       Swell factor:       Li125         Loose volume:       281 LCY       Source of estimated volume:       Division of Reclamation, Mining & Safety         Source of estimated swell factor:       Cat Handbook		**			
Cost Breakdown:       Utilization %         Ownership Cost/Hour:       \$140.61       NA         Operating Cost/Hour:       \$135.35       100         Ripper own. Cost/Hour:       \$1135.35       100         Ripper op. Cost/Hour:       \$10.80       100         Operator Cost/Hour:       \$11.35.35       100         Operator Cost/Hour:       \$11.35.35       100         Operator Cost/Hour:       \$11.42       NA         Total unit Cost/Hour:       \$346.33       Total Fleet Cost/Hour:       \$1.385.33         MATERIAL OUANTITIES       Initial Volume:       \$250       \$1.125         Loose volume:       281 LCY       Source of estimated volume:       Division of Reclamation, Mining & Safety         Source of estimated swell factor:       Cat Handbook       Cat Handbook         HOURLY PRODUCTION       946.0 LCY/hr       Materials consistency description:       Consolidated stockpile 1.0         Materials consistency description:       Consolidated stockpile 1.0       Average push gradien:       5 %         Average site altitude:       5 %       6,0000 feet       Stock					
Ownership Cost/Hour: $140.61$ NA         Operating Cost/Hour: $$140.61$ NA         Na $$135.35$ 100         Ripper own. Cost/Hour: $$135.35$ 100         Operator Cost/Hour: $$18.34$ NA         Ripper op. Cost/Hour: $$10.80$ 100         Operator Cost/Hour: $$346.33$ Total unit Cost/Hour: $$346.33$ Total Fleet Cost/Hour: $$346.33$ Total Fleet Cost/Hour: $$1,385.33$ MATERIAL QUANTITIES       Initial Volume:       250       Cost         Swell factor:       1.125       Cat Handbook         Loose volume:       281 LCY       Cat Handbook         Source of estimated swell factor:       Cat Handbook       Cat Handbook         HOURLY PRODUCTION       946.0 LCY/hr       Materials consistency description:       Consolidated stockpile 1.0         Average push distance:       200 feet       100       946.0 LCY/hr         Materials consistency description:       Consolidated stockpile 1.0       Average push gradient: $5\%$ Average site altitude: $6,000$ feet       100       100       100		(0)			
Ownership Cost/Hour:       \$140.61       NA         Operating Cost/Hour:       \$135.53       100         Ripper own Cost/Hour:       \$18.34       NA         Ripper op. Cost/Hour:       \$10.80       100         Operator Cost/Hour:       \$346.33         Total unit Cost/Hour:       \$346.33         Total unit Cost/Hour:       \$346.33         Total Pleet Cost/Hour:       \$1,385.33         MATERIAL QUANTITIES         Initial Volume:       250         Swell factor:       1.125         Loos volume:       281 LCY         Source of estimated volume:       Division of Reclamation, Mining & Safety         Source of estimated swell factor:       Cat Handbook         HOURLY PRODUCTION       946.0 LCY/hr         Materials consistency description:       Consolidated stockpile 1.0         Average push gradient:       5 %         Average site altitude:       5 %         Average site altitude:       5 %	Cost Breakdown:				
Operating Cost/Hour:       \$135.35       100         Ripper own. Cost/Hour:       \$18.34       NA         Ripper op. Cost/Hour:       \$10.80       100         Operator Cost/Hour:       \$10.80       100         Operator Cost/Hour:       \$346.33       NA         Total unit Cost/Hour:       \$346.33       NA         MATERIAL QUANTITIES       \$1,385.33       NA         Initial Volume:       250       Swell factor:       1.125         Loose volume:       281 LCY       Source of estimated volume:       Division of Reclamation, Mining & Safety         Source of estimated swell factor:       Cat Handbook       Cat Handbook         HOURLY PRODUCTION       946.0 LCY/hr       Materials consistency description:       Consolidated stockpile 1.0         Average push gradient:       5 %       4       6,0000 feet       10	Ownership Cost/Hours	\$140.61			
Ripper own. Cost/Hour:       \$18.34       NA         Ripper op. Cost/Hour:       \$10.80       100         Operator Cost/Hour:       \$346.33         Total unit Cost/Hour:       \$346.33         Total Fleet Cost/Hour:       \$345.33         MATERIAL QUANTITIES         Initial Volume:       250         Swell factor:       1.125         Loose volume:       281 LCY         Source of estimated volume:       Division of Reclamation, Mining & Safety         Source of estimated swell factor:       Cat Handbook         HOURLY PRODUCTION       946.0 LCY/hr         Materials consistency description:       Consolidated stockpile 1.0         Average push gradient:       5 %         Average site altitude:       5 %         Average site altitude:       5 %					
Ripper op. Cost/Hour:       \$10.80       100         Operator Cost/Hour:       \$41.24       NA         Total unit Cost/Hour:       \$346.33					
Operator Cost/Hour:       \$41.24       NA         Total unit Cost/Hour:       \$346.33         Total Fleet Cost/Hour:       \$1,385.33         MATERIAL QUANTITIES         Initial Volume:       250         Swell factor:       1.125         Loose volume:       281 LCY         Source of estimated volume:       Division of Reclamation, Mining & Safety         Source of estimated swell factor:       Cat Handbook         HOURLY PRODUCTION       946.0 LCY/hr         Materials consistency description:       Consolidated stockpile 1.0         Average push gradient:       5 %         Average site altitude:       5 %					
Total Fleet Cost/Hour:       \$1,385.33         MATERIAL QUANTITIES         Initial Volume:       250         Swell factor:       1.125         Loose volume:       281 LCY         Source of estimated volume:       Division of Reclamation, Mining & Safety         Source of estimated swell factor:       Cat Handbook         HOURLY PRODUCTION       Average push distance:       200 feet         Unadjusted hourly production:       946.0 LCY/hr         Materials consistency description:       Consolidated stockpile 1.0         Average push gradient:       5 %         Average site altitude:       5 %					
Total Fleet Cost/Hour:       \$1,385.33         MATERIAL QUANTITIES         Initial Volume:       250         Swell factor:       1.125         Loose volume:       281 LCY         Source of estimated volume:       Division of Reclamation, Mining & Safety         Source of estimated swell factor:       Cat Handbook         HOURLY PRODUCTION       Average push distance:       200 feet         Unadjusted hourly production:       946.0 LCY/hr         Materials consistency description:       Consolidated stockpile 1.0         Average push gradient:       5 %         Average site altitude:       5 %	Total unit Cost/Hour	\$346.33			
Initial Volume:       250         Swell factor:       1.125         Loose volume:       281 LCY         Source of estimated volume:       Division of Reclamation, Mining & Safety         Source of estimated swell factor:       Cat Handbook         HOURLY PRODUCTION       Cat Handbook         Average push distance:       200 feet         Unadjusted hourly production:       946.0 LCY/hr         Materials consistency description:       Consolidated stockpile 1.0         Average push gradient:       5 %         Average site altitude:       6,000 feet					
Initial Volume:       250         Swell factor:       1.125         Loose volume:       281 LCY         Source of estimated volume:       Division of Reclamation, Mining & Safety         Source of estimated swell factor:       Cat Handbook         HOURLY PRODUCTION       Cat Handbook         Average push distance:       200 feet         Unadjusted hourly production:       946.0 LCY/hr         Materials consistency description:       Consolidated stockpile 1.0         Average push gradient:       5 %         Average site altitude:       6,000 feet	MATERIAI OHANTITI	IFS			
Swell factor:       1.125         Loose volume:       281 LCY         Source of estimated volume:       Division of Reclamation, Mining & Safety         Source of estimated swell factor:       Cat Handbook         HOURLY PRODUCTION         Average push distance:       200 feet         Unadjusted hourly production:       946.0 LCY/hr         Materials consistency description:       Consolidated stockpile 1.0         Average site altitude:       5 %         Average site altitude:       6,000 feet					
Loose volume:       281 LCY         Source of estimated volume:       Division of Reclamation, Mining & Safety         Source of estimated swell factor:       Cat Handbook         HOURLY PRODUCTION         Average push distance:       200 feet         Unadjusted hourly production:       946.0 LCY/hr         Materials consistency description:       Consolidated stockpile 1.0         Average push gradient:       5 %         Average site altitude:       5 %		5			
Source of estimated volume:       Division of Reclamation, Mining & Safety         Source of estimated swell factor:       Cat Handbook         HOURLY PRODUCTION       Average push distance:       200 feet         Unadjusted hourly production:       946.0 LCY/hr         Materials consistency description:       Consolidated stockpile 1.0         Average push gradient:       5 %         Average site altitude:       6,000 feet					
Source of estimated swell factor:       Cat Handbook         HOURLY PRODUCTION       200 feet         Average push distance:       200 feet         Unadjusted hourly production:       946.0 LCY/hr         Materials consistency description:       Consolidated stockpile 1.0         Average push gradient:       5 %         Average site altitude:       6,000 feet					
HOURLY PRODUCTION         Average push distance:       200 feet         Unadjusted hourly production:       946.0 LCY/hr         Materials consistency description:       Consolidated stockpile 1.0         Average push gradient:       5 %         Average site altitude:       6,000 feet		,	Aining & Safety		
Average push distance:       200 feet         Unadjusted hourly production:       946.0 LCY/hr         Materials consistency description:       Consolidated stockpile 1.0         Average push gradient:       5 %         Average site altitude:       6,000 feet	Source of estimated swell fa	actor: Cat Handbook			
Unadjusted hourly production:       946.0 LCY/hr         Materials consistency description:       Consolidated stockpile 1.0         Average push gradient:       5 %         Average site altitude:       6,000 feet	HOURLY PRODUCTIO	<u>N</u>			
Unadjusted hourly production:       946.0 LCY/hr         Materials consistency description:       Consolidated stockpile 1.0         Average push gradient:       5 %         Average site altitude:       6,000 feet	Average nuch distance	200 feet			
Materials consistency description:       Consolidated stockpile 1.0         Average push gradient:       5 %         Average site altitude:       6,000 feet	01				
Average push gradient:5 %Average site altitude:6,000 feet	5 - 1				
Average site altitude:6,000 feet	Materials consistency descr	iption: Consolidated stockpile	1.0		
Average site altitude:6,000 feet	Average push gradient:	5 %			
Material weight: 2,550 lbs/LCY		6,000 feet			
	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:	1.000	(GEN.)	
Visibility:	1.000	(AVG.)	
Job efficiency:	0.830	(1 SHIFT/DAY)	
Spoil pile:	0.800	(FND-RF)	
Push gradient:	0.903	(CAT HB)	
Altitude:	1.000	(CAT HB)	
Material Weight:	0.902	(CAT HB)	
Blade type:	1.000	(PAT)	

Net correction: 0.4056

Adjusted unit production:	383.70 LCY/hr
Adjusted fleet production:	1534.8 LCY/hr

## JOB TIME AND COST

Fleet size:	4 Dozer(s)
Unit cost:	\$0.903/LCY
Total job time: Total job cost:	0.18 Hours \$254

## SCRAPER TEAM WORK

Task descript	tion:	Replace topsoil from Sto	ckpile E to Gob Pile #2		
Site: Bowie No.	2 Mine	Permit Actio	on: MT5	Permit/Job#: C199608	3
PROJECT I	DENTIFICA	ATION			
Task #:	123	State:	Colorado	Abbreviation:	None
Date:	10/2/2019	County:	Delta	Filename:	C083-123
User:	ZTT				
	Agency or of	rganization name: DRM	S		
HOURLY E	QUIPMENT	<u>r</u>	COSTShift ba	asis: <u>1 per day</u>	
		Equip	ment Description		
		-Scraper:	Cat 627G w/push-pull		
		-Dozer:	NA		
	Suppo	rt Equipment -Load Area:	NA		
		-Dump Area:	NA		

Cost Breakdown:	Scraper Work Team	Suppo	ort Equipment	Maintena	nce Equipment	
	Scraper	Dozer	Load Area	Dump Area	Motor Grader	Water Truck
%Utilization-machine:	100	NA	NA	NA	NA	N
Ownership cost/hour:	\$126.52	NA	NA	NA	NA	N
Operating cost/hour:	\$149.69	NA	NA	NA	NA	N
%Utilization-ripper:	NA	NA	NA	NA	NA	N
Ripper own. cost/hour:	NA	NA	NA	NA	NA	N
Ripper op. cost/hour:	NA	NA	NA	NA	NA	N
Operator cost/hour:	\$30.86	NA	NA	NA	NA	N
Unit Subtotals:	\$307.07	NA	NA	NA	NA	N
Number of Units:	2	0	0	0	0	
Group Subtotals:	Work:	\$614.14	Support:	\$0.00	Maint:	\$0.00
						•

NA

NA

Total work team cost/hour: <u>\$614.14</u>

Road Maintenance – Motor Grader:

-Water Truck:

#### **MATERIAL QUANTITIES**

Initial volume: 40,368	CCY	Swell factor:	1.125	
Loose volume: <b>45,414</b>	LCY			_
Source of estimated volume:	Appendix A			
Source of estimated swell factor:	Cat Handbook			

Scraper Bowl (volume) Basis:

## **HOURLY PRODUCTION**

Material weight:	2,550 lbs/LCY	Struck Volume:	15.70	LCY
Material description:	Earth - Dry packed	Heaped Volume:	22.00	LCY
Rated Payload:	52,800 pounds	Average Volume:	18.85	LCY
Payload Capacity:	20.71 LCY	Adjusted Capacity:	18.85	LCY

Cycle Time:

Scraper Loading Time: Maneuver and Spread Time:

Job Condition Correction:

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

#### Travel Time:

Road Condition: <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	1000.00	12.00	5.00	17.00	650	1.55

0.90 Minutes

0.60 Minutes

Haul Time: 1.55 minutes

Site Altitude: 6100 feet

Scraper(s) LCY/Hour

LCY/Hour

Return	Route	e:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	1000.00	-12.00	5.00	-7.00	2938	0.41
			R	eturn Time:	0.41 minute	s
			Total Scrape	er team cycle time:	3.46	minutes
			Adjusted	for job conditions:	542.62	LCY/Hour

Adjusted for job conditions:

Selected Number of Scrapers:2Adjusted single scraper team (unit) hourly production:542.62 542.62

Adjusted multiple scraper team (fleet) hourly production:

Unadjusted unit production/hour: 653.76 LCY/Hour Optimal Number of Scrapers per push dozer:

#### JOB TIME AND COST

Fleet size:	1	Team(s)	Total job time:	83.69	Hours
Unit cost:	\$1.132	/LCY	Total job cost:	\$51,400	

## SCRAPER TEAM WORK

Replace Topsoil from Stockpile D to Gob Pile #4 Task description:

Site: Bowie No. 2 Mine

#### **PROJECT IDENTIFICATION**

Task #:	124	State:	Colorado	Abbreviation:	None
Date:	10/2/2019	County:	Delta	Filename:	C083-124
User:	ZTT				

Agency or organization name: DRMS

HOURLY EQUIPMENT

COSTShift basis: <u>1 per day</u>

Equipment Description				
-Scraper:	Cat 627G w/push-pull			
-Dozer:	NA			
Support Equipment -Load Area:	NA			
-Dump Area:	NA			
Road Maintenance – Motor Grader:	NA			
-Water Truck:	NA			

Cost Breakdown:	Scraper Work Team Support Equip		ort Equipment	pment Maintenance Equipment		
	Scraper	Dozer	Load Area	Dump Area	Motor Grader	Water Truck
%Utilization-machine:	100	NA	NA	NA	NA	N
Ownership cost/hour:	\$126.52	NA	NA	NA	NA	N
Operating cost/hour:	\$149.69	NA	NA	NA	NA	N
%Utilization-ripper:	NA	NA	NA	NA	NA	N
Ripper own. cost/hour:	NA	NA	NA	NA	NA	N
Ripper op. cost/hour:	NA	NA	NA	NA	NA	N
Operator cost/hour:	\$30.86	NA	NA	NA	NA	N
Unit Subtotals:	\$307.07	NA	NA	NA	NA	N
Number of Units:	2	0	0	0	0	
Group Subtotals:	Work:	\$614.14	Support:	\$0.00	Maint:	\$0.00

Total work team cost/hour: <u>\$614.14</u>

#### **MATERIAL QUANTITIES**

Initial volume: Loose volume:	4,524 4,524	CCY LCY	Swell factor:	1.000	-
Source of estimated volume: Source of estimated swell factor:		Volume IX, Appe Cat Handbook	endix A		

Scraper Bowl (volume) Basis:

#### **HOURLY PRODUCTION**

Material weight:	2,550 lbs/LCY	Struck Volume:	15.70	LCY
Material description:	Earth - Dry packed	Heaped Volume:	22.00	LCY
Rated Payload:	52,800 pounds	Average Volume:	18.85	LCY
Payload Capacity:	20.71 LCY	Adjusted Capacity:	18.85	LCY

Cycle Time:

Scraper Loading Time: Maneuver and Spread Time:  $\frac{0.90}{0.60}$  Minutes

Job Condition Correction:

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

#### Travel Time:

Road Condition: <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	1000.00	5.00	5.00	10.00	1068		0.97
				Haul Time:	0.97	minutes	

## Return Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	1000.00	-5.00	5.00	0.00	2921	0.44

	Return Time:	0.44 minutes	
Т	otal Scraper team cycle time:	2.91	minutes
	Adjusted for job conditions:	645.18	LCY/Hour
S	Selected Number of Scrapers:	2	Scraper(s)
Adjusted single scraper te	eam (unit) hourly production:	645.18	LCY/Hour
Adjusted multiple scraper te	am (fleet) hourly production:	645.18	LCY/Hour
Unadjusted unit production/hour:777. Optimal Number of Scrapers per push dozer:	32 LCY/Hour		

#### JOB TIME AND COST

Fleet size:	1	Team(s)	Total job time:	7.01	Hours
Unit cost:	\$0.952	/LCY	Total job cost:	\$4,306	

#### SCRAPER TEAM WORK

Task description:	Replace topsoil from stockpile to Gob Pile #3	
Site: Bowie No. 2 Mine	Permit Action: MT5	Permit/Job#: <u>C1996083</u>
PROJECT IDENTIFIC	CATION	
Task #: 125	State: Colorado	Abbreviation: None

Date:	10/2/2019
User:	ZTT

County: Delta

Filename: C083-125

Agency or organization name: DRMS

#### HOURLY EQUIPMENT

COSTShift basis: <u>1 per day</u>

Equipment Description				
-Scraper:	Cat 627G w/push-pull			
-Dozer:	NA			
Support Equipment -Load Area:	NA			
-Dump Area:	NA			
Road Maintenance – Motor Grader:	NA			
-Water Truck:	NA			

Cost Breakdown:	Scraper Work Team Support Equipment		Maintenar			
	Scraper	Dozer	Load Area	Dump Area	Motor Grader	Water Truck
%Utilization-machine:	100	NA	NA	NA	NA	N
Ownership cost/hour:	\$126.52	NA	NA	NA	NA	Ν
Operating cost/hour:	\$149.69	NA	NA	NA	NA	Ν
%Utilization-ripper:	NA	NA	NA	NA	NA	N
Ripper own. cost/hour:	NA	NA	NA	NA	NA	N
Ripper op. cost/hour:	NA	NA	NA	NA	NA	Ν
Operator cost/hour:	\$30.86	NA	NA	NA	NA	Ν
Unit Subtotals:	\$307.07	NA	NA	NA	NA	Ν
Number of Units:	2	0	0	0	0	
Group Subtotals:	Work:	\$614.14	Support:	\$0.00	Maint:	\$0.00

Total work team cost/hour: <u>\$614.14</u>

#### **MATERIAL QUANTITIES**

Initial volume: Loose volume:	46,708 <b>46,708</b>	CCY LCY	Swell factor:	1.000	
	ource of estimated volume: e of estimated swell factor:	Operator Estimate Cat Handbook			

#### **HOURLY PRODUCTION**

#### Scraper Bowl (volume) Basis:

Material weight:	2,550 lbs/LCY	Struck Volume:	15.70	LCY
Material description:	Earth - Dry packed	Heaped Volume:	22.00	LCY
Rated Payload:	52,800 pounds	Average Volume:	18.85	LCY
Payload Capacity:	20.71 LCY	Adjusted Capacity:	18.85	LCY

Cycle Time:

Scraper Loading Time: Maneuver and Spread Time:  $\frac{0.90}{0.60}$  Minutes

Job Condition Correction:

Site Altitude: 6750 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	2000.00	0.00	5.00	5.00	2218	1.07
				Haul Time:	1.07 minutes	5
Return Ro	ute:					
Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	2000.00	0.00	5.00	5.00	2814	0.86
	Adju	sted multiple so	Total Scrap Adjusted Selected N craper team (unit) craper team (fleet)	Return Time: er team cycle time: for job conditions: fumber of Scrapers: hourly production: hourly production:	547.36 2 547.36	<ul> <li>minutes</li> <li>LCY/Hour</li> <li>Scraper(s)</li> <li>LCY/Hour</li> <li>LCY/Hour</li> </ul>
0	Unadjusted unit p ptimal Number of Scrapers			LCY/Hour		
JOB TIN	IE AND COST					
Fle	eet size: 1	Team(s)		Total job time:	85.33	Hours
U	nit cost: \$1.122	/LCY		Total job cost:	\$52,406	

## BULLDOZER WORK

ite: Bowie No.	2 Mine	Permit Ac	ction: MT5	Permit/Job#:	C1996083
PROJECT I	DENTIFICAT	<u>rion</u>			
Task #:	126	State:	Colorado	Abbro	eviation: None
Date:	10/2/2019	County:	Delta	F	ilename: C083-126
	ZTT				

#### HOURLY EQUIPMENT COST

Basic Machine:	Cat D10T - 10SU
Horsepower:	574
Blade Type:	Semi-Universal
Attachment:	3-shank ripper
Shift Basis:	1 per day
Data Source:	(CRG)

#### Cost Breakdown:

<u>Cost Breakdown</u> .		Utilization %
Ownership Cost/Hour:	\$140.61	NA
<b>Operating Cost/Hour:</b>	\$135.35	100
Ripper own. Cost/Hour:	\$18.34	NA
Ripper op. Cost/Hour:	\$10.80	100
Operator Cost/Hour:	\$41.24	NA
Total unit Cost/Hour	\$346.33	

Total unit Cost/Hour:	\$346.33
Total Fleet Cost/Hour:	\$1,385.33

## MATERIAL QUANTITIES

Initial Volume: Swell factor:	<u>300</u> 1.125	
Loose volume:	338 LCY	
Source of estimated v	volume:	Division of Reclamation, Mining & Safety

Source of estimated volume:		Division of Reclamation,	Mining & Safety
Source of estimated swell factor	or:	Cat Handbook	
HOURLY PRODUCTION			
Average push distance:		150 feet	
Unadjusted hourly production:		1,243.2 LCY/hr	
5 5 1			
Materials consistency descript	ion:	Consolidated stockpile	1.0
Average push gradient:	5 %		
Average site altitude:	6,100	) feet	
Material weight:	2,550	) lbs/LCY	
Weight description:	Earth	- Dry packed	
Job Condition Correction Factor	<u>r_</u>		Source
Operator S	kill:	0.750	(AVG.)
Material consistency:		1.000	(CAT HB)
Dozing met	hod:	1.000	(GEN.)
Visibi	ility:	1.000	(AVG.)
Job efficie	ncy:	0.830	(1 SHIFT/DAY)
Spoil	pile:	0.800	(FND-RF)
Push grad	ient:	0.903	(CAT HB)
Altit	ude:	1.000	(CAT HB)
Material Wei	ight:	0.902	(CAT HB)
Blade t	ype:	1.000	(PAT)
Net correct	tion:	0.4056	
Adjusted unit production:	504	4.24 LCY/hr	
Adjusted fleet production:	20	16.96 LCY/hr	

JOB TIME AND COST

Fleet size:	4 Dozer(s)
Unit cost:	\$0.687/LCY
Total job time:	<b>0.17</b> Hours

## SCRAPER TEAM WORK

Task description:	Replace topsoil from stoe	kpile to Water Ta	nk Bench			
Site: Bowie No. 2 Mine Permit Actio		on: MT5	Permit/J	Permit/Job#: C1996083		
PROJECT IDENTIFIC	ATION					
Task #: 127	State: 0	Colorado		Abbreviation:	None	
Date: 10/2/2019	County:	Delta		Filename:	C083-127	
User: ZTT						
Agency or o	organization name: DRM	5				
HOURLY EQUIPMEN	<u>T</u>	COSTS	hift basis: <u>1 per day</u>			
	Equip	ment Description				
	-Scraper:	Cat 627G w/push	-pull			
	-Dozer:	NA				
Suppo	ort Equipment -Load Area:	NA				
	-Dump Area:	NA				
Road Ma	intenance – Motor Grader:	NA				
	-Water Truck:	NA				

Cost Breakdown:	Scraper Work Team	Suppo	ort Equipment	Maintena	nce Equipment	
	Scraper	Dozer	Load Area	Dump Area	Motor Grader	Water Truck
%Utilization-machine:	100	NA	NA	NA	NA	N
Ownership cost/hour:	\$126.52	NA	NA	NA	NA	N
Operating cost/hour:	\$149.69	NA	NA	NA	NA	N
%Utilization-ripper:	NA	NA	NA	NA	NA	N
Ripper own. cost/hour:	NA	NA	NA	NA	NA	N
Ripper op. cost/hour:	NA	NA	NA	NA	NA	N
Operator cost/hour:	\$30.86	NA	NA	NA	NA	N
Unit Subtotals:	\$307.07	NA	NA	NA	NA	N
Number of Units:	2	0	0	0	0	
Group Subtotals:	Work:	\$614.14	Support:	\$0.00	Maint:	\$0.00

Total work team cost/hour: \$614.14

#### **MATERIAL QUANTITIES**

Initial volume: Loose volume:	850 <b>956</b>	CCY LCY	Swell factor:	1.125	_
Se	ource of estimated volume:	Operator Estimate			
Source	e of estimated swell factor:	Cat Handbook			

Scraper Bowl (volume) Basis:

#### **HOURLY PRODUCTION**

## Material weight:2,550 lbs/LCYStruck Volume:15.70LCYMaterial description:Earth - Dry packedHeaped Volume:22.00LCYRated Payload:52,800 poundsAverage Volume:18.85LCYPayload Capacity:20.71 LCYAdjusted Capacity:18.85LCY

#### Cycle Time:

Scraper Loading Time:	
Maneuver and Spread Time:	

 $\frac{0.90}{0.60}$  Minutes

Job Condition Correction:

Site Altitude: 6750 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:

Datum Dauta

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	1000.00	-15.00	5.00	-10.00	1749	0.69

Haul Time: **0.69** minutes

R	Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
	1	1000.00	15.00	5.00	20.00	868	1.17

			Return Time:	1.17	minutes	
			Total Scraper team cycle time:		3.36	minutes
			Adjusted for job conditions:	55	58.77	LCY/Hour
			Selected Number of Scrapers:		2	Scraper(s)
	Ac	ljusted single sci	raper team (unit) hourly production:	55	58.77	LCY/Hour
	Adju	sted multiple scr	aper team (fleet) hourly production:	55	58.77	LCY/Hour
	Unadjusted unit pr nber of Scrapers COST		<u>673.21</u> LCY/Hour			
Fleet size:	1	Team(s)	Total job time:	1	.71	Hours
Unit cost:	\$1.099	/LCY	Total job cost:	\$1	,051	

## SCRAPER TEAM WORK

Task description:	Replace topsoil f	rom Stock	pile G to	TR35 road/pad				
Site: Bowie No. 2 Mine	Per	mit Action:	MT5		Permit/Job#: <u>C1</u>	996083	3	
PROJECT IDENTIF	TICATION							
Task #:       128         Date:       10/2/20         User:       ZTT		State: <u>Co</u> unty: De	lorado lta		Abbrevia	ation: name:	None C083-128	
Agency	or organization name:	DRMS						
HOURLY EQUIPMI	ENT_	Equipme		COSTShift basis: <u>1</u>	per day			
		1 1		B w/push-pull				
		-	NA	, publi puli				
Su	pport Equipment -Loa		NA					
			NA					
Road	Maintenance – Motor -Water		NA NA					
Cost Breakdown:	Scraper Work Tean	1	Supp	ort Equipment	Maintenan	ce Equi	pment	
	Scraper	Doz	er	Load Area	Dump Area	Moto	r Grader	Water Truck
%Utilization-machine	: 100		NA	NA	NA		NA	N

NA

\$126.52

Ownership cost/hour:

NA

NA

NA

N

Operating cost/hour:	\$149.69	NA	NA	NA	NA	Ň
%Utilization-ripper:	NA	NA	NA	NA	NA	Ň
Ripper own. cost/hour:	NA	NA	NA	NA	NA	Ň
Ripper op. cost/hour:	NA	NA	NA	NA	NA	Ň
Operator cost/hour:	\$30.86	NA	NA	NA	NA	Ň
Unit Subtotals:	\$307.07	NA	NA	NA	NA	N
Number of Units:	2	0	0	0	0	
Group Subtotals:	Work:	\$614.14	Support:	\$0.00	Maint:	\$0.00

Total work team cost/hour: <u>\$614.14</u>

#### **MATERIAL QUANTITIES**

Initial volume:	1,000	CCY	Swell factor:	1.250	
Loose volume:	1,250	LCY			
Se	ource of estimated volume:	Operator Estimate			
Source	e of estimated swell factor:	Cat Handbook			

Scraper Bowl (volume) Basis:

#### **HOURLY PRODUCTION**

Material weight:	2,550 lbs/LCY	Struck Volume:	15.70	LCY
Material description:	Earth - Dry packed	Heaped Volume:	22.00	LCY
Rated Payload:	52,800 pounds	Average Volume:	18.85	LCY
Payload Capacity:	20.71 LCY	Adjusted Capacity:	18.85	LCY

Cycle Time:

Scraper Loading Time: Maneuver and Spread Time: 0.90 Minutes 0.60 Minutes

Job Condition Correction:

Site Altitude: 6750 feet

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

Travel Time:

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

Haul Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	4500.00	8.00	3.00	11.00	1018	4.45

Haul Time: 4.45 minutes

#### **Return Route:**

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	4500.00	-8.00	3.00	-5.00	2938	1.58

Return Time: **1.58** minutes

Total Scraper team cycle time:	7.53	minutes
Adjusted for job conditions:	249.33	LCY/Hour
Selected Number of Scrapers:	2	Scraper(s)

		5 C I	n (unit) hourly production:	249.33	LCY/Hour
	Adju	sted multiple scraper team	(fleet) hourly production:	249.33	LCY/Hour
Optimal Nur	Jnadjusted unit p nber of Scrapers		LCY/Hour		
JOB TIME AND	<u>COST</u>				
Fleet size:	1	Team(s)	Total job time:	5.01	Hours
Unit cost:	\$2.463	/LCY	Total job cost:	\$3,079	

## BULLDOZER WORK

Bowie No. 2 Mine	Permit Action: <u>M</u>	75	Permit/Job#: C199608	3
PROJECT IDENTIFICA	TION			
Task #: 129	State: Colorade	)	Abbreviation:	None
Date: 10/2/2019	County: Delta		Filename:	C083-129
User: ZTT				
Agency or or	ganization name: DRMS			
HOURLY EQUIPMENT	COST			
	D10T - 10SU			
Horsepower: 574				
1 <u> </u>	ni-Universal			
	hank ripper			
	er day			
Data Source: (CR				
<u>Cost Breakdown:</u>	,			
COSt Dieakuowii.		Utilization %		
Ownership Cost/Hour:	\$140.6			
Operating Cost/Hour:	\$135.3	5 100		
Ripper own. Cost/Hour:	\$18.3	4 NA		
Ripper op. Cost/Hour:	\$10.8	0 100		
Operator Cost/Hour:	\$41.2	4 NA		
Tatal	\$24C 22			
Total unit Cost/Hour:	\$346.33			

## MATERIAL QUANTITIES

Initial Volume: 7,400

Swell factor: 1.250 Loose volume: 9,250 LCY		
Source of estimated volume:	Operator Estimate	
Source of estimated swell factor:	Cat Handbook	
HOURLY PRODUCTION		
Average push distance:	200 feet	
Unadjusted hourly production:	946.0 LCY/hr	_
Materials consistency description:	Consolidated stockpile 1.0	
Average push gradient:0 %Average site altitude:6,20	0 feet	
Material weight:2,55	0 lbs/LCY	
Weight description:Earth	n - Dry packed	
Job Condition Correction Factor		Source
Operator Skill:	0.750	(AVG.)
Material consistency:	1.000	(CAT HB)
Dozing method:	1.000	(GEN.)
Visibility:	1.000	(AVG.)
Job efficiency:	0.830	(1 SHIFT/DAY)
Spoil pile:	0.800	(FND-RF)
Push gradient:	1.000	(CAT HB)
Altitude:	1.000	(CAT HB)
Material Weight:	0.902	(CAT HB)
Blade type:	1.000	(PAT)
Net correction:	0.4492	
5 I	24.94 LCY/hr	
Adjusted fleet production: 10	5 <b>99.76</b> LCY/hr	
JOB TIME AND COST		
Fleet size: 4 Doze		
Unit cost: \$0.815/	LCY	

Total job time:	<b>5.44</b> Hours
Total job cost:	\$7,539

## BULLDOZER WORK

PROJECT IDENTIFICATION         Task #:       130         Date:       10/2/2019         User:       ZTT         Agency or organizat         HOURLY EQUIPMENT COS'         Basic Machine:       Cat D10T         Horsepower:       574         Blade Type:       Semi-Univ         Attachment:       NA         Shift Basis:       1 per day         Data Source:       (CRG)	State: <u>Colorado</u> County: <u>Delta</u> on name: <u>DRMS</u>		Abbreviation: Filename:	None C083-130
Date:10/2/2019User:ZTTAgency or organizatHOURLY EQUIPMENT COS'Basic Machine:Cat D10THorsepower:574Blade Type:Semi-UnivAttachment:NAShift Basis:1 per day	County: Delta on name: DRMS		-	
User: ZTT Agency or organizat HOURLY EQUIPMENT COS Basic Machine: Cat D10T Horsepower: 574 Blade Type: Semi-Univ Attachment: NA Shift Basis: 1 per day	on name: <u>DRMS</u>		Filename:	C083-130
Agency or organizatHOURLY EQUIPMENT COS'Basic Machine:Cat D10THorsepower:574Blade Type:Semi-UnivAttachment:NAShift Basis:1 per day	<u>r</u> - 10SU			
HOURLY EQUIPMENT COS'Basic Machine: Horsepower:Cat D10TBlade Type: Attachment: Shift Basis:Semi-UnivNA 1 per day1	<u>r</u> - 10SU			
HOURLY EQUIPMENT COS'Basic Machine:Cat D10THorsepower:574Blade Type:Semi-UnivAttachment:NAShift Basis:1 per day	<u>r</u> - 10SU			
Basic Machine:Cat D10THorsepower:574Blade Type:Semi-UnivAttachment:NAShift Basis:1 per day	- 10SU			
Horsepower: 574 Blade Type: Semi-Univ Attachment: NA Shift Basis: 1 per day				
Horsepower: 574 Blade Type: Semi-Univ Attachment: NA Shift Basis: 1 per day				
Attachment:NAShift Basis:1 per day	ersal			
Shift Basis: 1 per day				
Data Source: (CPC)				
Data Source. (CKO)				
Cost Breakdown:				
		Utilization %		
Ownership Cost/Hour:	\$140.61	NA		
Operating Cost/Hour:	\$135.35	100		
Ripper own. Cost/Hour:	\$0.00	NA		
Ripper op. Cost/Hour:	\$0.00	0		
Operator Cost/Hour:	\$41.24	NA		
·	20			
Total unit Cost/Hour:\$31'Total Fleet Cost/Hour:\$31'				
LOTAL FIGHT OST/HOUT'				

## HOURLY PRODUCTION

Average push distance:	100 feet
Unadjusted hourly production:	1,718.9 LCY/hr

tion:	Consolidated stockpile	e 1.0
10 % 6,900 fee	et	
2,550 lbs	s/LCY	
Earth - D	Dry packed	
<u>r</u>		Source
Skill:	0.750	(AVG.)
ency:	1.000	(CAT HB)
thod:	1.000	(GEN.)
ility:	1.000	(AVG.)
ency:	0.830	(1 SHIFT/DAY)
pile:	0.800	(FND-RF)
lient:	0.786	(CAT HB)
Altitude:		(CAT HB)
eight:	0.902	(CAT HB)
Blade type: 1.000	1.000	(PAT)
ction: 0	.3531	
606.9	4 LCY/hr	
	10 %         6,900 fea         2,550 lbs         Earth - D         r         Skill:         ency:         thod:         pile:         pile:         ilient:         ency:         isight:         ency:         0         606.94	10 % $6,900$ feet $2,550$ lbs/LCY         Earth - Dry packed $r$ Skill: $0.750$ ency: $1.000$ thod: $1.000$ ency: $0.830$ pile: $0.800$ tient: $0.786$ tude: $1.000$ eight: $0.902$ type: $1.000$

## JOB TIME AND COST

Fleet size:	1 Dozer(s)
Unit cost:	\$0.523/LCY
Total job time:	0.46 Hours
Total job cost:	\$147

## SAFEGUARDING UNDERGROUND OPENINGS

r	Task description:	Seal Portals and Shafts				
Site:	Bowie No. 2 Mine	Permit Action:	MT5	Permit	/Job#: <u>C1996083</u>	
PROJE(	CT IDENTIFICATION	<u>N</u>				
Task ‡ Date User	e: 10/2/2019	State: Colorado County: Delta		Abbreviation: Filename:	None C083-140	

Agency or organization name: DRMS

## UNIT COSTS

Opening Description	Dimensions	Closure Method	Quantity	Unit	Unit Cost	Total Cost
D Portal Intake, Beltline & Return	200 SF x 3	Adit closure - bulkhead seal, $\geq 36$ sq. ft. (per sq.	600.00	SF	\$171.67	\$103,000.02
bulkhead		ft.)				
- backfill	185 CY x 3	Adit closure - backfilling (per opening)	3.00	EA	\$2,105.30	\$6,315.90
- drainpipe	165 LFx 3	PVC drain pipe, 6 in. diameter (per ln. ft. incl. mat. & labor)	495.00	LF	\$11.30	\$5,593.50
B Portal Intake, Beltline & Return bulkhead	200 SF x 3	Adit closure - bulkhead seal, >= 36 sq. ft. (per sq. ft.)	600.00	SF	\$171.67	\$103,000.02
- backfill	185 CY x 3	Adit closure - backfilling (per opening)	3.00	EA	\$2,105.30	\$6,315.90
- drainpipe	165 LF x 3	PVC drain pipe, 6 in. diameter (per ln. ft. incl. mat. & labor)	495.00	LF	\$11.30	\$5,593.50

Job Hours: 40.00

Total Cost: \$229,818.84

## **REVEGETATION WORK**

ite: Bowie No. 2 Mine		Permit Actio	on: MT5	Permit/Job#: C1996083		
PROJECT I	DENTIFICATIO	<u>DN</u>				
Task #:	150	State:	Colorado	Abbreviation:	None	
Date:	10/2/2019	County:	Delta	Filename:	C83-150	
Dute.						

## **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
Chisel plowing {DMG}	\$94.63
Total Tilling Cost/Acre	\$94.63

## **SEEDING**

Seed Mix	Rate – PLS LBS / Acre	Seeds per SQ. FT	Cost /Acre
Beardless Wheatgrass - Whitmar	1.30	4.24	\$15.24
Bitterbrush, Antelope	8.30	2.55	\$161.85
Aster, Smooth	0.30	5.22	\$43.95
Great Basin Wildrye - Magnar	1.20	4.88	\$13.86
Kentucky Bluegrass - Ginger	0.10	4.94	\$0.32
Ryegrass, Perennial - Belramo	0.70	3.97	\$1.26
Intermediate Wheatgrass - Oahe	1.80	3.84	\$5.04
Smooth Brome - Manchar	1.20	3.99	\$3.99
Alfalfa - Ranger (inoculated)	0.70	3.37	\$1.79
Burnett, Small (or Little) - Delar	2.80	3.54	\$7.00
Sheep Fescue - Covar	0.20	3.12	\$1.22
Milk Vetch, Cicer - Lutana	1.10	3.66	\$9.02
Tall Wheatgrass - Jose	2.00	3.63	\$6.75
Western Wheatgrass - Arriba	1.40	3.54	\$9.10

Rose, Wood's	2.70	0.00	\$55.35
Flax, Lewis Blue	0.50	3.32	\$8.25
Sagebrush, Silver	0.10	1.94	\$3.10
Saltbush, Four Wing	2.40	3.31	\$30.00
Serviceberry	4.80	8.82	\$295.20
Siberian Wheatgrass	0.90	2.27	\$5.15
Totals Seed Mix	34.50	74.14	\$677.44

## Application

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

## **MULCHING and MISCELLANEOUS**

#### Materials

Description	Units / Acre	Unit	Cost / Unit	Cost /Acre
Straw, delivered {MEANS 31 25 14.16 1200}	2.00	TON	\$295.00	\$590.00
Total Mulch Materials Cost/Acre				\$590.00

## **Application**

Description		Cost /Acre
Crimping, with tractor {DMG survey data}		\$70.17
Power mulcher (MEANS 32 91 13.16 0350)		\$95.83
	Total Mulch Application Cost/Acre	\$166.00

## 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:	225.02		Cost /Acre:	\$1,528.07	
 Estimate	ed Failure Rate:	50%		Cost /Acre*:	\$1,433.44	
 *Selected Replanti	ng Work Items:	SEEDING,MULC	HING			
Initial Job Cost:	\$343,846.31					
Reseeding Job Cost:	\$161.276.33					

Reseeding Job Cost:	\$161,276.33
Total Job Cost:	\$505,123
Job Hours:	225.02

## **REVEGETATION WORK**

	ask descripti Bowie No. 2		Drill Seed Drill Pads	Action: MT5	Permit/Job#:	C1996083	3
<u>PR</u>	OJECT II	DENTIFIC	ATION				
	Task #:	151	State	Colorado	Abbr	eviation:	None
	Date:	10/2/2019	County	Delta	F	ilename:	C083-151
	User:	ZTT					

## Materials

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

## Application

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

## **TILLING**

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

## **SEEDING**

Seed Mix	Rate – PLS LBS / Acre	Seeds per SQ. FT	Cost /Acre
Indian Ricegrass - Nespar	3.00	9.71	\$26.63
Bluebunch Wheatgrass - Secar	3.00	9.64	\$32.63
Mountain Brome - Bromar	3.00	4.82	\$11.40
Sandberg Bluegrass - VNS	3.00	63.71	\$25.20
Coreopsis, Lance Leafed	1.00	25.58	\$28.55
Western Wheatgrass - Arriba	4.00	10.10	\$26.00
Daisy, Englemann's	1.00	4.94	\$127.40
Prairie Junegrass	2.00	106.31	\$52.00
Golden Banner	1.00	2.00	\$83.00
Totals Seed Mix	21.00	236.80	\$412.80

Application

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

## **MULCHING and MISCELLANEOUS**

#### Materials

Description	Units / Acre	Unit	Cost / Unit	Cost /Acre
Straw, delivered {MEANS 31 25 14.16 1200}	2.00	TON	\$295.00	\$590.00
Total Mulch Materials Cost/Acre				\$590.00

## Application

Description	Cost /Acre
Crimping, with tractor {DMG survey data}	\$70.17
Power mulcher (MEANS 32 91 13.16 0350)	\$95.83
Total Mulch Application Cost/Acre	\$166.00

-

## **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 Ac	cres: 82.97	Cost /Acre:	\$1,168.80
Estimated Failure R	late: 50%	Cost /Acre*:	\$412.80
*Selected Replanting Work Ite	ems: SEEDING		
Initial Job Cost: \$96,975.3	4		
Reseeding Job Cost: \$17,125.0	1		

 Total Job Cost:
 \$114,100

 Job Hours:
 82.97

## **REVEGETATION WORK**

Task description:	Drill Seed Lt-Use Roads to Drill Pads and Terr	ror Creek
ite: Bowie No. 2 Mine	Permit Action: MT5	Permit/Job#: C1996083
PROJECT IDENTIFIC	ATION	
Task #: 152	State: Colorado	Abbreviation: None
Date: 10/2/2019	County: Delta	Filename: C083-152

## **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
	\$
Total Tilling Cost/Acre	\$0.00

## **SEEDING**

Seed Mix	Rate – PLS LBS / Acre	Seeds per SQ. FT	Cost /Acre
Indian Ricegrass - Nespar	3.00	9.71	\$26.63
Bluebunch Wheatgrass - Secar	3.00	9.64	\$32.63
Mountain Brome - Bromar	3.00	4.82	\$11.40
Sandberg Bluegrass - VNS	3.00	63.71	\$25.20
Coreopsis, Lance Leafed	1.00	25.58	\$28.55
Western Wheatgrass - Arriba	4.00	10.10	\$26.00
Daisy, Englemann's	1.00	4.94	\$127.40
Prairie Junegrass	2.00	106.31	\$52.00
Golden Banner	1.00	2.00	\$83.00
Totals Seed Mix	21.00	236.80	\$412.80

## Application

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

## **MULCHING and MISCELLANEOUS**

#### Materials

Description	Units / Acre	Unit	Cost / Unit	Cost /Acre
Straw, delivered {MEANS 31 25 14.16 1200}	2.00	TON	\$295.00	\$590.00
Total Mulch Materials Cost/Acre				\$590.00

## Application

Description	Cost /Acre
Crimping, with tractor {DMG survey data}	\$70.17
Power mulcher (MEANS 32 91 13.16 0350)	\$95.83
Total Mulch Application Cost/Acre	\$166.00

-

## **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:	62.01	Cost /Acre:	\$1,168.80
Estimate	d Failure Rate:	50%	Cost /Acre*:	\$412.80
*Selected Replantin	g Work Items:	SEEDING	•	
Initial Job Cost: Reserving Job Cost:				

Reseeding Job Cost:	\$12,798.86
Total Job Cost:	\$85,276
Job Hours:	62.01

## **REVEGETATION WORK**

e: Bowie No. 2 Mine		vie No. 2 Mine Permit Action: MT5		Permit/Job#: <u>C1996083</u>		
PROJECT II	DENTIFIC	ATION				
Task #:	154	State	: Colorado	Abbreviation:	None	
$1 \text{ dSK } \pi$ .						
Date:	10/2/2019	County	: Delta	Filename:	C083-154	

## **FERTILIZING**

## Materials

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

## Application

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

## **TILLING**

Description	Cost /Acre
Chisel plowing {DMG}	\$94.63
Total Tilling Cost/Acre	\$94.63

## **SEEDING**

Seed Mix	Rate – PLS LBS / Acre	Seeds per SQ. FT	Cost /Acre
Beardless Wheatgrass - Whitmar	2.60	8.48	\$30.49
Bitterbrush, Antelope	16.60	5.11	\$323.70
Aster, Smooth	0.60	10.44	\$87.90
Great Basin Wildrye - Magnar	2.40	9.75	\$27.72
Kentucky Bluegrass - Ginger	0.20	9.87	\$0.64
Ryegrass, Perennial - Belramo	1.40	7.94	\$2.52
Intermediate Wheatgrass - Oahe	3.60	7.69	\$10.08
Smooth Brome - Manchar	2.40	7.99	\$7.98
Alfalfa - Ranger (inoculated)	1.40	6.75	\$3.57
Burnett, Small (or Little) - Delar	5.60	7.07	\$14.00
Sheep Fescue - Covar	0.40	6.24	\$2.44
Milk Vetch, Cicer - Lutana	2.20	7.32	\$18.04
Tall Wheatgrass - Jose	4.00	7.25	\$13.50
Western Wheatgrass - Arriba	2.80	7.07	\$18.20
Rose, Wood's	5.40	0.00	\$110.70
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Flax, Lewis Blue	1.00	6.63	\$16.50
Sagebrush, Silver	0.20	3.88	\$6.20
Saltbush, Four Wing	4.80	6.61	\$60.00
Serviceberry	9.60	17.63	\$590.40
Siberian Wheatgrass	1.80	4.55	\$10.31
Totals Seed Mix	69.00	148.28	\$1,354.88

### Application

Description	Cost /Acre
Broadcast seeding [DMG]	\$267.22
Total Seed Application Cost/Acr	e <u>\$267.22</u>

# **MULCHING and MISCELLANEOUS**

#### Materials

Description	Units / Acre	Unit	Cost / Unit	Cost /Acre
Straw, delivered {MEANS 31 25 14.16 1200}	2.00	TON	\$295.00	\$590.00
Total Mulch Materials Cost/Acre				\$590.00

#### **Application**

Description		Cost /Acre
Crimping, with tractor {DMG survey data}		\$70.17
Power mulcher (MEANS 32 91 13.16 0350)		\$95.83
	<b>Total Mulch Application Cost/Acre</b>	\$166.00

# **NURSERY STOCK PLANTING**

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

	No. of Acres:	30.63	C	ost /Acre:	\$2,472.73
Estimate	ed Failure Rate:	50%	Cos	st /Acre*:	\$2,378.10
*Selected Replanti	ng Work Items:	SEEDING,MUL	CHING		
Initial Job Cost:	\$75,739.72				
Reseeding Job Cost:	\$36,420.60				
Total Job Cost:					
Job Hours:	60.63				

### **REVEGETATION WORK**

Task descript		Drill seed Hubbard C	reek Vent Shaft Pad	Permit/Job#: C1996083	3
e: Bowie No.	2 Mine	Permit A		Perinit/Job#: <u>C199608</u> .	
PROJECT I	DENTIFIC	ATION			
Task #:	155	State:	Colorado	Abbreviation:	None
Date:	10/2/2019	County:	Delta	Filename:	C083-155
	ZTT				

## **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
	\$
Total Tilling Cost/Acre	\$0.00

# **SEEDING**

Seed Mix	Rate – PLS LBS / Acre	Seeds per SQ. FT	Cost /Acre
Indian Ricegrass - Nespar	3.00	9.71	\$26.63
Bluebunch Wheatgrass - Secar	3.00	9.64	\$32.63
Mountain Brome - Bromar	3.00	4.82	\$11.40
Sandberg Bluegrass - VNS	3.00	63.71	\$25.20
Coreopsis, Lance Leafed	1.00	25.58	\$28.55
Western Wheatgrass - Arriba	4.00	10.10	\$26.00
Daisy, Englemann's	1.00	4.94	\$127.40
Prairie Junegrass	2.00	106.31	\$52.00
Golden Banner	1.00	2.00	\$83.00
Totals Seed Mix	21.00	236.80	\$412.80

#### Application

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

### **MULCHING and MISCELLANEOUS**

#### Materials

Description	Units / Acre	Unit	Cost / Unit	Cost /Acre
Straw, delivered {MEANS 31 25 14.16 1200}	2.00	TON	\$295.00	\$590.00
Total Mulch Materials Cost/Acre				\$590.00

### Application

Description		Cost /Acre
Crimping, with tractor {DMG survey data}		\$70.17
Power mulcher (MEANS 32 91 13.16 0350)		\$95.83
	Total Mulch Application Cost/Acre	\$166.00

### **NURSERY STOCK PLANTING**

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

No. of Acres:	1.2	Cost /Acre:	\$1,168.80
Estimated Failure Rate:	50%	Cost /Acre*:	\$412.80
*Selected Replanting Work Items:	SEEDING		

Initial Job Cost:	\$1,402.56
Reseeding Job Cost:	\$247.68
Total Job Cost:	\$1,650
Job Hours:	1.20

### **REVEGETATION WORK**

Bowie No.	2 Mine	Permit Ac	tion: MT5	Permit/Job#: C199608	3
PROJECT I	DENTIFICATI	<u>ON</u>			
Task #:	156	State:	Colorado	Abbreviation:	None
Date:	10/2/2019	County:	Delta	Filename:	C083-156
User:	ZTT				

# **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
	\$
Total Tilling Cost/Acre	\$0.00

# **SEEDING**

Seed Mix	Rate – PLS LBS / Acre	Seeds per SQ. FT	Cost /Acre
Indian Ricegrass - Nespar	3.00	9.71	\$26.63
Bluebunch Wheatgrass - Secar	3.00	9.64	\$32.63
Mountain Brome - Bromar	3.00	4.82	\$11.40
Sandberg Bluegrass - VNS	3.00	63.71	\$25.20
Coreopsis, Lance Leafed	1.00	25.58	\$28.55
Western Wheatgrass - Arriba	4.00	10.10	\$26.00
Daisy, Englemann's	1.00	4.94	\$127.40
Prairie Junegrass	2.00	106.31	\$52.00
Golden Banner	1.00	2.00	\$83.00
Totals Seed Mix	21.00	236.80	\$412.80

#### Application

Description	Cost /Acre
	\$0.00
Total Seed Application Cost/Acr	e \$0.00

### **MULCHING and MISCELLANEOUS**

#### Materials

Description	Units / Acre	Unit	Cost / Unit	Cost /Acre
Straw, delivered {MEANS 31 25 14.16 1200}	2.00	TON	\$295.00	\$590.00
Total Mulch Materials Cost/Acre				\$590.00

### Application

pheation		
Description		Cost /Acre
Crimping, with tractor {DMG survey data}		\$70.17
Power mulcher (MEANS 32 91 13.16 0350)		\$95.83
	Total Mulch Application Cost/Acre	\$166.00

### **NURSERY STOCK PLANTING**

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

No. of Acres:	0.2	Cost /Acre:	\$1,168.80
Estimated Failure Rate:	50%	Cost /Acre*:	\$412.80
*Selected Replanting Work Items:	SEEDING		

Initial Job Cost:	\$233.76
Reseeding Job Cost:	\$41.28
Total Job Cost:	\$275
Job Hours:	0.50

#### **REVEGETATION WORK**

Task descript	on:	Weed Control Over 1	0-Year Liability Period		
te: Bowie No.	2 Mine	Permit A	ction: MT5	Permit/Job#: C199608	3
PROJECT I	DENTIFIC	ATION			
Task #:	157	State:	Colorado	Abbreviation:	None
Date:	10/2/2019	County:	Delta	Filename:	C083-157
User:	ZTT				

#### **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
	\$
Total Tilling Cost/Acre	\$0.00

### **SEEDING**

Seed Mix	Rate – PLS LBS / Acre	Seeds per SQ. FT	Cost /Acre
			\$
Totals Seed Mix	0.00	0.00	\$0.00

### Application

Description	Cost /Acre
	\$
Total Seed Application Cost/Acre	¢0.00
Total Seed Application Cost/Acre	\$0.00

### **MULCHING and MISCELLANEOUS**

#### Materials

Description	Units / Acre	Unit	Cost / Unit	Cost /Acre
	1.00		\$0.00	\$0.00
	1.00		\$0.00	\$0.00
Total Mulch Materials Cost/Acre				\$0.00

# Application

Description		Cost /Acre
Weed spray, truck, aquatic area, nox. [DMG]		\$68.50
	Total Mulch Application Cost/Acre	\$68.50

# **NURSERY STOCK PLANTING**

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

No. of Acres:	838	Cost /Acre:	\$68.50
Estimated Failure Rate:	0%	Cost /Acre*:	\$0.00
*Selected Replanting Work Items:	NONE		
Initial Job Cost: <b>\$57,403.00</b>			
Reseeding Job Cost: <b>\$0.00</b>			
Total Job Cost: <b>\$57,403</b>			
Job Hours: <b>400.00</b>			

### **DEMOLITION WORK**

Tas	sk description:	Demolish and Remove all S	Structures		
Site: B	owie No. 2 Mine	Permit Action:	MT5	Permit	/Job#: C1996083
PROJECT	<u>IDENTIFICATIO</u>	<u>N</u>			
Task #: Date: User:	165 10/2/2019 ZTT	State:ColoradoCounty:Delta		Abbreviation: Filename:	None C083-165
	Agency or organization	ation name: DRMS			
UNIT COS	TS			Location adj	ustment: 102.20 %

Structure or Item Description	Dimensions	Demolition Menu Selection	Quantity	Unit	Unit Cost	Total Cost
<b>Description</b> Office and Bath House Superstructure	120'x50'x24'	Bldg. (MN) demo./on- site disposal in excavated pit - Max. 10,000 ft. haul	144,000.0 0	CF	\$0.23	\$33,163.20
floor	120'x50'x6"	Demo. and on-site disposal in excavated pit, 6 in. thick - Max. 200 ft. push	6,000.00	SF	\$0.93	\$5,603.40
footing	1.5'x2'	Demo. and on-site disposal in excavated pit, 1.5 ft. x 2 ft Max. 200 ft. push	340.00	LF	\$5.60	\$1,905.12
Shop Superstructure	100'x60'x24'	Bldg. (MN) demo./on- site disposal in excavated pit - Max. 10,000 ft. haul	144,000.0 0	CF	\$0.23	\$33,163.20
floor	100'x50'x6"	Demo. and on-site disposal in excavated pit, 6 in. thick - Max. 200 ft. push	5,000.00	SF	\$0.93	\$4,669.50
footing	1.5'x2'	Demo. and on-site disposal in excavated pit, 1.5 ft. x 2 ft Max. 200 ft. push	300.00	LF	\$5.60	\$1,680.99
Warehouse Superstructure	50'x60'x24'	Bldg. (MN) demo./on- site disposal in excavated pit - Max. 10,000 ft. haul	72,000.00	CF	\$0.23	\$16,581.60
floor	50'x60'x6"	Demo. and on-site disposal in excavated pit, 6 in. thick - Max. 200 ft. push	3,000.00	SF	\$0.93	\$2,801.70
footing	1.5'x2'	Demo. and on-site disposal in excavated pit, 1.5 ft. x 2 ft Max. 200 ft. push	220.00	LF	\$5.60	\$1,232.73
Wash Bay Superstructure	50'x25'x24'	Bldg. (MN) demo./on- site disposal in excavated pit - Max. 10,000 ft. haul	30,000.00	CF	\$0.23	\$6,909.00
floor	50'x25'x6"	Demo. and on-site disposal in excavated pit, 6 in. thick - Max. 200 ft. push	1,250.00	SF	\$0.93	\$1,167.38
footing	1.5'x2'	Demo. and on-site disposal in excavated pit, 1.5 ft. x 2 ft Max. 200 ft. push	150.00	LF	\$5.60	\$840.50
MCC Building Superstructure D-Seam Portal	18'x42'x11'	Bldg. (SC) demo./on- site disposal in excavated pit - Max. 10,000 ft. haul	8,316.00	CF	\$0.27	\$2,218.71
floor	18'x42'x6"	Demo. and on-site disposal in excavated pit, 6 in. thick - Max. 200 ft. push	756.00	SF	\$0.93	\$706.03

footing	1.5'x2'	Demo. and on-site	120.00	LF	\$5.60	\$672.40
		disposal in excavated				
		pit, 1.5 ft. x 2 ft Max. 200 ft. push				
MCC Building	15'x25'x12'	Bldg. (SC) demo./on-	4,500.00	CF	\$0.27	\$1,200.60
Superstructure Hubbard Creek		site disposal in excavated pit - Max.				
Hubbard Creek		10,000 ft. haul				
floor	15'x25'x6"	Demo. and on-site	375.00	SF	\$0.93	\$350.21
		disposal in excavated pit, 6 in. thick - Max. 200 ft. push				
footing	1.5'x2'	Demo. and on-site	80.00	LF	\$5.60	\$448.26
6		disposal in excavated pit, 1.5 ft. x 2 ft Max. 200 ft. push				
Covered	30'x80'x20'	Bldg. (MN) demo./on-	48,000.00	CF	\$0.23	\$11,054.40
Storage		site disposal in				
Superstructure - D Seam Portal		excavated pit - Max. 10,000 ft. haul				
floor	30'x80'x6"	Demo. and on-site	2,400.00	SF	\$0.93	\$2,241.36
		disposal in excavated pit, 6 in. thick - Max.				
footing	1.5'x2'	200 ft. push Demo. and on-site	220.00	LF	\$5.60	\$1,232.73
looting	1.5 A2	disposal in excavated pit, 1.5 ft. x 2 ft	220.00		φ2.00	φ1,232.73
<u> </u>	071 551 151	Max. 200 ft. push	00.075.00	CE	<b> ((</b> ) <b>(</b> ) <b>(</b> ) <b>(</b> ) <b>(</b> ) <b>(</b> ) <b>(</b> )	<b>\$5,120,02</b>
Covered Storage	27'x55'x15'	Bldg. (MN) demo./on- site disposal in	22,275.00	CF	\$0.23	\$5,129.93
Superstructure		excavated pit - Max.				
B Seam		10,000 ft. haul				
floor	40'x15'x6"	Demo. and on-site disposal in excavated	600.00	SF	\$0.93	\$560.34
		pit, 6 in. thick - Max.				
factions	1.5'x2'	200 ft. push	110.00	LF	\$5.60	\$616.36
footing	1.5 X2	Demo. and on-site disposal in excavated	110.00	LF	\$2.00	\$010.30
		pit, 1.5 ft. x 2 ft				
		Max. 200 ft. push				
Covered	50'x25'x20'	Bldg. (MN) demo./on-	25,000.00	CF	\$0.23	\$5,757.50
Storage Superstructure		site disposal in excavated pit - Max.				
B Seam		10,000 ft. haul				
floor	50'x25'x6"	Demo. and on-site	1,250.00	SF	\$0.93	\$1,167.38
		disposal in excavated pit, 6 in. thick - Max.				
		200  ft. push				
footing	1.5'x2'	Demo. and on-site	150.00	LF	\$5.60	\$840.50
		disposal in excavated				
		pit, 1.5 ft. x 2 ft Max. 200 ft. push				
Covered	30'x110'x15'	Bldg. (MN) demo./on-	49,500.00	CF	\$0.23	\$11,399.85
Storage		site disposal in	. ,		,	,, - > >
Superstructure		excavated pit - Max. 10,000 ft. haul				
Stockpile			1			

floor	30'x110'x6"	Demo. and on-site disposal in excavated pit, 6 in. thick - Max. 200 ft. push	3,300.00	SF	\$0.93	\$3,081.87
footing	1.5'x2'	Demo. and on-site disposal in excavated pit, 1.5 ft. x 2 ft Max. 200 ft. push	280.00	LF	\$5.60	\$1,568.92
Covered Storage Superstructure Stockpile Level	40'x15'x15'	Bldg. (MN) demo./on- site disposal in excavated pit - Max. 10,000 ft. haul	9,000.00	CF	\$0.23	\$2,072.70
floor	40'x15'x6"	Demo. and on-site disposal in excavated pit, 6 in. thick - Max. 200 ft. push	600.00	SF	\$0.93	\$560.34
footing	1.5'x2'	Demo. and on-site disposal in excavated pit, 1.5 ft. x 2 ft Max. 200 ft. push	110.00	LF	\$5.60	\$616.36
Water Treatment Building Superstructure	40'x21'x12'	Bldg. (SN) demo./on- site disposal in excavated pit - Max. 10,000 ft. haul	3,360.00	CF	\$0.20	\$682.08
floor	14'x20'x6"	Demo. and on-site disposal in excavated pit, 6 in. thick - Max. 200 ft. push	840.00	SF	\$0.93	\$784.48
footing	1.5'x2'	Demo. and on-site disposal in excavated pit, 1.5 ft. x 2 ft Max. 200 ft. push	122.00	LF	\$5.60	\$683.60
Fueling Station Superstructure	20'x30'x20'	Bldg. (MN) demo./on- site disposal in excavated pit - Max. 10,000 ft. haul	12,000.00	CF	\$0.23	\$2,763.60
Fueling Station Containment Structure	20'x30'x4'	Demo. and on-site disposal in excavated pit, 8 in. thick - Max. 200 ft. push	280.00	SF	\$1.32	\$368.82
-floor	20'x30'x8"	Demo. and on-site disposal in excavated pit, 6 in. thick - Max. 200 ft. push	600.00	SF	\$0.93	\$560.34
10k gal diesel tank remove/haul	NA	Haul tank to certified salvage dump - 9,000 to 12,000 gal. tank	1.00	EA	\$1,050.0 0	\$1,050.00
sludge removal	NA	Remove sludge, water, and rem. product from tank - 9,000 to 12,000 gal.	1.00	EA	\$379.00	\$379.00
sludge disposal	NA	Dispose of tank sludge off-site - Average	150.00	GAL	\$6.80	\$1,020.00
insert CO2	NA	Insert dry ice (CO2) into tank to produce inert gas - 1.5 lbs./100 gal.	150.00	LB	\$1.95	\$292.50

500 gal DOTdiesel tank	NA	Haul tank to certified salvage dump - 3,000 to 5,000 gal. tank	1.00	EA	\$760.00	\$760.00
remove/haul						
sludge removal	NA	Remove sludge, water, and rem. product from tank - 3,000 to 5,000 gal.	1.00	EA	\$227.50	\$227.50
sludge disposal	NA	Dispose of tank sludge off-site - Average	50.00	GAL	\$6.80	\$340.00
insert CO2	NA	Insert dry ice (CO2) into tank to produce inert gas - 1.5 lbs./100 gal.	7.50	LB	\$1.95	\$14.63
2k gal oil tank remove/haul	NA	Haul tank to certified salvage dump - 3,000 to 5,000 gal. tank	1.00	EA	\$760.00	\$760.00
sludge removal	NA	Remove sludge, water, and rem. product from tank - 3,000 to 5,000 gal.	1.00	EA	\$227.50	\$227.50
sludge disposal	NA	Dispose of tank sludge off-site - Average	200.00	GAL	\$6.80	\$1,360.00
insert CO2	NA	Insert dry ice (CO2) into tank to produce inert gas - 1.5 lbs./100 gal.	30.00	LB	\$1.95	\$58.50
2.5k gal gas tank remove/haul	NA	Haul tank to certified salvage dump - 3,000 to 5,000 gal. tank	1.00	EA	\$760.00	\$760.00
sludge removal	NA	Remove sludge, water, and rem. product from tank - 3,000 to 5,000 gal.	1.00	EA	\$227.50	\$227.50
sludge disposal	NA	Dispose of tank sludge off-site - Average	250.00	GAL	\$6.80	\$1,700.00
insert CO2	NA	Insert dry ice (CO2) into tank to produce inert gas - 1.5 lbs./100 gal.	37.00	LB	\$1.95	\$72.15
1k gal motor oil tank remove/haul	NA	Haul tank to certified salvage dump - 3,000 to 5,000 gal. tank	1.00	EA	\$760.00	\$760.00
sludge removal	NA	Remove sludge, water, and rem. product from tank - 3,000 to 5,000 gal.	1.00	EA	\$227.50	\$227.50
sludge disposal	NA	Dispose of tank sludge off-site - Average	100.00	GAL	\$6.80	\$680.00
insert CO2	NA	Insert dry ice (CO2) into tank to produce inert gas - 1.5 lbs./100 gal.	15.00	LB	\$1.95	\$29.25
Sewage Treatment	20'x30'x10'	Bldg. (SC) demo./on- site disposal in	6,000.00	CF	\$0.27	\$1,600.80

Plant Superstructure		excavated pit - Max. 10,000 ft. haul				
floor	20'x30'x6"	Demo. and on-site disposal in excavated pit, 6 in. thick - Max. 200 ft. push	600.00	SF	\$0.93	\$560.34
footing	1.5'x2'	Demo. and on-site disposal in excavated pit, 1.5 ft. x 2 ft Max. 200 ft. push	100.00	LF	\$5.60	\$560.33
Substation Superstructure	50'x100'x20'	Bldg. (MN) demo./on- site disposal in excavated pit - Max. 10,000 ft. haul	50,000.00	CF	\$0.23	\$11,515.00
floor	50'x100'x6"	Demo. and on-site disposal in excavated pit, 6 in. thick - Max. 200 ft. push	5,000.00	SF	\$0.93	\$4,669.50
transformers	3 each	NON-PCB Transformer Removal	3.00	EA	\$2,107.2 0	\$6,321.60
Mine Ventilation Fan Superstructure	20'x20'x8'	Bldg. (SN) demo./on- site disposal in excavated pit - Max. 10,000 ft. haul	3,200.00	CF	\$0.20	\$649.60
floor	20'x20'x6"	Demo. and on-site disposal in excavated pit, 6 in. thick - Max. 200 ft. push	400.00	SF	\$0.93	\$373.56
footing	1.5'x2'	Demo. and on-site disposal in excavated pit, 1.5 ft. x 2 ft Max. 200 ft. push	80.00	LF	\$5.60	\$448.26
Non-Coal Waste Storage Structures (3)	20'x30'x6'	Bldg. (MN) demo./on- site disposal in excavated pit - Max. 200 ft. push	10,800.00	CF	\$0.23	\$2,464.56
Rock Dust Storage Area Superstructure	30'x20'x8'	Bldg. (SN) demo./on- site disposal in excavated pit - Max. 10,000 ft. haul	4,800.00	CF	\$0.20	\$974.40
floor	30'x20'x6"	Demo. and on-site disposal in excavated pit, 6 in. thick - Max. 200 ft. push	600.00	SF	\$0.93	\$560.34
footing	1.5'x2'	Demo. and on-site disposal in excavated pit, 1.5 ft. x 2 ft Max. 200 ft. push	100.00	LF	\$5.60	\$560.33
silo	50'hx8'd	Bldg. (MC) demo./on- site disposal in excavated pit - Max. 10,000 ft. haul	2,513.00	CF	\$0.30	\$749.38
silo pad	25'x20'x6"	Demo. and on-site disposal in excavated pit, 6 in. thick - Max. 200 ft. push	100.00	SF	\$0.93	\$93.39
Pump House Superstructure	18'x12'x8	Bldg. (SN) demo./on- site disposal in	1,728.00	CF	\$0.20	\$350.78

		excavated pit - Max. 10,000 ft. haul				
floor	18'x12'x6"	Demo. and on-site disposal in excavated pit, 6 in. thick - Max. 200 ft. push	216.00	SF	\$0.93	\$201.72
footing	1.5'x2'	Demo. and on-site disposal in excavated pit, 1.5 ft. x 2 ft Max. 200 ft. push	60.00	LF	\$5.60	\$336.20
Portal Conveyor Transfer Building Superstructure	20'x24'x45'	Bldg. (MN) demo./on- site disposal in excavated pit - Max. 10,000 ft. haul	21,600.00	CF	\$0.23	\$4,974.48
floor	20'x24'x6"	Demo. and on-site disposal in excavated pit, 6 in. thick - Max. 200 ft. push	480.00	SF	\$0.93	\$448.27
footing	1.5'x2'	Demo. and on-site disposal in excavated pit, 1.5 ft. x 2 ft Max. 200 ft. push	88.00	LF	\$5.60	\$493.09
Screening and Crushing Building	40'x21'x52'	Bldg. (MN) demo./on- site disposal in excavated pit - Max. 10,000 ft. haul	43,680.00	CF	\$0.23	\$10,059.50
floor	40'x21'x6"	Demo. and on-site disposal in excavated pit, 6 in. thick - Max. 200 ft. push	840.00	SF	\$0.93	\$784.48
footing	1.5'x2'	Demo. and on-site disposal in excavated pit, 1.5 ft. x 2 ft Max. 200 ft. push	122.00	LF	\$5.60	\$683.60
Clean Gob Pile Material Storage Area	NA	Loading and 5 mile haul, salvage allowed - Wood frame structures	968.00	СҮ	\$18.35	\$17,762.80
Clean Haul Road Storage Piles (2)	NA	Loading and 5 mile haul, salvage allowed - Wood frame structures	484.00	СҮ	\$18.35	\$8,881.40
Clean Topsoil Stockpile A Storage Pile	NA	Loading and 5 mile haul, salvage allowed - Wood frame structures	1,839.00	CY	\$18.35	\$33,745.65
Clean Portal Bench/Light Use Rd Piles (2)	NA	Loading and 5 mile haul, salvage allowed - Wood frame structures	1,670.00	СҮ	\$18.35	\$30,644.50
Portal Conveyor (D and B Seams)	140'x72"	OBSOLETE- Conveyor, elevated, including supports - 8 ft. W x 10 ft. H housing	140.00	LF	\$53.42	\$7,478.80
footing	2'x3'	Demo. and on-site disposal in excavated	5.00	LF	\$11.21	\$56.03

		pit, 2.0 ft. x 3 ft				
Gob Belt	81'x48"	Max. 200 ft. push OBSOLETE-	81.00	LF	\$44.51	\$3,605.23
Conveyor	01 X40	Conveyor, elevated, including supports - 5 ft. W x 6 ft. H	81.00	Lr	\$44.31	\$3,003.25
		housing			****	
footing	2'x3'	Demo. and on-site disposal in excavated pit, 2.0 ft. x 3 ft Max. 200 ft. push	2.00	LF	\$11.21	\$22.41
Stockpile	393'x72"	OBSOLETE-	393.00	LF	\$53.42	\$20,994.06
Conveyor		Conveyor, elevated, including supports - 8 ft. W x 10 ft. H housing				
footing	2'x3'	Demo. and on-site disposal in excavated pit, 2.0 ft. x 3 ft Max. 200 ft. push	16.00	LF	\$11.21	\$179.30
Reclaim	402'x48"	OBSOLETE-	402.00	LF	\$44.51	\$17,892.62
Conveyor		Conveyor, elevated, including supports - 5 ft. W x 6 ft. H housing				
footing	2'x3'	Demo. and on-site disposal in excavated pit, 2.0 ft. x 3 ft Max. 200 ft. push	18.00	LF	\$11.21	\$201.72
Off-Spec Coal	111'x72"	OBSOLETE-	111.00	LF	\$53.42	\$5,929.62
Conveyor		Conveyor, elevated, including supports - 8 ft. W x 10 ft. H housing				
footing	2'x3'	Demo. and on-site disposal in excavated pit, 2.0 ft. x 3 ft Max. 200 ft. push	4.00	LF	\$11.21	\$44.83
Radial Stacker #1 Conveyor	150'x36"	OBSOLETE- Conveyor, elevated, including supports - 5 ft. W x 6 ft. H housing	150.00	LF	\$44.51	\$6,676.35
footing	2'x3'	Demo. and on-site disposal in excavated pit, 2.0 ft. x 3 ft Max. 200 ft. push	6.00	LF	\$11.21	\$67.24
Radial Stacker #2 Conveyor	80' x 36"	OBSOLETE- Conveyor, elevated, including supports - 5 ft. W x 6 ft. H housing	80.00	LF	\$44.51	\$3,560.72
footing	2'x3'	Demo. and on-site disposal in excavated pit, 2.0 ft. x 3 ft Max. 200 ft. push	1.00	LF	\$11.21	\$11.21
Stoker Collecting Conveyor	29' x 36"	OBSOLETE- Conveyor, elevated, including supports - 5	29.00	LF	\$44.51	\$1,290.76

		ft. W x 6 ft. H housing				
concrete runway	29' x 48"	Demo. and on-site disposal in excavated pit, 4 in. thick - Max. 200 ft. push	116.00	SF	\$0.62	\$72.22
Stacking Tube	12' diam x 100'	Demo. and on-site disposal in excavated pit, 12 in. thick - Max. 200 ft. push	3,770.00	SF	\$1.98	\$7,448.39
foundation	2'x3'	Demo. and on-site disposal in excavated pit, 2.0 ft. x 3 ft Max. 200 ft. push	38.00	LF	\$11.21	\$425.85
Stacking Tube	12' diam x 120'	Demo. and on-site disposal in excavated pit, 12 in. thick - Max. 200 ft. push	4,524.00	SF	\$1.98	\$8,938.07
foundation	2'x3'	Demo. and on-site disposal in excavated pit, 2.0 ft. x 3 ft Max. 200 ft. push	38.00	LF	\$11.21	\$425.85
Stacking Tube	12' diam x 130'	Demo. and on-site disposal in excavated pit, 12 in. thick - Max. 200 ft. push	4,901.00	SF	\$1.98	\$9,682.91
Reclaim Tunnel Part 1	13' diam x 350'	USER PROVIDED ITEM	9,065.00	SF	\$7.77	\$70,435.05
Reclaim Tunnel Part 2	13' diam x 200'	USER PROVIDED ITEM	1,481.00	SF	\$7.77	\$11,507.37
Escape Tube	42" x 160'&150'	Bldg. (SN) demo./on- site disposal in excavated pit - Max. 10,000 ft. haul	3,797.00	CF	\$0.20	\$770.79
Concrete Fan Housing	6'x6'x8'	Bldg. (SN) demo./on- site disposal in excavated pit - Max. 10,000 ft. haul	288.00	CF	\$0.20	\$58.46
10k gal hydraulic oil tank	NA	Haul tank to certified salvage dump - 9,000 to 12,000 gal. tank	1.00	EA	\$1,050.0 0	\$1,050.00
remove sludge	NA	Remove sludge, water, and rem. product from tank - 9,000 to 12,000 gal.	1.00	EA	\$379.00	\$379.00
sludge disposal	NA	Dispose of tank sludge off-site - Average	1,000.00	GAL	\$6.80	\$6,800.00
insert CO2	NA	Insert dry ice (CO2) into tank to produce inert gas - 1.5 lbs./100 gal.	150.00	LB	\$1.95	\$292.50
500 gal antifreeze tank	NA	Haul tank to certified salvage dump - 3,000 to 5,000 gal. tank	1.00	EA	\$760.00	\$760.00
sludge removal	NA	Remove sludge, water, and rem. product from tank - 3,000 to 5,000 gal.	1.00	EA	\$227.50	\$227.50

sludge disposal	NA	Dispose of tank sludge off-site -	50.00	GAL	\$6.80	\$340.00
		Average				
insert CO2	NA	Insert dry ice (CO2) into tank to produce inert gas - 1.5 lbs./100	7.50	LB	\$1.95	\$14.63
Power line removal	6350' lin.ft.	gal. Disposal of utility pole and hardware surplus material	6,350.00	LF	\$0.02	\$127.00
Portal Bench to Transfer Tower on grade conveyor	36" x 800'	OBSOLETE- Conveyor, overland, including supports - 5 ft. W x 6 ft. H housing	800.00	LF	\$17.60	\$14,080.00
Portal Bench to Transfer Tower elevated conveyor	36" x 120'	OBSOLETE- Conveyor, elevated, including supports - 5 ft. W x 6 ft. H	120.00	LF	\$44.51	\$5,341.08
footing	2'x3'	housing Demo. and on-site disposal in excavated pit, 2.0 ft. x 3 ft Max. 200 ft. push	38.00	LF	\$11.21	\$425.85
tunnel structure	100 lin.ft.	USER PROVIDED ITEM	100.00	LF	\$58.19	\$5,819.00
Transfer Tower to Stockpile overland	36" x 2280'	OBSOLETE- Conveyor, overland, including supports - 5 ft. W x 6 ft. H housing	2,280.00	LF	\$17.60	\$40,128.00
Transfer Tower to Stockpile elevated	36" x 475'	OBSOLETE- Conveyor, elevated, including supports - 5 ft. W x 6 ft. H housing	475.00	LF	\$44.51	\$21,141.78
footing	2'x3'	Demo. and on-site disposal in excavated pit, 2.0 ft. x 3 ft Max. 200 ft. push	112.00	LF	\$11.21	\$1,255.13
tunnel	80 lin.ft.	USER PROVIDED ITEM	80.00	LF	\$58.19	\$4,655.20
Downhill Conveyor Transfer Tower Structure	16'x16'x25'	Bldg. (MN) demo./on- site disposal in excavated pit - Max. 200 ft. push	6,400.00	CF	\$0.23	\$1,460.48
concrete pad	16'x16'	Demo. and on-site disposal in excavated pit, 6 in. thick - Max. 200 ft. push	256.00	SF	\$0.93	\$239.08
footing	2'x3'	Demo. and on-site disposal in excavated pit, 2.0 ft. x 3 ft Max. 200 ft. push	65.00	LF	\$11.21	\$728.42
Wildlife Structures	300 lin.ft.	USER PROVIDED ITEM	300.00	LF	\$58.19	\$17,457.00
Reclaim Conveyor overland	36" x 395'	OBSOLETE- Conveyor, overland, including supports - 5	395.00	LF	\$17.60	\$6,952.00

		ft. W x 6 ft. H				
Reclaim Conveyor elevated	36" x 180'	housing OBSOLETE- Conveyor, elevated, including supports - 5	180.00	LF	\$44.51	\$8,011.62
Coal Loadout Bin	NA	ft. W x 6 ft. H housing Bldg. (MN) demo./on- site disposal in	46,875.00	CF	\$0.23	\$10,696.88
footing	2'x3'	excavated pit - Max. 200 ft. push Demo. and on-site	100.00	LF	\$10.71	\$1,071.08
		disposal in existing pit, 2.0 ft. x 3 ft Max. 200 ft. push				+ - ,
Coal Reclaim Tunnel	42" x 160'	USER PROVIDED ITEM	160.00	LF	\$58.19	\$9,310.40
escapeway	42" x 160'	USER PROVIDED ITEM	160.00	LF	\$17.70	\$2,832.00
fan housing building	NA	Bldg. (MN) demo./on- site disposal in excavated pit - Max. 200 ft. push	288.00	CF	\$0.23	\$65.72
Loadout Substation	20'x20'x10'	Bldg. (MN) demo./on- site disposal in excavated pit - Max. 200 ft. push	4,000.00	CF	\$0.23	\$912.80
floor	20'x20'	Demo. and on-site disposal in excavated pit, 6 in. thick - Max. 200 ft. push	400.00	SF	\$0.93	\$373.56
transformer	NA	NON-PCB Transformer Removal	1.00	EA	\$2,107.2 0	\$2,107.20
fencing	100 lin.ft.	Fencing, chain link, including posts and fabric - 8 ft. to 10 ft. high	100.00	LF	\$3.12	\$312.00
Structure at Vent Shaft - Lap Slab	576 sq.ft.	Demo. and on-site disposal in excavated pit, 6 in. thick - Max. 200 ft. push	576.00	SF	\$0.93	\$537.93
wing and stem walls	1408 sq.ft.	Demo. and on-site disposal in existing pit, 6 in. thick - Max. 200 ft. push	1,408.00	SF	\$0.95	\$1,332.81
wing wall footing	100 lin. ft.	Demo. and on-site disposal in excavated pit, 1.5 ft. x 3 ft Max. 200 ft. push	100.00	LF	\$8.40	\$840.49
fan and evase	NA	Bldg. (MN) demo./on- site disposal in excavated pit - Max. 200 ft. push	22,032.00	CF	\$0.23	\$5,027.70
shaft house	NA	Bldg. (MN) demo./on- site disposal in excavated pit - Max. 200 ft. push	10,788.00	CF	\$0.23	\$2,461.82

Haul road	NA	Pavement,	33,367.00	SY	\$4.31	\$143,811.7
pavement removal		bituminous, demolition only - 3 in. thick				7
disposal	NA	Loading and 2 mile haul, no salvage - Machine loading	5,578.00	CY	\$17.55	\$97,893.90
guardrail removal	NA	Railing, roadside guiderail and posts (posts on 20 ft. centers)	7,545.00	LF	\$3.67	\$27,682.61
Storage Shed at Topsoil Stockpile	NA	Bldg. (MN) demo./on- site disposal in excavated pit - Max. 200 ft. push	76,500.00	CF	\$0.23	\$17,457.30
floor	NA	Demo. and on-site disposal in excavated pit, 6 in. thick - Max. 200 ft. push	5,100.00	SF	\$0.93	\$4,762.89
Wood fencing from TR-11	NA	Fencing, wood, all types - 4 ft. to 6 ft. high	140.00	LF	\$1.31	\$183.40
12" PVC Pipe from TR-11	NA	Pipe, corrugated metal (CMP) - 8 in. diameter pipe	42.00	LF	\$2.58	\$108.17
Misc Steel Pipe from TR-11	NA	Pipe, steel, welded connections - 4 in. diameter pipe	18.00	LF	\$1.70	\$30.60
Reclaim Conveyor Transfer Building	20'x20'x45'	Bldg. (MN) demo./on- site disposal in excavated pit - Max. 200 ft. push	18,000.00	CF	\$0.23	\$4,107.60
floor	20'x20'	Demo. and on-site disposal in excavated pit, 6 in. thick - Max. 200 ft. push	400.00	SF	\$0.93	\$373.56
footing	2'x3'	Demo. and on-site disposal in excavated pit, 1.5 ft. x 2 ft Max. 200 ft. push	80.00	LF	\$5.60	\$448.26
Railroad Track	NA	Railroad track - Ties and track	7,630.00	LF	\$9.36	\$71,416.80
Storage Track	NA	Railroad track - Ties and track	3,880.00	LF	\$9.36	\$36,316.80
Bypass Track	NA	Railroad track - Ties and track	615.00	LF	\$9.36	\$5,756.40
ballast	NA	Railroad track - Ballast	1,347.00	CY	\$4.78	\$6,438.66
Reclaim Conveyor Transfer Building	NA	OBSOLETE- Conveyor, overland, including supports - 5 ft. W x 6 ft. H housing	340.00	LF	\$17.60	\$5,984.00
elevated portion	NA	OBSOLETE- Conveyor, elevated, including supports - 5 ft. W x 6 ft. H housing	265.00	LF	\$44.51	\$11,794.89

elevated to	NA	OBSOLETE-	1,200.00	LF	\$44.51	\$53,410.80
batch weigh		Conveyor, elevated, including supports - 5				
		ft. W x 6 ft. H housing				
footing	NA	Demo. and on-site	7.00	LF	\$11.21	\$78.45
		disposal in excavated pit, 2.0 ft. x 3 ft				
Hazardous	NA	Max. 200 ft. push Hazardous waste	20.00	DRU	\$486.10	\$9,722.09
Waste Removal		removal - Drum solids/liquids, per		М		
		drum, (7+ drum job)				
test	NA	Hazardous waste sampling and analysis,	20.00	EA	\$232.49	\$4,649.78
4	NT A	per sample	150.00	M	¢7.25	¢1.007.50
transport to dump	NA	Solid transport, large truck (max. 80 drums,	150.00	MI	\$7.25	\$1,087.50
		25 cy, or 18 tons) - Maximum				
dump charges	NA	Dumpsite disposal charge - Average	6.00	TON	\$277.50	\$1,665.00
TR24 Fan	NA	Bldg. (MN) demo./on-	12,923.00	CF	\$0.23	\$2,949.03
Structure		site disposal in excavated pit - Max.				
floor	NA	200 ft. push Demo. and on-site	20.00	SF	\$0.93	\$18.68
1001	1111	disposal in excavated	20.00	51	ψ0.75	φ10.00
		pit, 6 in. thick - Max. 200 ft. push				
footing	NA	Demo. and on-site	12.00	LF	\$5.60	\$67.24
		disposal in excavated pit, 1.5 ft. x 2 ft				
		Max. 200 ft. push				
Conveyor	NA	Bldg. (MN) demo./on-	3,400.00	CF	\$0.23	\$775.88
Overpass Retaining Wall		site disposal in excavated pit - Max.				
Retaining Waii		200 ft. push				
concrete	NA	Demo. and on-site	480.00	SF	\$1.26	\$605.81
halfwall		disposal in existing pit, 8 in. thick - Max.				
		200 ft. push				
floor	NA	Demo. and on-site	120.00	SF	\$0.93	\$112.07
		disposal in excavated pit, 6 in. thick - Max.				
		200  ft. push				
footing	NA	Demo. and on-site	360.00	LF	\$5.60	\$2,017.19
		disposal in excavated pit, 1.5 ft. x 2 ft				
		Max. 200 ft. push				
multiplate	5.5' dia x 4'	Bldg. (SN) demo./on-	64.00	CF	\$0.18	\$11.65
structure		site disposal in				
		existing pit or cut - Max. 200 ft. push				
140k gal water	NA	Bldg. (MN) demo./on-	19,300.00	CF	\$0.23	\$4,404.26
tank		site disposal in				
		excavated pit - Max.				

Transfer Building	20'x24'x45'	Bldg. (MN) demo./on- site disposal in	21,600.00	CF	\$0.23	\$4,929.12
		excavated pit - Max. 200 ft. push				
floor	20'x35'	Demo. and on-site disposal in excavated pit, 6 in. thick - Max. 200 ft. push	700.00	SF	\$0.93	\$653.73
footing	2'x3'	Demo. and on-site disposal in excavated pit, 1.5 ft. x 2 ft Max. 200 ft. push	106.00	LF	\$5.60	\$593.95
MCC Building	NA	Bldg. (MN) demo./on- site disposal in excavated pit - Max. 200 ft. push	1,000.00	CF	\$0.23	\$228.20
floor	NA	Demo. and on-site disposal in excavated pit, 6 in. thick - Max. 200 ft. push	100.00	SF	\$0.93	\$93.39
Substation	NA	Bldg. (MN) demo./on- site disposal in excavated pit - Max. 200 ft. push	25,000.00	CF	\$0.23	\$5,705.00
transformer	NA	NON-PCB Transformer Removal	2.00	EA	\$2,107.2 0	\$4,214.40
Water tank 50k gal	NA	Bldg. (MN) demo./on- site disposal in excavated pit - Max. 200 ft. push	6,720.00	CF	\$0.23	\$1,533.50
Mine vent fan	NA	Bldg. (MN) demo./on- site disposal in excavated pit - Max. 200 ft. push	3,200.00	CF	\$0.23	\$730.24
floor	NA	Demo. and on-site disposal in excavated pit, 6 in. thick - Max. 200 ft. push	40.00	SF	\$0.93	\$37.36
footing	NA	Demo. and on-site disposal in excavated pit, 1.5 ft. x 2 ft Max. 200 ft. push	116.00	LF	\$5.60	\$649.98
Powerlines	NA	Disposal of utility pole and hardware surplus material	200.00	LF	\$0.02	\$4.00
Rock Dust Tank	NA	Bldg. (MN) demo./on- site disposal in excavated pit - Max. 200 ft. push	2,513.00	CF	\$0.23	\$573.47
compressor house	NA	Bldg. (MN) demo./on- site disposal in excavated pit - Max. 200 ft. push	4,800.00	CF	\$0.23	\$1,095.36
Portal Conveyor	NA	OBSOLETE- Conveyor, overland, including supports - 5 ft. W x 6 ft. H housing	148.00	LF	\$17.60	\$2,604.80

Gob Conveyor	NA	OBSOLETE-	100.00	LF	\$17.60	\$1,760.00
Radial Stacker Conveyor	NA	Conveyor, overland, including supports - 5 ft. W x 6 ft. H housing OBSOLETE- Conveyor, overland, including supports - 5 ft. W x 6 ft. H housing	42.00	LF	\$17.60	\$739.20
Wash Plant	55'x70'x80'	Bldg. (MN) demo./on- site disposal in excavated pit - Max. 200 ft. push	308,000.0 0	CF	\$0.23	\$70,285.60
floor	55'x70'	Demo. and on-site disposal in excavated pit, 6 in. thick - Max. 200 ft. push	3,850.00	SF	\$0.93	\$3,595.52
footing	55'x70'	Demo. and on-site disposal in existing pit, 1.5 ft. x 2 ft Max. 200 ft. push	250.00	LF	\$5.36	\$1,338.85
MCC Room	NA	Bldg. (MN) demo./on- site disposal in excavated pit - Max. 200 ft. push	5,760.00	CF	\$0.23	\$1,314.43
floor	NA	Demo. and on-site disposal in excavated pit, 6 in. thick - Max. 200 ft. push	480.00	SF	\$0.93	\$448.27
Transfer Bldg - Reclaim to Plant	NA	Bldg. (MN) demo./on- site disposal in excavated pit - Max. 200 ft. push	10,240.00	CF	\$0.23	\$2,336.77
Reclaim Tunnel Multiplate	5.5' dia x 4'	Bldg. (SN) demo./on- site disposal in existing pit or cut - Max. 200 ft. push	64.00	CF	\$0.18	\$11.65
Stacking Tube	NA	Bldg. (MN) demo./on- site disposal in excavated pit - Max. 200 ft. push	4,900.00	CF	\$0.23	\$1,118.18
structure	NA	Demo. and on-site disposal in excavated pit, 6 in. thick - Max. 200 ft. push	8,000.00	SF	\$0.99	\$7,903.20
footing	NA	Demo. and on-site disposal in excavated pit, 1.5 ft. x 2 ft Max. 200 ft. push	38.00	LF	\$5.60	\$212.93
Clarifier Tank/Thickene r	70'd x 10'h x 10" th	Demo. and on-site disposal in excavated pit, 10 in. thick - Max. 200 ft. push	2,199.00	SF	\$1.56	\$3,422.74
base	NA	Demo. and on-site disposal in excavated pit, 6 in. thick - Max. 200 ft. push	3,848.00	SF	\$0.93	\$3,593.65

sludge	NA	Remove sludge,	10.00	EA	\$379.00	\$3,790.00
removal		water, and rem. product from tank -				
Transfer Building - Plant Feed	NA	9,000 to 12,000 gal. Bldg. (MN) demo./on- site disposal in excavated pit - Max.	8,192.00	CF	\$0.23	\$1,869.41
Transfer Building - Clean Coal	NA	200 ft. push Bldg. (MN) demo./on- site disposal in excavated pit - Max. 200 ft. push	4,096.00	CF	\$0.23	\$934.71
Reclaim Conveyor	NA	OBSOLETE- Conveyor, overland, including supports - 8 ft. W x 10 ft. H housing	250.00	LF	\$26.71	\$6,677.50
Plant Feed Conveyor	NA	OBSOLETE- Conveyor, overland, including supports - 8 ft. W x 10 ft. H housing	300.00	LF	\$26.71	\$8,013.00
Stoker Stockpile Conveyor	NA	OBSOLETE- Conveyor, overland, including supports - 8 ft. W x 10 ft. H housing	125.00	LF	\$26.71	\$3,338.75
Clean Coal Transfer Conveyor	NA	OBSOLETE- Conveyor, overland, including supports - 8 ft. W x 10 ft. H housing	25.00	LF	\$26.71	\$667.75
Clean Coal Stockpile Conveyor	NA	OBSOLETE- Conveyor, overland, including supports - 8 ft. W x 10 ft. H housing	550.00	LF	\$26.71	\$14,690.50
Synfuel Plant	NA	Bldg. (MN) demo./on- site disposal in excavated pit - Max. 200 ft. push	84,000.00	CF	\$0.23	\$19,168.80
floor	NA	Demo. and on-site disposal in excavated pit, 6 in. thick - Max. 200 ft. push	28,000.00	SF	\$0.93	\$26,149.20
footing	NA	Demo. and on-site disposal in excavated pit, 1.5 ft. x 2 ft Max. 200 ft. push	220.00	LF	\$5.60	\$1,232.73
Feed Belt Conveyor	NA	OBSOLETE- Conveyor, overland, including supports - 5 ft. W x 6 ft. H housing	50.00	LF	\$17.60	\$880.00
Product Belt Conveyor	NA	OBSOLETE- Conveyor, overland, including supports - 5 ft. W x 6 ft. H housing	85.00	LF	\$17.60	\$1,496.00

Return Belt	NA	OBSOLETE-	80.00	LF	\$17.60	\$1,408.00
Conveyor		Conveyor, overland, including supports - 5				
		ft. W x 6 ft. H housing				
Fan and Duct	NA	Bldg. (MN) demo./on-	31,752.00	CF	\$0.23	\$7,245.81
Work TR62		site disposal in excavated pit - Max.				
		200 ft. push				
footings	NA	Demo. and on-site disposal in excavated	108.00	LF	\$5.60	\$605.16
		pit, 1.5 ft. x 2 ft				
MCC D 111	NT A	Max. 200 ft. push	4 500 00	CE	¢0.22	¢1.0 <b>2</b> <.00
MCC Building TR62	NA	Bldg. (MN) demo./on- site disposal in excavated pit - Max.	4,500.00	CF	\$0.23	\$1,026.90
	NA	200 ft. push Demo. and on-site	100.00	SF	\$0.89	\$89.26
motor foundation	INA	disposal in existing pit, 6 in. thick - Max. 200 ft. push	100.00	бг	\$0.89	\$89.20
floor	NA	Demo. and on-site disposal in excavated pit, 6 in. thick - Max. 200 ft. push	375.00	SF	\$0.93	\$350.21
footing	NA	Demo. and on-site	80.00	LF	\$5.60	\$448.26
		disposal in excavated pit, 1.5 ft. x 2 ft Max. 200 ft. push			40.00	¢ <u>-</u> c
Water Line	NA	Pipe, sewer/water - 12	400.00	LF	\$4.64	\$1,856.00
TR53		in. diameter pipe				
Upper Parking	NA	Demo. and on-site	1,305.00	SF	\$1.98	\$2,578.29
Area Retaining Wall TR50		disposal in excavated pit, 12 in. thick - Max. 200 ft. push				
footing	NA	Demo. and on-site	150.00	LF	\$5.60	\$840.50
		disposal in excavated pit, 1.5 ft. x 2 ft Max. 200 ft. push				
10k gal fuel	NA	Excavate and load	1.00	EA	\$1,330.0	\$1,330.00
tank TR47		tank onto trailer, non- leaking - 9,000 gal. to 12,000 gal.			0	
remove	NA	Remove sludge,	1.00	EA	\$379.00	\$379.00
sludge		water, and rem. product from tank -				
		9,000 to 12,000 gal.				
dispose of sludge	NA	Dispose of tank sludge off-site - Average	1,000.00	GAL	\$6.80	\$6,800.00
insert CO2	NA	Insert dry ice (CO2) into tank to produce inert gas - 1.5 lbs./100 gal.	150.00	LB	\$1.95	\$292.50
haul tank to certified dump	NA	Haul tank to certified salvage dump - 9,000 to 12,000 gal. tank	1.00	EA	\$1,050.0 0	\$1,050.00
Trailers (3)	NA	Bldg. (MN) demo./on- site disposal in	3,000.00	CF	\$0.23	\$684.60

		excavated pit - Max. 200 ft. push				
Quonset Hut MR108	25'x60'x12.5 '	Bldg. (MN) demo./on- site disposal in excavated pit - Max. 200 ft. push	18,750.00	CF	\$0.23	\$4,278.75
floor	25'x60'	Demo. and on-site disposal in excavated pit, 6 in. thick - Max.	1,500.00	SF	\$0.93	\$1,400.85
Hoist Structure MR97	NA	200 ft. push Bldg. (MN) demo./on- site disposal in excavated pit - Max. 200 ft. push	1,440.00	CF	\$0.23	\$328.61
footing	NA	Demo. and on-site disposal in excavated pit, 1.5 ft. x 2 ft Max. 200 ft. push	9.00	LF	\$5.60	\$50.43
piers	NA	USER PROVIDED ITEM	2.00	CY	\$89.00	\$178.00
head frame	NA	Bldg. (MN) demo./on- site disposal in excavated pit - Max. 200 ft. push	5,886.00	CF	\$0.23	\$1,343.19
Collecting Conveyor	NA	OBSOLETE- Conveyor, elevated, including supports - 5 ft. W x 6 ft. H housing	76.00	LF	\$44.51	\$3,382.68
footing	NA	Demo. and on-site disposal in excavated pit, 2.0 ft. x 3 ft Max. 200 ft. push	2.00	LF	\$11.21	\$22.41
Batch Weigh @ Loadout	30' x 40' x 120'	Bldg. (MN) demo./on- site disposal in excavated pit - Max. 200 ft. push	144,000.0 0	CF	\$0.23	\$32,860.80
Fuel Station floor	20' x 30'	Demo. and on-site disposal in excavated pit, 6 in. thick - Max. 200 ft. push	600.00	SF	\$0.93	\$560.34
footing	2'x3'	Demo. and on-site disposal in excavated pit, 1.5 ft. x 2 ft Max. 200 ft. push	100.00	LF	\$5.60	\$560.33
Loadout Storage Stacker	NA	Bldg. (MN) demo./on- site disposal in excavated pit - Max. 200 ft. push	8,000.00	CF	\$0.23	\$1,825.60
tube	NA	Demo. and on-site disposal in excavated pit, 6 in. thick - Max. 200 ft. push	3,678.00	SF	\$0.93	\$3,434.88
footing	NA	Demo. and on-site disposal in excavated pit, 1.5 ft. x 2 ft Max. 200 ft. push	44.00	LF	\$5.60	\$246.55
Filter Building MR 125	40'x16'x8'	Bldg. (SC) demo./on- site disposal in	5,120.00	CF	\$0.26	\$1,355.78

		excavated pit - Max. 200 ft. push				
floor	40'x16'x4"	Demo. and on-site disposal in excavated pit, 4 in. thick - Max. 200 ft. push	640.00	SF	\$0.62	\$398.46
footing	112 LF	Demo. and on-site disposal in excavated pit, 1.5 ft. x 2 ft Max. 200 ft. push	112.00	LF	\$5.60	\$627.57
Shower Facility Expansion MR 126	16' x 50' x 12'	Bldg. (MN) demo./on- site disposal in excavated pit - Max. 200 ft. push	9,600.00	CF	\$0.23	\$2,190.72
floor	16'x50'x4"	Demo. and on-site disposal in excavated pit, 4 in. thick - Max. 200 ft. push	800.00	SF	\$0.62	\$498.08
footing	82 LF	Demo. and on-site disposal in excavated pit, 1.0 ft. x 2 ft Max. 200 ft. push	82.00	LF	\$3.74	\$306.31
Terror Creek Vent Shaft Collar	30'x30'x12"	Demo. and on-site disposal in excavated pit, 12 in. thick - Max. 200 ft. push	900.00	SF	\$1.87	\$1,681.02
Terror Creek Vent Shaft Quonset Hut	NA	Bldg. (SN) demo./on- site disposal in excavated pit - Max. 10,000 ft. haul	14,720.00	CF	\$0.20	\$2,988.16
pad	NA	Demo. and on-site disposal in excavated pit, 6 in. thick - Max. 200 ft. push	1,500.00	SF	\$0.93	\$1,400.85
Temporary Culvert T-F1	24" x 300'	Pipe, corrugated metal (CMP) - 24 in. diameter pipe	300.00	LF	\$5.94	\$1,783.32
Temporary Culvert T-F2	12" x 20'	Pipe, corrugated metal (CMP) - 12 in. diameter pipe	20.00	LF	\$3.38	\$67.65
Half Culvert C- J11	30" x 500'	USER PROVIDED ITEM	500.00	LF	\$3.42	\$1,710.00
Culvert C-G5	36" x 95'	Pipe, corrugated metal (CMP) - 36 in. diameter pipe	95.00	LF	\$9.23	\$876.92
Culvert C-G6	12" x 87'	Pipe, corrugated metal (CMP) - 12 in. diameter pipe	87.00	LF	\$3.38	\$294.27
Culvert C-G2	12" x 40'	Pipe, corrugated metal (CMP) - 12 in. diameter pipe	40.00	LF	\$3.38	\$135.30
Concrete Box Structure at Pond D	4' x 4'	Wall, concrete, demolition only, average reinforcing - 4 in. thick	80.00	SF	\$0.71	\$56.50
Temporary Culvert T-F3	24" x 20'	Pipe, corrugated metal (CMP) - 24 in. diameter pipe	20.00	LF	\$5.94	\$118.89

Temporary	30" x 40'	Pipe, corrugated metal	40.00	LF	\$7.66	\$306.32
Culvert T-F4	50 x 40	(CMP) - 30 in.	40.00	LF	\$1.00	\$300.52
-	2011 001	diameter pipe	00.00		<b>A7 5 5</b>	<b>*</b> <1 <b>*</b> < <b>*</b>
Temporary Culvert T-F5	30" x 80'	Pipe, corrugated metal (CMP) - 30 in. diameter pipe	80.00	LF	\$7.66	\$612.65
Temporary	24" x 30'	Pipe, corrugated metal	30.00	LF	\$5.94	\$178.33
Culvert C-J10	24 x 30	(CMP) - 24 in. diameter pipe	50.00		φ3.74	\$176.55
Culvert C22 drop inlet structure	44 - 16" x 8" x 6" blocks	Wall, block, demolition only, 6 in. thick - Vertical reinforcing	39.06	SF	\$0.58	\$22.50
Trailer Mounted Filter Press	8' x 8' x 40'	Bldg. (SN) demo./on- site disposal in existing pit or cut - Max. 200 ft. push	2,560.00	CF	\$0.18	\$465.92
West Terror Creek Flume Anchors	1' x 1.5' x 4'	Footing, concrete, 1.0 ft. x 2 ft Average reinforcing	8.00	LF	\$3.37	\$26.93
W Ter Crk Flume walls - 2 walls/2 flumes	2' x 4' x 4" (2)	Footing, concrete, 1.5 ft. x 2 ft Average reinforcing	16.00	LF	\$4.05	\$64.77
Flume rubble disposal	NA	Loading and 5 mile haul, salvage allowed - Concrete frame structures	2.80	СҮ	\$12.40	\$34.72
Rock Bin on D Portal Bench - side walls	7' x 15' (2)	Wall, concrete, demolition only, average reinforcing - 12 in. thick	210.00	SF	\$1.29	\$270.27
Rock Bin on D Portal Bench - back wall	8' x 23'	Wall, concrete, demolition only, average reinforcing - 18 in. thick	184.00	SF	\$2.57	\$473.62
Rock Bin on D Portal Bench - floor	16.5' x 23' x 12"	Floor, concrete, demolition only, average reinforcing - 12 in. thick	379.50	SF	\$1.70	\$645.76
Rock Bin on D Bench rubble disposal	NA	Push demolished materials/rubble/debri s into pit - Max. 200 ft. push	32.00	СҮ	\$1.62	\$51.78
Concrete patch @haul road intersection	50' x 18' x 8"	Pavement, concrete, demolition only, 7 in. to 24 in. thick - Reinforced	7.40	CY	\$124.00	\$917.60
Culverts B1(50), B3(100), B7(220)	12"	Pipe, corrugated metal (CMP) - 12 in. diameter pipe	370.00	LF	\$3.38	\$1,251.49
Culverts B8(110), B9(140)	12"	Pipe, corrugated metal (CMP) - 12 in. diameter pipe	250.00	LF	\$3.38	\$845.60
Culverts B13(110), B18(110),	12"	Pipe, corrugated metal (CMP) - 12 in. diameter pipe	280.00	LF	\$3.38	\$947.07

Culverts	12"	Pipe, corrugated metal	230.00	LF	\$3.38	\$777.95
B25(160),		(CMP) - 12 in.				
B26(70)		diameter pipe				
Culverst	18"	Pipe, corrugated metal	100.00	LF	\$4.58	\$458.17
B11(60) and		(CMP) - 18 in.				
B29 (40)		diameter pipe				
Culverts	18"	Pipe, corrugated metal	280.00	LF	\$4.58	\$1,282.88
B12(170),		(CMP) - 18 in.				
B14(70),		diameter pipe				
B22(40)						
Culvert	18"	Pipe, corrugated metal	40.00	LF	\$4.58	\$183.27
B23(40)		(CMP) - 18 in.				
		diameter pipe				
Culverts	24"	Pipe, corrugated metal	230.00	LF	\$5.94	\$1,367.21
B15(80),		(CMP) - 24 in.				
B16(60),		diameter pipe				
B17(90)						
Culverts	24"	Pipe, corrugated metal	160.00	LF	\$5.94	\$951.10
B19(60),		(CMP) - 24 in.				
B27(100)		diameter pipe				
Culvert	30"	Pipe, corrugated metal	120.00	LF	\$7.66	\$918.97
B28(120)		(CMP) - 30 in.				
		diameter pipe				
Culvert	36"	Pipe, corrugated metal	40.00	LF	\$9.23	\$369.23
B21(40)	20	(CMP) - 36 in.	10100	21	¢>.=e	<i>\\\\\\\\\\\\\\</i>
<b>D</b> 21(10)		diameter pipe				
Culverts	12"	Pipe, corrugated metal	210.00	LF	\$3.38	\$710.30
C1(110),	12	(CMP) - 12 in.	210.00		ψ5.50	ψ/10.50
C1(110), C2(30), C2(		diameter pipe				
C3(40), C8(30)		unameter pipe				
Culverts	12"	Pipe, corrugated metal	200.00	LF	\$3.38	\$676.48
C10(100) and	12	(CMP) - 12 in.	200.00	LI	\$5.50	\$070.48
C10(100) and C17(100)		diameter pipe				
Culverts	12"	Pipe, corrugated metal	380.00	LF	\$3.38	\$1,285.31
C19(60),	12	(CMP) - 12 in.	580.00	LI	\$5.50	\$1,205.51
C19(00), C21(170),		diameter pipe				
C21(170), C22(150)		diameter pipe				
Culverts	12"	Pipe, corrugated metal	90.00	LF	\$3.38	\$304.42
Curvents C23(30),	12	(CMP) - 12 in.	90.00	LF	\$3.30	\$304.42
		diameter pipe				
C24(30), C25(30)		diameter pipe				
. ,	24"	Ding commission motol	200.00	LE	\$5.04	\$2,219,22
Culverts	24	Pipe, corrugated metal	390.00	LF	\$5.94	\$2,318.32
C4(300) and		(CMP) - 24 in.				
C11(90)	2.4"	diameter pipe	255.00	LE	\$5.04	\$2,110,20
Culverts	24"	Pipe, corrugated metal	355.00	LF	\$5.94	\$2,110.26
C12(65),		(CMP) - 24 in.				
C13(120),		diameter pipe				
C14(170)						******
Culverts	24"	Pipe, corrugated metal	145.00	LF	\$5.94	\$861.94
C15(25),		(CMP) - 24 in.				
C16(90),		diameter pipe				
C18(30)						
Culvert	30"	Pipe, corrugated metal	260.00	LF	\$7.66	\$1,991.11
C5(260)		(CMP) - 30 in.				
CJ(200)	1	diameter pipe				
Culverts	36"	Pipe, corrugated metal	465.00	LF	\$9.23	\$4,292.28
	36"	(CMP) - 36 in.	465.00	LF	\$9.23	\$4,292.28
Culverts	36"		465.00	LF	\$9.23	\$4,292.28

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Culverts D1(40), D2(30)	24"	Pipe, corrugated metal (CMP) - 24 in.	70.00	LF	\$5.94	\$416.11
		diameter pipe				
Culvert E1(40)	12"	Pipe, corrugated metal (CMP) - 12 in.	40.00	LF	\$3.38	\$135.30
Culvert F2(40) and F4(60)	30"	diameter pipe Pipe, corrugated metal (CMP) - 30 in. diameter pipe	100.00	LF	\$7.66	\$765.81
Culverts G2(40) and G4(25)	12"	Pipe, corrugated metal (CMP) - 12 in. diameter pipe	65.00	LF	\$3.38	\$219.86
Culvert G3(50)	24"	Pipe, corrugated metal (CMP) - 24 in. diameter pipe	50.00	LF	\$5.94	\$297.22
Culvert H1(175)	36"	Pipe, corrugated metal (CMP) - 36 in. diameter pipe	175.00	LF	\$9.23	\$1,615.37
Culverts J3(60), J5(50), J6(60)	12"	Pipe, corrugated metal (CMP) - 12 in. diameter pipe	170.00	LF	\$3.38	\$575.01
Culverts J7(60), J12(50), J13(50)	12"	Pipe, corrugated metal (CMP) - 12 in. diameter pipe	160.00	LF	\$3.38	\$541.18
Culvert J14(175)	12"	Pipe, corrugated metal (CMP) - 12 in. diameter pipe	175.00	LF	\$3.38	\$591.92
Culverts J1(65), J2(100), J4(50)	24"	Pipe, corrugated metal (CMP) - 24 in. diameter pipe	215.00	LF	\$5.94	\$1,278.05
Culverts J8(50), J9(90- 2), J10(40)	24"	Pipe, corrugated metal (CMP) - 24 in. diameter pipe	270.00	LF	\$5.94	\$1,604.99
Culverts K1(40), K2(130)	12"	Pipe, corrugated metal (CMP) - 12 in. diameter pipe	170.00	LF	\$3.38	\$575.01
Culvert K3(75)	24	Pipe, corrugated metal (CMP) - 24 in. diameter pipe	75.00	LF	\$5.94	\$445.83
Refuse Bin	20' x 20' x 60'	Bldg. (MN) demo./on- site disposal in excavated pit - Max. 200 ft. push	24,000.00	CF	\$0.23	\$5,476.80
- slab	20' x 20'	Demo. and on-site disposal in excavated pit, 6 in. thick - Max. 200 ft. push	400.00	SF	\$0.93	\$373.56
- footing	20' x 20'	Demo. and on-site disposal in existing pit, 1.5 ft. x 2 ft Max. 200 ft. push	80.00	LF	\$5.36	\$428.43
Refuse Bin Fender Walls	4' x 40' x 12" (2)	Wall, concrete, demolition only, average reinforcing - 12 in. thick	320.00	SF	\$1.29	\$411.84
- footing (10' either side of bin)	20' (2)	Demo. and on-site disposal in existing	40.00	LF	\$8.08	\$323.34

		pit, 1.5 ft. x 3 ft				
Refuse Bin	12"diam	Max. 10,000 ft. haul USER PROVIDED	2.00	EA	\$23.50	\$47.00
Bollards (2)		ITEM	2.00	LA	φ25.50	φ-7.00
- footing	1' x 2'	Demo. and on-site	2.00	LF	\$3.59	\$7.19
		disposal in existing				
		pit, 1.0 ft. x 2 ft				
		Max. 10,000 ft. haul	10.00	- T F	¢1.c.c <b>2</b>	<b> </b>
Mine Entrance Security Gate	6' x 40'	USER PROVIDED ITEM	40.00	LF	\$16.62	\$664.80
- motor	NA	USER PROVIDED	1.00	EA	\$755.00	\$755.00
assembly		ITEM				
- actuator	NA	USER PROVIDED ITEM	1.00	EA	\$50.50	\$50.50
Culvert G5	36" x 150'	Pipe, corrugated metal (CMP) - 36 in.	150.00	LF	\$9.23	\$1,384.61
		diameter pipe				
Culvert G6	12" x 100'	Pipe, corrugated metal (CMP) - 12 in.	100.00	LF	\$3.38	\$338.24
Fire Mountain	100' x 20' x	diameter pipe Bldg. (MN) demo./on-	40,000.00	CF	\$0.22	\$8,600,00
Canal Storage	100 x 20 x 20'	site disposal in	40,000.00	CF	\$0.22	\$8,600.00
Bldg	20	existing pit or cut -				
8		Max. 10,000 ft. haul				
- slab	100' x 20'	Demo. and on-site	2,000.00	SF	\$0.90	\$1,796.40
		disposal in existing				
		pit, 6 in. thick - Max. 10,000 ft. haul				
- footing	100' x 20'	Demo. and on-site	240.00	LF	\$3.59	\$862.25
		disposal in existing				
		pit, 1.0 ft. x 2 ft Max. 10,000 ft. haul				
Culvert C9	36" x 500'	Pipe, corrugated metal	500.00	LF	\$9.23	\$4,615.35
(replaced by		(CMP) - 36 in.			+	+ ,,
Ditch D-C14)		diameter pipe				
Smart Ditch T-	24"X 50'	Pipe, corrugated metal	50.00	LF	\$5.94	\$297.22
F6		(CMP) - 24 in.				
Bowie Rd	620 SY	diameter pipe Pavement,	620.00	SY	\$4.31	\$2,672.20
Intersection	020 5 1	bituminous,	020.00	51	φ <b>4</b> .51	\$2,072.20
Asphalt		demolition only - 3 in.				
Removal		thick				
Temporary	36"X40'	Pipe, corrugated metal	40.00	LF	\$9.23	\$369.23
Culvert T6		(CMP) - 36 in.				
		diameter pipe	1 41 4 00	<u> </u>	<b>\$0.22</b>	¢211.00
Methane Flare Stack (MR200)	6' dia x 50'	USER PROVIDED ITEM	1,414.00	CF	\$0.22	\$311.08
- Skid	17' x 10' x 6'	USER PROVIDED	1,020.00	CF	\$0.22	\$224.40
5110		ITEM	1,020100	01	¢0	<i><i><i>v</i>==<i>v</i></i></i>
-	40'	USER PROVIDED	40.00	LF	\$2.30	\$92.00
Interconnecting		ITEM				
Piping	2501	Transform 1 1 1 1	250.00		¢0.50	¢020.00
- Remove	350'	Fencing, chain link, including posts and	350.00	LF	\$2.68	\$938.00
Fence		fabric - to 6 ft. high				
- Concrete	8' dia	Demo. and on-site	50.00	SF	\$0.89	\$44.63
Foundation for		disposal in existing	20.00		φ0.07	φ ττ.03
Oxidizer		pit, 6 in. thick - Max.				
		200 ft. push				

- Footing	25'	Demo. and on-site disposal in existing pit, 2.0 ft. x 3 ft Max. 200 ft. push	25.00	LF	\$10.71	\$267.77
				Tata	Cost	

				I otal Cost	
		Subtotal		(adjusted for	
Job Hours:	160.00	(unadjusted):	\$1,563,930.02	location):	\$1,598,336.48

	Task desc	cription:	Proctor Testing of Backf	ill (5 tests)			
Site:	Bowie No	o. 2 Mine	Permit Action:	MT5	P	ermit/Job#:	C1996083
	PROJEC	T IDENTIFI	CATION				
	Task	170	State: Colorado		Abbreviation:	None	
	#: Date:	10/2/2019	County: Delta		Filename:	C083-170	
	User:	ZTT					
	A	Agency or organ	nization name: DRMS				

### UNIT COSTS

Maintenance Item	Hours per Year	Menu Selection	Quantity	Unit	Unit Cost	Total Cost
Supervison/Quality Control	0.00	USER PROVIDED ITEM	5.00	1	\$135.00	\$675.00

Job Hours: 0.00

Total Cost: \$675.00

	Task desc	ription:	Nuclear Density Testing	of Backfill			
Site:	Bowie No	o. 2 Mine	Permit Action:	MT5	P	ermit/Job#:	C1996083
	PROJEC	T IDENTIFI	CATION				
	Task #:	171	State: Colorado		Abbreviation:	None	
	Date: User:	10/2/2019 ZTT	County: Delta		Filename:	C083-171	
	A	gency or organ	ization name: DRMS				

### UNIT COSTS

Maintenance Item	Hours per Year	Menu Selection	Quantity	Unit	Unit Cost	Total Cost
Supervisor/Quality Control	0.00	USER PROVIDED ITEM	1,760.00	1	\$73.13	\$128,708.80

Job Hours: 0.00

Total Cost: \$128,708.80

### MISCELLANEOUS TRUCK WORK

Task description:	Water Truck for Moistu	re Augmentation of Backfi	ll Material		
Bowie No. 2 Mine	2 Mine Permit Action: MT5		Permit/Job#:C1996083		
PROJECT IDENTIFI	CATION				
Task #: 172   Date: 10/2/2019   User: ZTT	County: Colora	do		lone 83-172	
Agency or organ	nization name: DRMS				
HOURLY EQUIPME	NT COST				
Make and Model: Attachment 1: Attachment 2: Labor Unit 1: Labor Unit 2:	Water Tanker, 5,000 Gal.			1 per day	
<u>Cost Breakdown:</u>					
Ownership Cost/I	Hour: \$27.40	Utilization % NA			
Operating Cost/I		100			
Operator Cost/I		NA			
Total Unit Cost/I					
Total Fleet Cost	/Hour: \$88.48	_			
IOB TIME AND CO	<u>DST</u>				
Fleet size:	1 Truck(s)	Total job time:	1,437.02	Hours	
Unit cost: \$88	3.48 /Hour	Total job cost:	\$127,148		

	ription:	Site Maintenance - Ten	Years			
Bowie No	. 2 Mine	Permit Actio	n: MT5	Pe	ermit/Job#:	C1996083
<b>ROJEC</b>	<u>T IDENTIFI(</u>	CATION				
Task #:	173	State: Colorado	)	Abbreviation:	None	
Date: User:	10/2/2019 ZTT	County: Delta		Filename:	C083-173	
	<b>ROJEC</b> Task #: Date:	Task 173 #: Date: 10/2/2019	ROJECT IDENTIFICATION     Task   173   State:   Colorado     #:	ROJECT IDENTIFICATION     Task   173   State:   Colorado     #:	ROJECT IDENTIFICATION     Task   173   State:   Colorado   Abbreviation:     #:	ROJECT IDENTIFICATION     Task   173   State:   Colorado   Abbreviation:   None     #:

### UNIT COSTS

Maintenance Item	Hours per Year	Menu Selection	Quantity	Unit	Unit Cost	Total Cost
Dozer for Rills and Gullies	24.00	Cat D3K LGP - 3P	240.00	EA	\$95.66	\$22,958.40
Grader for Roads and Ditches	4.00	CAT 12M	40.00	EA	\$96.36	\$3,854.40
Pond Dredging	12.00	USER PROVIDED ITEM	12.00	EA	\$18,000.00	\$216,000.00

Job Hours: 292.00

Total Cost: \$242,812.80

No. 2 Mine		mit Action:	MT5	P	ermit/Job#:	C1996083
CT IDENTIFI	CATION					
	CATION					
	State:	Colorado		Abbreviation:	None	
10/2/2019	County:	Delta		Filename:	C083-174	
	10/2/2019 ZTT	10/2/2019 County: ZTT	10/2/2019County:DeltaZTT	10/2/2019     County:     Delta       ZTT	10/2/2019County:DeltaFilename:ZTT	10/2/2019County:DeltaFilename:C083-174ZTT

### UNIT COSTS

Maintenance Item	Hours per Year	Menu Selection	Quantity	Unit	Unit Cost	Total Cost
Water Truck	458.57	Water Tanker,	458.57	EA	\$88.48	\$40,574.27
		5,000 Gal.				
Grader	458.57	CAT 14M	458.57	EA	\$148.79	\$68,230.63

Job Hours: <u>449.16</u>

Total Cost: \$108,804.90
## EQUIPMENT MOBILIZATION/DEMOBILIZATION

Mobilize/Demobilize Equipment for First Construction Season				
Site: Bowie No. 2 Mine	Permi	t Action: MT5	Permit/Jo	ob#: <u>C1996083</u>
PROJECT IDENTIFICAT	ION			
Task #:       180         Date:       10/2/2019         User:       ZTT		olorado Delta	Abbreviation: Filename:	None C083-180
Agency or organization	n name: DRMS	5		
EQUIPMENT TRANSPOI	RT RIG COST			
			Shift basis: Cost Data Source:	1 per day CRG Data
Truck Tractor Des	cription: GENE		AY TRUCK TRACTOR, 6X4, 400 HP (2ND HALF, 2006)	DIESEL POWERED,
Truck Trailer Des	cription: C	<b>JENERIC FOLDIN</b>	G GOOSENECK, DROP DEC AILER (25T, 50T, AND 100T	-
Cost Breakdown:				
Available Rig Capacities	0-25 Tons	26-50 Tons	51+ Tons	
Ownership Cost/Hour:	\$17.20	\$29.63	\$38.69	
Operating Cost/Hour:	\$26.56	\$47.02	\$55.69	
Operator Cost/Hour:	\$23.63	\$23.63	\$23.63	
Helper Cost/Hour:	\$0.00	\$23.53	\$23.53	

\$123.81

\$141.54

\$67.39

## **NON ROADABLE EQUIPMENT:**

Total Unit Cost/Hour:

Machine	Weight/	Owner ship	Haul Rig	Fleet	Haul Trip	Return Trip	DOT Permit
Description	Unit	Cost/hr/ unit	Cost/hr/unit	Size	Cost/hr/	Cost/hr/ fleet	Cost/ fleet
-	(TONS)				fleet		
Cat D10T - 10SU	84.53	\$140.61	\$141.54	4	\$1,128.60	\$566.16	\$1,000.00
Cat 365C L 13'-7" Stick	77.56	\$121.37	\$141.54	2	\$525.82	\$283.08	\$500.00
CAT 815F	22.88	\$60.28	\$67.39	1	\$127.67	\$67.39	\$250.00
CAT 14M	23.57	\$64.10	\$67.39	1	\$131.49	\$67.39	\$250.00
CAT 988H	54.46	\$91.83	\$141.54	1	\$233.37	\$141.54	\$250.00
Cat 773F	49.74	\$105.90	\$123.81	3	\$689.13	\$371.43	\$750.00
Cat 627G w/push- pull	43.48	\$126.52	\$123.81	4	\$1,001.32	\$495.24	\$1,000.00
Water Tanker, 5,000 Gal.	15.00	\$27.40	\$67.39	1	\$94.79	\$67.39	\$250.00
ATLAS COPCO ROC D7-11,4.0 in.	1.25	\$79.74	\$67.39	1	\$147.13	\$67.39	\$250.00
Drill/Broadcast Seeder with Tractor	25.00	\$18.15	\$67.39	1	\$85.54	\$67.39	\$250.00
Fuel Tanker, 6x4, 210 HP	6.00	\$13.51	\$67.39	1	\$80.90	\$67.39	\$250.00

Subtotals: \$4,245.76 \$2,261.79

.79 \$5,000.00

## **ROADABLE EQUIPMENT:**

Machine Description	Total Cost/hr/ unit	Fleet Size	Haul Trip Cost/hr/ fleet	Return Trip Cost/hr/ fleet
Fuel Tanker, 6x4, 210 HP	\$63.55	1	\$63.55	\$63.55
Lube Truck, 6x4, 250 HP	\$71.50	1	\$71.50	\$71.50
Flatbed Truck, 6x4, 45K GVW	\$76.76	1	\$76.76	\$76.76
Light Duty Pickup, 4x4, 1 T.	\$48.58	1	\$48.58	\$48.58
Crew				
		Subtotals:	\$260.39	\$260.39

## **EQUIPMENT HAUL DISTANCE and Time**

Nearest Major City or Town within project area region:	GRAND JUNCTION	_
Total one-way travel distance:	100.00	miles
Average Travel Speed:	40.00	mph
Total Non-Roadable Mob/Demob Cost *	\$51,029.27 \$1,301.95	_

Transportation Cycle Time:

	Non-	
	Roadable	Roadable
	Equipment	Equipment
Haul Time (Hours):	2.50	2.50
Return Time (Hours):	2.50	2.50
Loading Time (Hours):	0.50	NA
Unloading Time (Hours):	0.50	NA
Subtotals:	6.00	5.00

#### JOB TIME AND COST

Total job time:	12.00	Hours
Total job cost:	\$52,331	_

## EQUIPMENT MOBILIZATION/DEMOBILIZATION

ite:	Bowie No	o. 2 Mine	Perm	nit Action:	MT5	Permit/Jo	b#: <u>C1996083</u>
<u>P</u> ]	ROJECT	IDENTIFI	CATION				
	Task #:	181	State:	Colorado		Abbreviation:	None
	Date:	10/2/2019	County:	Delta		Filename:	C083-181
	User:	ZTT					

Shift basis: <u>1 per day</u>

Cost Data Source: CRG Data

Truck Tractor Description: GENERIC ON-HIGHWAY TRUCK TRACTOR, 6X4, DIESEL POWERED, 400 HP (2ND HALF, 2006)

Truck Trailer Description:

GENERIC FOLDING GOOSENECK, DROP DECK EQUIPMENT TRAILER (25T, 50T, AND 100T)

Cost Breakdown:

Available Rig Capacities	0-25 Tons	26-50 Tons	51+ Tons
Ownership Cost/Hour:	\$17.20	\$29.63	\$38.69
Operating Cost/Hour:	\$26.56	\$47.02	\$55.69
Operator Cost/Hour:	\$23.63	\$23.63	\$23.63
Helper Cost/Hour:	\$0.00	\$23.53	\$23.53
Total Unit Cost/Hour:	\$67.39	\$123.81	\$141.54

#### **NON ROADABLE EQUIPMENT:**

Machine	Weight/	Owner ship	Haul Rig	Fleet	Haul Trip	Return Trip	DOT Permit
Description	Unit	Cost/hr/ unit	Cost/hr/unit	Size	Cost/hr/	Cost/hr/ fleet	Cost/ fleet
-	(TONS)				fleet		
Cat D10T - 10SU	84.53	\$140.61	\$141.54	4	\$1,128.60	\$566.16	\$1,000.00
Cat 365C L 13'-7"	77.56	\$121.37	\$141.54	2	\$525.82	\$283.08	\$500.00
Stick							
CAT 815F	22.88	\$60.28	\$67.39	1	\$127.67	\$67.39	\$250.00
CAT 14M	23.57	\$64.10	\$67.39	1	\$131.49	\$67.39	\$250.00
CAT 988H	54.46	\$91.83	\$141.54	1	\$233.37	\$141.54	\$250.00
Cat 773F	49.74	\$105.90	\$123.81	3	\$689.13	\$371.43	\$750.00
Cat 627G w/push-	43.48	\$126.52	\$123.81	4	\$1,001.32	\$495.24	\$1,000.00
pull							
Water Tanker,	15.00	\$27.40	\$67.39	1	\$94.79	\$67.39	\$250.00
5,000 Gal.							
ATLAS COPCO	1.25	\$79.74	\$67.39	1	\$147.13	\$67.39	\$250.00
ROC D7-11,4.0							
in.							
Drill/Broadcast	25.00	\$18.15	\$67.39	1	\$85.54	\$67.39	\$250.00
Seeder with							
Tractor							
Fuel Tanker, 6x4,	6.00	\$13.51	\$67.39	1	\$80.90	\$67.39	\$250.00
210 HP							

Subtotals: \$4,245.76 \$2,261.79 \$5,000.00

#### **ROADABLE EQUIPMENT:**

Machine Description	Total Cost/hr/	Fleet Size	Haul Trip	Return Trip
	unit		Cost/hr/ fleet	Cost/hr/ fleet
Fuel Tanker, 6x4, 210 HP	\$63.55	1	\$63.55	\$63.55
Lube Truck, 6x4, 250 HP	\$71.50	1	\$71.50	\$71.50
Flatbed Truck, 6x4, 45K GVW	\$76.76	1	\$76.76	\$76.76
Light Duty Pickup, 4x4, 1 T.	\$48.58	1	\$48.58	\$48.58
Crew				
		Subtotals	: \$260.39	\$260.39

#### **EQUIPMENT HAUL DISTANCE and Time**

Nearest Major City or Town within project area region: Total one-way travel distance: Average Travel Speed:	GRAND JUNCTION 100.00 40.00	_ miles _ mph
Total Non-Roadable Mob/Demob Cost * '* two round trips with haul rig:	\$51,029.27	
Total Roadable Mob/Demob Cost ** ** one round trip, no haul rig:	\$1,301.95	_

Transportation Cycle Time:

	Non-	
	Roadable	Roadable
	Equipment	Equipment
Haul Time (Hours):	2.50	2.50
Return Time (Hours):	2.50	2.50
Loading Time (Hours):	0.50	NA
Unloading Time (Hours):	0.50	NA
Subtotals:	6.00	5.00

## JOB TIME AND COST

Total job time: **12.00** Hours

Total job cost: \$52,331

# EQUIPMENT MOBILIZATION/DEMOBILIZATION

Task description: Mobilize/I	Demoblize Equipment for Pond Remo	oval
ite: Bowie No. 2 Mine	Permit Action: MT5	Permit/Job#: C1996083
PROJECT IDENTIFICATION		
	tate: Colorado inty: Delta	Abbreviation:NoneFilename:C083-182
Agency or organization name:	DRMS	
EQUIPMENT TRANSPORT RIG	COST	
	Со	Shift basis: <u>1 per day</u> st Data Source: <u>CRG Data</u>
Truck Tractor Description:		K TRACTOR, 6X4, DIESEL POWERED, ND HALF, 2006)
Truck Trailer Description:		ENECK, DROP DECK EQUIPMENT 5T, 50T, AND 100T)
Cost Breakdown:		

Available Rig Capacities	0-25 Tons	26-50 Tons	51+ Tons
Ownership Cost/Hour:	\$17.20	\$29.63	\$38.69
Operating Cost/Hour:	\$26.56	\$47.02	\$55.69
Operator Cost/Hour:	\$23.63	\$23.63	\$23.63
Helper Cost/Hour:	\$0.00	\$23.53	\$23.53
Total Unit Cost/Hour:	\$67.39	\$123.81	\$141.54

## **NON ROADABLE EQUIPMENT:**

Machine Description	Weight/ Unit (TONS)	Owner ship Cost/hr/ unit	Haul Rig Cost/hr/unit	Fleet Size	Haul Trip Cost/hr/ fleet	Return Trip Cost/hr/ fleet	DOT Permit Cost/ fleet
C DOT OUL		¢101.40	ф141 <u>л</u> 4	1		ф141 <i>5</i> 4	¢250.00
Cat D9T - 9SU	60.01	\$121.49	\$141.54	1	\$263.03	\$141.54	\$250.00
Cat 627G w/push- pull	43.48	\$126.52	\$123.81	1	\$250.33	\$123.81	\$250.00
Drill/Broadcast Seeder with Tractor	25.00	\$18.15	\$67.39	1	\$85.54	\$67.39	\$250.00

Subtotals: \$598.90

\$332.74

\$750.00

## **ROADABLE EQUIPMENT:**

Machine Description	Total Cost/hr/ unit	Fleet Size	Haul Trip Cost/hr/ fleet	Return Trip Cost/hr/ fleet
Flatbed Truck, 6x4, 45K GVW	\$76.15	1	\$76.15	\$76.15
		Subtotals:	\$76.15	\$76.15
EQUIPMENT HAUL DIST.	ANCE and Time			
Nearest Major C	City or Town within p	project area region:	DELTA	
	Total one-w	ay travel distance:	45.00	miles
	Aver	rage Travel Speed:	40.00	mph
Т	otal Non-Roadable M * two round Total Roadable M	trips with haul rig:	\$4,793.99	)
		nd trip, no haul rig:	\$171.34	

Transportation Cycle Time:

	Non-	
	Roadable	Roadable
	Equipment	Equipment
Haul Time (Hours):	1.13	1.13
Return Time (Hours):	1.13	1.13
Loading Time (Hours):	0.50	NA
Unloading Time (Hours):	0.50	NA
Subtotals:	3.25	2.25

## JOB TIME AND COST

Total job time: 6.50 Hours

Total job cost: **\$4,965** 

## EQUIPMENT MOBILIZATION/DEMOBILIZATION

Task description:	Mobi	lize/Demobilize	e Equipment i	for rearing	Site Maintena	nce		
e: Bowie No. 2 Mi	ne	Permit	Action: MT	5	]	Permit/Job	o#: <u>C</u>	1996083
PROJECT IDEN	TIFICATIO	<u>N</u>						
Task #:       183         Date:       10/2/         User:       ZTT	/2019		olorado elta			viation: lename:	None C083-	183
Agency or	organization n	name: DRMS						
<u>EQUIPMENT TI</u>	RANSPORT	RIG COST						
					Shift bas Cost Data Sour		per da RG Da	
	Fractor Descrip	- 		400 HF	UCK TRACTO (2ND HALF, 1)	2006)		-
Iruck	Trailer Descrip	ption: G	ENERIC FOL		DSENECK, DR (25T, 50T, AN		K EQUI	IPMENI
Cost Breakdown:								
Available Rig Ca		0-25 Tons	26-50 Tons		+ Tons			
Ownership (		\$17.20 \$26.56	\$29.63		38.69			
Operating (	Cost/Hour:	\$26.56 \$23.63	\$47.02		55.69			
	Cost/Hour:	\$23.03	\$23.63		23.63			
Total Unit (		\$0.00 \$67.39	\$23.53 \$123.81		141.54			
			Haul Rig	Fleet	Haul Trip	Return '	Frip	DOT Permit
NON ROADABL Machine Description	Weight/ Unit	ENT: Owner ship Cost/hr/ unit	Haul Rig Cost/hr/unit	Fleet Size	Haul Trip Cost/hr/	Return Cost/hr/		DOT Permit Cost/ fleet
Machine	Weight/	Owner ship	-		Cost/hr/ fleet \$921.50	Cost/hr/ \$673.90		Cost/ fleet \$2,500.00
Machine Description	Weight/ Unit (TONS)	Owner ship Cost/hr/ unit	Cost/hr/unit	Size	Cost/hr/ fleet	Cost/hr/		Cost/ fleet
Machine Description Cat D3K LGP - 3P CAT 14M	Weight/ Unit (TONS) 9.20 23.57	Owner ship Cost/hr/ unit \$24.76	Cost/hr/unit \$67.39	Size	Cost/hr/ fleet \$921.50 \$657.45	Cost/hr/ \$673.90 \$336.95		Cost/ fleet \$2,500.00
Description Cat D3K LGP - 3P	Weight/ Unit (TONS) 9.20 23.57 UIPMENT:	Owner ship Cost/hr/ unit \$24.76	Cost/hr/unit \$67.39	Size       10       5       Subtotals	Cost/hr/ fleet \$921.50 \$657.45	Cost/hr/ \$673.90 \$336.95 \$1,0 Retur	fleet	Cost/ fleet \$2,500.00 \$1,250.00 \$3,750.00
Machine Description Cat D3K LGP - 3P CAT 14M <b>ROADABLE EQ</b> Machine Descripti	Weight/ Unit (TONS) 9.20 23.57 UIPMENT: on	Owner ship Cost/hr/ unit \$24.76 \$64.10 Total Cost/hr/ unit	Cost/hr/unit \$67.39 \$67.39 Fleet S	Size       10       5       Subtotals	Cost/hr/ fleet \$921.50 \$657.45 : <b>\$1,578.95</b> Haul Trip	Cost/hr/ \$673.90 \$336.95 <b>\$1,0</b> Retur Cost/	10.85	Cost/ fleet \$2,500.00 \$1,250.00 \$3,750.00
Machine Description Cat D3K LGP - 3P CAT 14M <b>ROADABLE EQ</b> Machine Descripti <b>EQUIPMENT H</b>	Weight/ Unit (TONS) 9.20 23.57 UIPMENT: on	Owner ship Cost/hr/ unit \$24.76 \$64.10 Total Cost/hr/ unit NCE and Tim	Cost/hr/unit \$67.39 \$67.39 Fleet S	Subtotals:	Cost/hr/ fleet \$921.50 \$657.45 : <b>\$1,578.95</b> Haul Trip Cost/hr/ fleet <b>\$0.00</b>	Cost/hr/ \$673.90 \$336.95 <b>\$1,0</b> Retur Cost/l	fleet 10.85 n Trip hr/ fleet	Cost/ fleet \$2,500.00 \$1,250.00 \$3,750.00
Machine Description Cat D3K LGP - 3P CAT 14M <b>ROADABLE EQ</b> Machine Descripti <b>EQUIPMENT H</b>	Weight/ Unit (TONS) 9.20 23.57 UIPMENT: on	Owner ship Cost/hr/ unit \$24.76 \$64.10 Total Cost/hr/ unit NCE and Tim	Cost/hr/unit \$67.39 \$67.39 Fleet S ne in project area	Subtotals: region:	Cost/hr/ fleet \$921.50 \$657.45 : <b>\$1,578.95</b> Haul Trip Cost/hr/ fleet <b>\$0.00</b> DELT	Cost/hr/ \$673.90 \$336.95 \$1,0 Retur Cost/l	10.85 n Trip hr/ fleet \$0.00	Cost/ fleet \$2,500.00 \$1,250.00 \$3,750.00
Machine Description Cat D3K LGP - 3P CAT 14M <b>ROADABLE EQ</b> Machine Descripti <b>EQUIPMENT H</b>	Weight/ Unit (TONS) 9.20 23.57 UIPMENT: on	Owner ship Cost/hr/ unit \$24.76 \$64.10 Total Cost/hr/ unit NCE and Time ty or Town with Total on	Cost/hr/unit \$67.39 \$67.39 Fleet S	Size 10 5 Subtotals ize Subtotals: region: istance:	Cost/hr/ fleet \$921.50 \$657.45 : <b>\$1,578.95</b> Haul Trip Cost/hr/ fleet <b>\$0.00</b>	Cost/hr/ \$673.90 \$336.95 \$1,0 Retur Cost/l A	fleet 10.85 n Trip hr/ fleet	Cost/ fleet \$2,500.00 \$1,250.00 \$3,750.00
Machine Description Cat D3K LGP - 3P CAT 14M <b>ROADABLE EQ</b> Machine Descripti <b>EQUIPMENT H</b>	Weight/ Unit (TONS) 9.20 23.57 UIPMENT: on AUL DISTA	Owner ship Cost/hr/ unit \$24.76 \$64.10 Total Cost/hr/ unit <b>NCE and Tim</b> ty or Town with Total on <i>A</i> tal Non-Roadabl '* two rou	Cost/hr/unit \$67.39 \$67.39 Fleet S Fleet S ne in project area e-way travel d Average Travel le Mob/Demot and trips with h	Size 10 5 Subtotals ize Subtotals: region: istance: l Speed: o Cost * naul rig:	Cost/hr/ fleet \$921.50 \$657.45 : <b>\$1,578.95</b> Haul Trip Cost/hr/ fleet <b>\$0.00</b> DELT 45.00	Cost/hr/ \$673.90 \$336.95 <b>\$1,0</b> Retur Cost/l A )	fleet           10.85           n Trip           hr/ fleet           \$0.00	Cost/ fleet \$2,500.00 \$1,250.00 \$3,750.00
Machine Description Cat D3K LGP - 3P CAT 14M <b>ROADABLE EQ</b> Machine Descripti <b>EQUIPMENT H</b>	Weight/ Unit (TONS) 9.20 23.57 UIPMENT: on AUL DISTA	Owner ship Cost/hr/ unit \$24.76 \$64.10 Total Cost/hr/ unit <b>NCE and Tim</b> ty or Town withi Total on <i>A</i> tal Non-Roadabl '* two rou Total Roadable	Cost/hr/unit \$67.39 \$67.39 Fleet S Fleet S ne in project area e-way travel d Average Travel le Mob/Demot and trips with h	Size 10 5 Subtotals ize Subtotals: region: istance: l Speed: o Cost * naul rig: Cost **	Cost/hr/ fleet \$921.50 \$657.45 : <b>\$1,578.95</b> Haul Trip Cost/hr/ fleet <b>\$0.00</b> DELT 45.00 45.00	Cost/hr/ \$673.90 \$336.95 <b>\$1,0</b> Retur Cost/l A ) )	fleet           10.85           n Trip           hr/ fleet           \$0.00	Cost/ fleet \$2,500.00 \$1,250.00 \$3,750.00
Machine Description Cat D3K LGP - 3P CAT 14M <b>ROADABLE EQ</b> Machine Descripti <b>EQUIPMENT H</b>	Weight/ Unit (TONS) 9.20 23.57 UIPMENT: on AUL DISTA arest Major Cit	Owner ship Cost/hr/ unit \$24.76 \$64.10 Total Cost/hr/ unit <b>NCE and Tim</b> ty or Town withi Total on <i>A</i> tal Non-Roadabl '* two rou Total Roadable	Cost/hr/unit \$67.39 \$67.39 Fleet S Fleet S IE in project area e-way travel d Average Travel le Mob/Demob ind trips with h Mob/Demob	Size 10 5 Subtotals ize Subtotals: region: istance: l Speed: o Cost * naul rig: Cost **	Cost/hr/ fleet \$921.50 \$657.45 : <b>\$1,578.95</b> Haul Trip Cost/hr/ fleet <b>\$0.00</b> DELT 45.00 45.00	Cost/hr/ \$673.90 \$336.95 <b>\$1,0</b> Retur Cost/l A ) )	fleet           10.85           n Trip           hr/ fleet           \$0.00	Cost/ fleet \$2,500.00 \$1,250.00 \$3,750.00
Machine Description Cat D3K LGP - 3P CAT 14M <b>ROADABLE EQ</b> Machine Descripti <b>EQUIPMENT H</b> Nea	Weight/ Unit (TONS) 9.20 23.57 UIPMENT: on AUL DISTA arest Major Cit	Owner ship Cost/hr/ unit \$24.76 \$64.10 Total Cost/hr/ unit <b>NCE and Tim</b> ty or Town withi Total on <i>A</i> tal Non-Roadabl '* two rou Total Roadable	Cost/hr/unit \$67.39 \$67.39 Fleet S Fleet S IE in project area e-way travel d Average Travel le Mob/Demob ind trips with h Mob/Demob	Size 10 5 Subtotals ize Subtotals: region: istance: l Speed: o Cost * naul rig: Cost **	Cost/hr/ fleet \$921.50 \$657.45 : <b>\$1,578.95</b> Haul Trip Cost/hr/ fleet <b>\$0.00</b> DELT 45.00 45.00	Cost/hr/ \$673.90 \$336.95 <b>\$1,0</b> Retur Cost/l A ) )	fleet           10.85           n Trip           hr/ fleet           \$0.00	Cost/ fleet \$2,500.00 \$1,250.00 \$3,750.00
Machine Description Cat D3K LGP - 3P CAT 14M <b>ROADABLE EQ</b> Machine Descripti <b>EQUIPMENT H</b> Nea	Weight/ Unit (TONS) 9.20 23.57 UIPMENT: on AUL DISTA arest Major Cit	Owner ship Cost/hr/ unit \$24.76 \$64.10 Total Cost/hr/ unit <b>NCE and Tim</b> ty or Town with Total on A tal Non-Roadabl '* two rou Total Roadable ** one r	Cost/hr/unit \$67.39 \$67.39 Fleet S Fleet S In project area e-way travel d Average Travel le Mob/Demob and trips with h Mob/Demob ound trip, no h	Size 10 5 Subtotals ize Subtotals: region: istance: l Speed: o Cost * haul rig: cost *** haul rig: e	Cost/hr/ fleet \$921.50 \$657.45 : <b>\$1,578.95</b> Haul Trip Cost/hr/ fleet <b>\$0.00</b> DELT 45.00 45.00	Cost/hr/ \$673.90 \$336.95 <b>\$1,0</b> Retur Cost/l A ) )	fleet           10.85           n Trip           hr/ fleet           \$0.00	Cost/ fleet \$2,500.00 \$1,250.00 \$3,750.00
Machine Description Cat D3K LGP - 3P CAT 14M <b>ROADABLE EQ</b> Machine Descripti <b>EQUIPMENT H</b> Nea Transportation Cycle	Weight/ Unit (TONS) 9.20 23.57 UIPMENT: on AUL DISTA arest Major Cit Tot	Owner ship Cost/hr/ unit \$24.76 \$64.10 Total Cost/hr/ unit <b>NCE and Tim</b> Total on <i>A</i> tal Non-Roadabl '* two rou Total Roadable ** one r Non- Roadable Equipment	Cost/hr/unit \$67.39 \$67.39 Fleet S Fleet S real e-way travel d Average Travel le Mob/Demob and trips with h Mob/Demob ound trip, no h Roadabl Equipmo	Size 10 5 Subtotals ize Subtotals: region: istance: l Speed: o Cost * haul rig: cost ** haul rig: e e e	Cost/hr/ fleet \$921.50 \$657.45 : <b>\$1,578.95</b> Haul Trip Cost/hr/ fleet <b>\$0.00</b> DELT 45.00 45.00	Cost/hr/ \$673.90 \$336.95 <b>\$1,0</b> Retur Cost/l A ) )	fleet           10.85           n Trip           hr/ fleet           \$0.00	Cost/ fleet \$2,500.00 \$1,250.00 \$3,750.00
Machine Description Cat D3K LGP - 3P CAT 14M <b>ROADABLE EQ</b> Machine Descripti EQUIPMENT HA Nea Transportation Cycle Haul	Weight/ Unit (TONS) 9.20 23.57 UIPMENT: on AUL DISTA arest Major Cit	Owner ship Cost/hr/ unit \$24.76 \$64.10 Total Cost/hr/ unit <b>NCE and Tim</b> Total on <i>A</i> tal Non-Roadabl '* two rou Total Roadable ** one r Non- Roadable Equipment : 1.00	Cost/hr/unit \$67.39 \$67.39 Fleet S Fleet S Fleet S Fleet S Fleet S Nob/Demob and trips with P Mob/Demob ound trip, no P Roadabl Equipme	Size 10 5 Subtotals ize Subtotals: region: istance: l Speed: o Cost * haul rig: cost *** haul rig: e	Cost/hr/ fleet \$921.50 \$657.45 : <b>\$1,578.95</b> Haul Trip Cost/hr/ fleet <b>\$0.00</b> DELT 45.00 45.00	Cost/hr/ \$673.90 \$336.95 <b>\$1,0</b> Retur Cost/l A ) )	fleet           10.85           n Trip           hr/ fleet           \$0.00	Cost/ fleet \$2,500.00 \$1,250.00 \$3,750.00

Looding Time (Hours);	2.50	NA
Loading Time (Hours):	2.30	INA
Unloading Time (Hours):	2.50	NA
Subtotals:	7.00	2.00

## JOB TIME AND COST

Total job time: 14.00 Hours

Total job cost: **\$28,469** 

## BULLDOZER WORK

Task description:	Regrade Terror	Creek Light	t-Use Road		
e: Bowie No. 2 Mine	Pe	rmit Action:	MT5	Permit/Jo	b#: <u>C1996083</u>
PROJECT IDENTIF	ICATION				
Task #:     241       Date:     10/2/2019       User:     ZTT	State: County:	Colorado Delta		Abbreviation: Filename:	None C083-241
Agency or orga	nization name:	RMS			
HOURLY EQUIPME	ENT COST				
	t D9T - 9SU		-		
Horsepower: 40 Blade Type: Se	5 mi-Universal		-		
Attachment: NA			-		
Shift Basis: 1 p	per day RG)		-		
Cost Breakdown:			- 		
Ownership Cost/Hour:		\$121.49	<u>Utilization %</u> NA		
Operating Cost/Hour:		\$105.84	100		
Ripper own. Cost/Hour:		\$0.00	NA		
Ripper op. Cost/Hour:		\$0.00	0		
Operator Cost/Hour:		\$41.24	NA		
MATERIAL QUANT Initial Volume: 9,80 Swell factor: 1.17	00 25				
Loose volume: 11,	025 LCY	_			
Source of estimated vol Source of estimated swe factor:			on, Mining & Safety		
HOURLY PRODUC	<u>FION</u>				
Average push distance:	125 feet				
Unadjusted hourly production:	1,055.6 LC	Y/hr			
Materials consistency description:	Compa	cted fill or er	nbankment 0.9		
Average push gradient:	5 %				
Average site altitude:	7,800 feet				
Material weight:	2,650 lbs/LCY				
Weight description:	Decomposed rock	- 25% Rock,	, 75% Earth		

Job Condition Correction Factor		Source
Operator Skill:	0.750	(AVG.)
Material consistency:	0.900	(CAT HB))
Dozing method:	1.000	(GEN.)
Visibility:	1.000	(AVG.)
Job efficiency:	0.830	(1 SHIFT/DAY)
Spoil pile:	0.800	(FND-RF)
Push gradient:	0.903	(CAT HB)
Altitude:	1.000	(CAT HB)
Material Weight:	0.868	(CAT HB)
Blade type:	1.000	(PAT)

Net correction: 0.3513

Adjusted unit production:	370.83 LCY/hr
Adjusted fleet	<b>370.83</b> LCY/hr
production:	570.05 LC 1/11

Fleet size:	1 Dozer(s)	
Unit cost:	\$0.724/LCY	

Total job time:	<b>29.73</b> Hours
Total job cost:	\$7,985

## BULLDOZER WORK

Task description:	Replace Topsoi	from Stock	pile to Terror Creek I	Lt-Use Road	
e: Bowie No. 2 Mine	Pe	rmit Action:	MT5	Permit/Job	#: <u>C1996083</u>
PROJECT IDENTIF	ICATION				
Task #: 242 Date: 10/2/2019 User: ZTT	State:	Colorado Delta		Abbreviation: _ Filename: _	None C083-242
Agency or orga	nization name: DI	RMS			
HOURLY EQUIPME	ENT COST				
Horsepower: 40 Blade Type: Se Attachment: NA Shift Basis: 1	mi-Universal A per day				
Data Source: <u>(C</u> <u>Cost Breakdown</u> :	RG)				
Ownership Cost/Hour: Operating Cost/Hour:		\$121.49 \$105.84	Utilization % NA 100		
Ripper own. Cost/Hour:		\$103.84	NA		
Ripper op. Cost/Hour:		\$0.00	0		
Operator Cost/Hour:		\$41.24	NA		
MATERIAL QUANT Initial Volume: 7,40 Swell factor: 1.12 Loose volume: 8,32	25				
	25 LCY	_			
Source of estimated vol Source of estimated swe factor:			on, Mining & Safety		
HOURLY PRODUCT	<u>FION</u>				
Average push distance: Unadjusted hourly production:	125 feet 1,055.6 LC	Y/hr			
Materials consistency description:	Compa	acted fill or en	nbankment 0.9		
Average push gradient:	5 %				
Average site altitude:	7,800 feet				
Material weight:	2,650 lbs/LCY				
Weight description:	Decomposed rock	- 25% Rock,	75% Earth		

Job Condition Correction Factor		Source
Operator Skill:	0.750	(AVG.)
Material consistency:	0.900	(CAT HB))
Dozing method:	1.000	(GEN.)
Visibility:	1.000	(AVG.)
Job efficiency:	0.830	(1 SHIFT/DAY)
Spoil pile:	0.800	(FND-RF)
Push gradient:	0.903	(CAT HB)
Altitude:	1.000	(CAT HB)
Material Weight:	0.868	(CAT HB)
Blade type:	1.000	(PAT)

Net correction: 0.3513

Adjusted unit production:	370.83 LCY/hr
Adjusted fleet production:	370.83 LCY/hr

Fleet size:	1 Dozer(s)	
Unit cost:	\$0.724/LCY	

Total job time:	<b>22.45</b> Hours
Total job cost:	\$6,029

## SAFEGUARDING UNDERGROUND OPENINGS

Bowie N	o. 2 Mine	Per	mit Action:	MT5	I	Permit/Job#:	C1996083
<u>PROJEC</u>	<u>CT IDENTIFI</u>	CATION					
Task #:	261	State:	Colorado		Abbreviation:	None	
Date: User:	10/2/2019 ZTT	County:	Delta		Filename:	C083-261	

# UNIT COSTS

Opening Description	Dimensions	Closure Method	Quantity	Unit	Unit Cost	Total Cost
Concrete Cap	269.00 cf	Shaft closure - concrete cap, poured- in-place (per Cubic Feet)	269.00	CF	\$3.70	\$996.30
Backfill Shaft	6900 cy	Shaft closure - backfilling, by hand	6,900.00	CY	\$15.00	\$103,500.00
- Equipment to Backfill	1717 hr/cy	Cat D7R DS XR Series II	4.00	EA	\$177.10	\$708.40

Job Hours: 40.00

Total Cost: \$105,204.70

# **REVEGETATION WORK**

: Bow	ie No. 2 Mine	Per	mit Action:	MT5	Permit/Jo	b#: <u>C1996083</u>
PROJE	CT IDENTIFI	CATION				
Task Da	ate: 301 10/2/2019	State: County:	Colorado Delta		Abbreviation: Filename:	None C083-301
	er: ZTT					

# **FERTILIZING**

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

#### Application

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

# **TILLING**

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

## **SEEDING**

Seed Mix	Rate – PLS LBS / Acre	Seeds per SQ. FT	Cost /Acre
Indian Ricegrass - Nespar	3.00	9.71	\$26.63
Bluebunch Wheatgrass - Secar	3.00	9.64	\$32.63
Mountain Brome - Bromar	3.00	4.82	\$11.40
Sandberg Bluegrass - VNS	3.00	63.71	\$25.20
Coreopsis, Lance Leafed	1.00	25.58	\$28.55
Western Wheatgrass - Arriba	4.00	10.10	\$26.00
Daisy, Englemann's	1.00	4.94	\$127.40
Prairie Junegrass	2.00	106.31	\$52.00
Golden Banner	1.00	2.00	\$83.00
Totals Seed Mix	21.00	236.80	\$412.80

## Application

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

# MULCHING and MISCELLANEOUS

#### Materials

Description	Units / Acre	Unit	Cost / Unit	Cost /Acre
Hay, delivered {MEANS 31 25 14.16 1200}	2.00	TON	\$295.00	\$590.00
Total Mulch Materials Cost/Acre				\$590.00

## Application

Description		Cost /Acre
Crimping, with tractor {DMG survey data}		\$70.17
Power mulcher (MEANS 32 91 13.16 0350)		\$95.83
	Total Mulch Application Cost/Acre	\$166.00

## 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

Cost/Acie.	\$1,168.80
Cost /Acre*:	\$412.80
ING	
)	DING

Initial Job Cost:	\$455.83
Reseeding Job Cost:	\$80.50
Total Job Cost:	\$536
Job Hours:	1.00

## BULLDOZER WORK

Bowie No. 2 Mine	Pe	ermit Action:	MT5	Permit/Jo	b#: <u>C1996083</u>
ROJECT IDENTIFI	CATION				
Task #:302	State:	Colorado		Abbreviation:	None
Date:         10/2/2019           User:         ZTT	County:	Delta		Filename:	C083-302
Agency or organ	nization name: D	RMS			
OURLY EQUIPME	NT COST				
Basic Machine: Cat Horsepower: 405	t D9T - 9SU				
	ni-Universal		-		
Attachment: NA			-		
	er day RG)		-		
ost Breakdown:		1			
Ownership Cost/Hour:		\$121.49	<u>Utilization %</u> NA		
Operating Cost/Hour:		\$105.84	100		
Ripper own.		\$0.00	NA		
Cost/Hour: Ripper op. Cost/Hour:		\$0.00	0		
Operator Cost/Hour:		\$41.24	NA		
IATERIAL QUANT	<u>ITIES</u>				
Initial Volume:782Swell factor:1.16Loose volume:911	5 LCY				
Source of estimated volu			on, Mining & Safety		
Source of estimated swe factor:	ll Cat Hand	lbook			
OURLY PRODUCT	<u>'ION</u>				
Average push distance: Unadjusted hourly production:	200 feet 700.0 LCY	/hr			
Materials consistency description:	Compa	acted fill or en	nbankment 0.9		
Average push gradient:	5 %				
	7,500 feet				
Average site altitude:	7,500 1001				
Average site altitude: Material weight:	2,900 lbs/LCY				

Job Condition Correction Factor		Source
Operator Skill:	0.750	(AVG.)
Material consistency:	0.900	(CAT HB))
Dozing method:	1.000	(GEN.)
Visibility:	1.000	(AVG.)
Job efficiency:	0.830	(1 SHIFT/DAY)
Spoil pile:	0.800	(FND-RF)
Push gradient:	0.903	(CAT HB)
Altitude:	1.000	(CAT HB)
Material Weight:	0.793	(CAT HB)
Blade type:	1.000	(PAT)

Net correction: 0.3209

Adjusted unit production:	224.63 LCY/hr
Adjusted fleet production:	224.63 LCY/hr

Fleet size:	1 Dozer(s)	
Unit cost:	\$1.196/LCY	

Total job time:	<b>4.06</b> Hours
Total job cost:	\$1,089

## BULLDOZER WORK

Task description:	Re-topsoil Pitkin	1 Mesa Pipel	ine corridor		
e: Bowie No. 2 Mine	Pe	rmit Action:	MT5	Permit/Jo	b#: <u>C1996083</u>
PROJECT IDENTIFI	<b>ICATION</b>				
Task #:         352           Date:         10/2/2019           User:         ZTT	State: County:	Colorado Delta		Abbreviation: Filename:	None C083-352
Agency or organ	nization name:	RMS			
HOURLY EQUIPME	<u>ENT COST</u>				
Horsepower: 40: Blade Type: Ser Attachment: NA Shift Basis: 1 p	mi-Universal		- - - -		
Cost Breakdown:	)	1			
Ownership Cost/Hour:		\$121.49	<u>Utilization %</u> NA		
Operating Cost/Hour:		\$105.84	100		
Ripper own. Cost/Hour:		\$0.00	NA		
Ripper op. Cost/Hour:		\$0.00	0		
Operator Cost/Hour:		\$41.24	NA		
MATERIAL QUANT Initial Volume: 3,22 Swell factor: 1.00 Loose volume: 3,22	27				
Source of estimated vol Source of estimated swe factor:	-	acres @ 12" book			
HOURLY PRODUCT	<u>FION</u>				
Average push distance: Unadjusted hourly production:	100 feet 1,243.2 LC	Y/hr			
Materials consistency description:	Consol	idated stockp	ile 1.0		
Average push gradient: Average site altitude:	20 % 7,725 feet				
Material weight:	2,550 lbs/LCY				
Weight description:	Earth - Dry packe	d			

Job Condition Correction Factor		Source
Operator Skill:	0.750	(AVG.)
Material consistency:	1.000	(CAT HB)
Dozing method:	1.000	(GEN.)
Visibility:	1.000	(AVG.)
Job efficiency:	0.830	(1 SHIFT/DAY)
Spoil pile:	0.800	(FND-RF)
Push gradient:	0.545	(CAT HB)
Altitude:	1.000	(CAT HB)
Material Weight:	0.902	(CAT HB)
Blade type:	1.000	(PAT)

Net correction: 0.2448

Adjusted unit production:	304.34 LCY/hr
Adjusted fleet	<b>304.34</b> LCY/hr
production:	304.34 LC 1/III

Fleet size:	1 Dozer(s)
Unit cost:	\$0.882/LCY

Total job time:	<b>10.60</b> Hours
Total job cost:	\$2,848

## **REVEGETATION WORK**

Та	ask descrip	otion:	<b>Reseed Pitkin N</b>	Iesa Pipeline	Corridor		
ite:	Bowie No	o. 2 Mine	Pe	ermit Action:	MT5	Permit/Jo	b#: <u>C1996083</u>
<u>PR</u>	ROJECT	IDENTIFIC	<u>CATION</u>				
	Task #:	353	State:	Colorado		Abbreviation:	None
	Date:	10/2/2019	County:	Delta		Filename:	C083-353

## **FERTILIZING**

# Materials Units / Acre Unit Cost / Unit Cost /Acre Image: I

#### Application

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

## **TILLING**

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

## **SEEDING**

Seed Mix	Rate – PLS LBS / Acre	Seeds per SQ. FT	Cost /Acre
Indian Ricegrass - Nespar	3.00	9.71	\$26.63
Bluebunch Wheatgrass - Secar	3.00	9.64	\$32.63
Mountain Brome - Bromar	3.00	4.82	\$11.40
Sandberg Bluegrass - VNS	3.00	63.71	\$25.20
Coreopsis, Lance Leafed	1.00	25.58	\$28.55
Western Wheatgrass - Arriba	4.00	10.10	\$26.00
Daisy, Englemann's	1.00	4.94	\$127.40
Prairie Junegrass	2.00	106.31	\$52.00
Golden Banner	1.00	2.00	\$83.00
Totals Seed Mix	21.00	236.80	\$412.80

## Application

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

# MULCHING and MISCELLANEOUS

#### Materials

Description	Units / Acre	Unit	Cost / Unit	Cost /Acre
Hay, delivered {MEANS 31 25 14.16 1200}	2.00	TON	\$295.00	\$590.00
Total Mulch Materials Cost/Acre				\$590.00

## Application

Description		Cost /Acre
Crimping, with tractor {DMG survey data}		\$70.17
Power mulcher (MEANS 32 91 13.16 0350)		\$95.83
	Total Mulch Application Cost/Acre	\$166.00

## NURSERY STOCK PLANTING

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

30

Initial Job Cost.	\$2,337.00
Reseeding Job Cost:	\$412.80
Total Job Cost:	\$2,750
Job Hours:	2.00

# BOREHOLE SEALING WORK

	Task desc	cription:	Seal Well DH	-67blw				
Site:	Bowie No	o. 2 Mine	Pe	rmit Action:	MT5	P	ermit/Job#:	C1996083
	<u>PROJEC</u>	<u>T IDENTIFI</u>	<b>CATION</b>					
	Task #:	369	State:	Colorado		Abbreviation:	None	
	Date: User:	10/2/2019 ZTT	County:	Delta		Filename:	C083-369	
	A	Agency or organ	nization name:	DRMS				

# UNIT COSTS

Borehole Description	Sealing/Item Method	Diameter	Length	Quantity	Unit	Unit Cost	Total Cost
Cement seal	Portland cement grout ( Bag, material cost only94 lb. bag)	8.75	360	127.40	bag	\$13.40	\$1,707.16
Casing removal	Exposed casing removal - Calculate Circumference in Linear Feet	8.75	3	2.00	LF	\$3.26	\$6.52
Hole marker	Borehole location/identification marker (EA, material cost only)	NA	NA	1.00	EA	\$32.00	\$32.00
Drill Rig Time	ATLAS COPCO ROC D7-11,4.0 in.	NA	NA	12.00	EA	\$232.77	\$2,793.24
Water Truck Time	Water Tanker, 3,500 Gal.	NA	NA	12.00	EA	\$63.55	\$762.60

 Job Hours:
 12.00
 Total Cost:
 \$5,302.00

# BOREHOLE SEALING WORK

	Task dese	cription:	Seal CWI-DF	I-58A				
Site:	Bowie No	o. 2 Mine	Pe	ermit Action:	MT5	P	ermit/Job#:	C1996083
	<u>PROJEC</u>	T IDENTIF	ICATION					
	Task #:	374	State:	Colorado		Abbreviation:	None	
	Date: User:	10/2/2019 ZTT	County:	Delta		Filename:	C083-374	
	A	Agency or orga	nization name:	DRMS				

# UNIT COSTS

Borehole Description	Sealing/Item Method	Diameter	Length	Quantity	Unit	Unit Cost	Total Cost
Seal hole	Portland cement grout ( Bag, material cost only94 lb. bag)	8.75	550	194.37	bag	\$13.40	\$2,604.56
Remove casing	Exposed casing removal - Calculate Circumference in Linear Feet	8.75	3	2.00	LF	\$3.26	\$6.52
Hole marker	Borehole location/identification marker (EA, material cost only)	NA	NA	1.00	EA	\$32.00	\$32.00
Drill Rig Time	ATLAS COPCO ROC D7-11,4.0 in.	NA	NA	12.00	EA	\$229.43	\$2,753.16
Water Truck Time	Water Tanker, 3,500 Gal.	NA	NA	12.00	EA	\$63.55	\$762.60

 Job Hours:
 12.00
 Total Cost:
 \$6,159.00

## BULLDOZER WORK

Task description:	Regrade Section	5 Road			
te: Bowie No. 2 Mine	Pe	rmit Action:	MT5	Permit/Jo	b#: <u>C1996083</u>
PROJECT IDENTIF	<b>ICATION</b>				
Task #:       379         Date:       10/2/2019         User:       ZTT	State: County:	Colorado Delta		Abbreviation: Filename:	None C083-379
Agency or orga	nization name:	RMS			
HOURLY EQUIPME	ENT COST				
Horsepower: 40 Blade Type: Se Attachment: NA Shift Basis: 1	mi-Universal				
Cost Breakdown:	KU)		Litilization 0/		
Ownership Cost/Hour:		\$121.49	<u>Utilization %</u> NA		
Operating Cost/Hour:		\$105.84	100		
Ripper own. Cost/Hour:		\$0.00	NA		
Ripper op. Cost/Hour:		\$0.00	0		
Operator Cost/Hour:		\$41.24	NA		
MATERIAL QUANT Initial Volume: 2,9 Swell factor: 1.1 Loose volume: 3,4	57				
Source of estimated vol Source of estimated sw factor:	ume: DRMS -		naterial over1.22 ac		
HOURLY PRODUC					
Average push distance: Unadjusted hourly production:	100 feet 1,243.2 LC	Y/hr			
Materials consistency description:	Consol	idated stockp	ile 1.0		
Average push gradient:	20 %				
Average site altitude:	7,725 feet				
Material weight:	2,900 lbs/LCY				
Weight description:	Decomposed rock	- 50% Rock,	50% Earth		

Job Condition Correction Factor		Source
Operator Skill:	0.750	(AVG.)
Material consistency:	1.000	(CAT HB)
Dozing method:	1.000	(GEN.)
Visibility:	1.000	(AVG.)
Job efficiency:	0.830	(1 SHIFT/DAY)
Spoil pile:	0.800	(FND-RF)
Push gradient:	0.545	(CAT HB)
Altitude:	1.000	(CAT HB)
Material Weight:	0.793	(CAT HB)
Blade type:	1.000	(PAT)

Net correction: 0.2152

Adjusted unit production:	267.54 LCY/hr
Adjusted fleet production:	<b>267.54</b> LCY/hr

Fleet size:	1 Dozer(s)	
Unit cost:	\$1.004/LCY	_

Total job time:	<b>12.88</b> Hours
Total job cost:	\$3,458

## BULLDOZER WORK

Task description:	Re-topsoil Section	on 5 Road			
e: Bowie No. 2 Mine	Pe	rmit Action:	MT5	Permit/Jo	o#: <u>C1996083</u>
PROJECT IDENTIE	FICATION				
Task #:         380           Date:         10/2/2011           User:         ZTT	9 State: County:	Colorado Delta		Abbreviation: Filename:	None C083-380
Agency or org	anization name: DF	RMS			
HOURLY EQUIPM	ENT COST				
	at D9T - 9SU		-		
	05		-		
	emi-Universal		-		
	A		-		
	per day CRG)		-		
Cost Breakdown:			Utilization %		
Ownership Cost/Hour		\$121.49	NA		
Operating Cost/Hour		\$105.84	100		
Ripper own		\$0.00	NA		
Cost/Hour Ripper op. Cost/Hour		\$0.00	0		
Operator Cost/Hour		\$41.24	NA		
	<b>ITTIES</b> 178 125				
	563 LCY				
Source of estimated vo Source of estimated sw factor:		0.75' over 1.2 lbook	22 acres		
HOURLY PRODUC	TION				
Average push distance Unadjusted hourly production:	: <u>100 feet</u> 1,243.2 LC	Y/hr			
Materials consistency description:	Consol	idated stockp	ile 1.0		
Average push gradient:	20 %				
Average site altitude:	7,725 feet				
Material weight:	2,550 lbs/LCY				
Weight description:	Earth - Dry packe	d			

Job Condition Correction Factor		Source
Operator Skill:	0.750	(AVG.)
Material consistency:	1.000	(CAT HB)
Dozing method:	1.000	(GEN.)
Visibility:	1.000	(AVG.)
Job efficiency:	0.830	(1 SHIFT/DAY)
Spoil pile:	0.800	(FND-RF)
Push gradient:	0.545	(CAT HB)
Altitude:	1.000	(CAT HB)
Material Weight:	0.902	(CAT HB)
Blade type:	1.000	(PAT)

Net correction: 0.2448

Adjusted unit production:	304.34 LCY/hr
Adjusted fleet	<b>304.34</b> LCY/hr
production:	

Fleet size:	1 Dozer(s)	
Unit cost:	\$0.882/LCY	-

Total job time:	<b>5.46</b> Hours
Total job cost:	\$1,467

## **REVEGETATION WORK**

Т	ask descrip	tion:	Reseed Section 5	5 road				
Site:	Bowie No	. 2 Mine	Pe	rmit Action:	MT5	Permit/Jo	b#: <u>C1996083</u>	
<u>PI</u>	ROJECT	IDENTIFIC	CATION					
	Task #:	381	State:	Colorado		Abbreviation:	None	
	Date:	10/2/2019	County:	Delta		Filename:	C083-381	_
	User:	ZTT						
	Age	ncy or organi	zation name: DF	RMS				

## **FERTILIZING**

# Materials Units / Acre Unit Cost / Unit Cost / Acre Image: Image:

#### Application

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

## **TILLING**

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

## **SEEDING**

Seed Mix	Rate – PLS LBS / Acre	Seeds per SQ. FT	Cost /Acre
Indian Ricegrass - Nespar	3.00	9.71	\$26.63
Bluebunch Wheatgrass - Secar	3.00	9.64	\$32.63
Mountain Brome - Bromar	3.00	4.82	\$11.40
Sandberg Bluegrass - VNS	3.00	63.71	\$25.20
Coreopsis, Lance Leafed	1.00	25.58	\$28.55
Western Wheatgrass - Arriba	4.00	10.10	\$26.00
Daisy, Englemann's	1.00	4.94	\$127.40
Prairie Junegrass	2.00	106.31	\$52.00
Golden Banner	1.00	2.00	\$83.00
Totals Seed Mix	21.00	236.80	\$412.80

## Application

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

# MULCHING and MISCELLANEOUS

#### Materials

Description	Units / Acre	Unit	Cost / Unit	Cost /Acre
Hay, delivered {MEANS 31 25 14.16 1200}	2.00	TON	\$295.00	\$590.00
Total Mulch Materials Cost/Acre				\$590.00

#### Application

Description		Cost /Acre
Crimping, with tractor {DMG survey data}		\$70.17
Power mulcher (MEANS 32 91 13.16 0350)		\$95.83
	Total Mulch Application Cost/Acre	\$166.00

## NURSERY STOCK PLANTING

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

No. of Acres:	1.22	Cost /Acre:	\$1,168.80
Estimated Failure Rate:	50%	Cost /Acre*:	\$412.80
*Selected Replanting Work Items:	SEEDING		·

Initial Job Cost:	\$1,425.94
Reseeding Job Cost:	\$251.81
Total Job Cost:	\$1,678
Job Hours:	2.00

## BULLDOZER WORK

Task description:	Distribute Gob	Pile #2 cover	hauled by T/L		
ite: Bowie No. 2 Mine	Pe	rmit Action:	MT5	Permit/Jo	b#: <u>C1996083</u>
PROJECT IDENTIE	FICATION				
Task #: $45A$ Date: $10/2/201$ User:ZTT	·	Colorado Delta		Abbreviation: Filename:	None C083-45A
		RMS			
HOURLY EQUIPM	<u>ENI COSI</u>				
Horsepower: 5 Blade Type: 5 Attachment: N Shift Basis: 1	Cat D10T - 10SU 74 emi-Universal IA per day CRG)				
Cost Breakdown:					
		¢140-c1	<u>Utilization %</u>		
Ownership Cost/Hour Operating Cost/Hour		\$140.61 \$135.35	<u>NA</u> 100		
Ripper own Cost/Hour	l.	\$0.00	NA		
Ripper op. Cost/Hour		\$0.00	0		
Operator Cost/Hour		\$41.24	NA		
Swell factor: 1.0	4,142	_			
Loose volume: 13	4,142 LCY	_			
Source of estimated vo Source of estimated sw factor:		IX, Appendix Ibook	A		
HOURLY PRODUC	<u>CTION</u>				
Average push distance Unadjusted hourly production:	250 feet 754.3 LCY	/hr			
Materials consistency description:	Loose	stockpile 1.2			
Average push gradient:	0 %				
Average site altitude:	6,300 feet				
Material weight:	2,900 lbs/LCY				
Weight description:	Decomposed rock	- 50% Rock,	50% Earth		

Job Condition Correction Factor		Source
Operator Skill:	0.750	(AVG.)
Material consistency:	1.200	(CAT HB)
Dozing method:	1.000	(GEN.)
Visibility:	1.000	(AVG.)
Job efficiency:	0.830	(1 SHIFT/DAY)
Spoil pile:	0.800	(FND-RF)
Push gradient:	1.000	(CAT HB)
Altitude:	1.000	(CAT HB)
Material Weight:	0.793	(CAT HB)
Blade type:	1.000	(PAT)

Net correction: 0.4739

Adjusted unit production:	357.46 LCY/hr
Adjusted fleet production:	357.46 LCY/hr

Fleet size:	1 Dozer(s)	
Unit cost:	\$0.887/LCY	_

Total job time:	375.26 Hours
Total job cost:	\$119,033

## TRUCK/LOADER TEAM WORK

Task description:	Haul Co	over Mate	rial fro	om Borrow Area	#1 to Gob Pile	#2		
Site: Bowie No. 2 Mine Perr			nit Act	ion: MT5		Permit/Jo	b#: _	C1996083
PROJECT IDEN	<b><u><b>FIFICATION</b></u></b>							
Task #: 45B			Colora	ndo		previation:	Nor	
Date: 10/2/2 User: ZTT	2019 (	County:	Delta			Filename:	C08	33-45B
Agency or	organization nan	ne: DRM	1S					
HOURLY EQUIP	MENT COST	-			Shift ba	sis: <u>1 per da</u>	<u>iy</u>	
				Equipment Descri	1			
Tı	ruck Loader Tear			eric 10-12 cy, 6x	4			
		-Loader:		Г 950Н				
Suppo	rt Equipment -L		NA NA					
Road Ma	intenance – Moto	mp Area:	NA NA					
Road Ma		ter Truck:	NA					
Cost Breakdown:	Truck/Loa	der Team		Support	Equipment	Ma	intena	nce Equipmen
	Truck	Loader		Load Area	Dump Area	Motor Grader		Water Truck
6Utilization-machine:	100		100	NA	NA		NA	NA
Ownership cost/hour:	\$19.51	\$2	7.37	NA	NA		NA	NA
Operating cost/hour:	\$46.51	\$3	3.82	NA	NA		NA	NA
%Utilization-riper:	NA		0	NA	NA		NA	NA
Ripper own. cost/hour:	NA	\$	0.00	NA	NA		NA	NA
Ripper op. cost/hour:	NA	\$	0.00	NA	NA		NA	NA

Group Subtotals:Work:\$167.86Total work team cost/hour:\$167.86

\$0.00

\$66.02

1

\$40.65

\$101.84

1

MATERIAL QUANTITIES

Operator cost/hour:

Unit Subtotals:

Number of Units:

Initial volume: Loose volume:	7,200 <b>8,388</b>	CCY LCY	Swell factor:	1.165	
Source	e of estimated volume:	Volume IX	K, Appendix A		
Source of	estimated swell factor:	Cat Handb	ook		
Ν	Material Purchase Cost:	\$0.00			
	Total Cost:	\$0.00			

NA

NA

Support:

0

\$0.00

NA

NA

0

NA

NA

Maint:

0

\$0.00

NA

NA

0

# **HOURLY PRODUCTION**

<u> Truck Capacity:</u>							
Truck Payload (weight) Basis	<u>s:</u>						
Material weight:	2,900	Pounds/					
Description:	1	rock - 50% Rock, 50%	Earth				
Rated Payload:	35,400	Pounds					
Payload Capacity:	12.21	LCY					
<u>Truck Bed (volume) Basis:</u>	10.00	LOW					
Struck Volume:	10.00	LCY					
Heaped Volume:	12.00	LCY					
Average Volume:	11.00	LCY					
Adjusted Volume:	12.00	LCY					
Final 7	Fruck Volume	Based on Number of L	oader Passes:	10.9	7	_ LCY	
oading Tool Capacity							
			Buck	et Size Class	S: NA	1	
Rated Capacity:	4.300	LCY (heaped)					
Bucket Fill Factor:	0.850	Hard, tough clay	(80% - 90%) 0	.850			
Adjusted Capacity:	3.655	LCY					
ob Condition Corrections:		Site	Altitude (ft.):	6300 feet			
				<u></u>			
	Truck	Loader	Source				
Altitude Adj:	1.000	1.000					
	0.000		(CAT HB	,			
Job Efficiency:	0.830	0.830	(CAT HB (CAT HB	,			
		0.830		,			
Job Efficiency:     Net Correction:	0.830 0.830			,			
	0.830	0.830	(CAT HB			2	passes
Net Correction:	<b>0.830</b>	0.830 0.830	(CAT HB			3	passes
Net Correction: Loading Tool Cycle Time: Excavators and Front Shovel	<b>0.830</b>	0.830 0.830 Number of Loading To	(CAT HB	ired to Fill		3	passes
Net Correction: Loading Tool Cycle Time: Excavators and Front Shovel Machine Cycle Time vs	<b>0.830</b> I I <u>s:</u> s. Job Conditio	0.830 0.830 Number of Loading Too n Rating: <u>NA</u>	(CAT HB	ired to Fill		3	passes
Net Correction: Loading Tool Cycle Time: Excavators and Front Shovel	<b>0.830</b> I I <u>s:</u> s. Job Conditio	0.830 0.830 Number of Loading Too n Rating: <u>NA</u>	(CAT HB	ired to Fill		3	passes
Net Correction: Loading Tool Cycle Time: Excavators and Front Shovel Machine Cycle Time vs	<b>0.830</b> I <u>ls:</u> s. Job Conditio vithin this Basi	0.830 0.830 Number of Loading To- n Rating: <u>NA</u> ic Rating: <u>NA</u>	(CAT HB	ired to Fill		3	passes
Net Correction: Loading Tool Cycle Time: Excavators and Front Shovel Machine Cycle Time vs Selected Value w Track Loaders – 2	<b>0.830</b> I <u>ls:</u> s. Job Conditio vithin this Basi Material Descr	0.830 0.830 Number of Loading To- n Rating: <u>NA</u> ic Rating: <u>NA</u>	(CAT HB	ired to Fill		3	passes
Net Correction: Loading Tool Cycle Time: Excavators and Front Shovel Machine Cycle Time vs Selected Value w Track Loaders – T Cycle Time Elements (min.):	<b>0.830</b> I <u>ls:</u> s. Job Conditio vithin this Basi Material Descr	0.830 0.830 Number of Loading Too n Rating: <u>NA</u> ic Rating: <u>NA</u> ription:	(CAT HB	ired to Fill Truck:		3	passes
Net Correction: Loading Tool Cycle Time: Excavators and Front Shovel Machine Cycle Time vs Selected Value w	<b>0.830</b> I <u>ls:</u> s. Job Conditio vithin this Basi Material Descr	0.830 0.830 Number of Loading To- n Rating: <u>NA</u> ic Rating: <u>NA</u>	(CAT HB	ired to Fill	0.100	3	passes
Net Correction: Loading Tool Cycle Time: Excavators and Front Shovel Machine Cycle Time vs Selected Value w Track Loaders – 1 Cycle Time Elements (min.): Load: NA	0.830 Is: s. Job Conditio vithin this Basi Material Descr	0.830 0.830 Number of Loading Toc n Rating: NA ic Rating: NA ription: NA	(CAT HB ol Passes Requ	ired to Fill Truck:	0.100	3	- -
Net Correction: Loading Tool Cycle Time: Excavators and Front Shovel Machine Cycle Time vs Selected Value w Track Loaders – 1 Cycle Time Elements (min.): Load: NA	0.830 Is: s. Job Conditio vithin this Basi Material Descr	0.830 0.830 Number of Loading Too n Rating: <u>NA</u> ic Rating: <u>NA</u> ription:	(CAT HB ol Passes Requ 	Dump:	0.100		passes  minutes
Net Correction: Loading Tool Cycle Time: Excavators and Front Shovel Machine Cycle Time vs Selected Value w Track Loaders – 1 Cycle Time Elements (min.): Load: NA Wheel and Track	0.830 Is: s. Job Conditio vithin this Basi Material Descr	0.830 0.830 Number of Loading Toc n Rating: NA ic Rating: NA ription: NA	(CAT HB ol Passes Requ 	Dump: pad, dump, naneuver):	0.5	500	minutes
Net Correction: Loading Tool Cycle Time: Excavators and Front Shovel Machine Cycle Time vs Selected Value w Track Loaders – 1 Cycle Time Elements (min.): Load: NA Wheel and Track Cycle Time Factors	0.830	0.830 0.830 Number of Loading Toc n Rating: NA ic Rating: NA ription: NA daneuver: NA adjusted Basic Loader of	(CAT HB ol Passes Requ  Cycle Time (lo	Dump: Dump: 	0.5 in.)	500 Sour	 minutes
Net Correction: Loading Tool Cycle Time: Excavators and Front Shovel Machine Cycle Time vs Selected Value w Track Loaders – 1 Cycle Time Elements (min.): Load: <u>NA</u> Wheel and Track Cycle Time Factors Material:	0.830	0.830         0.830         Number of Loading Too         In Rating:       NA         ic Rating:       NA         ription:	(CAT HB ol Passes Requ Cycle Time (lo n	Dump: Dump: 	0.5 in.)	500 Sour (Cat H	minutes ce IB)
Net Correction: Loading Tool Cycle Time: Excavators and Front Shovel Machine Cycle Time vs Selected Value w Track Loaders – T Cycle Time Elements (min.): Load: NA Wheel and Track Cycle Time Factors Material: Stockpile:	0.830	0.830         0.830         Number of Loading Too         In Rating:       NA         ic Rating:       NA         ription:	(CAT HB ol Passes Requ Cycle Time (lo n ole 0.00	Dump: Dump: 	0.5 in.)	500 Sour	minutes ce IB)
Net Correction: Loading Tool Cycle Time: Excavators and Front Shovel Machine Cycle Time vs Selected Value w Track Loaders – 1 Cycle Time Elements (min.): Load: <u>NA</u> Wheel and Track Cycle Time Factors Material:	0.830	0.830         0.830         Number of Loading Too         In Rating:       NA         ic Rating:       NA         ription:	(CAT HB ol Passes Requ Cycle Time (lo n ole 0.00	Dump: Dump: 	0.5 in.)	500 Sour (Cat H	minutes <u>ce</u> <u>1B)</u>
Net Correction: Loading Tool Cycle Time: Excavators and Front Shovel Machine Cycle Time vs Selected Value w Track Loaders – 1 Sycle Time Elements (min.): Load: NA Wheel and Track Cycle Time Factors Material: Stockpile: Truck Ownership:	0.830	0.830         0.830         Number of Loading Too         In Rating:       NA         ic Rating:       NA         ription:	(CAT HB ol Passes Requ Cycle Time (lo n ole 0.00	Dump: Dump: Dump: Factor (m 0.040 0.000 -0.040	0.5 in.)	500 Sour (Cat F (Cat F (Cat F	
Net Correction: Loading Tool Cycle Time: Excavators and Front Shovel Machine Cycle Time vs Selected Value w Track Loaders – 1 Cycle Time Elements (min.): Load: NA Wheel and Track Cycle Time Factors Material: Stockpile: Truck Ownership: Operation:	0.830	0.830         0.830         Number of Loading Too         In Rating:       NA         ic Rating:       NA         ription:	(CAT HB ol Passes Requ Cycle Time (lo n ole 0.00	Dump: Dump: Dump: Factor (m 0.040 0.000 -0.040	0.5	500 Sour (Cat H (Cat H (Cat H (Cat H	minutes <u>ce</u> <u>HB)</u> <u>HB)</u> <u>HB)</u>
Net Correction: Loading Tool Cycle Time: Excavators and Front Shovel Machine Cycle Time vs Selected Value w Track Loaders – 1 Cycle Time Elements (min.): Load: NA Wheel and Track Cycle Time Factors Material: Stockpile: Truck Ownership:	0.830	0.830         0.830         Number of Loading Too         In Rating:       NA         ic Rating:       NA         ription:	(CAT HB ol Passes Requ Cycle Time (lo n ole 0.00 loaders -	Dump: Dump: Dump: 	0.5	500 Sour (Cat H (Cat H (Cat H (Cat H (Cat H	- minutes 
Net Correction: Loading Tool Cycle Time: Excavators and Front Shovel Machine Cycle Time vs Selected Value w Track Loaders – 1 Cycle Time Elements (min.): Load: NA Wheel and Track Cycle Time Factors Material: Stockpile: Truck Ownership: Operation:	0.830	0.830         0.830         Number of Loading Too         In Rating:       NA         ic Rating:       NA         ription:	(CAT HB ol Passes Requ Cycle Time (lo n ole 0.00 loaders - Adjustment:	Dump: Dump: Dump: Factor (m 0.040 0.000 -0.040	0.5	500 Sour (Cat H (Cat H (Cat H (Cat H	

	Tru	ck Exchange Time:	0.50	Minutes	Adjusted for site altitude:		titude:	0.500	Minutes
		Truck Load Time:	1.180	Minutes	Adju	sted for site al	titude:	1.180	Minutes
	Truck M	aneuver and Dump Time:		Minutes	Adju	isted for site al	titude:	0.900	Minutes
	penetration Haul Route		Time: Grade (%)	Road Conditi	ion: <u>Rutted dirt,</u> Total Res	little maintena	ance, no wate	er, 2" tire	
	Seg #	(Ft)	Grade (%)	(%)	(%)	(fpm)	Time (min)		
	1	500.00	5.00	5.00	10.00	1068	0.482		
					Haul Time:	0.482	minu	tes	
	Return Rou Seg #	Haul Distance	Grade (%)	Roll. Res	Total Res	Velocity	Travel		
	Seg #	(Ft)	Grade (%)	(%)	(%)	(fpm)	Time (min)		
	1	500.00	-5.00	5.00	0.00	2938	0.195		
				Total Tru	Return Time: ack Cycle Time:				
	oading Too Produ Unit Produ	action 391.61	LCY/Hou	r	Adjusted for j	ob efficiency:	325.03	LCY	/Hour
TTUCK		202.00	LCY/Hou	r	Adjusted for j	ob efficiency:	167.66	LCY	/Hour
Optim	al No. of Tı	rucks: 2	Truck(s)		Selected Numb	per of Trucks:	1	Truc	k(s)
				le truck/loader	c team production r team production r team production	on: 167.	66 LC	Y/Hour Y/Hour Y/Hour	
	JOB TIM	E AND COST							
	Fleet	size: 1	Team(s)	Т	Total job time:	50.03	<b>3</b> I	Hours	
	Unit	cost: \$1.001	/LCY		Total job cost:	\$8,39	8		

## TRUCK/LOADER TEAM WORK

Task description:	Haul C	over Material	from Borrow Are	a #2 to Gob Pile	#2	
Site: Bowie No. 2 Mine		Permit A	Action: MT5		Permit/Job#	#: <u>C1996083</u>
PROJECT IDENT	<b>IFICATION</b>					
Task #:       45C         Date:       10/2/20         User:       ZTT	)19 (	State: Col- County: Del	orado ta			None C083-45C
Agency or or	rganization nan	ne: DRMS				
HOURLY EQUIPM	MENT COST	-		Shift ba	sis: <u>1 per day</u>	
			Equipment Desci	iption		
Tru	ck Loader Tea	m -Truck: G	eneric 10-12 cy, 62			
			AT 950H			
Support	Equipment -L		A			
	-Du ntenance –Moto		IA IA			
Road Main			A A			<u></u>
	, viu	ter fruek.				
Cost Breakdown:	Truck/Loa	der Team	Support	Equipment	Main	tenance Equipment
	Truck	Loader	Load Area	Dump Area	Motor Grader	Water Truck
%Utilization-machine:	100	100	0 NA	NA	N	IA NA
Ownership cost/hour:	\$19.51	\$27.3	7 NA	NA	N	IA NA
Operating cost/hour:	\$46.51	\$33.82	2 NA	NA	N	IA NA
%Utilization-riper:	NA	(	0 NA	NA	N	IA NA
Ripper own. cost/hour:	NA	\$0.00	0 NA	NA	N	IA NA
Ripper op. cost/hour:	NA	\$0.00	0 NA	NA	N	IA NA
Operator cost/hour:	\$0.00	\$40.6	5 NA	NA	N	IA NA

Total work team cost/hour: \$167.86

\$66.02

Work:

1

## **MATERIAL QUANTITIES**

Unit Subtotals:

Number of Units:

Group Subtotals:

Initial volume:	30,000	CCY	Swell factor:	1.165	
Loose volume:	34,950	LCY			
Sourc	e of estimated volume:	Volume IX	, Appendix A		
Source of	estimated swell factor:	Cat Handbo	ook		
Ν	Aaterial Purchase Cost:	\$0.00			
	Total Cost:	\$0.00			

NA

Support:

0

\$0.00

NA

0

NA

Maint:

0

\$0.00

NA

0

\$101.84

\$167.86

1

# **HOURLY PRODUCTION**

<u> Fruck Capacity:</u>					
Fruck Payload (weight) Bas					
Material weight:	2,900	Pounds			
Description:		rock - 50% Rock, 50%			
Rated Payload:	35,400	Pounds			
Payload Capacity:	12.21	LCY			
Fruck Rad (volume) Resist					
<u>Fruck Bed (volume) Basis:</u> Struck Volume:	10.00	LCY			
Heaped Volume:		LCY			
Average Volume:		LCY			
Adjusted Volume:		LCY			
Augusted Volume.	12.00	Lei			
Final	Tmal: Volumo I	Deced on Number of I	ander Dessage	10.07	LCV
	Truck volume	Based on Number of L	loader Passes:	10.97	LCY
oading Tool Capacity					
			Buck	et Size Class: <u>N</u>	A
Rated Capacity:	4.300	LCY (heaped)	(000) 0000	0.50	
Bucket Fill Factor:	0.850	Hard, tough clay	(80% - 90%) (	0.850	
Adjusted Capacity:	3.655	LCY			
ob Condition Corrections	:	Site	e Altitude (ft.):	<u>6300</u> feet	
	Truck	Loader	Source		
Altitude Adj:	1.000	1.000	(CAT HB	5)	
Job Efficiency:	0.830	0.830	(CAT HB	,	
JOU Lincichey.	0.050	0.050			
Net Correction:	0.830	0.830			
			_		
Loading Tool Cycle Time:	<u> </u>	Number of Loading To	ol Passes Requ		3 passes
Excavators and Front Shove	els:			Truck:	
Machine Cycle Time	vs. Job Condition	n Rating: NA			
•	within this Basic				
Track Loaders -	- Material Descri	ption:			
Cycle Time Elements (min.)	:				
Load: NA	Μ	aneuver: NA		Dump: 0.100	
Wheel and Trac	ck Loaders - Una	djusted Basic Loader	•	- U	500 minutes
			п	naneuver): 0.	
Cycle Time Factors				Factor (min.)	Source
Material:		ten material 0.04		0.040	(Cat HB)
Stockpile:		nt - factor not applical		0.000	(Cat HB)
Truck Ownership:		mership of trucks and	loaders -	-0.040	(Cat HB)
	0.04				
Operation:		operation 0.04		0.040	(Cat HB)
Dump Target:	Nominal targ	-	A 1	0.000	(Cat HB)
		Net Cycle Time		0.040	minutes
		Adjusted Loader Net Load Tim		0.540	minutes
		Net Load Tim	ie per Truck.	1.180	minutes

	Tru	ck Exchange Time:	0.50	Minutes	Adju	sted for site al	titude:	0.500	Minutes
		Truck Load Time:	1.180	Minutes	Adju	sted for site al	titude:	1.180	Minutes
	Truck M	aneuver and Dump Time:	0.90	Minutes	Adju	sted for site al	titude:	0.900	Minutes
	Truck Trav penetration Haul Route Seg #		<u>Fime:</u> Grade (%)	Road Condit	ion: <u>Rutted dirt,</u> Total Res	little maintena	nce, no wate	er, 2" tire	
	Seg #	(Ft)	Grade (%)	(%)	(%)	(fpm)	Time (min)		
	1	750.00	5.00	5.00	10.00	1068	0.716		
					Haul Time:	0.716	minu	ites	
	Return Rou Seg #	te: Haul Distance	Grade (%)	Roll. Res	Total Res	Velocity	Travel		
	Seg #	(Ft)	Glade (%)	(%)	(%)	(fpm)	Time (min)		
	1	750.00	-5.00	5.00	0.00	2938	0.280		
				Total Tru	Return Time: uck Cycle Time:			nutes	
	oading Too Produ	action 391.61	LCY/Hou	r	Adjusted for j	ob efficiency:	325.03	B LCY	/Hour
Iruck	Unit Produ	183.98	LCY/Hou	r	Adjusted for jo	ob efficiency:	152.70	) LCY	/Hour
Optima	al No. of Tr	ucks: 2	Truck(s)		Selected Numb	per of Trucks:	1	Truc	k(s)
	Adjusted hourly truck team production:152.70LCY/HourAdjusted single truck/loader team production:152.70LCY/HourAdjusted multiple truck/loader team production:152.70LCY/Hour								
	JOB TIME AND COST								
	Fleet	size: 1	Team(s)	7	Fotal job time:	228.8	8	Hours	
	Unit o	cost: \$1.099	/LCY	•	Total job cost:	\$38,42	20		

## TRUCK/LOADER TEAM WORK

Task description:	Haul Co	over Mater	rial fro	om Borrow Area	a #3 to Gob Pile	#2			
Site: Bowie No. 2 Mir	ne	Permit Action: <u>MT5</u> Permit/J					b#: _	C1996083	
PROJECT IDEN	<b><u><b>FIFICATION</b></u></b>								
Task #: 45D		State:	Colora	ado	Abb	previation:	Nor	ne	
Date: 10/2/2	2019 0	County:	Delta			Filename:	C08	33-45D	
User: ZTT									
Agency or	organization nan	ne: DRM	IS						
HOURLY EQUIP	MENT COST				Shift ba	usis: <u>1 per da</u>	ıy		
		-	Ŧ	Equipment Descri					
Tı	uck Loader Tea	m -Truck:		eric 10-12 cy, 6x	1				
		-Loader:	CA	Г 950Н					
Support Equipment -Load Area: NA									
D1)/(		mp Area:	NA						
Road Ma	intenance – Moto		NA						
	-wai	ter Truck:	NA						
Cost Breakdown:	Truck/Loa	der Team		Support	Equipment	Ma	intena	nce Equipm	ient
	Truck	Loader		Load Area	Dump Area	Motor Grader		Water Tru	
Utilization-machine:	100		100	NA	NA		NA	1	NA
Ownership cost/hour:	\$19.51	\$2	7.37	NA	NA		NA	1	NA
Operating cost/hour:	\$46.51	\$3	3.82	NA	NA		NA	1	NA
%Utilization-riper:	NA		0	NA	NA		NA	1	NA
Ripper own. cost/hour:	NA	\$	0.00	NA	NA		NA	1	NA
Ripper op. cost/hour:	NA	\$	0.00	NA	NA		NA	1	NA

Number of Units:11Group Subtotals:Work:\$167.86

\$0.00

\$66.02

\$40.65

\$101.84

Total work team cost/hour: **<u>\$167.86</u>** 

## **MATERIAL QUANTITIES**

Operator cost/hour:

Unit Subtotals:

Initial volume:	5,000	CCY	Swell factor:	1.165	
Loose volume:	5,825	LCY			
Source of		Cat Handbo	· • •		
Γ	Aaterial Purchase Cost:	\$0.00			
	Total Cost:	\$0.00			

NA

NA

Support:

0

\$0.00

NA

NA

0

NA

NA

Maint:

0

\$0.00

NA

NA

0

# **HOURLY PRODUCTION**

<u> Fruck Capacity:</u>					
Fruck Payload (weight) Basi					
Material weight:	2,900	Pounds/			
Description:	-	l rock - 50% Rock, 50%	Earth		
Rated Payload:	35,400	Pounds			
Payload Capacity:	12.21	LCY			
Truck Bed (volume) Basis:					
Struck Volume:	10.00	LCY			
Heaped Volume:	12.00	LCY			
Average Volume:	11.00	LCY			
Adjusted Volume:	12.00	LCY			
Final	Truck Volume	Based on Number of Lo	oader Passes:	10.97	LCY
oading Tool Capacity					
			Bucke	et Size Class: NA	4
Rated Capacity:	4.300	LCY (heaped)			
Bucket Fill Factor:	0.850	Hard, tough clay (	(80% - 90%) 0.	850	
Adjusted Capacity:	3.655	LCY	,		
		~.			
ob Condition Corrections		- F	Altitude (ft.): 6	5300 feet	
	Truck	Loader	Source		
Altitude Adj:	1.000	1.000	(CAT HB)		
Job Efficiency:	0.830	0.830	(CAT HB)	)	
	0.020	0.020			
Net Correction:	0.830	0.830			
Loading Tool Cycle Time:	•	Number of Loading Too	ol Passes Requi	red to Fill	3 passes
Excavators and Front Shove	els:			Truck:	5
		on Rating: NA			
Machine Cycle Time v Selected Value					
Sciected value		<u> </u>			
Track Londors	Material Daga	rintion			
Track Loaders –		ription:			
		ription:			
	:	ription: Maneuver:NA		Dump:0.100	
Cycle Time Elements (min.): Load: <u>NA</u>	: N	Maneuver: NA		·	
Cycle Time Elements (min.): Load: <u>NA</u>	: N		•	ad, dump,	500 minutes
Cycle Time Elements (min.): Load: <u>NA</u> Wheel and Trac	: N k Loaders - Un	Maneuver: NA	•	ad, dump, 0. aneuver):0.	500 minutes
Cycle Time Elements (min.): Load: <u>NA</u> Wheel and Trac Cycle Time Factors	: N k Loaders - Un	Maneuver: <u>NA</u> nadjusted Basic Loader (	•	ad, dump, 0. aneuver): 0. Factor (min.)	500 minutes
Cycle Time Elements (min.): Load: <u>NA</u> Wheel and Trac <u>Cycle Time Factors</u> Material:	: N k Loaders - Un Bank or bro	Maneuver: <u>NA</u> nadjusted Basic Loader ( oken material 0.04		ad, dump, 0. aneuver): 0. Factor (min.) 0.040	500 minutes Source (Cat HB)
Eycle Time Elements (min.): Load: <u>NA</u> Wheel and Trac <u>Cycle Time Factors</u> <u>Material:</u> Stockpile:	: k Loaders - Un Bank or bro No adjustm	Maneuver: NA nadjusted Basic Loader ( oken material 0.04 ent - factor not applicab	m le 0.00	ad, dump, 0. aneuver): 0. Factor (min.)	500 minutes
ycle Time Elements (min.): Load: <u>NA</u> Wheel and Trac <u>Cycle Time Factors</u> Material:	: 	Maneuver: <u>NA</u> nadjusted Basic Loader ( oken material 0.04	m le 0.00	ad, dump, 0. aneuver): 0. Factor (min.) 0.040	500 minutes Source (Cat HB)
Eycle Time Elements (min.) Load: <u>NA</u> Wheel and Trac <u>Cycle Time Factors</u> <u>Material:</u> <u>Stockpile:</u> Truck Ownership:	: k Loaders - Un Bank or bro No adjustm Common ov 0.04	Maneuver: NA nadjusted Basic Loader ( oken material 0.04 ent - factor not applicab wnership of trucks and h	m le 0.00	ad, dump, 0 aneuver): 0 Factor (min.) 0.040 0.000 -0.040	500 minutes 500 Cat HB) (Cat HB) (Cat HB) (Cat HB)
Cycle Time Elements (min.): Load: <u>NA</u> Wheel and Trac <u>Cycle Time Factors</u> <u>Material:</u> Stockpile: Truck Ownership: <u>Operation:</u>	: k Loaders - Un Bank or bro No adjustm Common ov 0.04 Inconsisten	Maneuver: NA nadjusted Basic Loader ( oken material 0.04 ent - factor not applicab wnership of trucks and h t operation 0.04	m le 0.00	ad, dump, 0 aneuver): 0 Factor (min.) 0.040 0.000 -0.040 0.040	500 minutes 500 (Cat HB) (Cat HB) (Cat HB) (Cat HB) (Cat HB)
Cycle Time Elements (min.): Load: <u>NA</u> Wheel and Trac <u>Cycle Time Factors</u> <u>Material:</u> <u>Stockpile:</u> Truck Ownership:	: k Loaders - Un Bank or bro No adjustm Common ov 0.04	Maneuver: NA nadjusted Basic Loader ( oken material 0.04 ent - factor not applicab wnership of trucks and h t operation 0.04 rget 0.00	m le 0.00 oaders -	ad, dump, aneuver):0. Factor (min.) 0.040 0.000 -0.040 0.040 0.000	Source         (Cat HB)         (Cat HB)
Cycle Time Elements (min.): Load: <u>NA</u> Wheel and Trac <u>Cycle Time Factors</u> <u>Material:</u> Stockpile: Truck Ownership: <u>Operation:</u>	: k Loaders - Un Bank or bro No adjustm Common ov 0.04 Inconsisten	Maneuver: NA nadjusted Basic Loader ( oken material 0.04 ent - factor not applicab wnership of trucks and h t operation 0.04	m le 0.00 oaders -	ad, dump, 0 aneuver): 0 Factor (min.) 0.040 0.000 -0.040 0.040	500 minutes 500 (Cat HB) (Cat HB) (Cat HB) (Cat HB) (Cat HB)

	Tru	ck Excha	nge Time:	0.50	Minutes	Adju	sted for site al	titude:	0.500	Minutes
		Truck L	oad Time:	1.180	Minutes	Adju	sted for site al	titude:	1.180	Minutes
	Truck M	laneuver a	and Dump Time:	0.90	Minutes	Adju	sted for site al	titude:	0.900	Minutes
	Truck Trav penetration Haul Route Seg #	5.0	& Return) T	ime: Grade (%)	Road Condit	ion: <u>Rutted dirt,</u> Total Res (%)	little maintena Velocity (fpm)	ance, no wate Travel Time	er, 2" tire	
	1	1000.00	2	5.00	5.00	10.00	· • ·	(min)	_	
	1	1000.00	J	5.00	5.00		1068	0.950		
	D ( D					Haul Time:	0.950	minu	ites	
	Return Rou Seg #	Haul D (Ft)	istance	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)		
	1	1000.0	0	-5.00	5.00	0.00	2938	0.365		
					Total Tr	Return Time: uck Cycle Time:			utes	
	Loading Too Produ t Unit Produ	uction	391.61 168.91	LCY/Hou		Adjusted for jo Adjusted for jo	-			/Hour /Hour
Optim	al No. of Tı	ucks:	2	Truck(s)		Selected Numb	per of Trucks:	1	Truc	k(s)
				Adjusted singl	e truck/loade	k team productio r team productio r team productio	on: 140.	19 LC	CY/Hour CY/Hour CY/Hour	
	JOB TIM	IE AND	COST							
	Fleet	size:	1	Team(s)	r	Fotal job time:	41.5	5 ]	Hours	
	Unit	cost:	\$1.197	/LCY	,	Total job cost:	\$6,97	4		

## TRUCK/LOADER TEAM WORK

Task description:	Haul Co	over Material f	rom B Portal Sto	rage to Gob Pile	#2		
Site: Bowie No. 2 Mine	<u>)</u>	Permit Ac	ction: MT5		Permit/Job#:	C1996083	
PROJECT IDENT	<b>IFICATION</b>						
Task #:       45E         Date:       10/2/20         User:       ZTT	019 (	State: Colo County: Delta				None 2083-45E	
Agency or or	rganization nan	ne: DRMS					
HOURLY EQUIPM	MENT COST	_		Shift ba	sis: <u>1 per day</u>		
			Equipment Descr	iption			
Tru	Truck Loader Team -Truck: Generic 10-12 cy, 6x4						
			AT 950H				
Support	t Equipment -L						
DeadMair	-Du ntenance –Moto	mp Area: NA					
Road Main		ter Truck: NA				<u></u>	
	, , , , , , , , , , , , , , , , , , ,		1				
Cost Breakdown:	Truck/Loa	der Team	Support	Equipment	Maintenance Equipm		
	Truck	Loader	Load Area	Dump Area	Motor Grader	Water Truck	
%Utilization-machine:	100	100	NA	NA	NA	A NA	
Ownership cost/hour:	\$19.51	\$27.37	NA	NA	NA	A NA	
Operating cost/hour:	\$46.51	\$33.82	NA	NA	NA	A NA	
%Utilization-riper:	NA	0	NA	NA	NA	NA NA	
Ripper own. cost/hour:	NA	\$0.00	NA	NA	NA	NA NA	
Ripper op. cost/hour:	NA	\$0.00	NA	NA	NA	A NA	
Operator cost/hour:	\$0.00	\$40.65	NA	NA	NA	A NA	

Total work team cost/hour: \$365.92

\$66.02

Work:

4

\$101.84

\$365.92

1

## **MATERIAL QUANTITIES**

Unit Subtotals:

Number of Units:

Group Subtotals:

CCY	Swell factor:	1.165	
LCY			
Volume XI, Ap	pendix A		
Cat Handbook			
\$0.00			
\$0.00			
	LCY Volume XI, Ap Cat Handbook \$0.00	LCY Volume XI, Appendix A Cat Handbook \$0.00	LCY Volume XI, Appendix A Cat Handbook \$0.00

NA

Support:

0

\$0.00

NA

0

NA

Maint:

0

\$0.00

NA

0

# **HOURLY PRODUCTION**

Truck Capacity: Truck Payload (weight) Bas	ia							
Material weight:	2,900		Pounds/	I CY				
Description:		rock - 50% Ro						
Rated Payload:	35,400		Pounds	Durth				-
Payload Capacity:	12.21		LCY					
5 I 5								
Truck Bed (volume) Basis:								
Struck Volume:	10.00	LCY						
Heaped Volume:	12.00	LCY						
Average Volume:	11.00	LCY						
Adjusted Volume:	12.00	LCY						
Final	Truck Volume	Based on Num	ber of Lo	oader Passes:	10.64	L	LCY	
Loading Tool Capacity				Buck	et Size Class:	NA		
Rated Capacity:	4.300	LCY (he	anad	Duck	er 512e Class.	11/1		
Bucket Fill Factor:	0.825			g. blasted (75	90%) 0 825			_
Adjusted Capacity:	3.548	LCY	OCK - ave	$\frac{1}{3}$	- 90%) 0.823			
Augusted Capacity.	5.540	Lei						
Job Condition Corrections	<u>s:</u>		Site	Altitude (ft.):	<u>6300</u> feet			
	Truck	Loade	r	Source				
Altitude Adj:	1.000	1.000		(CAT HB	)			
Job Efficiency:	0.830	0.830	1	(CAT HB	)			
Net Correction:	0.830	0.830						
Loading Tool Cycle Time	<u>:</u>	Number of Loa	ading Too	ol Passes Requ		,	3	passes
Excavators and Front Shov	els:				Truck:			
Machine Cycle Time Selected Value			A A					
Track Loaders -	- Material Desc	ription:						
Cycle Time Elements (min.)	):							
Load: NA	N	Maneuver: N	IA		Dump:	0.100		
Wheel and Trac	ck Loaders - Un	adjusted Basic	Loader (	•	ad, dump, naneuver):	0.500	0 mi	nutes
Cycle Time Factors	3				Factor (mi	n.)	Source	
Material		1" to 6" diameter	er 0.00		0.000		(Cat HB)	
Stockpile	Conveyor o 0.01	r dozer piled 10	0 ft. high	or less	0.010		(Cat HB)	
Truck Ownership:		wnership of true	cks and l	oaders -	-0.040		(Cat HB)	
Operation	Constant op	eration -0.04			-0.040		(Cat HB)	
Dump Target:		get 0.00			0.000		(Cat HB)	
		•		Adjustment:	-0.070		minutes	
				Cycle Time:	0.430		minutes	
		Net L	.oad Time	e per Truck:	0.960		minutes	

#### Truck Cycle Time:

Truck Exchange Time:	0.50	Minutes	Adjusted for site altitude:	0.500	Minutes
Truck Load Time:	0.960	Minutes	Adjusted for site altitude:	0.960	Minutes
Truck Maneuver and Dump Time:	0.90	Minutes	Adjusted for site altitude:	0.900	Minutes

Truck Travel	(Haul & Return)	Time:				
maintained 3.0						

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

maintained 3.0 Haul Route:

Return Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	6500.00	-10.70	3.00	-7.70	1749	3.831
2	3100.00	0.00	3.00	3.00	2824	1.128
3	1000.00	10.00	3.00	13.00	834	0.191

Haul Time: **5.150** minutes

.150	minutes		

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	1000.00	-10.00	3.00	-7.00	2938	0.410
2	3100.00	0.00	3.00	3.00	2874	1.079
3	6500.00	10.70	3.00	13.70	1274	5.147

Return Time:	6.636	minutes
Total Truck Cycle Time:	14.146	minutes

Loading Tool unit						
Production	437.36	LCY/Hour	Adjusted for job eff	ficiency:	363.01	LCY/Hour
Truck Unit Production						
-	45.14	LCY/Hour	Adjusted for job eff	ficiency:	37.47	LCY/Hour
Optimal No. of Trucks:	10	Truck(s)	Selected Number of	Trucks:	4	Truck(s)
		Adjusted hour	ly truck team production:	149.86	LCY/I	Hour
	A	Adjusted single truck/loader team production:			149.86 LCY/Hour	
	Ad	Adjusted multiple truck/loader team production:		149.86	LCY/Hour	

JOB TIME AND COST						
Fleet size:	1	Team(s)	Total job time:	108.83	Hours	
Unit cost:	\$2.442	/LCY	Total job cost:	\$39,824		