

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

1313 Sherman Street, Room 215 Denver, CO 80203

May 16, 2019

Kirk Daehling Natural Soda LLC 3200 CR 31 Rifle, CO 81650

RE: Nacholite Project, Permit No. M-1983-194, Technical Revision (TR-42) Approval

Dear Mr. Daehling:

On May 16, 2019 the Division of Reclamation, Mining and Safety (Division) <u>approved</u> the Technical Revision request (TR-42) submitted on May 3, 2019, addressing the following:

Addition of wells 14H-1V and DS-10 and associated pads

The terms of the TR-42 approved by the Division are hereby incorporated into Permit No. M-1983-194. All other conditions and requirements of the permit remain in full force and effect.

Division calculations estimate the cost to reclaim the above referenced site to be <u>\$7,429,753.00</u>. This is an increase of <u>\$3,271,412.32</u> over the <u>\$4,158,340.68</u> currently held by the Division. *Pursuant to Section 34–32–117(4) of the Colorado Land Reclamation Act, adequate Financial Warranty must be submitted to the Division within 60 days of the mailing date of this letter.* The additional amount needs to be accepted prior **Monday, July 15, 2019**. Please review the enclosed figures as soon as possible and contact our office if any calculation errors are noted. The revision will not be final until the bond is approved by the Division.

Please make arrangements with Barbara Coria at the Division of Reclamation, Mining and Safety Denver Office, phone no. 303.866.3567, ext. 8148 for submittal of the financial warranty. Any questions regarding completion, execution and/or submittal of financial warranty forms should also be directed to Barbara Coria.

If you require additional information, or have questions or concerns, please feel free to contact me. Amy Yeldell at the Division of Reclamation, Mining and Safety, 1313 Sherman St., Room 215, Denver, CO 80203. Direct contact can be made by phone at 970-254-8511 or via email at amy.yeldell@ state.co.us



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Sincerely,

Amy Geldell

Amy Yeldell Environmental Protection Specialist

Enclosures:

Reclamation Cost Estimate TR-42 Reclamation Cost Estimate-Changes to Bond BLM-Natural Soda, 2015 Mine Plan Modification 500,000 Tons Per Year, Volume 4, Section 8.0, Reclamation Plan TR-42 Adequacy Responses from Daub and Associates, Inc.

Ec:

Travis Marshall, Senior EPS, Grand Junction DRMS Paul Daggett, White River Field Office, BLM Gerry Deschaine, Natural Soda EH&S Manager Gerald Daub, Consultant

COST SUMMARY WORK

Task description:		TR-42 Update						
Site: Nahcolite Project		Per	Permit Action: TR-42			Permit/Job#: M1983194		
Pl	ROJECT	IDENTIFIC	ATION					
	Task #: Date:	ACY 5/6/2019	State: County:	Colorado Rio Blanco		Abbreviation: Filename:	None M194-ACY	
	User:	ACY						

Agency or organization name: DRMS

TASK LIST (DIRECT COSTS)

Task		Form	Fleet	Task	
1 45K	Description	Used	Size	Hours	Cost
01a	Demo of Plant, pipelines, power lines and parking	DEMOLISH	1	160.00	\$5,106,446
	lot				
02a	Borehole P&A	BOREHOLE	1	580.00	\$530,432
03a	Regrade Process Ponds	DOZER	2	133.65	\$55,729
03b	Decompact Process Pond	RIPPER	2	6.85	\$3,086
03c	Topsoil Process Pond	DOZER	2	14.06	\$5,863
03d	Reveg Process Pond	REVEGE	1	28.50	\$35,938
04a	Regrade Plant Area	DOZER	2	23.69	\$9,879
04b	Decompact Plant Area	RIPPER	2	7.02	\$3,163
04c	Topsoil Plant Area	DOZER	2	6.07	\$2,530
04d	Reveg Plant Area	REVEGE	1	12.30	\$15,510
05a	Regrade Well Pads	DOZER	2	140.83	\$58,723
05b	Topsoil Well Pads	DOZER	2	28.92	\$12,059
05c	Reveg Well Pads	REVEGE	1	58.62	\$73,919
06a	Decompact Roads	RIPPER	2	4.95	\$2,233
06b	Topsoil roads	DOZER	2	4.56	\$1,901
06c	Reveg Roads	REVEGE	1	9.24	\$11,652
12a	Initial Mobilization	MOBILIZE	1	8.00	\$14,224
12b	Secondary Mobilization	MOBILIZE	1	8.00	\$2,742
		<u>SUBTO</u>	TALS:	1235.26	\$5,946,029

INDIRECT COSTS

OVERHEAD AND PROFIT:

2.02	Total =	\$120,110
1.05	Total =	\$62,433
617.63	Total =	\$45,118
10.00	Total =	\$594,603
	TOTAL O & P =	\$822,264
	CONTRACT AMOUNT (direct + O & P) = $($	\$6,768,293
	2.02 1.05 617.63 10.00	2.02 Total = 1.05 Total = 617.63 Total = 10.00 Total = TOTAL O & P = CONTRACT AMOUNT (direct + O & P) =

LEGAL - ENGINEERING - PROJECT MANAGEMENT:

Financial warranty processing (legal/related costs):	\$500	Total =	\$500
Engineering work and/or contract/bid preparation:	4.00	Total =	\$270,732
Reclamation management and/or administration:	3.13		\$211,848
CONTINGENCY:	3.00	Total =	\$178,381
Engineering work and/or contract/bid preparation: Reclamation management and/or administration: CONTINGENCY:	4.00 3.13 3.00	Total = Total =	\$270,732 \$211,848 \$178,381

TOTAL INDIRECT COST = \$1,483,724

TOTAL BOND AMOUNT (direct + indirect) = ____\$7,429,753

DEMOLITION WORK

Site:	Nahcolite Project	Pe	ermit Action:	TR-42	Permit/.	Job#: <u>M1983194</u>
ROJEC	CT IDENTIFICAT	ION				
Task #:	01A	State:	Colorado		Abbreviation:	None
Date:	5/6/2019	County:	Rio Blanco		Filename:	M194-01a
TT	ACY					

<u>UNIT COSTS</u>

Structure or Item Description	Dimensions	Demolition Menu Selection	Quantity	Unit	Unit Cost	Total Cost
NSI Plant	200'L x 175'W x 50'H	Plant (3S) demo./off-site disposal in approved landfill - Max. 30 mile haul	1,750,000.00	CF	\$0.70	\$1,221,500.00
Product Storage Dome	100'L x 100'W x 50'H	Plant (3S) demo./off-site disposal in approved landfill - Max. 30 mile haul	500,000.00	CF	\$0.70	\$349,000.00
Removal of NSI Plant Slab	200'L x 175'W x 8"	Demo. and on-site disposal in excavated pit, 8 in. thick - Max. 200 ft. push	35,000.00	SF	\$1.14	\$39,830.00
Removal of Storage Dome Slab	100'L x 100'W x8"	Demo. and on-site disposal in excavated pit, 8 in. thick - Max. 200 ft. push	10,000.00	SF	\$1.14	\$11,380.00
Scale Building	20'W x 100'L x 10'H	Plant (1S) demo./off-site disposal in approved landfill - Max. 30 mile haul	30,000.00	CF	\$0.70	\$21,000.00
Removal of Scale Building Slab	20'W x 100'L x 6"	Demo. and on-site disposal in excavated pit, 6 in. thick - Max. 200 ft. push	2,000.00	SF	\$0.85	\$1,706.00
Tank Farm	30'W x 50'H	Haul tank to certified salvage dump - 3,000 to 5,000 gal. tank	5.00	EA	\$760.00	\$3,800.00
Removal of Flagpole/Monument	70 Sq Ft	USER PROVIDED ITEM	70.00	Ft^2	\$5.00	\$350.00
TR-36 Processing Building 1	165' x 79' x 60'	Plant (3S) demo./off-site disposal in approved landfill - Max. 30 mile haul	782,100.00	CF	\$0.70	\$545,905.80
TR-36 Processing Building 2	105' x 36' x 170'	Plant (3S) demo./off-site disposal in approved landfill - Max. 30 mile haul	642,600.00	CF	\$0.70	\$448,534.80
TR-36 Dry handling, Screening and Storage	90' x 65' x 160'	Plant (3S) demo./off-site disposal in approved landfill - Max. 30 mile haul	936,000.00	CF	\$0.70	\$653,328.00
TR-36 Warehouse and Packaging Building	400' x 150' x 22'	Plant (3S) demo./off-site disposal in approved landfill - Max. 30 mile	273,000.00	CF	\$0.70	\$190,554.00

Location adjustment: 95.50 %

		haul				
TR-36 Warehouse Building	400' x 150' x 22'	Plant (1C) demo./off-site disposal in approved landfill - Max. 30 mile haul	1,320,000.00	CF	\$0.79	\$1,038,840.00
TR-36 Removal of concrete foundations	101285 sq. ft.,	Demo. and on-site disposal in excavated pit, 6 in. thick - Max. 200 ft. push	101,285.00	SF	\$0.85	\$86,396.11
TR-36 Asphalt Parking Removal	133' x 182'	Pavement, bituminous, demolition only - 4 in. to 6 in. thick	897.00	SY	\$7.00	\$6,279.00
Off Site removal of asphalt-Loading	12,103 Cu Ft	Loading and 2 mile haul, no salvage - Machine loading	448.00	CY	\$17.20	\$7,705.60
Off site removal of asphalt-Hauling	448 CY @ 19 mi a trip	Hauling only, per mile, 12-18 CY truck - 50 mph average speed	473.00	MI	\$3.08	\$1,456.84
Off site removal of asphalt-dump fee	448 CY	Dump fees - Building construction materials.	448.00	CY	\$11.10	\$4,972.80
Demolition of Screening and Magnet System	120' x 160' x 40'	Plant (3S) demo./off-site disposal in approved landfill - Max. 30 mile haul	672,000.00	CF	\$0.70	\$469,056.00
Pipelines averaged to 10" diam.	36, 050 LF	Pipe, steel, welded connections - 10 in. diameter pipe	36,050.00	LF	\$6.33	\$228,196.50
Overhead Power line Removal-Pole	57 poles	Utility Poles, Wood 35' - 45' high (each pole)	57.00	EA	\$258.00	\$14,706.00
Overhead Power line Removal-Cross Arms	57 Arms	Utility Pole Cross Arm	27.00	EA	\$93.00	\$2,511.00
Disposal of Power Poles	57 @ 45'	Disposal of utility pole and hardware surplus material	2,565.00	LF	\$0.02	\$51.30
Disposal of Cross Arms	57 @ 8 ft. wide each	Disposal of utility pole cross arms and hardware surplus material	456.00	LF	\$0.01	\$4.56

				Total Cost	
		Subtotal		(adjusted for	
Job Hours:	160.00	(unadjusted):	\$5,347,064.31	location):	\$5,106,446.42
-					

BOREHOLE SEALING WORK

,	Task description:	Borehole P	&A			
Site:	Nahcolite Project		Permit Action:	TR-42	Permit/J	ob#: <u>M1983194</u>
<u>PROJE</u>	CT IDENTIFICATION	N				
Task #: Date: User:	02A 5/10/2019 ACY	State: County:	Colorado Rio Blanco		Abbreviation: Filename:	None M194-02a
	Agency or organizat	ion name:	DRMS			

UNIT COSTS

Borehole	Sealing/Item Method						
Description		Diameter	Length	Quantity	Unit	Unit Cost	Total Cost
3M-TDR	Portland cement grout - 4 in. (labor, equip, materials)	4	1876	1,876.00	LF	\$4.68	\$8,779.68
89-1	Portland cement grout - 4 in. (labor, equip, materials)	4	1627	1,627.00	LF	\$4.68	\$7,614.36
89-2	Portland cement grout - 4 in. (labor, equip, materials)	4	1417	1,417.00	LF	\$4.68	\$6,631.56
89-3	Portland cement grout - 4 in. (labor, equip, materials)	4	347	347.00	LF	\$4.68	\$1,623.96
90-1	Portland cement grout - 8 in. (labor, equip, materials)	8.9	1417	1,417.00	LF	\$5.95	\$8,431.15
90-3	Portland cement grout - 4 in. (labor, equip, materials)	4	1627	1,627.00	LF	\$4.68	\$7,614.36
90-4	Portland cement grout - 4 in. (labor, equip, materials)	4	1417	1,417.00	LF	\$4.68	\$6,631.56
BG-1	Portland cement grout - 4 in. (labor, equip, materials)	4	1627	1,627.00	LF	\$4.68	\$7,614.36
BG-4	Portland cement grout - 4 in. (labor, equip, materials)	4	1627	1,627.00	LF	\$4.68	\$7,614.36
DS-2	Portland cement grout - 4 in. (labor, equip, materials)	4	1876	1,876.00	LF	\$4.68	\$8,779.68
DS-3	Portland cement grout - 4 in. (labor, equip, materials)	4	1876	1,876.00	LF	\$4.68	\$8,779.68
EX-2	Portland cement grout - 4 in. (labor, equip, materials)	4	1876	1,876.00	LF	\$4.68	\$8,779.68
IRI-1	Portland cement grout - 4 in. (labor, equip, materials)	4	347	347.00	LF	\$4.68	\$1,623.96
IRI-4	Portland cement grout - 4 in. (labor, equip, materials)	4	1417	1,417.00	LF	\$4.68	\$6,631.56

IRI-5	Portland cement grout - 4 in. (labor, equip, materials)	4.1	347	347.00	LF	\$4.68	\$1,623.96
IRI-6	Portland cement grout - 4 in. (labor, equip, materials)	4	1627	1,627.00	LF	\$4.68	\$7,614.36
IRI-7	Portland cement grout - 4 in. (labor, equip, materials)	4	1876	1,876.00	LF	\$4.68	\$8,779.68
IRI-8	Portland cement grout - 4 in. (labor, equip, materials)	4	347	347.00	LF	\$4.68	\$1,623.96
12H-I	Portland cement grout - 8 in. (labor, equip, materials)	7	2100	2,100.00	LF	\$5.95	\$12,495.00
12H-I Bridge Plug	PVC plug - 8 in. diameter borehole	7	1	1.00	EA	\$79.19	\$79.19
12H-R	Portland cement grout - 8 in. (labor, equip, materials)	7	2100	2,100.00	LF	\$5.95	\$12,495.00
12H-R Bridge Plug	PVC plug - 8 in. diameter borehole	7	1	1.00	EA	\$79.19	\$79.19
10H-I	Portland cement grout - 8 in. (labor, equip, materials)	7	1935	1,935.00	LF	\$5.95	\$11,513.25
10H-I Bridge Plug	PVC plug - 8 in. diameter borehole	7	1	1.00	EA	\$79.19	\$79.19
10H-R	Portland cement grout - 8 in. (labor, equip, materials)	7	1935	1,935.00	LF	\$5.95	\$11,513.25
10H-R Bridge Plug	PVC plug - 8 in. diameter borehole	7	1	1.00	EA	\$79.19	\$79.19
BG-5	Portland cement grout - 4 in. (labor, equip, materials)	4	1645	1,645.00	LF	\$4.68	\$7,698.60
DS-5 (BG-9)	Portland cement grout - 4 in. (labor, equip, materials)	4	1902	1,902.00	LF	\$4.68	\$8,901.36
BG-6	Portland cement grout - 4 in. (labor, equip, materials)	4	1639	1,639.00	LF	\$4.68	\$7,670.52
WSW-2	Portland cement grout - 8 in. (labor, equip, materials)	7	1460	1,460.00	LF	\$5.95	\$8,687.00
DVPW-1(A)	Portland cement grout - 6 in. (labor, equip, materials)	6.4	1900	1,900.00	LF	\$5.33	\$10,127.00
DVPW-1(A) Bridge Plug	PVC plug - 6 in. diameter borehole	6.4	1	1.00	EA	\$57.81	\$57.81
DVPW-1(B)	Portland cement grout - 6 in. (labor, equip, materials)	6.4	1900	1,900.00	LF	\$5.33	\$10,127.00
DVPW-1(B) Bridge Plug	PVC plug - 6 in. diameter borehole	6.4	1	1.00	EA	\$57.81	\$57.81
10H-IV	Portland cement grout - 8 in. (labor, equip, materials)	7	1950	1,950.00	LF	\$5.95	\$11,602.50
13H-I	Portland cement grout - 8	8	2335	2,335.00	LF	\$5.95	\$13,893.25

CIRCES Cost Estimating Software

	in. (labor, equip,						
$13H_RI_F(13H_R)$	Portland cement grout - 8	7	2100	2 100 00	IF	\$5.95	\$12.495.00
1511-KI-L (1511-K)	in (labor equip	,	2100	2,100.00	LI	ψ5.75	\$12,795.00
	materials)						
13H-RI-E Bridge	PVC plug - 8 in.	7	1	1.00	EA	\$79.19	\$79.19
Plug	diameter borehole						
8H-1	Portland cement grout - 8	7	2110	2,110.00	LF	\$5.95	\$12,554.50
	in. (labor, equip,						
	materials)						
8H-R	Portland cement grout - 8	7	2110	2,110.00	LF	\$5.95	\$12,554.50
	in. (labor, equip,						
	Dertland concert arout 9	7	2050	2.050.00	LE	¢5.05	¢12 107 50
14H-I	Portland cement grout - 8	/	2050	2,050.00	LF	\$3.95	\$12,197.50
	materials)						
1/H-I Bridge Plug	PVC plug - 8 in	7	1	1.00	FΔ	\$79.19	\$79.19
1411-1 Diluge 1 lug	diameter borehole	,	1	1.00	LA	Ψ/).1)	φ/).1)
14H-RI-E (14H-R)	Portland cement grout - 8	7	2110	2 110 00	LF	\$5.95	\$12,554,50
	in (labor, equip.	,	2110	2,110.00	21	<i><i><i>40.70</i></i></i>	¢12,00 1100
	materials)						
14H-RI-E Bridge	PVC plug - 8 in.	7	1	1.00	EA	\$79.19	\$79.19
Plug	diameter borehole						
WSW-3	Portland cement grout - 8	7	1420	1,420.00	LF	\$5.95	\$8,449.00
	in. (labor, equip,						
	materials)						
WSW-4	Portland cement grout - 8	7	1431	1,431.00	LF	\$5.95	\$8,514.45
	in. (labor, equip,						
	materials)		1000			* 4 + 5	+0.00 7 - 1
DS-8 (I, Phase 1)	Portland cement grout - 4	4	1882	1,882.00	LF	\$4.68	\$8,807.76
	in. (labor, equip,						
AC = 1 (I Dhase 1)	Dertland concert creat	4	1407	1 497 00	LE	\$4.69	¢C 050 1C
AG-1 (J, Phase 1)	in (labor equip	4	1467	1,487.00	LF	\$4.08	\$0,939.10
	materials)						
BG-7 (K Phase 1)	Portland cement grout - 4	4	1593	1 593 00	IF	\$4.68	\$7 455 24
	in (labor, equip.	-	1575	1,575.00		ψ+.00	φ1,+33.2+
	materials)						
DS-9 (M, Phase 1)	Portland cement grout - 4	4	1917	1,917.00	LF	\$4.68	\$8,971.56
	in. (labor, equip,			,			
	materials)						
DS-7	Portland cement grout - 4	4	1897	1,897.00	LF	\$4.68	\$8,877.96
	in. (labor, equip,						
	materials)						
0-GWM-A (0,	Portland cement grout - 8	7	1294	1,294.00	LF	\$5.95	\$7,699.30
Phase 2)	ın. (labor, equip,						
	materials)	4	1000	1.992.00	LE	\$4.69	¢0.007.76
DS-0	in (labor equip	4	1882	1,882.00	LF	\$4.08	\$8,807.70
	materials)						
IRI-9	Portland cement grout - 4	4	1710	1 710 00	LF	\$4 68	\$8,002,80
	in. (labor, equip.		1,10	1,, 10.00		÷ 1.00	÷0,00 2 .00
	materials)						
IRI-11	Portland cement grout - 4	4	1550	1,550.00	LF	\$4.68	\$7,254.00
	in. (labor, equip,						
	materials)						
15H-I	Portland cement grout - 6	6.4	1960	1,960.00	LF	\$5.33	\$10,446.80
	in. (labor, equip,						

	materials)						
15H-1 Bridge Plug	PVC plug - 6 in.	6.4	1	1.00	EA	\$57.81	\$57.81
	diameter borehole						
15H-RI (15H-R)	Portland cement grout - 6	6.4	1960	1,960.00	LF	\$5.33	\$10,446.80
- (-)	in. (labor, equip,			,			, ,
	materials)						
15H-RI Bridge	PVC plug - 6 in.	6.4	1	1.00	EA	\$57.81	\$57.81
Plug	diameter borehole						
16H-I	Portland cement grout - 6	6.4	1960	1,960.00	LF	\$5.33	\$10,446.80
	in. (labor, equip,			,			
	materials)						
16H-I Bridge Plug	PVC plug - 6 in.	6.4	1	1.00	EA	\$57.81	\$57.81
	diameter borehole						
16H-R	Portland cement grout - 8	8.9	1960	1,960.00	LF	\$5.95	\$11,662.00
	in. (labor, equip,			,			
	materials)						
16H-R Bridge	PVC plug - 8 in.	8.9	1	1.00	EA	\$79.19	\$79.19
Plug	diameter borehole						
17H-I	Portland cement grout - 6	6.4	1960	1,960.00	LF	\$5.33	\$10,446.80
	in. (labor, equip,			,			
	materials)						
17H-I Bridge Plug	PVC plug - 6 in.	6.4	1	1.00	EA	\$57.81	\$57.81
	diameter borehole						
17H-R (17R-I)	Portland cement grout -	9	2000	2,000.00	LF	\$6.80	\$13,600.00
	10 in. (labor, equip,			,			
	materials)						
17H-R Bridge	PVC plug - 10 in.	9	1	1.00	EA	\$108.49	\$108.49
Plug	diameter borehole						
12H-IR	Portland cement grout -	9	2100	2,100.00	LF	\$6.80	\$14,280.00
	10 in. (labor, equip,						
	materials)						
12H-IRBridge	PVC plug - 10 in.	9	1	1.00	EA	\$108.49	\$108.49
Plug	diameter borehole						
13H-IR	Portland cement grout -	9	2100	2,100.00	LF	\$6.80	\$14,280.00
	10 in. (labor, equip,						
	materials)						
13H-IR Bridge	PVC plug - 10 in.	9	1	1.00	EA	\$108.49	\$108.49
Plug	diameter borehole						
15H-SSMW	Portland cement grout - 4	4	1760	1,760.00	LF	\$4.68	\$8,236.80
	in. (labor, equip,						
	materials)						
17H-SSMW	Portland cement grout - 4	4	1720	1,720.00	LF	\$4.68	\$8,049.60
	in. (labor, equip,						
	materials)						
DS-10	Portland cement grout - 4	4	1882	1,882.00	LF	\$4.68	\$8,807.76
	in. (labor, equip,						
	materials)						
14H-1V	Portland cement grout - 8	8.9	2130	2,130.00	LF	\$5.95	\$12,673.50
	in. (labor, equip,						
	materials)						
14H-1V Bridge	PVC plug - 8 in.	8.9	1	1.00	EA	\$79.19	\$79.19
				1 · · · · · · · · · · · · · · · · · · ·	1	1	

Job Hours: 580.00

Total Cost: \$530,432.00

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BULLDOZER WORK

Task description:	Regrade Process	Ponds			
Nahcolite Project	Perm	nit Action:	TR-42	Permit/Job#:	M1983194
PROJECT IDENTIFI	CATION				
Task #: 03A Date: 5/7/2019 User: ACY	County:	Colorado Rio Blanco)	Abbreviation: Filename:	None M194-03a
Agency or organ	ization name: DR	MS			
HOURLY EQUIPME	NT COST				
Basic Machine: Cat	D8T - 8SU				
Horsepower: 310	i Universel				
Attachment: NA	II-UIIIversai				
Shift Basis: 1 pe	er dav				
Data Source: (CR	G)				
Cost Breakdown:	·				
Cost Dicardowii.			Utilization %		
Ownership Cost/Hour:		\$93.62	NA		
Operating Cost/Hour:		\$73.35	100		
Ripper own. Cost/Hour:		\$0.00	NA		
Ripper op. Cost/Hour:		\$0.00	0		
Operator Cost/Hour:		\$41.52	NA		
MATERIAL QUANT	<u>ITIES</u> 17	_			
Loose volume: 73,75	54 LCY				
Source of estimated volum	$\frac{\text{TR-42}}{\text{C} + \text{H}}$	1			
Source of estimated swell	factor: <u>Cat Handb</u>	OOK			
HOURLY PRODUCT	<u>'ION</u>				
Average push distance: Unadjusted hourly produc	175 feet tion: 562.2 LCY/h	n			
Materials consistency deso	cription: Compac	ted fill or er	mbankment 0.9		
Average push gradient: Average site altitude:	0 % 6,600 feet				
Material weight:	2,100 lbs/LCY				
Weight description:	Earth - Loam				
Job Condition Correction	Factor		Source		
Operator S	Skill: 0.7	50	(AVG.)		
		20			
Material consiste	ency: 0.9	000	(CAT HB))		
Material consiste Dozing met	ancy: 0.9 hod: 1.0	000	(CAT HB)) (GEN.)		

Job efficienc	y: 0.830	(1 SHIFT/DAY)
Spoil pil	e: 0.800	(FND-RF)
Push gradier	nt: 1.000	(CAT HB)
Altitud	e: 1.000	(CAT HB)
Material Weigh	nt: 1.095	(CAT HB)
Blade typ	e: 1.000	(PAT)
Net correctio	n: 0.4908	
Adjusted unit production:	275.93 LCY/hr	
Adjusted fleet production:	551.86 LCY/hr	

Fleet size:	2 Dozer(s)
Unit cost:	\$0.756/LCY

Total job time:	133.65 Hours
Total job cost:	\$55,729

BULLDOZER RIPPING WORK

	Task description:	Deco	mpact Process Pond					
Site	: Nahcolite Pro	ject	Permit Action:	TR-42	P	Permit/Job#	: <u>M19831</u>	94
	PROJECT ID	ENTIFICATI	<u>ON</u>					
	Task #: 03 Date: $5/1$ User: AC	B 5/2019 CY	State: Colorado County: Rio Blanco)	Abb	previation: Filename:	None M194-03	b
	Agency	or organization	name: DRMS					
	HOURLY EO	UIPMENT CO)ST					
	Basic	Machine: Cat	D8T - 8SU		Horsepower:		310	
	Ripper Att	achment: 3-S	hank Ripper		Shift Basis:	1	per day	
					Data Source:	(CRG)	
	Cost Breakdown	<u>.</u>			Utilization %			
		Ownership Co	ost/Hour:	\$93.62	NA	_		
	Dinn	Operating Co	ost/Hour:	\$73.35	100 NA	_		
	Ripp	per Ownership Co	ost/Hour:	\$7.78	<u>100</u>	_		
	1	Operator Co	ost/Hour:	\$41.52	NA	_		
		Total Unit Co	ost/Hour:	\$225.20				
		Total Fleet Co	ost/Hour: \$450).40				
	MATERIAL (UANTITIES	Sele	cted estimating	method: Are	a		
	Alternate Method	<u>ls:</u>						
Seismic:	NA		Bank Volume:	NA	BCY		NA	
Area:	8.00	acres	Rip Depth (ft):	2.00	Volume:	25,813		BCY or CCY
		Source of estir	nated quantity: <u>TR-42</u>					
	HOURLY PR	ODUCTION						
	Seismic:							
		5	Seismic Velocity:	NA	feet/sec	cond		
	Area:							
		Averag	e Ripping Depth:	2.56	feet/pas	88		
		Average	Ripping whun:	100.00	feet/pas	88		
		Aver	age Dozer Speed:	88.00	feet/mi	nute		
		Average	Maneuver Time:	0.25	minute	s/pass		
		Product	ion per unit area:	0.703	acres/h	our		
	Job Condition Co	prrection Factors						
	Un	adjusted Hourly	Unit Production:	0.703	Acres/h	nr		
			Site Altitude:	6,600	feet			
			Altitude Adj:	1.00	(CAT I	HB)		
			Job Efficiency:	0.83	(1 shift	/day)		
				0.85		101		
		Adjusted	Hourly Unit Production:	0.58	Acres/hr			
	IOR TIME AN	ID COST		1,1/				
	Floot size:	2 2	Gradar(c)	Total ich tim	. .	6 85	II	11#0
	rieet size:	Z	Grader(s)	i otal job time	<i>.</i>	0.85	H0	118
	Unit cost:	\$385.719	Per acre	Total job cos	it:\$	53,086		

Page 1 of 2

BULLDOZER WORK

	1005011100055101				
Nahcolite Project	Permit .	Action:	TR-42	Permit/Job#:	M1983194
PROJECT IDENTIF	ICATION				
Task #: 03C Date: 5/15/2019 User: ACY	State: <u>C</u> County: R	olorado io Blanco)	Abbreviation: Filename:	None M194-03c
Agency or organ	nization name: DRMS	5			
HOURLY EQUIPME	<u>ENT COST</u>				
Basic Machine: Cat	D8T - 8SU				
Horsepower: 310)				
Blade Type: Sen	ni-Universal				
Shift Degist 1 p	ar dau		_		
Data Source: (CF	PC)		_		
Data Source. (Cr	(U)				
Cost Breakdown:		I	**		
		¢02.52	Utilization %		
Ownership Cost/Hour:		\$95.62 \$72.25	NA 100		
Operating Cost/Hour:		\$15.55	100 NTA		
Ripper own. Cost/Hour:		\$0.00 \$0.00			
Operator Cost/Hour		\$41.50			
Operator Cost/Hour.		φ 4 1. <i>J</i> 2	NA		
MATERIAL OUANT	THES				
Initial Volume: 15,3 Swell factor: 1.00	27 0				
Initial Volume:15,3Swell factor:1.00Loose volume:15,3	27 0 27 LCY				
Initial Volume: 15,3 Swell factor: 100 Loose volume: 15,3 Source of estimated volum Source of estimated swell	27 0 27 LCY ne: <u>19 ac @ 6'' d</u> factor: <u>Cat Handboo</u>	epthk			
Initial Volume: 15,3 Swell factor: 100 Loose volume: 15,3 Source of estimated volum Source of estimated swell HOURLY PRODUCT	27 0 27 LCY ne: <u>19 ac @ 6" d</u> factor: <u>Cat Handboo</u>	epth k			
Initial Volume: 15,3 Swell factor: 100 Loose volume: 15,3 Source of estimated volum Source of estimated swell HOURLY PRODUCT Average push distance:	27 0 27 LCY ne: <u>19 ac @ 6" d</u> factor: <u>Cat Handboo</u> FION 150 feet	epth k			
Initial Volume: 15,3 Swell factor: 1.00 Loose volume: 15,3 Source of estimated volum Source of estimated swell HOURLY PRODUCT Average push distance: Unadjusted hourly product	27 0 27 LCY ne: <u>19 ac @ 6" d</u> factor: <u>Cat Handboo</u> FION 150 feet ction: <u>634.3 LCY/hr</u>	epthk			
Initial Volume: 15,3 Swell factor: 1.00 Loose volume: 15,3 Source of estimated volum Source of estimated swell HOURLY PRODUCT Average push distance: Unadjusted hourly product Materials consistency dest	27 0 27 LCY ne: <u>19 ac @ 6" d</u> 1 factor: <u>Cat Handboo</u> FION CION ction: <u>150 feet</u> 634.3 LCY/hr ccription: Loose stock	epth k kpile 1.2			
Initial Volume: 15,3 Swell factor: 1.00 Loose volume: 15,3 Source of estimated volum Source of estimated volum Source of estimated swell HOURLY PRODUCT Average push distance: Unadjusted hourly product Materials consistency des Average push gradient:	27 0 27 LCY ne: <u>19 ac @ 6" d</u> 1 factor: <u>Cat Handboo</u> FION Ction: <u>150 feet</u> 634.3 LCY/hr acription: Loose stock	epth k kpile 1.2			
Initial Volume: 15,3 Swell factor: 1.00 Loose volume: 15,3 Source of estimated volu Source of estimated volu Source of estimated swell HOURLY PRODUCT Average push distance: Unadjusted hourly product Materials consistency des Average push gradient: Average site altitude:	$\begin{array}{r} 27 \\ 0 \\ \hline 27 \text{ LCY} \\ \text{ne:} \\ 19 \text{ ac } @ 6" \text{ d} \\ \hline \text{factor:} \\ \hline \text{Cat Handboo} \\ \hline \hline \text{CION} \\ \hline \hline \text{CION} \\ \hline \text{ction:} \\ \hline 150 \text{ feet} \\ \hline 634.3 \text{ LCY/hr} \\ \hline \text{cription:} \\ \hline \text{Loose stoch} \\ \hline 0 \% \\ \hline 6,600 \text{ feet} \\ \hline \end{array}$	epth k kpile 1.2			
Initial Volume: 15,3 Swell factor: 1.00 Loose volume: 15,3 Source of estimated volum Source of estimated volum Source of estimated volum Source of estimated swell HOURLY PRODUCT Average push distance: Unadjusted hourly product Materials consistency des Average push gradient: Average site altitude: Material weight: Material weight:	27 0 27 LCY ne: 19 ac @ 6" d factor: Cat Handboo If factor: 150 feet ction: 634.3 LCY/hr cription: Loose stock 0 % 6,600 feet 1,600 lbs/LCY	epth k			
Initial Volume: 15,3 Swell factor: 1.00 Loose volume: 15,3 Source of estimated volum Source of estimated volum Source of estimated volum Source of estimated volum Materials consistency des 100 Average push distance: Unadjusted hourly product Materials consistency des Average push gradient: Average site altitude: Material weight: Weight description: Verage	27 0 27 LCY ne: 19 ac @ 6" d factor: Cat Handboo If factor: Cat Handboo CION 150 feet ction: 634.3 LCY/hr ccription: Loose stock 0 % 6,600 feet 1,600 lbs/LCY Top Soil	epth k			
Initial Volume: 15,3 Swell factor: 1.00 Loose volume: 15,3 Source of estimated volu Source of estimated volu Source of estimated volu Source of estimated swell HOURLY PRODUCT Average push distance: Unadjusted hourly product Materials consistency des Average push gradient: Average site altitude: Material weight: Weight description: Job Condition Correction Source constant	27 0 27 LCY ne: <u>19 ac @ 6" d</u> 1 factor: <u>Cat Handboo</u> FION Cat Handboo FION 150 feet <u>150 feet</u> <u>150 feet</u> <u>150 feet</u> <u>150 feet</u> <u>150 feet</u> <u>150 feet</u> <u>150 feet</u> <u>150 feet</u> <u>150 feet</u> <u>150 feet</u> <u>1600 lbs/LCY</u> <u>1600 lbs/LCY</u> <u>170 Soil</u> <u>Factor</u>	epth k			
Initial Volume: 15,3 Swell factor: 1.00 Loose volume: 15,3 Source of estimated volum Source of estimated volum Source of estimated swell HOURLY PRODUCT Average push distance: Unadjusted hourly product Materials consistency des Average push gradient: Average site altitude: Material weight: Weight description: Job Condition Correction Operator Operator	27 0 27 LCY ne: 19 ac @ 6" d 1 factor: Cat Handboo I factor: 150 feet ction: 634.3 LCY/hr cription: Loose stock 0 % 6,600 feet 1,600 lbs/LCY Top Soil Factor 0.750	epth k	<u>Source</u> (AVG.)		
Initial Volume: 15,3 Swell factor: 1.00 Loose volume: 15,3 Source of estimated volum Source of estimated volum Source of estimated swell HOURLY PRODUCT Average push distance: Unadjusted hourly product Materials consistency des Average push gradient: Average push gradient: Average site altitude: Material weight: Weight description: Job Condition Correction Operator 3 Material consistency	$\begin{array}{c c} 27 \\ 0 \\ \hline \\ 27 LCY \\ \hline \\ ne: 19 ac @ 6" d \\ \hline \\ factor: Cat Handboo \\ \hline \\ \hline \\ Cat Handboo \\ \hline \\ \hline \\ \hline \\ Cat Handboo \\ \hline \\ \hline \\ \hline \\ \hline \\ Cat Handboo \\ \hline \\$	epth k kpile 1.2	<u>Source</u> (AVG.) (CAT HB)		
Initial Volume: 15,3 Swell factor: 1.00 Loose volume: 15,3 Source of estimated volum Source of estimated volum Source of estimated swell HOURLY PRODUCT Average push distance: Unadjusted hourly product Materials consistency dest Average push gradient: Average push gradient: Average site altitude: Material weight: Weight description: Job Condition Correction Operator 3 Material consiste Dozing me	$\begin{array}{c c} 27 \\ \hline 0 \\ \hline 27 LCY \\ \hline ne: 19 ac @ 6" d \\ \hline factor: Cat Handboo \\ \hline ION \\ \hline CION \\ \hline ction: 634.3 LCY/hr \\ \hline cription: Loose stoch \\ \hline 0 \% \\ \hline 6,600 feet \\ \hline 1,600 lbs/LCY \\ \hline Top Soil \\ \hline Factor \\ \hline Skill: 0.750 \\ \hline ency: 1.200 \\ \hline thod: 1.000 \\ \hline \end{array}$	epth k	<u>Source</u> (AVG.) (CAT HB) (GEN.)		

Job efficient	cy: 0.830	(1 SHIFT/DAY)
Spoil pi	le: 0.800	(FND-RF)
Push gradie	nt: 1.000	(CAT HB)
Altitud	de: 1.000	(CAT HB)
Material Weig	ht: 1.438	(CAT HB)
Blade typ	pe: 1.000	(PAT)
Net correction	on: 0.8593	
Adjusted unit production:	545.05 LCY/hr	
Adjusted fleet production:	1090.1 LCY/hr	

Fleet size:	2 Dozer(s)
Unit cost:	\$0.383/LCY

Total job time:	14.06 Hours
Total job cost:	\$5,863

REVEGETATION WORK

ite: <u>Nahcoli</u>	te Project	Permit Action: <u>TR-42</u>	Permit/Job#:
PROJECT	<u> IDENTIFIC</u>	<u>CATION</u>	
Task #:	03D	State: Colorado	Abbreviation: None
Date:	5/15/2019	County: Rio Blanco	Filename: M194-03d
	ACY		

FERTILIZING

Materials

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

Application

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

TILLING

Description	Cost /Acre
Disc harrowing, 6" deep (MEANS 32 91 13.23 6100)	\$106.29
Weed control spraying (MEANS 31 31 16.13 3100)	\$193.60
Total Tilling Cost/Acre	\$299.89

SEEDING

Seed Mix	Rate – PLS LBS / Acre	Seeds per SQ. FT	Cost /Acre
Alkali Sacaton	0.10	3.90	\$2.90
Crested Wheatgrass - Ephraim	4.00	18.37	\$15.00
Blue Wildrye - Arlington or Elkton	1.50	5.17	\$9.99
Russian Wildrye - Bozoisky	1.50	6.03	\$9.72
Hard Fescue - Discovery	1.00	12.97	\$3.80
Pubescent Wheatgrass - Luna	1.50	3.10	\$6.26
Yellow Sweet Clover - Madrid	0.50	2.98	\$1.45
Tall Wheatgrass - Jose	1.80	3.26	\$4.46
Thickspike Wheatgrass - Critana	4.30	15.20	\$25.24

Sweetvetch, Utah or Northern	0.10	0.05	\$7.68
Western Wheatgrass - Barton	1.50	3.79	\$11.66
Yarrow, Western	0.20	12.16	\$8.56
Totals Seed Mix	18.00	86.97	\$106.71

Application

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

MULCHING and MISCELLANEOUS

Materials

	Units /			
Description	Acre	Unit	Cost / Unit	Cost /Acre
Herbicide - 2,4D @ 1.0 pt/ac	2.00	ACRE	\$2.81	\$5.61
Straw, delivered {MEANS 31 25 14.16 1200}	2.00	TON	\$288.00	\$576.00
Total Mulch Materials Cost/Acre				\$581.61

Application

Description		Cost /Acre
Crimping, with tractor {DMG survey data}		\$68.78
Power mulcher (MEANS 32 91 13.16 0350)		\$92.78
Weed spray, truck, non-aquatic area, nox. [DMG]		\$73.22
	Total Mulch Application Cost/Acre	\$234.78

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

Estimate *Selected Replanti	No. of Acres: ed Failure Rate: ng Work Items:	19 30% TILLING,SEEDI	Cost /Acre: Cost /Acre*: NG,MULCHING	\$1,454.99 \$1,454.99	_
Initial Job Cost: Reseeding Job Cost: Total Job Cost: Job Hours:	\$27,644.81 \$8,293.44 \$35,938 28.50				

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BULLDOZER WORK

i ush deseription.	Regrade Flam Area				
Nahcolite Project	Permit Ac	tion: <u>TR-42</u>		Permit/Job#:	M1983194
PROJECT IDENTIFI	CATION				
Task #: 04A Date: 5/7/2019 User: ACY	State: Colo County: Rio	orado Blanco		Abbreviation: Filename:	None M194-04a
Agency or organ	ization name: DRMS				
HOURLY EQUIPME	NT COST				
Basic Machine: Cat	D8T - 8SU				
Horsepower: 310	· • • • • • • • • • • • • • • • • • • •				
Attachmont: NA	1-Universal				
Shift Basis: 1 ne	r dav				
Data Source: (CR	G)				
C (D 11	0)				
Cost Breakdown:		т	Itilization 0/		
Ownershin Cost/Hour	0 2	3 62	NA		
Operating Cost/Hour:	\$7	3.35	100		
Ripper own. Cost/Hour:	\$	0.00	NA		
Ripper op. Cost/Hour:	\$	0.00	0		
Operator Cost/Hour:	\$4	1.52	NA		
MATERIAL OLIANT	TIES				
Initial Volume: 13,22	9				
Initial Volume:13,22Swell factor:1.115Loose volume:14,75	9 0 LCY				
Initial Volume: 13,22 Swell factor: 1.115 Loose volume: 14,75 Source of estimated volum	9 0 LCY ne: <u>TR-2 8.2 ac @</u>	12"			
Initial Volume: 13,22 Swell factor: 1.115 Loose volume: 14,75 Source of estimated volum Source of estimated swell	9 0 LCY ne: TR-2 8.2 ac @ factor: Cat Handbook	12"			
Initial Volume: 13,22 Swell factor: 1.115 Loose volume: 14,75 Source of estimated volum Source of estimated swell HOURLY PRODUCT	9 0 LCY 10 L	12"			
Initial Volume: 13,22 Swell factor: 1.115 Loose volume: 14,75 Source of estimated volum Source of estimated swell HOURLY PRODUCT Average push distance: Unadjusted hourly produc	Image: 19 0 LCY ne: TR-2 8.2 ac @ factor: Cat Handbook ION 150 feet 634.3 LCY/hr	12"			
Initial Volume: 13,22 Swell factor: 1.115 Loose volume: 14,75 Source of estimated volum Source of estimated swell HOURLY PRODUCT Average push distance: Unadjusted hourly produc Materials consistency desc	9 0 LCY ne: TR-2 8.2 ac @ factor: Cat Handbook ION tion: 150 feet 634.3 LCY/hr cription: Compacted fi	12"	ent 0.9		
Initial Volume: 13,22 Swell factor: 1.115 Loose volume: 14,75 Source of estimated volum Source of estimated volum Source of estimated swell HOURLY PRODUCT Average push distance: Unadjusted hourly produc Materials consistency desc Average push gradient: Average site altitude:	19 0 LCY ne: TR-2 8.2 ac @ factor: Cat Handbook Ion 150 feet tion: 634.3 LCY/hr cription: Compacted fi 0 % 6,600 feet	12" 	ent 0.9		
Initial Volume: 13,22 Swell factor: 1.115 Loose volume: 14,75 Source of estimated volum Source of estimated volum Source of estimated volum Materials consistency desc Average push distance: Unadjusted hourly product Materials consistency desc Average site altitude: Material weight:	9 0 LCY ne: TR-2 8.2 ac @ factor: Cat Handbook ION tion: 634.3 LCY/hr cription: Compacted fi 0 % 6,600 feet 2,100 lbs/LCY	12" ll or embankme	ent 0.9		
Initial Volume: 13,22 Swell factor: 1.115 Loose volume: 14,75 Source of estimated volum Source of estimated volum Source of estimated volum Materials consistency desc Average push gradient: Average site altitude: Material weight: Weight description:	9 0 LCY ne: TR-2 8.2 ac @ factor: Cat Handbook ION ition: 634.3 LCY/hr cription: Compacted fi 0 % 6,600 feet 2,100 lbs/LCY Earth - Loam	12" 11 or embankm	ent 0.9		
Initial Volume: 13,22 Swell factor: 1.115 Loose volume: 14,75 Source of estimated volum Source of estimated volum Source of estimated volum Materials consistency desc Average push distance: Unadjusted hourly product Materials consistency desc Average site altitude: Material weight: Weight description: Job Condition Correction	9 0 LCY ne: TR-2 8.2 ac @ factor: Cat Handbook ION tion: 150 feet 634.3 LCY/hr cription: Compacted fi 0 % 6,600 feet 2,100 lbs/LCY Earth - Loam Factor Factor	12" 11 or embankm	ent 0.9 Source		
Initial Volume: 13,22 Swell factor: 1.115 Loose volume: 14,75 Source of estimated volum Source of estimated volum Source of estimated volum Materials consistency desc Average push distance: Unadjusted hourly produc Materials consistency desc Average site altitude: Material weight: Weight description: Job Condition Correction Operator S	Image: system Image: system 9	12"	ent 0.9 <u>Source</u> (AVG.)		
Initial Volume: 13,22 Swell factor: 1.115 Loose volume: 14,75 Source of estimated volum Source of estimated volum Source of estimated volum Source of estimated volum Materials consistency desc Average push distance: Unadjusted hourly produc Materials consistency desc Average push gradient: Average site altitude: Material weight: Weight description: Job Condition Correction Operator S Material consistence	Image: 19 0 LCY ne: TR-2 8.2 ac @ factor: Cat Handbook ION tion: 634.3 LCY/hr cription: Compacted fi 0 % 6,600 feet 2,100 lbs/LCY Earth - Loam Factor kill: 0.750 ncy: 0.900	12" ll or embankm	ent 0.9 Source (AVG.) (CAT HB))		
Initial Volume: 13,22 Swell factor: 1.115 Loose volume: 14,75 Source of estimated volum Source of estimated volum Source of estimated volum Source of estimated swell HOURLY PRODUCT Average push distance: Unadjusted hourly produc Materials consistency desc Average push gradient: Average site altitude: Material weight: Weight description: Job Condition Correction Operator S Material consiste Dozing met	9 9 0 LCY he: TR-2 8.2 ac @ factor: Cat Handbook ION tion: 634.3 LCY/hr cription: Compacted fi 0 % 6,600 feet 2,100 lbs/LCY Earth - Loam Factor kill: 0.750 ncy: 0.900 hod: 1.000	12" ll or embankm	ent 0.9 Source (AVG.) (CAT HB)) (GEN.)		

Job efficience	cy: 0.830	(1 SHIFT/DAY)
Spoil pi	le: 0.800	(FND-RF)
Push gradie	nt: 1.000	(CAT HB)
Altitud	de: 1.000	(CAT HB)
Material Weig	ht: 1.095	(CAT HB)
Blade typ	pe: 1.000	(PAT)
Net correction	on: 0.4908	
Adjusted unit production:	311.31 LCY/hr	
Adjusted fleet production:	622.62 LCY/hr	

Fleet size:	2 Dozer(s)
Unit cost:	\$0.670/LCY

Total job time:	23.69 Hours
Total job cost:	\$9,879

BULLDOZER RIPPING WORK

	Task description	: Dec	compact Plant Area					
Site	: Nahcolite Pro	oject	Permit Action:	TR-42	Perm	it/Job#:	M19831	94
	PROJECT ID	ENTIFICAT	ION					
	Task #: 04 Date: $5/2$ User: AG	B 15/2019 CY	State: Colorado County: Rio Blanco)	Abbrev File	iation: name:	None M194-04	b
	Agency	or organization	n name: DRMS					
	HOURLY EO	LIPMENT C	'OST					
	Basic	Machine: C	at D8T - 8SU		Horsepower:		310	
	Ripper At	tachment: 3-	Shank Ripper		Shift Basis:	1 p	er day	
	C (D 11				Data Source:	((CRG)	
	Cost Breakdown	<u>:</u>			Utilization %			
		Ownership C	Cost/Hour:	\$93.62	NA			
	Dinn	Operating C	Cost/Hour:	\$73.35	<u>100</u>			
	Ripp	per Ownersnip (Cost/Hour:	\$8.93	<u> </u>			
	цр	Operator C	Cost/Hour:	\$41.52	NA			
		Total Unit C	Cost/Hour:	\$225.20				
		Total Fleet C	Cost/Hour: \$450	.40				
	MATERIAL (QUANTITIE	<u>S</u> Sele	cted estimating	method: Area			
	Alternate Metho	ds:						
Seismic:	NA		Bank Volume:	NA	BCY		NA	
Area:	8.20	acres	Rip Depth (ft):	2.00	Volume:26,4	459		BCY or CCY
		Source of est	imated quantity: TR-42					
	HOURLY PR	ODUCTION						
	Seismic:			N 7.4	6 /			
			Seismic Velocity:	NA	feet/second	l		
	Area:		Distant Devil	2.56	C			
		Avera	ge Ripping Depth:	2.56	feet/pass			
		Averag	ge Ripping Length:	100.00	feet/pass			
		Ave	rage Dozer Speed:	88.00	feet/minute			
		Averag	e Maneuver Time:	0.25	minutes/pa	SS		
		Produ	ction per unit area:	0.703	acres/hour			
	Job Condition C	orrection Factor	<u>rs</u>					
	Uı	nadjusted Hourl	y Unit Production:	0.703	Acres/hr			
			Site Altitude:	6,600	feet			
			Altitude Adj:	1.00	(CAT HB)	`		
			Job Efficiency:	0.83	(1 shift/day	7)		
				0.05				
		Adjusted Adjusted	d Hourly Unit Production:	0.58	Acres/hr Acres/hr			
	JOB TIME AT	ND COST						
	Fleet size)	Grader(s)	Total ioh tim	e. 70	2	Ho	urs
		4005 510				<u> </u>	110	41 0
	Unit cost:	\$385.719	Per acre	Total job cos	st: \$3,1	63		

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BULLDOZER WORK

Nakasita Dusisat				
Nancome Project	Permit Act	ion: TR-42	Permit/Job#:	M1983194
PROJECT IDENTIFI	CATION			
Task #: 04C	State: Color	rado	Abbreviation:	None
Date: 5/15/2019	County: Rio E	Blanco	Filename:	M194-04c
User: <u>ACY</u>				
Agency or organ	ization name: DRMS			
HOURLY EQUIPME	NT COST			
Basic Machine: Cat	D8T - 8SU			
Horsepower: 310				
Blade Type: Sem	ni-Universal			
Attachment: NA	a dou			
Data Source: (CR	G)			
Cost Breakdown:		T 12:11		
Ownership Cost/Hours	\$03	NA	<u>_</u>	
Operating Cost/Hour	\$95	3.35 100		
Ripper own. Cost/Hour:	\$0	0.00 NA		
Ripper op. Cost/Hour:	\$0	0.00 0		
Operator Cost/Hour:	\$41	.52 NA		
MATERIAL QUANT	<u>ITTES</u>			
Initial Volume: 6,615	5			
Initial Volume:6,615Swell factor:1.000Loose volume:6,615	5) 5 LCY			
Initial Volume: 6,615 Swell factor: 1.000 Loose volume: 6,615 Source of estimated volum	5) 5 LCY ne: 8.2 ac @ 6" dept	:h		
Initial Volume: 6,615 Swell factor: 1.000 Loose volume: 6,615 Source of estimated volum Source of estimated swell	5 5 LCY ne: 8.2 ac @ 6" dept factor: Cat Handbook	.h		
Initial Volume: 6,615 Swell factor: 1.000 Loose volume: 6,615 Source of estimated volum Source of estimated swell HOURLY PRODUCT	5 5 LCY me: 8.2 ac @ 6" dept factor: Cat Handbook	:h		
Initial Volume: 6,615 Swell factor: 1.000 Loose volume: 6,615 Source of estimated volum Source of estimated swell HOURLY PRODUCT Average push distance:	5 5 LCY ne: <u>8.2 ac @ 6" dept</u> factor: <u>Cat Handbook</u> YION 150 feet	:h		
Initial Volume: 6,615 Swell factor: 1.000 Loose volume: 6,615 Source of estimated volum Source of estimated swell HOURLY PRODUCT Average push distance: Unadjusted hourly produc	5 5 LCY ne: <u>8.2 ac @ 6" dept</u> factor: <u>Cat Handbook</u> TON <u>150 feet</u> tion: <u>634.3 LCY/hr</u>	:h		
Initial Volume: 6,615 Swell factor: 1.000 Loose volume: 6,615 Source of estimated volum Source of estimated swell HOURLY PRODUCT Average push distance: Unadjusted hourly produc	5 5 LCY ne: 8.2 ac @ 6" dept factor: Cat Handbook TON tion: 150 feet tion: 634.3 LCY/hr cription: Loose stockpil	h		
Initial Volume: 6,615 Swell factor: 1.000 Loose volume: 6,615 Source of estimated volum Source of estimated swell HOURLY PRODUCT Average push distance: Unadjusted hourly produc Materials consistency desc Average push gradient:	5 5 LCY ne: <u>8.2 ac @ 6" dept</u> factor: <u>Cat Handbook</u> TON tion: <u>150 feet</u> tion: <u>634.3 LCY/hr</u> cription: <u>Loose stockpil</u> 0 %	le 1.2		
Initial Volume: 6,615 Swell factor: 1.000 Loose volume: 6,615 Source of estimated volum Source of estimated swell HOURLY PRODUCT Average push distance: Unadjusted hourly produc Materials consistency dese Average push gradient: Average site altitude:	5 5 5 5 5 5 5 5 5 5 5 5 5 6 6 6 6 6 6 6 6 6 6 6 6 6 6	ih 		
Initial Volume: 6,615 Swell factor: 1.000 Loose volume: 6,615 Source of estimated volum Source of estimated volum Source of estimated swell HOURLY PRODUCT Average push distance: Unadjusted hourly product Materials consistency desc Average site altitude: Material weight:	5 5 5 5 5 5 5 5 5 5 5 5 6 6 1 5 6 6 6 1 6 6 1 6 1 6 1 6 1 6 1 6 1 6 1 6 1 6 1 6 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 <td< td=""><td>h</td><td></td><td></td></td<>	h		
Initial Volume: 6,61! Swell factor: 1.000 Loose volume: 6,61! Source of estimated volum Source of estimated volum Source of estimated swell HOURLY PRODUCT Average push distance: Unadjusted hourly product Materials consistency desc Average site altitude: Material weight: Weight description:	5 5 5 5 5 5 5 5 5 5 5 5 15	ih 		
Initial Volume: 6,61! Swell factor: 1.000 Loose volume: 6,61! Source of estimated volum Source of estimated volum Source of estimated swell HOURLY PRODUCT Average push distance: Unadjusted hourly product Materials consistency desc Average site altitude: Material weight: Weight description: Job Condition Correction	5 5 5 5 5 5 5 5 5 5 5 5 1 6 6 6 6 6 1 6 6 1 6 1 6 1 600 1	ih le 1.2 		
Initial Volume: 6,61f Swell factor: 1.000 Loose volume: 6,61f Source of estimated volum Source of estimated volum Source of estimated swell HOURLY PRODUCT Average push distance: Unadjusted hourly product Materials consistency desc Average push gradient: Average site altitude: Material weight: Weight description: Job Condition Correction Operator S	5 5 5 5 5 5 5 5 5 5 5 5 5 5 6 6 6 6 6 6 6 6 7	ih 		
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Initial Volume: 6,615 Swell factor: 1.000 Loose volume: 6,615 Source of estimated volum Source of estimated volum Source of estimated swell HOURLY PRODUCT Average push distance: Unadjusted hourly produc Materials consistency desc Average push gradient: Average site altitude: Material weight: Weight description: Job Condition Correction Operator S	5 5 5 5 5 5 5 5 5 5 5 5 15 15 150 1600 150 1600 150 1600 1600 170	:h 		

Job efficience	cy: 0.830	(1 SHIFT/DAY)
Spoil pi	le: 0.800	(FND-RF)
Push gradier	nt: 1.000	(CAT HB)
Altitud	le: 1.000	(CAT HB)
Material Weigl	ht: 1.438	(CAT HB)
Blade typ	be: 1.000	(PAT)
Net correction	on: 0.8593	
Adjusted unit production:	545.05 LCY/hr	
Adjusted fleet production:	1090.1 LCY/hr	
-		

Fleet size:	2 Dozer(s)
Unit cost:	\$0.383/LCY

Total job time:	6.07 Hours
Total job cost:	\$2,530

REVEGETATION WORK

e: <u>Nahcolite</u>	e Project	Permit Action:	2 Permit/Job#:M198319
<u>PROJECT</u>	IDENTIFIC	CATION	
Task #: Date:	04D 5/15/2019	State:ColoradoCounty:Rio Blanco	Abbreviation: None Filename: M194-04d

FERTILIZING

Materials

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

Application

Description	Cost /Acre
	\$
Total Fertilizer Application Cost/Ac	re sa aa

TILLING

Description	Cost /Acre
Disc harrowing, 6" deep (MEANS 32 91 13.23 6100)	\$106.29
Weed control spraying (MEANS 31 31 16.13 3100)	\$193.60
Total Tilling Cost/Acre	\$299.89

SEEDING

Seed Mix	Rate – PLS LBS / Acre	Seeds per SQ. FT	Cost /Acre
Alkali Sacaton	0.10	3.90	\$2.90
Crested Wheatgrass - Ephraim	4.00	18.37	\$15.00
Blue Wildrye - Arlington or Elkton	1.50	5.17	\$9.99
Russian Wildrye - Bozoisky	1.50	6.03	\$9.72
Hard Fescue - Discovery	1.00	12.97	\$3.80
Pubescent Wheatgrass - Luna	1.50	3.10	\$6.26
Yellow Sweet Clover - Madrid	0.50	2.98	\$1.45
Tall Wheatgrass - Jose	1.80	3.26	\$4.46
Thickspike Wheatgrass - Critana	4.30	15.20	\$25.24

Sweetvetch, Utah or Northern	0.10	0.05	\$7.68
Western Wheatgrass - Barton	1.50	3.79	\$11.66
Yarrow, Western	0.20	12.16	\$8.56
Totals Seed Mix	18.00	86.97	\$106.71

Application

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

MULCHING and MISCELLANEOUS

Materials

	Units /			
Description	Acre	Unit	Cost / Unit	Cost /Acre
Herbicide - 2,4D @ 1.0 pt/ac	2.00	ACRE	\$2.81	\$5.61
Straw, delivered {MEANS 31 25 14.16 1200}	2.00	TON	\$288.00	\$576.00
Total Mulch Materials Cost/Acre				\$581.61

Application

Description		Cost /Acre
Crimping, with tractor {DMG survey data}		\$68.78
Power mulcher (MEANS 32 91 13.16 0350)		\$92.78
Weed spray, truck, non-aquatic area, nox. [DMG]		\$73.22
	Total Mulch Application Cost/Acre	\$234.78

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. o Estimated Failu *Selected Replanting Wo	of Acres: 8.2 ure Rate: 30% rk Items: TILLING	Cost /Ac Cost /Ac SEEDING,MULCHING	re: \$1,454.99 e*: \$1,454.99
Initial Job Cost: \$11,9 Reseeding Job Cost: \$3,57 Total Job Cost: \$15,5 Job Hours: 12.30	30.92 9.28 10		

Page 1 of 2

BULLDOZER WORK

rr	n:		Kegrade	wen Pa	ads				
: Nahcolite Pr	roject			Per	mit Action:	TR-42		Permit/Job#:	M1983194
PROJECT II	DENI	TIFIC	ATION						
Task #: 0	5A			State:	Colorado			Abbreviation:	None
Date: 5	/7/201	.9	C	County:	Rio Blanc	0		Filename:	M194-05a
User: A	CY	-		j.		-			
Ageno	ev or o	organiza	tion nam	e: DF	RMS				
HOURLY E	OUIP	MENT	г соят						
Basic Machi	no:	Cat DS	2T 2SII						
Horsepou			51 - 650						
Blade Tv	ne –	Semi-I	Iniversal						
Attachme	pc	NA	Jiiversai						
Shift Ba	sis	1 ner d	lav						
Data Sour		(CRG)							
		(010)							
Cost Breakdow	<u>'n</u> :						r. • . · .		
					¢02.62	<u> </u>	tilization %		
Ownership Co	ost/Ho	ur:			\$93.62		NA 100		
Operating Co	OSU/HO	ur:			\$/3.33		100 N 4		
Ripper own. Co	JSI/HO	ur:			\$0.00		<u>INA</u>		
Correction C	JSU/110	ui			\$U.UU \$ 41 50				
Operator Co	ost/Ho	ur:			\$41.52		NA		
Total Fleet Cos	oUA	r: <u>\$</u>	1208.49 1416.99						
Total Fleet Cos <u>MATERIAL</u> Initial Volum	QUA ne:	r: <u>\$</u> NTIT	1208.49 1416.99 IES						
Total Fleet Cos <u>MATERIAL</u> Initial Volum Swell factor Loose volum	QUA e:	r:\$ NTIT 126,098 1.115 140,599	208.49 416.99 IES 3						
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Total Fleet Cos <u>MATERIAL</u> Initial Volum Swell factor Loose volum Source of estim Source of estim	QUA QUA ae: apr: ae: apr:	*: *NTIT 126,098 1.115 140,599 701ume: well fac UCTIC	$\frac{1208.49}{1416.99}$ $\frac{1ES}{2}$ $\frac{1}{2}$ $\frac{1}{2}$ $\frac{1}{2}$ $\frac{3}{2}$	9.08 ac Cat Hand	of pads grad lbook	 e 24" dep	th		
Total Fleet Cos <u>MATERIAL</u> Initial Volum Swell facto Loose volum Source of estim Source of estim <u>HOURLY PH</u> Average push d	QUA e: pr: pr: mated v mated s RODU listance	r:	$\frac{1208.49}{1416.99}$ $\frac{1ES}{3}$ $\frac{1}{2}$ $\frac{1}{2}$ $\frac{3}{2}$	9.08 ac Cat Hand	of pads grad lbook	e 24" dep	th		
Total Fleet Cos <u>MATERIAL</u> Initial Volum Swell factor Loose volum Source of estim Source of estim <u>HOURLY PH</u> Average push d Unadjusted hou	QUA e: pr: pr: ie: mated v mated s RODI listanc	** ** ** ** ** ** ** ** ** ** ** ** ** ** ** ** ** ** ** **	$\frac{1208.49}{1416.99}$ $\frac{116.99}{16.99}$ $\frac{116.99}{16.99}$ $\frac{116.99}{16.99}$ $\frac{116.99}{16.99}$ $\frac{3}{10.00}$ $\frac{3}{10.00}$ $\frac{75 \pm 10.00}{10.00}$	9.08 ac Cat Hand feet 17.1 LC	of pads grad lbook	e 24" dep	<u>th</u>		
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Total Fleet Cos MATERIAL Initial Volum Swell factor Loose volum Source of estim Source of estim HOURLY PH Average push d Unadjusted hou Materials consi Average push g Average site alt Material weight Weight descript Job Condition C Material	QUA e: jor: ine: ine: ine: inated v nated v stency gradier titude: t: tion: Correct Operatial con Dozing	r:	208.49 208.49 416.99 IES 3 0 LCY 3 0 n: 1,0 ption: 0 % 6,600 feet 2,100 lbs/ Earth - Lo ctor II: y: d:	9.08 ac Cat Hand feet 17.1 LC Compa LCY am 0. 0. 1.		e 24" dep	th ent 0.9 Source (AVG.) (CAT HB)) (GEN.)		

Job efficient	cy: 0.830	(1 SHIFT/DAY)
Spoil pi	le: 0.800	(FND-RF)
Push gradie	nt: 1.000	(CAT HB)
Altitud	de: 1.000	(CAT HB)
Material Weig	ht: 1.095	(CAT HB)
Blade typ	pe: 1.000	(PAT)
Net correction	on: 0.4908	
Adjusted unit production:	499.19 LCY/hr	
Adjusted fleet production:	998.38 LCY/hr	

Fleet size:	2 Dozer(s)
Unit cost:	\$0.418/LCY

Total job time:	140.83 Hours
Total job cost:	\$58,723

Page 1 of 2

BULLDOZER WORK

Task description:	Topsoil	Well Pads			
: Nahcolite Project		Permit Action:	TR-42	Permit/Job#:	M1983194
PROJECT IDENT	TIFICATION	1			
Task #: 05B		State: Colorado		Abbreviation:	None
Date: $5/15/20$)19	County: Rio Blanc	0	Filename:	M194-05b
User: ACY		·			
Agency or c	rganization na	me' DRMS			
HOURLY FOUIP	MENT COS	Г			
D i M li i		<u> </u>			
Basic Machine:	Cat D8T - 8SU	J			
Blade Type:	Somi Universe	1			
Attachment:	NA	11			
Shift Basis	1 per day				
Data Source:	(CRG)				
	(end)				
Cost Breakdown:			TT.'11		
Orren englisher Orent /II		¢02.72	Utilization %		
Ownersnip Cost/Ho	ur:	\$93.62	100		
Dipperating Cost/Ho	ur:	\$75.55	100 NA		
Ripper own. Cost/Ho	ur:	\$0.00	NA 0		
Ripper op. Cost/110	ui.	\$41.50			
Operator Cost/He	1100				
Operator Cost/Ho	ur:	\$41.32	NA		
Operator Cost/Ho Total unit Cost/Hour:	ur:\$208.49	\$41.52	NA		
Operator Cost/Ho Total unit Cost/Hour: Total Fleet Cost/Hour	ur: \$208.49 r: \$416.99	\$41.32	NA		
Operator Cost/Ho Total unit Cost/Hour: Total Fleet Cost/Hour	ur: \$208.49 r: \$416.99	\$41.32	NA		
Operator Cost/Ho Total unit Cost/Hour: Total Fleet Cost/Hour MATERIAL QUA	ur: \$208.49 r: \$416.99	\$41.32	NA		
Operator Cost/Ho Total unit Cost/Hour: Total Fleet Cost/Hour MATERIAL QUA Initial Volume:	ur: \$208.49 r: \$416.99 NTITIES 31,524	\$41.32			
Operator Cost/Ho Total unit Cost/Hour: Total Fleet Cost/Hour MATERIAL QUA Initial Volume:	ur: \$208.49 r: \$416.99 NTITIES 31,524 1.000	\$41.32	NA		
Operator Cost/Ho Total unit Cost/Hour: Total Fleet Cost/Hour MATERIAL QUA Initial Volume: Swell factor: Loose volume:	ur: \$208.49 r: \$416.99 ANTITIES 31,524 1.000 31,524 LCY				
Operator Cost/Ho Total unit Cost/Hour: Total Fleet Cost/Hour MATERIAL QUA Initial Volume: Swell factor: Loose volume: Source of estimated x	ur: \$208.49 r: \$208.49 \$416.99 NTITIES 31,524 1.000 31,524 LCY volume:	\$41.32			
Operator Cost/Ho Total unit Cost/Hour: Total Fleet Cost/Hour <u>MATERIAL QUA</u> Initial Volume: Swell factor: Loose volume: Source of estimated y Source of estimated s	ur: \$208.49 r: \$416.99 NTITIES 31,524 1.000 31,524 LCY volume: well factor:	39.08 ac @ 6" depth Cat Handbook			
Operator Cost/Ho Total unit Cost/Hour: Total Fleet Cost/Hour MATERIAL QUA Initial Volume: Swell factor: Loose volume: Source of estimated v Source of estimated s	ur: \$208.49 r: \$416.99 NTITIES 31,524 1.000 31,524 LCY volume: well factor:	\$41.32 \$41.32 39.08 ac @ 6" depth Cat Handbook			
Operator Cost/Ho Total unit Cost/Hour: Total Fleet Cost/Hour MATERIAL QUA Initial Volume: Swell factor: Loose volume: Source of estimated v Source of estimated s	ur:	39.08 ac @ 6" depth Cat Handbook			
Operator Cost/Ho Total unit Cost/Hour: Total Fleet Cost/Hour MATERIAL QUA Initial Volume: Swell factor: Loose volume: Source of estimated v Source of estimated s HOURLY PRODU	ur:	39.08 ac @ 6" depth Cat Handbook			
Operator Cost/Ho Total unit Cost/Hour: Total Fleet Cost/Hour MATERIAL QUA Initial Volume: Swell factor: Loose volume: Source of estimated v Source of estimated s HOURLY PRODU	ur:	39.08 ac @ 6" depth Cat Handbook			
Operator Cost/Ho Total unit Cost/Hour: Total Fleet Cost/Hour MATERIAL QUA Initial Volume: Swell factor: Loose volume: Source of estimated v Source of estimated s HOURLY PRODU Average push distanc Unadjusted hourly pr	ur:\$208.49 r:\$416.99 NTITIES 31,524 1.000 31,524 LCY volume: well factor: UCTION re:15 oduction:63	39.08 ac @ 6" depth Cat Handbook			
Operator Cost/Ho Total unit Cost/Hour: Total Fleet Cost/Hour MATERIAL QUA Initial Volume: Swell factor: Loose volume: Source of estimated v Source of estimated v Source of estimated s HOURLY PRODU Average push distanc Unadjusted hourly pro- Materials consistency	ur:	39.08 ac @ 6" depth Cat Handbook 50 feet 34.3 LCY/hr Loose stockpile 1.2			
Operator Cost/Ho Total unit Cost/Hour: Total Fleet Cost/Hour MATERIAL QUA Initial Volume: Swell factor: Loose volume: Source of estimated v Source of estimated v Source of estimated s HOURLY PRODU Average push distanc Unadjusted hourly pr Materials consistency	ur: \$208.49 r: \$416.99 xNTITIES 31,524 31,524 1.000 31,524 LCY 2000 volume: well factor: UCTION 63 v description: 63 v description: 63	39.08 ac @ 6" depth Cat Handbook 50 feet 34.3 LCY/hr Loose stockpile 1.2			
Operator Cost/Ho Total unit Cost/Hour: Total Fleet Cost/Hour MATERIAL QUA Initial Volume: Swell factor: Loose volume: Source of estimated v Source of estimated v Source of estimated s HOURLY PRODU Average push distanc Unadjusted hourly pro Materials consistency Average push gradier Average site altitude:	ur: $$208.49$ r: $$416.99$ well factor: $$1,524$ 1.000 $31,524$ 200.00 $31,524$ <td< td=""><td>39.08 ac @ 6" depth 39.08 ac @ 6" depth Cat Handbook 341.32</td><td></td><td></td><td></td></td<>	39.08 ac @ 6" depth 39.08 ac @ 6" depth Cat Handbook 341.32			
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Operator Cost/Ho Total unit Cost/Hour: Total Fleet Cost/Hour: MATERIAL QUA Initial Volume: Swell factor: Loose volume: Source of estimated v Source of estimated v Source of estimated s HOURLY PRODU Average push distanc Unadjusted hourly pro Materials consistency Average push gradier Average site altitude: Material weight: Weight description: Job Condition Correc	ur:	39.08 ac @ 6" depth 39.08 ac @ 6" depth Cat Handbook 60 feet 34.3 LCY/hr Loose stockpile 1.2 et 5/LCY			
Operator Cost/Ho Total unit Cost/Hour: Total Fleet Cost/Hour: MATERIAL QUA Initial Volume: Swell factor: Loose volume: Source of estimated v Source of estimated v Source of estimated v Source of estimated s HOURLY PRODU Average push distanc Unadjusted hourly pr Materials consistency Average push gradier Average site altitude: Material weight: Weight description: Job Condition Correct Opera	ur: \$208.49 r: \$416.99 xNTITIES 31,524 31,524 1.000 31,524 LCY 20100 volume: well factor: UCTION 63 v description: 63 v description: 63 nt: 0 %	39.08 ac @ 6" depth 39.08 ac @ 6" depth Cat Handbook 50 feet 34.3 LCY/hr Loose stockpile 1.2 et 5/LCY 0.750			
Operator Cost/Ho Total unit Cost/Hour: Total Fleet Cost/Hour: MATERIAL QUA Initial Volume: Swell factor: Source of estimated v Source of estimated v Source of estimated s HOURLY PRODU Average push distanc Unadjusted hourly pr Materials consistency Average push gradier Average site altitude: Material weight: Weight description: Job Condition Correct Opera Material con	ur: \$208.49 r: \$416.99 xmrities 31,524 31,524 31,524 1.000 31,524 31,524 CY volume: well factor: well factor: well factor: volume: well factor: volume: well factor: oduction: oduction: oduction: for description: nt:	39.08 ac @ 6" depth 39.08 ac @ 6" depth Cat Handbook 50 feet 341.3 LCY/hr Loose stockpile 1.2 et 6/LCY 0.750 1.200			
Operator Cost/Ho Total unit Cost/Hour: Total Fleet Cost/Hour: Total Fleet Cost/Hour: MATERIAL QUA Initial Volume: Swell factor: Loose volume: Source of estimated v Source of estimated v Source of estimated v Source of estimated s HOURLY PRODU Average push distance Unadjusted hourly pro- Materials consistency Average push gradier Average site altitude: Material weight: Weight description: Job Condition Correct Opera Material con Dozing	ur: \$208.49 r: \$416.99 xnTITIES 31,524 31,524	39.08 ac @ 6" depth 39.08 ac @ 6" depth Cat Handbook 50 feet 341.3 LCY/hr Loose stockpile 1.2 et 6/LCY 0.750 1.200 1.000	<u>Source</u> (AVG.) (CAT HB) (GEN.)		

Job efficient	cy:	0.830	(1 SHIFT/DAY)
Spoil pi	le:	0.800	(FND-RF)
Push gradie	nt:	1.000	(CAT HB)
Altitud	de:	1.000	(CAT HB)
Material Weig	ht:	1.438	(CAT HB)
Blade typ	pe:	1.000	(PAT)
Net correction	on: 0.859.	3	
Adjusted unit production:	545.05 LC	CY/hr	
Adjusted fleet production:	1090.1 LC	CY/hr	

Fleet size:	2 Dozer(s)
Unit cost:	\$0.383/LCY

Total job time:	28.92 Hours
Total job cost:	\$12,059

REVEGETATION WORK

	Permit Action: <u>TR-42</u>	Permit/Job#:M1983194
PROJECT IDENTIFIC	CATION	
Task #: 05C Date: 5/15/2019 User: ACY	State: Colorado County: Rio Blanco	Abbreviation:NoneFilename:M194-05c

FERTILIZING

Materials

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

Application

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

TILLING

Description	Cost /Acre
Disc harrowing, 6" deep (MEANS 32 91 13.23 6100)	\$106.29
Weed control spraying (MEANS 31 31 16.13 3100)	\$193.60
Total Tilling Cost/Acre	\$299.89

SEEDING

Seed Mix	Rate – PLS LBS / Acre	Seeds per SQ. FT	Cost /Acre
Alkali Sacaton	0.10	3.90	\$2.90
Crested Wheatgrass - Ephraim	4.00	18.37	\$15.00
Blue Wildrye - Arlington or Elkton	1.50	5.17	\$9.99
Russian Wildrye - Bozoisky	1.50	6.03	\$9.72
Hard Fescue - Discovery	1.00	12.97	\$3.80
Pubescent Wheatgrass - Luna	1.50	3.10	\$6.26
Yellow Sweet Clover - Madrid	0.50	2.98	\$1.45
Tall Wheatgrass - Jose	1.80	3.26	\$4.46
Thickspike Wheatgrass - Critana	4.30	15.20	\$25.24

Sweetvetch, Utah or Northern	0.10	0.05	\$7.68
Western Wheatgrass - Barton	1.50	3.79	\$11.66
Yarrow, Western	0.20	12.16	\$8.56
Totals Seed Mix	18.00	86.97	\$106.71

Application

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

MULCHING and MISCELLANEOUS

Materials

	Units /			
Description	Acre	Unit	Cost / Unit	Cost /Acre
Herbicide - 2,4D @ 1.0 pt/ac	2.00	ACRE	\$2.81	\$5.61
Straw, delivered {MEANS 31 25 14.16 1200}	2.00	TON	\$288.00	\$576.00
Total Mulch Materials Cost/Acre				\$581.61

Application

Description		Cost /Acre
Crimping, with tractor {DMG survey data}		\$68.78
Power mulcher (MEANS 32 91 13.16 0350)		\$92.78
Weed spray, truck, non-aquatic area, nox. [DMG]		\$73.22
	Total Mulch Application Cost/Acre	\$234.78

NURSERY STOCK PLANTING

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

Estimate *Selected Replantir	No. of Acres: d Failure Rate: ng Work Items:	39.08 30% TILLING,SEEDIN	Cost /Acre: Cost /Acre*: NG,MULCHING	\$1,454.99 \$1,454.99	
Initial Job Cost: Reseeding Job Cost: Total Job Cost: Job Hours:	\$56,861.01 \$17,058.30 \$73,919 58.62				

BULLDOZER RIPPING WORK

	Task description:	Decompact Roads			
Site:	Nahcolite Projec	t Permit Actio	on: <u>TR-42</u>	Permit/Jo	b#: <u>M1983194</u>
	PROJECT IDEN	TIFICATION			
	Task #: 06A Date: 5/15/2 User: ACY	019 State: Colora County: Rio Bl	do anco	Abbreviation Filename	n: <u>None</u> e: <u>M194-06a</u>
	Agency or	organization name: DRMS			
	HOURLY EOUI	PMENT COST			
	Basic Ma	chine: Cat D8T - 8SU		Horsepower:	310
	Ripper Attach	ment: 3-Shank Ripper		Shift Basis: Data Source:	1 per day (CRG)
	Cost Breakdown:				
			¢02.c2	Utilization %	
	(Operating Cost/Hour:	\$93.62	<u>NA</u> 100	
	Ripper (Ownership Cost/Hour:	\$8.93	NA	
	Ripper	Operating Cost/Hour:	\$7.78	100	
		Operator Cost/Hour:	\$41.52	NA	
	,	Fotal Unit Cost/Hour:	\$225.20		
	1	Total Fleet Cost/Hour:	\$450.40		
	MATERIAL QU	ANTITIES	Selected estimating	method: Area	
	Alternate Methods:				
Seismic:	NA	Bank Volum	e: NA	BCY	NA
Area:	6.16	acres Rip Depth (ft): 2.00	Volume: 19,876	BCY or CC
	S	ource of estimated quantity:	-42		
	HOURLY PROD	UCTION			
	Seismic:				
	<u></u>	Seismic Velocity:	NA	feet/second	
	Area:				
	<u>Indu.</u>	Average Ripping Depth:	2.56	feet/pass	
		Average Ripping Width:	7.08	feet/pass	
		Average Ripping Length:	150.00	feet/pass	
		Average Dozer Speed:	88.00	feet/minute	
		Production per unit area:	0.23	minutes/pass	
	Job Condition Corre	ction Factors	0.710		
	Unadi	usted Hourly Unit Production:	0.748	A cres/hr	
	Ollady		0.748		
		Altitude:	<u> </u>	(CAT HB)	
		Job Efficiency:	0.83	(1 shift/day)	
		Net Correction:	0.83	multiplier	
		Adjusted Hourly Unit Producti Adjusted Hourly Fleet Producti	on: 0.62	Acres/hr	
	IOR TIME AND	COST			
	Fleet size:	2 Grader(s)	Total job tim	e: 4.96	Hours
	Unit cost:	262 524 Der eere	Total ich ac	et. \$2.323	

Page 1 of 2

BULLDOZER WORK

Task description:	Tops	on roaus					
: Nahcolite Project	t	Perm	it Action:	TR-42	Permit/J	lob#: <u>N</u>	M1983194
PROJECT IDEN	TIFICATI	<u>ON</u>					
Task #: 06B		State:	Colorado		Abbreviati	on: N	one
Date: $5/15/2$	019	County:	Rio Blanco)	Filena	ne: M	[194-06b
User: ACY		<u> </u>					
Agency or	organization	name: DRM	MS				
HOURLY EQUI	<u>PMENT CO</u>	<u>DST</u>					
Basic Machine:	Cat D8T - 8	SU					
Horsepower:	310			_			
Blade Type:	Semi-Unive	ersal		_			
Attachment:	NA						
Shift Basis:	1 per day						
Data Source:	(CRG)			_			
Cost Breakdown:							
				<u>Utilization</u>	<u>%</u>		
Ownership Cost/He	our:		\$93.62	NA			
Operating Cost/He	our:		\$73.35	100			
Ripper own. Cost/He	our:		\$0.00	NA			
Ripper op. Cost/He	our:		\$0.00	0			
Operator Cost/He	our:		\$41.52	NA			
Total unit Cost/Hou Total Fleet Cost/Hou	:: \$208.4 ur: \$416. 9	49 99					
Total unit Cost/Hour Total Fleet Cost/Hou MATERIAL QUA	:: \$208. Ir: \$416. ANTITIES	49 99					
Total unit Cost/Hou Total Fleet Cost/Hou <u>MATERIAL QU</u> Initial Volume:	:: \$208. 1r: \$416. ANTITIES 4,969	49 99					
Total unit Cost/Hour Total Fleet Cost/Hour MATERIAL QUA Initial Volume: Swell factor:	:: \$208. Ir: \$416. ANTITIES 4,969 1.000	49 99					
Total unit Cost/Hour Total Fleet Cost/Hour MATERIAL QUA Initial Volume: Swell factor: Loose volume:	:: \$208. Ir: \$416. ANTITIES 4,969 1.000 4,969 LCY	49 99					
Total unit Cost/Hou Total Fleet Cost/Hou MATERIAL QUA Initial Volume: Swell factor: Loose volume: Source of estimated	:: \$208. Ir: \$416. ANTITIES 4,969 1.000 4,969 LCY volume:	49 99 6.16 ac @					
Total unit Cost/Hou Total Fleet Cost/Hou MATERIAL QUA Initial Volume: Swell factor: Loose volume: Source of estimated Source of estimated	:: \$208. Ir: \$416. ANTITIES 4,969 1.000 4,969 LCY volume: swell factor:	49 99 6.16 ac @ Cat Handb					
Total unit Cost/Hou Total Fleet Cost/Hou MATERIAL QUA Initial Volume: Swell factor: Loose volume: Source of estimated Source of estimated	:: \$208. Ir: \$416. ANTITIES 4,969 1.000 4,969 LCY volume: swell factor:	49 99 6.16 ac @ Cat Handb	 6" depth ook				
Total unit Cost/Hour Total Fleet Cost/Hour MATERIAL QUA Initial Volume: Swell factor: Loose volume: Source of estimated Source of estimated HOURLY PROD	:: \$208. IT: \$416. ANTITIES 4,969 1.000 4,969 LCY volume: swell factor: UCTION	49 99 6.16 ac @ Cat Handb	 6" depth ook				
Total unit Cost/Hou Total Fleet Cost/Hou MATERIAL QUA Initial Volume: Swell factor: Loose volume: Source of estimated Source of estimated HOURLY PROD Average push distan	:: \$208. III: \$416. ANTITIES 4,969 1.000 4,969 LCY volume: swell factor: UCTION ce:	49 99 6.16 ac @ Cat Handb 150 feet	- - 6" depth ook				
Total unit Cost/Hou Total Fleet Cost/Hou MATERIAL QUA Initial Volume: Swell factor: Loose volume: Source of estimated Source of estimated HOURLY PROD Average push distan Unadjusted hourly p	:: \$208. Ir: \$416. ANTITIES 4,969 1.000 4,969 LCY volume: swell factor: UCTION ce: roduction:	49 99 6.16 ac @ Cat Handb 150 feet 634.3 LCY/h	 6" depth ook				
Total unit Cost/Hou Total Fleet Cost/Hou MATERIAL QUA Initial Volume: Swell factor: Loose volume: Source of estimated Source of estimated HOURLY PROD Average push distan Unadjusted hourly p	:: \$208. Ir: \$416. ANTITIES 4,969 1.000 4,969 LCY volume: swell factor: UCTION ce: roduction: y description	49 99 6.16 ac @ Cat Handb 150 feet 634.3 LCY/h : Loose st					
Total unit Cost/Hou Total Fleet Cost/Hou MATERIAL QUA Initial Volume: Swell factor: Loose volume: Source of estimated Source of estimated HOURLY PROD Average push distan Unadjusted hourly p Materials consistenc Average push gradie Average site altitude	\$208. ur: \$416. 4,969 1.000 4,969 LCY volume: swell factor: UCTION ce: roduction: y description nt: 0 % : 6,600	49 99 6.16 ac @ Cat Handb 150 feet 634.3 LCY/h : Loose st feet	- 6" depth ook r ockpile 1.2				
Total unit Cost/Hou Total Fleet Cost/Hou MATERIAL QUA Initial Volume: Swell factor: Loose volume: Source of estimated Source of estimated HOURLY PROD Average push distan Unadjusted hourly p Materials consistenc Average push gradie Average site altitude Material weight:	:: \$208. Ir: \$416. ANTITIES 4,969 1.000 4,969 LCY volume: swell factor: UCTION ce: roduction: _ y description nt: 0 % : 6,600 _1,600	49 99 6.16 ac @ Cat Handb 150 feet 634.3 LCY/h : Loose st feet lbs/LCY	- 6" depth ook r ockpile 1.2				
Total unit Cost/Hou Total Fleet Cost/Hou MATERIAL QUA Initial Volume: Swell factor: Loose volume: Source of estimated Source of estimated HOURLY PROD Average push distan Unadjusted hourly p Materials consistenc Average push gradie Average site altitude Material weight: Weight description:	:: \$208. Ir: \$416. ANTITIES 4,969 1.000 4,969 LCY volume: swell factor: UCTION ce: roduction: y description nt: 0 % : 6,600 Top S	49 99 6.16 ac @ Cat Handb 150 feet 634.3 LCY/h : Loose st feet lbs/LCY coil	- - - 6" depth ook r ockpile 1.2				
Total unit Cost/Hou Total Fleet Cost/Hou MATERIAL QUA Initial Volume: Swell factor: Loose volume: Source of estimated Source of estimated HOURLY PROD Average push distan Unadjusted hourly p Materials consistenc Average push gradie Average site altitude Material weight: Weight description: Job Condition Corre	:: \$208. Ir: \$416. ANTITIES 4,969 1.000 4,969 LCY volume: swell factor: UCTION ce: roduction: y description nt: 0 % : 6,600 Top S ction Factor	49 99 6.16 ac @ Cat Handb 150 feet 634.3 LCY/h : Loose st feet lbs/LCY soil	- - - 6" depth ook r ockpile 1.2				
Total unit Cost/Hou Total Fleet Cost/Hou MATERIAL QUA Initial Volume: Swell factor: Loose volume: Source of estimated Source of estimated Mource of estimated HOURLY PROD Average push distan Unadjusted hourly p Materials consistenc Average push gradie Average site altitude Material weight: Weight description: Job Condition Corre Oper	:: \$208. Ir: \$416. ANTITIES 4,969 1.000 4,969 LCY volume: swell factor: UCTION ce: roduction: y description nt: 0 % : 6,600 1,600 Con Section Factor ator Skill:	49 99 6.16 ac @ Cat Handb 150 feet 634.3 LCY/h : Loose st feet lbs/LCY coil 0.7			<u>—</u>		
Total unit Cost/Hou Total Fleet Cost/Hou MATERIAL QUA Initial Volume: Swell factor: Loose volume: Source of estimated Source of estimated Mource of estimated HOURLY PROD Average push distan Unadjusted hourly p Materials consistenc Average push gradie Average site altitude Material weight: Weight description: Job Condition Corre Oper Material co	:: \$208. Ir: \$416. ANTITIES 4,969 1.000 4,969 LCY volume: swell factor: UCTION ce: roduction: y description nt: 0 % : 6,600 Top S ction Factor ator Skill: nsistency:	49 99 6.16 ac @ Cat Handb 150 feet 634.3 LCY/h : Loose st feet lbs/LCY foil 0.7 1.2			<u>ce</u> 3.) HB)		
Total unit Cost/Hou Total Fleet Cost/Hou Total Fleet Cost/Hou Initial Volume: Swell factor: Loose volume: Source of estimated Source of estimated HOURLY PROD Average push distan Unadjusted hourly p Materials consistenc Average push gradie Average site altitude Material weight: Weight description: Job Condition Corre Oper Material co Dozin	:: \$208. Ir: \$416. ANTITIES 4,969 1.000 4,969 LCY volume: swell factor: UCTION ce: roduction: y description nt:0 % :6600 1600 Ction Factor ator Skill: nsistency: g method:	49 99 6.16 ac @ Cat Handb 150 feet 634.3 LCY/h : Loose st feet lbs/LCY coil 0.7 1.2 1.0			<u>ce</u> 3.) <u>HB)</u> N.)		

Job efficience	cy: 0.830	(1 SHIFT/DAY)
Spoil pi	le: 0.800	(FND-RF)
Push gradie	nt: 1.000	(CAT HB)
Altitud	le: 1.000	(CAT HB)
Material Weight	ht: 1.438	(CAT HB)
Blade typ	be: 1.000	(PAT)
Net correction	on: 0.8593	
Adjusted unit production:	545.05 LCY/hr	
Adjusted fleet production:	1090.1 LCY/hr	

Fleet size:	2 Dozer(s)
Unit cost:	\$0.383/LCY

Total job time:	4.56 Hours
Total job cost:	\$1,901

REVEGETATION WORK

te: Na	hcolite Project	Permit Action: TR-42	Permit/Job#: <u>M198319</u>
<u>PROJ</u>	ECT IDENTIFIC	CATION	
	sk #: 06C	State: Colorado	Abbreviation: None
Та	SK #. 00C		
Ta I	Date: $5/15/2019$	County: Rio Blanco	Filename: M194-06c

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/Ac	re sa aa

TILLING

Description	Cost /Acre
Disc harrowing, 6" deep (MEANS 32 91 13.23 6100)	\$106.29
Weed control spraying (MEANS 31 31 16.13 3100)	\$193.60
Total Tilling Cost/Acre	\$299.89

SEEDING

Seed Mix	Rate – PLS LBS / Acre	Seeds per SQ. FT	Cost /Acre
Alkali Sacaton	0.10	3.90	\$2.90
Crested Wheatgrass - Ephraim	4.00	18.37	\$15.00
Blue Wildrye - Arlington or Elkton	1.50	5.17	\$9.99
Russian Wildrye - Bozoisky	1.50	6.03	\$9.72
Hard Fescue - Discovery	1.00	12.97	\$3.80
Pubescent Wheatgrass - Luna	1.50	3.10	\$6.26
Yellow Sweet Clover - Madrid	0.50	2.98	\$1.45
Tall Wheatgrass - Jose	1.80	3.26	\$4.46
Thickspike Wheatgrass - Critana	4.30	15.20	\$25.24

Sweetvetch, Utah or Northern	0.10	0.05	\$7.68
Western Wheatgrass - Barton	1.50	3.79	\$11.66
Yarrow, Western	0.20	12.16	\$8.56
Totals Seed Mix	18.00	86.97	\$106.71

Application

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

MULCHING and MISCELLANEOUS

Materials

Description	Units / Acre	Unit	Cost / Unit	Cost /Acre
Herbicide - 2,4D @ 1.0 pt/ac	2.00	ACRE	\$2.81	\$5.61
Straw, delivered {MEANS 31 25 14.16 1200}	2.00	TON	\$288.00	\$576.00
Total Mulch Materials Cost/Acre				\$581.61

Application

Description		Cost /Acre
Crimping, with tractor {DMG survey data}		\$68.78
Power mulcher (MEANS 32 91 13.16 0350)		\$92.78
Weed spray, truck, non-aquatic area, nox. [DMG]		\$73.22
	Total Mulch Application Cost/Acre	\$234.78

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

Estimate *Selected Replantin	No. of Acres: ed Failure Rate: ng Work Items:	6.16 30% TILLING,SEEDIN	Cost /Acre: Cost /Acre*: IG,MULCHING	\$1,454.99 \$1,454.99	
Initial Job Cost: Reseeding Job Cost: Total Job Cost: Job Hours:	\$8,962.74 \$2,688.82 \$11,652 9.24				

EQUIPMENT MOBILIZATION/DEMOBILIZATION

Task description	n: Ini t	ial Mobilization					
Nahcolite Pr	oject	Permit	Action: TR-42	2		Permit/Job#: <u>M</u>	1983194
PROJECT ID	ENTIFICATI	<u>ON</u>					
$\begin{array}{c} \text{Task #:} \\ \text{Date:} \\ \text{User:} \end{array} \begin{array}{c} 12 \\ 5/ \\ 4 \end{array}$	2A 7/2019 CY	State: <u>Co</u> County: <u>Ri</u>	olorado o Blanco		Abbre	eviation: None ilename: M194	12a
Agency	or organization	n name: DRMS					
EQUIPMENT	TRANSPOR	<u>T RIG COST</u>					
					Shift ba Cost Data Sou	sis: 1 per da rce: CRG Da	y ta
True	ck Tractor Desc	ription: GENE	RIC ON-HIGHV	WAY TRU 400 HP	UCK TRACT(2 (2ND HALF.	OR, 6X4, DIESEI 2006)	L POWERED,
Tru	ck Trailer Desc	ription: G	ENERIC FOLD T	ING GOO TRAILER	SENECK, DF (25T, 50T, A)	ROP DECK EQU ND 100T)	IPMENT
Cost Breakdown:							
Available Rig	Capacities	0-25 Tons	26-50 Tons	51-	+ Tons		
Ownersh	ip Cost/Hour:	\$16.63	\$18.37	\$2	22.33		
Operatir	ng Cost/Hour:	\$44.38	\$46.13	\$	50.07		
Operat	or Cost/Hour:	\$27.66	\$27.66	\$2	27.66		
Help	er Cost/Hour:	\$0.00	\$25.39	\$2	25.39		
Total Ur	it Cost/Hour:	\$88.67	\$117.55	\$1	25.45		
NON ROADA	BLE EQUIPN	MENT:					
Machine Description	Weight/ Unit (TONS)	Owner ship Cost/hr/ unit	Haul Rig Cost/hr/uni t	Fleet Size	Haul Trip Cost/hr/ fleet	Return Trip Cost/hr/ fleet	DOT Permit Cost/ fleet
Cat D8T - 8SU	53.08	\$102.55	\$125.45	2	\$456.00	\$250.90	\$500.00
Drill/Broadcast Seeder with Tractor	25.00	\$15.54	\$88.67	1	\$104.21	\$88.67	\$250.00
Power Mulcher (Bowie LD-90)	6.00	\$8.33	\$88.67	1	\$97.00	\$88.67	\$250.00
Grove RT650E,	28.74	\$49.93	\$117.55	1	\$167.48	\$117.55	\$250.00
105°, 45.4 MT		¢15.27	\$88.67	1	\$104.04	\$88.67	\$250.00
105', 45.4 M1 Broderson IC-20 2F, 45', 13.6MT	0- 8.68	\$15.37	<i>ф00.07</i>		+		¢200100
105', 45.4 M1 Broderson IC-20 2F, 45', 13.6MT Cat 345D L 12'- 10" Stick	0- 8.68 54.31	\$15.37 \$66.64	\$125.45	1	\$192.09	\$125.45	\$250.00

Subtotals: \$1,302.31 \$877.46 \$2,000.00

ROADABLE EQUIPMENT:

Machine Description	Total Cost/hr/ unit	Fleet Size	Haul Trip Cost/hr/ fleet	Return Trip Cost/hr/ fleet
Light Duty Pickup, 4x4, 3/4 T.	\$67.83	1	\$67.83	\$67.83
Generic 12-18 cy, 6x4	\$97.40	3	\$292.20	\$292.20

CIRCES Cost Estimating Software

Subtotals:	\$360.03	\$360.03
EQUIPMENT HAUL DISTANCE and Time		
Nearest Major City or Town within project area region:	RIFLE	
Total one-way travel distance:	60.00	miles
Average Travel Speed:	40.00	mph
Total Non-Roadable Mob/Demob Cost *	\$13,143.93	
Total Roadable Mob/Demob Cost ** ** one round trip, no haul rig:	\$1,080.09	

Transportation Cycle Time:

	Non-	
	Roadable	Roadable
	Equipment	Equipment
Haul Time (Hours):	1.50	1.50
Return Time (Hours):	1.50	1.50
Loading Time (Hours):	0.50	NA
Unloading Time (Hours):	0.50	NA
Subtotals:	4.00	3.00

Total job time:	8.00	Hours
Total job cost:	\$14,224	_

EQUIPMENT MOBILIZATION/DEMOBILIZATION

Та	ask descript	tion: Se	condary Mobiliza					
e: _	Nahcolite	Project	Permit	Action: TR-4	2]	Permit/Job#:	M1983194
PR	ROJECT I	IDENTIFICAT	ION					
	Task #:	12B	State: Co	olorado		Abbre	eviation: N	one
	Date:	5/7/2019	County: Ri	o Blanco		Fi	lename: M	[194-12b
	User:	ACY						
	Age	ncy or organizatio	on name: DRMS					
EQ)UIPMEN	NT TRANSPOI	RT RIG COST					
						Shift ba	sis: 1 pe	r day
						Cost Data Sour	rce: CRG	Data
	т	[cristian. CENE					CEL DOWEDED
	1	ruck Tractor Des	cription: GENE	RIC ON-HIGH		UCK TRACTO	JR, 6A4, DIE 2006)	SEL POWERED,
					40011	(ZND HALF,	20000	
	r	Truck Troilor Doc	arintian:	ENEDIC EOLD	INC CO	SENECK DE		OLIDMENT
	r	Truck Trailer Des	cription: G	ENERIC FOLD	ING GOO	DSENECK, DF	ROP DECK E	QUIPMENT
		Truck Trailer Des	cription: G	ENERIC FOLD	ING GOO FRAILER	DSENECK, DF (25T, 50T, AN	ROP DECK E ND 100T)	QUIPMENT
Cos	st Breakdov	Truck Trailer Des <u>wn:</u>	cription: G	ENERIC FOLD	ING GOO TRAILER	OSENECK, DF (25T, 50T, AN	ROP DECK E ND 100T)	QUIPMENT
$\frac{\cos}{A}$	st Breakdov	Truck Trailer Des <u>wn:</u> Lig Capacities	cription: G	ENERIC FOLD	VING GOO TRAILER	DSENECK, DF (25T, 50T, AN + Tons	ROP DECK E ND 100T)	QUIPMENT
Cos A	st Breakdov vailable R Owner	Truck Trailer Des <u>wn:</u> t ig Capacities rship Cost/Hour:	cription: G	ENERIC FOLD	ING GOO TRAILER	DSENECK, DF (25T, 50T, AN + Tons 22.33	ROP DECK E ND 100T)	QUIPMENT
<u>Cos</u>	st Breakdov vailable R Owner Opera	Truck Trailer Des wn: t ig Capacities rship Cost/Hour: ating Cost/Hour:	o-25 Tons \$16.63 \$44.38	ENERIC FOLD	FING GOO FRAILER	DSENECK, DF (25T, 50T, AN + Tons 22.33 50.07	ROP DECK E ND 100T)	QUIPMENT
Cos A	st Breakdov vailable R Owner Opera Ope	Truck Trailer Des wn: tig Capacities rship Cost/Hour: ating Cost/Hour: erator Cost/Hour:	0-25 Tons \$16.63 \$44.38 \$27.66	ENERIC FOLD	ING GOO TRAILER 51 \$ \$ \$ \$	DSENECK, DF (25T, 50T, AN + Tons 22.33 50.07 27.66	ROP DECK E ND 100T)	QUIPMENT
Cos A	st Breakdov vailable R Owner Opera Ope	Truck Trailer Des wn: Sig Capacities rship Cost/Hour: ating Cost/Hour: erator Cost/Hour: elper Cost/Hour:	0-25 Tons \$16.63 \$44.38 \$27.66 \$0.00	ENERIC FOLD 26-50 Tons \$18.37 \$46.13 \$27.66 \$25.39	ING GOO FRAILER 51 \$ \$ \$ \$ \$ \$ \$ \$ \$	DSENECK, DF (25T, 50T, AN + Tons 22.33 50.07 27.66 25.39	ROP DECK E ND 100T)	QUIPMENT
<u>Cos</u>	st Breakdov vailable R Owner Oper Ope Ho Total	Truck Trailer Des wn: tig Capacities rship Cost/Hour: ating Cost/Hour: erator Cost/Hour: elper Cost/Hour: Unit Cost/Hour:	0-25 Tons \$16.63 \$44.38 \$27.66 \$0.00 \$88.67	ENERIC FOLD 26-50 Tons \$18.37 \$46.13 \$27.66 \$25.39 \$117.55	ING GOO TRAILER 51 \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$	DSENECK, DF (25T, 50T, AN + Tons 22.33 50.07 27.66 25.39 25.45	ROP DECK E ND 100T)	QUIPMENT
<u>Cos</u> A	st Breakdov vailable R Owner Oper Ope Ho Total	Truck Trailer Des wn: tig Capacities rship Cost/Hour: ating Cost/Hour: elper Cost/Hour: Unit Cost/Hour:	0-25 Tons \$16.63 \$44.38 \$27.66 \$0.00 \$88.67	ENERIC FOLD 7 26-50 Tons \$18.37 \$46.13 \$27.66 \$25.39 \$117.55	ING GOO FRAILER 51 \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$	DSENECK, DF (25T, 50T, AN + Tons 22.33 50.07 27.66 25.39 .25.45	ROP DECK E ND 100T)	QUIPMENT
	st Breakdov vailable R Owner Oper Ope Ha Total	Truck Trailer Des wn: tig Capacities rship Cost/Hour: ating Cost/Hour: elper Cost/Hour: Unit Cost/Hour: Unit Cost/Hour: DABLE EQUIP	0-25 Tons \$16.63 \$44.38 \$27.66 \$0.00 \$88.67	ENERIC FOLD 7 26-50 Tons \$18.37 \$46.13 \$27.66 \$25.39 \$117.55	ING GOO TRAILER 51 \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$	DSENECK, DF (25T, 50T, AN + Tons 22.33 50.07 27.66 25.39 25.45	ROP DECK E ND 100T)	QUIPMENT
	st Breakdov vailable R Owner Oper Ope Ha Total	Truck Trailer Des wn: tig Capacities rship Cost/Hour: ating Cost/Hour: erator Cost/Hour: elper Cost/Hour: Unit Cost/Hour: DABLE EQUIP	0-25 Tons \$16.63 \$44.38 \$27.66 \$0.00 \$88.67	ENERIC FOLD 26-50 Tons \$18.37 \$46.13 \$27.66 \$25.39 \$117.55 Haul Big	ING GOO TRAILER	DSENECK, DF (25T, 50T, AN + Tons 22.33 50.07 27.66 25.39 25.45	Return Trir	QUIPMENT
<u>Cos</u> A NC	st Breakdov vailable R Owner Oper Ope Ho Total ON ROAD	Truck Trailer Des wn: tig Capacities rship Cost/Hour: ating Cost/Hour: elper Cost/Hour: Unit Cost/Hour: DABLE EQUIP Weight/ Unit	0-25 Tons \$16.63 \$44.38 \$27.66 \$0.00 \$88.67 MENT: Owner ship Cost/br/unit	ENERIC FOLD 26-50 Tons \$18.37 \$46.13 \$27.66 \$25.39 \$117.55 Haul Rig Cost/br/uri	ING GOO TRAILER 51 \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$	DSENECK, DF (25T, 50T, AN + Tons 22.33 50.07 27.66 25.39 .25.45	Return Trip Cost/hr/ fle	QUIPMENT DOT Permit et Cost/ fleet
	st Breakdov vailable R Owner Oper Ope Ho Total ON ROAD Jachine Description	Truck Trailer Des <u>wn:</u> <u>rig Capacities</u> rship Cost/Hour: ating Cost/Hour: erator Cost/Hour: elper Cost/Hour: Unit Cost/Hour: DABLE EQUIP Weight/ Unit (TONS)	0-25 Tons \$16.63 \$44.38 \$27.66 \$0.00 \$88.67 MENT: Owner ship Cost/hr/ unit	ENERIC FOLD 26-50 Tons \$18.37 \$46.13 \$27.66 \$25.39 \$117.55 Haul Rig Cost/hr/uni t	ING GOO FRAILER 51 \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$	DSENECK, DF (25T, 50T, AN + Tons 22.33 50.07 27.66 25.39 25.45	Return Trip Cost/hr/ fle	QUIPMENT DOT Permit et Cost/ fleet
<u>Cos</u> A NC	st Breakdov vailable R Owner Oper Ope Ha Total ON ROAD Machine Description	Truck Trailer Des wn: Sig Capacities rship Cost/Hour: ating Cost/Hour: erator Cost/Hour: Unit Cost/Hour: Unit Cost/Hour: DABLE EQUIP Weight/ Unit (TONS) st 25.00	0-25 Tons \$16.63 \$44.38 \$27.66 \$0.00 \$88.67 MENT: Owner ship Cost/hr/ unit \$15.54	ENERIC FOLD 26-50 Tons \$18.37 \$46.13 \$27.66 \$25.39 \$117.55 Haul Rig Cost/hr/uni t \$88.67	ING GOO FRAILER 51 \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$	DSENECK, DF (25T, 50T, AN + Tons 22.33 50.07 27.66 25.39 25.45	Return Trip Cost/hr/ fle	QUIPMENT DOT Permit et Cost/ fleet
	st Breakdov vailable R Owner Oper Ope Ho Total ON ROAD Aachine Description Orill/Broadca eeder with ractor	Truck Trailer Des wn: tig Capacities rship Cost/Hour: ating Cost/Hour: erator Cost/Hour: Unit Cost/Hour: DABLE EQUIP Weight/ Unit (TONS) sst 25.00	0-25 Tons \$16.63 \$44.38 \$27.66 \$0.00 \$88.67 MENT: Owner ship Cost/hr/ unit \$15.54	ENERIC FOLD 26-50 Tons \$18.37 \$46.13 \$27.66 \$25.39 \$117.55 Haul Rig Cost/hr/uni t \$88.67	ING GOO FRAILER 51 \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$	DSENECK, DF (25T, 50T, AN + Tons 22.33 50.07 27.66 25.39 25.45 Haul Trip Cost/hr/ fleet \$104.21	Return Trip Cost/hr/ fle \$88.67	QUIPMENT DOT Permit Cost/ fleet \$250.00

 Subtotals:
 \$201.21
 \$177.34
 \$500.00

ROADABLE EQUIPMENT:

Machine Description	Total Cost/hr/ unit	Fleet Size	Haul Trip Cost/hr/ fleet	Return Trip Cost/hr/ fleet
Light Duty Pickup, 4x4, 3/4 T.	\$67.83	1	\$67.83	\$67.83
		Subtotals:	\$67.83	\$67.83

EQUIPMENT HAUL DISTANCE and Time

Nearest Major City or Town within project area region:	RIFLE	
Total one-way travel distance:	60.00	miles
Average Travel Speed:	40.00	mph
Total Non-Roadable Mob/Demob Cost *	\$2,538.07	
Total Roadable Mob/Demob Cost ** ** one round trip, no haul rig:	\$203.49	

Transportation Cycle Time:

	Non-	
	Roadable	Roadable
	Equipment	Equipment
Haul Time (Hours):	1.50	1.50
Return Time (Hours):	1.50	1.50
Loading Time (Hours):	0.50	NA
Unloading Time (Hours):	0.50	NA
Subtotals:	4.00	3.00

JOB TIME AND COST

Total job time: **8.00** Hours

Total job cost: \$2,742

determination that desired plant species are established and fertilizer is necessary to meet ROD vegetative production or species mixture goals.

8.3.3. Well Field and Plant Decommissioning

Production and monitoring wells associated with the well field will be plugged and capped in accordance with procedures described herein and permit stipulations. In some cases only the lower portion of the well casings will be cemented in place during operations, therefore the casings can be cut off at the top of the cement column and reused in other wells. All abandoned wells will be filled with cement and other acceptable plugging materials from the bottom of the hole to the surface per Section 6.6.7 Well Abandonment.

At the completion of commercial mining operations, all surface facilities will be dismantled. Areas previously occupied by these facilities, and any remaining areas associated with the well field, will be reclaimed and revegetated according to procedures described in this section.

Surface facilities include the process plant building, product storage and load-out facility, roads, parking lots, pipelines, power lines, retention ponds, and the evaporation pond. These facilities will be dismantled and either salvaged or removed for disposal. Concrete foundations and road pavement will be broken up and buried on-site minimum of three feet below final grade. Salts remaining in the evaporation pond will be removed from the pond and disposed of either in a mined-out cavity or at an approved off-site disposal location. The evaporation pond liner will be removed and disposed of at an approved off-site landfill. The natural gas and water pipelines will be disconnected and purged; they will be left in place because these areas will have already been reclaimed and revegetated.

8.4. Reclamation Schedule³

During the operational phase of the mine, NS will conduct on-going reclamation activities in order to maintain a minimal impact to the ground surface. As of 2014, all well pads have undergone reclamation to some extent. Monitoring well locations are

³ Revised December 2015



Permit # M1983-194													
Borehole Description	Sealing/Item Method	Diameter (inch)	Length (feet)	Bridge Plug at Indicated Depth (feet)	Comments								
3M-TDR	Portland cement grout	4.0	1876										
89-1	Portland cement grout	4.0	1627										
89-2	Portland cement grout	4.0	1417										
89-3	Portland cement grout	4.0	347										
90-1	Portland cement grout	8.9	1417										
90-4	Portland cement grout	4.0	1417										
BG-1	Portland cement grout	4.0	1627										
BG-4	Portland cement grout	4.0	1627										
DS-2	Portland cement grout	4.0	1876										
DS-3	Portland cement grout	4.0	1876										
EX-2	Portland cement grout	4.0	18/6										
IRI-4	Portland cement grout	4.0	1417										
IRI-5	Portland cement grout	4.1	347										
IRI-6	Portland cement grout	4.0	1627										
IRI-7	Portland cement grout	4.0	1876										
IRI-8	Portland cement grout	4.0	347	2400									
12H-I 12H P	Portland cement grout	7.0	2100	2100									
12H-K	Portland cement grout	7.0	1935	1935									
10H-R	Portland cement grout	7.0	1935	1935									
BG-5	Portland cement grout	4.0	1645										
DS-5	Portland cement grout	4.0	1902		DRMS should change name to BG-9 (DS-5)								
BG-6	Portland cement grout	4.0	1639										
WSW-2	Portland cement grout	7.0	1460	1000									
DVPW-1(A) DVPW-1(B)	Portland cement grout	6.4	1900	1900									
10H-IV	Portland cement grout	7.0	1900	1900									
13H-I	Portland cement grout	8.0	2335		P&A process is ongoing, to be completed by 5/24/19								
13H-R	Portland cement grout	7.0	2100	2100	DRMS should change name to 13H-RI-E								
8H-I	Portland cement grout	7.0	2110		P&A process is ongoing, to be completed by 5/24/19								
8H-R	Portland cement grout	7.0	2110	2050	P&A process is ongoing, to be completed by 5/24/19								
14H-I 14H P	Portland cement grout	7.0	2050	2050	DRMS should shange name to 14H RLE								
WSW-3	Portland cement grout	7.0	1420	2110									
WSW-4	Portland cement grout	7.0	1431										
I (Phase 1)	Portland cement grout	4.0	1882		DRMS should change name to DS-8								
J (Phase 1)	Portland cement grout	4.0	1487		DRMS should change name to AG-1								
K(Phase 1)	Portland cement grout	4.0	1593		DRMS should change name to BG-7								
M (Phase 1)	Portland cement grout	4.0	1917		DRMS should change name to DS-9								
O (Phase 2)	Portland cement grout	4.0	1294		DRMS should change name to O-GMW-A								
DS-6	Portland cement grout	4.0	1882										
IRI-9	Portland cement grout	4.0	1710										
IRI-11	Portland cement grout	4.0	1550										
15H-I	Portland cement grout	6.4	1960	1960									
15H-К 16Н-I	Portland cement grout	6.4	1960	1960	אטע change name to 15H-RI								
16H-R	Portland cement grout	0.4 ጸ ዓ	1960	1960									
17H-I	Portland cement grout	6.4	1960	1960									
17H-R	Portland cement grout	9.0	2000	2000	DRMS should change name from 17R-I to 17H-R								
4 01H-I	Portland cement grout	6.4	209 4		NS will not drill this well (similar to 9H and 2014 RDP wells, see Travis M. for additional details)								
401H-R	Portland cement grout	8.8	209 4		NS will not drill this well (similar to 9H and 2014 RDP wells, see Travis M. for additional details)								
4 02H-I	Portland cement grout	6. 4	2097		NS will not drill this well (similar to 9H and 2014 RDP wells, see Travis M. for additional details)								
402H-R	Portland cement grout	8.8	2097		NS will not drill this well (similar to 9H and 2014 RDP wells, see Travis M. for additional details)								
4 03H-I	Portland cement grout	6.4	2095		NS will not drill this well (similar to 9H and 2014 RDP wells, see Travis M. for additional details)								
4 03H-R	Portland cement grout	8.8	2095	2010	RDP wells, see Travis M. for additional details)								
12H-IK	Portland cement grout	9.0	2100	2010									
15H-SSMW	Portland cement grout	9.0 4 N	1760	2010									
17H-SSMW	Portland cement grout	4.0	1720										
DS-10	Portland cement grout	4.0	1882										
14H-1V	Portland cement grout	8.9	2130	2130									
1													

WELL PADS									ROADS											
DISTURBED UNDERGO		UNDERGOING INTER	3 INTERIM RECLAMATION		UNDERGOING FINAL RECLAMATION		SUCCESSFULLY RECLAIMED (meets ROD goals)			DISTURBED			UNDERGOING INTERIM RECLAMATION			UNDERGOING FINAL RECLAMATION				
Description	Area, ft ²	Acres	Description	Area, ft ²	Acres	Description	Area, ft ²	Acres	Description	Area, ft ²	Acres	Description	Area, ft ²	Acres	Description	Area, ft ²	Acres	Description	Area, ft ²	Acres
8H/3A-4H (2013)	88,287	2.03	2M-TDR, 3M-TDR	5,554	0.13	A (May 2016, Good Response)	24,345	0.56	1A-4HI (2013)	68,443	1.57	RD A	23,690	0.5	RD D	1,044	0.02	RD A rdp	928	0.02
5Н	98,187	2.25	89-1	14,961	0.34	C (Aug 2015, Good Response)	28,725	0.66	1A-5HR (13,14,15)	68,443	1.57	RD B	45,832	1.1	RD G	8,168	0.19	RD E rdp	10,649	0.24
7Н	76,787	1.76	90-1	38,490	0.88	D (Aug 2015, Good Response)	27,853	0.64	3A-5V (13,14,15)	68,443	1.57	RD C	18,711	0.4	RD H	6,168	0.14	RD G rdp	1,050	0.02
7H-1V	47,028	1.08	90-2	18,509	0.42	E (May 2016, Good Response)	25,379	0.58	4-3H(V) (2013)	39,927	0.92	RD E	778	0.0	RD I	1,528	0.04	RD H-C rdp	10,103	0.23
10H-13H	290,596	6.67	90-5H	8,791	0.20	G (May 2016, Good Response)	26,321	0.60	4-2V & 93-3V (13,14,15)	131,882	3.0	RD F	900	0.0	RD I rdp (DS-8)	1,476	0.03	RD H rdp	11,542	0.26
14H	98,457	2.26	94-1M	56,433	1.30	H (Aug 2015, Good Response)	28,880	0.66	91-1V (2013,14,15)	8,746	0.2	RD K	1,808	0.0	RD J	578	0.01	RD N-C rdp	10,196	0.23
88-1V	19,714	0.45	BG-4	20,343	0.47	N (Aug 2015, Good Response)	29,639	0.68	4A-5M, 4A-6V (13,14,15 chk w/ BLM)	26,122	0.60	RD 14H	421	0.0	RD M rdp (DS-9)	7,799	0.18	RD P rdp	4,607	0.11
15H-17H	207,133	4.76	BG-5 (see RR 2015 rept)	38,668	0.89	P (May 2016, Good Response)	24,581	0.56	91-2H (2017)	88,994	2.0	RD 15-17	13,252	0.3	RD M-K rdp (DS- 9/BG-7)	8,651	0.20	RD Q rdp	30,284	0.70
12H-13H-IR (1-3A, 2B-3C)	74,053	1.7	BG-6 (see RR 2015 rept)	25,439	0.58	Q (May 2016, Good Response) D (May 2016, Good	24,786	0.57	4A-1V (2018, 11yrs of rec)	57,885	1.3	RD 15H-SSMW	1,464	0.0	RD O rdp	11,436	0.26	RD U-T rdp	27,602	0.63
DS-10 2019 proposed	66,211	1.5	DS-2	6,659	0.15	R (May 2016, Good Response) T (May 2010, Cood	26,013	0.60			0.00			0.0	RD DS-6 rdp	453	0.01			0.0
14H-1V 2019 proposed	56,628	1.3	DS-3	6,524	0.15	T (May 2016, Good Response)	31,010	0.71			0.0			0.0	WSW-3 pipeline	21,521	0.49			0.0
		0.0	DS-5 (see RR 2015 rept)	29,973	0.69	Response)	25,075	0.58			0.0			0.0	WSW-4 pipeline	53,675	1.23			0.0
		0.0	DS-6 (Aug 2015, Good Response)	25,160	0.58	MW-1, PW-1, PW-2 (RR to ck 07 or 08 2016)	24,278	0.56			0.0			0.0	RD WSW-3 rdp	2,405	0.06			0.0
		0.0	DS-7, 2A-2V (Aug 2015, Fair Response)	38,045	0.87	IRI-3 (P&A 2015, RR to ck 07 or 08 2016)	6,872	0.16			0.0			0.0	RD WSW-4 rdp	344	0.01			0.0
		0.0	I (DS-8) (Aug 2015, Good Response)	26,732	0.61	BG-8 (DS-4) P&A 2017, 2018 1st grow yr	45,021	1.03			0.0			0.0	RD 17H-SSMW	4,354	0.10			0.0
		0.0	K (BG-7) (Aug 2015, Good Response)	27,870	0.64	5H-1V (2012 & <mark>2014</mark>)	35,862	0.82			0.0			0.0			0.00			0.0
		0.0	M (DS-9) (Aug 2015, Good Response)	29,224	0.67	93-2M (2011 & <mark>2013</mark>)	12,505	0.29			0.0			0.0			0			0.0
		0.0	WSW-2 WSW-3 (May 2016, Good	30,389	0.70			0.0			0.0			0.0			0			0.0
		0.0	Response) WSW-4 (Aug 2015, Good	32,647	0.75			0.0			0.0			0.0			0			0.0
		0.0	Response)	32,789	0.75			0.0			0.0			0.0			0			0.0
		0.0	WSW-5 (O-GMW-A) (Aug 2015, Good Response)	28,854	0.66			0.0			0.0			0.0			0			0.0
		0.0	15H-SSMW	24,594	0.56			0.0			0.0			0.0			0			0.0
		0.0	17H-SSMW Pad	12,791	0.3			0.0			0.0			0.0			0			0.0
		0.0			0.0			0.0			0.0			0.0			0.0			0.0
TOTAL	1,123,081	<u>25.78</u>	TOTAL	579,439	13.30	TOTAL	<u>447,145</u>	<u>10.2</u> 7	TOTAL	558,885	<u>12.8</u> 3	TOTAL	106,856	<u>2.4</u> 5	TOTAL	129,600	2.98	TOTAL	<u>106,961</u>	2.46
TOTAL Pad & Road	ACERAGE	70.06																		
		28.24	4																	
		10.28	4																	
		12.72	-																	



Yeldell - DNR, Amy <amy.yeldell@state.co.us>

RE: Natural Soda TR-42 -Response #3

1 message

Randy Dean <randy.dean@daubandassociates.com> To: amy.yeldell@state.co.us Cc: Gerald Daub <gjdaub@daubandassociates.com> Wed, May 15, 2019 at 2:52 PM

Amy,

Please see our responses inserted into your text below.

Please contact me with any questions or comments.

Regards,

Randall G. Dean

Geologist

Daub & Associates, Inc.

970.254.1224 (O)

970.361.1964 (C)

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From: Yeldell - DNR, Amy [mailto:amy.yeldell@state.co.us]
Sent: Wednesday, May 15, 2019 9:50 AM
To: Daub, Gerald
Cc: Kirk Daehling; Randy Dean
Subject: Re: Natural Soda TR-42 -Response

All,

I have a few more follow up clarification questions.

01A-Demo for the power-lines the old calculation was for Double pole or "H" pole which is inaccurate. I mentioned in the field that it was difficult to tell what was NSI only power verse services that also went to other operators. BLM has indicated only the poles owned by NSI will need to be removed. James mentioned that D&A has a utility CAD file that could give me a power pole count needing to be removed. Most of what I observed appeared to be the 30-45" kind but if there are the shorter ones too that is also an input

State.co.us Executive Branch Mail - RE: Natural Soda TR-42 -Response #3

option. *[D&A responds:]* NS is responsible for ~54 T-type power poles (~35-45' in length) and 2 or 3 T-type power poles (~50' in length).

Clarification on he Well pad spreadsheet. For interim reclamation does that acreage represent the area with seeding remaining or the total pad partially reclaimed? **[D&A responds:]** Total pad partially reclaimed. Also the total for roads on that spreadsheet is 7.89 ac while your email with acreages to be ripped indicates 6.16 ac of roads. Can you please clarify **[D&A responds:]** The well pad spreadsheet, road section columns also contain ~1.72 ac for the WSW-3&4 pipelines. We note a rounding discrepancy of 0.01 acre between the email (~6.16 ac of roads to be ripped) and the spreadsheet 6.17 acre (7.89-1.72= 6.17 acres of roads that are disturbed or undergoing interim or final reclamation).

My goal is to have a final calculation done by lunch so I can get it to BLM for final review today. *[D&A responds:]* We appreciate your efforts in expediting this as soon as possible.

--

Amy Yeldell

Environmental Protection Specialist

Minerals Program, Grand Junction Field Office



P 970.254.8511 Ext:8183| F 970.241.1516

101 S. 3rd St., Suite 301, Grand Junction, CO 81501

amy.yeldell@state.co.us | www.mining.state.co.us

On Thu, May 9, 2019 at 5:16 PM Daub, Gerald <gjdaub@daubandassociates.com> wrote:

Amy:

The CIRCES document that you attached (AM-4, dated 9/7/17) indicated a total bond amount of \$4,627,490.29. The AM-4 CIRCES document contained flaws which were previously discussed with the DRMS. These flaws were partially addressed in the DRMS correspondence dated 10/30/17 (see attached) which provided an updated cost estimate for AM-4. The 10/30/17 correspondence indicated a currently held bond amount of \$4,158,340.68 and was accompanied by a partial CIRCES document which included a calculated total bond amount of \$3,950,444.75. Although a complete CIRCES document was requested for our review, none was received.

Additionally, the DRMS TR-41 approval letter (dated 8/2/18, see attached) indicated that the currently held reclamation bond amount of \$4,158,340.68 was more than adequate to bond for the additional reclamation associated with TR-41. An updated CIRCES document was not included with the TR-41 approval letter. Although an updated CIRCES document was requested, we have not received that document. Please forward the updated CIRCES document associated with TR-41 at your earliest convenience.

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Please see our additional response comments inserted into your original email below.

With a long and busy field season already upon us, we greatly appreciate your efforts to expedite the TR-42 approval process. I look forward to receiving the TR-42 approval soon.

Please contact me if you have any questions or comments.

From: Yeldell - DNR, Amy [mailto:amy.yeldell@state.co.us]
Sent: Wednesday, May 08, 2019 10:58 AM
To: Kirk Daehling; Daub, Gerald; Randy Dean
Cc: Travis Marshall
Subject: Natural Soda TR-42

Jerry,

I have received and process your TR-42 request. Attached is the completeness letter.

I did have a few questions for the bond calc that I felt would be more expedient to address via email. I've attached the AM-4 bond calc for reference since this is largely updating that previous calculation.

1. For the DS-10 Well pad you list ~1.5 ac affected with a polygon around the well pad. That acreage does not appear to include the additional disturbance to build the access road. Can you please include a diagram for the road with the associated acreages like you have on past TR's *D&A responds: J* Please see attached diagram. The DS-10 road will disturb 1,680 sq ft (0.04 ac).

2. For task 01a can you please verify the pipeline length and quantity type on site. I know some of the 12" pipeline has been removed but I do not have an exact length to know how much to remove or if any still remains on site. If any oher structures have been removed or added please note those as well.

[D&A responds:] Active Pipeline: 27,300'

- Two 16" pipelines from the plant to the south @ 4,800': 9,600'
- One 12" pipeline from the plant to the east @ 5,300: 5,300'
- Two 8" pipelines from the plant to the east @ 5,300: 10,600'
- 100' of 6" carbon steel connection pipeline from each operating wellhead to the pipelines totaling 1,800' of connection pipe:
 - 1. 8H well pair = 200' 2. 10H well pair = 200' 3. 12H well pair = 200' 4. 13H well pair = 200' 5. 14H well pair = 200' 6. 15H well pair = 200' 7. 16H well pair = 200' 8. 17H well pair = 200' 9. 12H-IR = 100' 10. 13H-IR = 100'

• Inactive Pipeline: 7,950' (88-1V, 11H well pairs, 5H, 6H, 7H-2I, 7H-1R and 7H-1V).

3. For task 02a can you please send me an updated table of all open wells you have, including the diameter, length, and bridge plug placement dept if applicable. Please include the two proposed wells under this TR as well on your list but no other unapproved wells. Note that I got clarification for our bonding guy and the cement materials listed on our bond calc does not include the bridge

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plug so I will be adding them in for each applicable well. Also if a well has previously gone under a different name please list all aliases. *[D&A responds:]* See attached spreadsheet.

4. For tasks 03a, 04a, 05a I do not have source of these volumes to be graded. *[D&A responds:]* Cumulatively, the TR-1 through TR-42 submission documents and the resultant DRMS CIRCES documents are the source for these volumes. Can you please give me an acreage and depth type calculation that results in XX amount of CY to be graded. *[D&A responds:]* The historic DRMS CIRCES and TR's are the best sources for that data. For the well pads and access roads a list for each pad would be most helpful so that we can add and subtract them as needed and its easier to keep track of them. *[D&A responds:]* See attached spreadsheet. The acreages you provide I will use for topsoil application in tasks 06a-08a.

5. Task 10a, I cannot find where the 27.7 ac comes from. Nearly all of the affected lands will be compacted to some effect but through grading some areas may not required ripping. Please provide the acreage requiring decomposition.

[D&A responds:] We understand that the area surrounding the plant and the roads will require decompaction (ripping). The regrading/recontouring of well pads, pond, and other areas will eliminate the need to separately decompact/rip.

D&A calculated 22.36 (not 27.7) acres will require ripping of compacted soils:

- Area surrounding the pond: 8 acres
- Plant area: 8.2 acres
- Road areas: 6.16 acres

It is D&A's position that the DRMS should reduce the Task 10A volume of topsoil from 22,297 LCY to 18,037 LCY.

6. 11a acreage will be the sum of all lands with topsoil being applied. Right now its 90.5, that should go up to account for TR-40 thru TR-42 well pads. *[D&A responds:]* Please note that frequently, Natural Soda (NS) chooses to reutilize a previously disturbed and currently bonded area, in which case additional bonding would only be needed for any actual new disturbance. The DS-10 (1.5 ac) and 14H-1V (1.3 ac) will increase NS's total disturbed area to 93.3 acres. Again the running list of pads will help keep track of this total as the project progresses. Your annual report indicates that some pads have been initially seeded, you can note that separately and I can run a new task for just the failure of those pads. *[D&A responds:]* We will review your proposed modifications.

7. Mobilization, previously the equipment required for demo of plant style buildings was not included. this will be added to this calculation. As will a secondary mobilization of seeding equipment to account for vegetation failure. *[D&A responds:]* We will review your proposed modifications.

Hopefully all of this makes sense. I'll be driving to Denver later today and at a confrere all day tomorrow so email is probably the best bet. My phone is on call forwarding if you would prefer. I'll be back in the office on Friday. My hope is to have a solid draft ready by the inspection.

Thanks

Amy Yeldell

Environmental Protection Specialist

Minerals Program, Grand Junction Field Office



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Regards, Jerry

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