

COST SUMMARY WORK

Task description: _____

Site: Nahcolite Project

Permit Action: TR-49

Permit/Job#: M1983194

PROJECT IDENTIFICATION

Task #: 001

State: Colorado

Abbreviation: None

Date: 9/22/2022

County: Rio Blanco

Filename: M194-001

User: THM

Agency or organization name: DRMS

TASK LIST (DIRECT COSTS)

Task	Description	Form Used	Fleet Size	Task Hours	Cost
01a	Demo of Plant, pipelines, powerlines and parking lot	DEMOLISH	1	80.00	\$2,382,431
02a	Borehole P&A	BOREHOLE	1	610.00	\$649,434
03a	Regrade Process Ponds	DOZER	2	178.19	\$94,008
03b	Decompact Process Pond	RIPPER	2	6.85	\$3,894
03c	Topsoil Process Pond	DOZER	2	14.06	\$7,418
03d	Reveg Process Pond	REVEGE	1	28.50	\$46,361
04a	Regrade Plant Area	DOZER	2	23.69	\$12,498
04b	Decompact Plant Area	RIPPER	2	7.02	\$3,991
04c	Topsoil Plant Area	DOZER	2	7.58	\$4,001
04d	Reveg Plant Area	REVEGE	1	12.30	\$20,008
05a	Regrade Well Pads	DOZER	2	159.03	\$83,896
05b	Topsoil Well Pads	DOZER	2	32.66	\$17,228
05c	Reveg Well Pads	REVEGE	1	66.20	\$107,679
06a	Decompact Roads	RIPPER	2	3.02	\$1,720
06b	Topsoil roads	DOZER	2	2.32	\$1,223
06c	Reveg Roads	REVEGE	1	5.60	\$9,175
07a	Initial Mobilization	MOBILIZE	1	8.00	\$15,400
07b	Secondary Mobilization	MOBILIZE	1	8.00	\$2,405
<u>SUBTOTALS:</u>				1253.02	\$3,462,770

INDIRECT COSTS

OVERHEAD AND PROFIT:

Liability insurance: 2.02
Performance bond: 1.05
Job superintendent: 626.51
Profit: 10.00

Total = \$69,948

Total = \$36,359

Total = \$47,070

Total = \$346,277

TOTAL O & P = \$499,654

CONTRACT AMOUNT (direct + O & P) = \$3,962,424

LEGAL - ENGINEERING - PROJECT MANAGEMENT:

Financial warranty processing (legal/related costs): \$500
Engineering work and/or contract/bid preparation: 4.25
Reclamation management and/or administration: 5.00

Total = \$500

Total = \$168,403

\$198,121

CONTINGENCY: 3.00

Total = \$103,883

TOTAL INDIRECT COST = \$970,561

TOTAL BOND AMOUNT (direct + indirect) = \$4,433,331

DEMOLITION WORK

Task description: Demo of Plant, pipelines, powerlines and parking lot

Site: Nahcolite Project

Permit Action: TR-49

Permit/Job#: M1983194

PROJECT IDENTIFICATION

Task #: 01A

State: Colorado

Abbreviation: None

Date: 9/22/2022

County: Rio Blanco

Filename: 01a

User: THM

Agency or organization name: DRMS

UNIT COSTS

Location adjustment: 95.50 %

Structure or Item Description	Dimensions	Demolition Menu Selection	Quantity	Unit	Unit Cost	Total Cost
NSI Plant	200'L x 227'W x 42.5'H	Plant (3S) demo./off-site disposal in approved landfill - Max. 30 mile haul	1,929,500.00	CF	\$0.84	\$1,618,850.50
Product Storage Dome	95'L x 95'W x 50'H	Plant (3S) demo./off-site disposal in approved landfill - Max. 30 mile haul	451,250.00	CF	\$0.84	\$378,598.75
Removal of NSI Plant Slab	200'L x 227'W x 8"	Demo. and on-site disposal in excavated pit, 8 in. thick - Max. 200 ft. push	45,400.00	SF	\$1.61	\$73,184.80
Removal of Storage Dome Slab	95'L x 95'W x 8"	Demo. and on-site disposal in excavated pit, 8 in. thick - Max. 200 ft. push	9,025.00	SF	\$1.61	\$14,548.30
Scale Building	108'W x 18'L x 10'H	Plant (1S) demo./off-site disposal in approved landfill - Max. 30 mile haul	19,440.00	CF	\$0.80	\$15,493.68
Removal of Scale Building Slab	108'W x 18'L x 8"	Demo. and on-site disposal in excavated pit, 8 in. thick - Max. 200 ft. push	1,944.00	SF	\$1.61	\$3,133.73
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 SqFt	USER PROVIDED ITEM	70.00	Ft^2	\$5.00	\$350.00
Demolition of Screening and Magnet System	6'W x 18'L x 10'H	Plant (3S) demo./off-site disposal in approved landfill - Max. 30 mile haul	1,080.00	CF	\$0.84	\$906.12
Pipelines averaged to 10" diam	34,948 LF	Pipe, steel, welded connections - 10 in. diameter pipe	34,948.00	LF	\$11.04	\$385,825.92

Job Hours: CTJT

Subtotal
(unadjusted): \$2,494,691.80

Total Cost
(adjusted for location): \$2,382,430.67

BOREHOLE SEALING WORK

Task description: Borehole P&A

Site: Nahcolite Project

Permit Action: TR-49

Permit/Job#: M1983194

PROJECT IDENTIFICATION

Task #: 02A
Date: 9/22/2022
User: THM

State: Colorado
County: Rio Blanco

Abbreviation: None
Filename: 02a

Agency or organization name: DRMS

UNIT COSTS

Borehole Description	Sealing/Item Method	Diameter	Length	Quantity	Unit	Unit Cost	Total Cost
3M-TDR	Portland cement grout - 4 in. (labor, equip, materials)	4	1876	1,876.00	LF	\$5.55	\$10,411.80
89-1	Portland cement grout - 4 in. (labor, equip, materials)	4	1627	1,627.00	LF	\$5.55	\$9,029.85
89-2	Portland cement grout - 4 in. (labor, equip, materials)	4	1417	1,417.00	LF	\$5.55	\$7,864.35
89-3	Portland cement grout - 4 in. (labor, equip, materials)	4	347	347.00	LF	\$5.55	\$1,925.85
90-1	Portland cement grout - 8 in. (labor, equip, materials)	8.9	1417	1,417.00	LF	\$7.03	\$9,961.51
90-3	Portland cement grout - 4 in. (labor, equip, materials)	4	1627	1,627.00	LF	\$5.55	\$9,029.85
90-4	Portland cement grout - 4 in. (labor, equip, materials)	4	1417	1,417.00	LF	\$5.55	\$7,864.35
BG-1	Portland cement grout - 4 in. (labor, equip, materials)	4	1627	1,627.00	LF	\$5.55	\$9,029.85
BG-4	Portland cement grout	4	1627	1,627.00	LF	\$5.55	\$9,029.85

	- 4 in. (labor, equip, materials)						
DS-2	Portland cement grout - 4 in. (labor, equip, materials)	4	1876	1,876.00	LF	\$5.55	\$10,411.80
DS-3	Portland cement grout - 4 in. (labor, equip, materials)	4	1876	1,876.00	LF	\$5.55	\$10,411.80
EX-2	Portland cement grout - 4 in. (labor, equip, materials)	4	1876	1,876.00	LF	\$5.55	\$10,411.80
IRI-1	Portland cement grout - 4 in. (labor, equip, materials)	4	347	347.00	LF	\$5.55	\$1,925.85
IRI-4	Portland cement grout - 4 in. (labor, equip, materials)	4	1417	1,417.00	LF	\$5.55	\$7,864.35
IRI-5	Portland cement grout - 4 in. (labor, equip, materials)	4.1	347	347.00	LF	\$5.55	\$1,925.85
IRI-6	Portland cement grout - 4 in. (labor, equip, materials)	4	1627	1,627.00	LF	\$5.55	\$9,029.85
IRI-7	Portland cement grout - 4 in. (labor, equip, materials)	4	1876	1,876.00	LF	\$5.55	\$10,411.80
IRI-8	Portland cement grout - 4 in. (labor, equip, materials)	4	347	347.00	LF	\$5.55	\$1,925.85
12H-I	Portland cement grout - 8 in. (labor, equip, materials)	7	2100	2,100.00	LF	\$7.03	\$14,763.00
12H-I Bridge Plug	PVC plug - 8 in. diameter borehole	7	1	1.00	EA	\$84.15	\$84.15
12H-R	Portland cement grout - 8 in. (labor,	7	2100	2,100.00	LF	\$7.03	\$14,763.00

	equip, materials)						
12H-R Bridge Plug	PVC plug - 8 in. diameter borehole	7	1	1.00	EA	\$84.15	\$84.15
BG-6	Portland cement grout - 4 in. (labor, equip, materials)	4	1639	1,639.00	LF	\$5.55	\$9,096.45
WSW-2	Portland cement grout - 8 in. (labor, equip, materials)	7	1460	1,460.00	LF	\$7.03	\$10,263.80
DVPW-1(A)	Portland cement grout - 6 in. (labor, equip, materials)	6.4	1900	1,900.00	LF	\$6.32	\$12,008.00
DVPW-1(A) Bridge Plug	PVC plug - 6 in. diameter borehole	6.4	1	1.00	EA	\$61.43	\$61.43
DVPW-1(B)	Portland cement grout - 6 in. (labor, equip, materials)	6.4	1900	1,900.00	LF	\$6.32	\$12,008.00
DVPW-1(B) Bridge Plug	PVC plug - 6 in. diameter borehole	6.4	1	1.00	EA	\$61.43	\$61.43
13H-RI-E (13H-R)	Portland cement grout - 8 in. (labor, equip, materials)	7	2100	2,100.00	LF	\$7.03	\$14,763.00
13H-RI-E Bridge Plug	PVC plug - 8 in. diameter borehole	7	1	1.00	EA	\$84.15	\$84.15
14H-RI-E (14H-R)	Portland cement grout - 8 in. (labor, equip, materials)	7	2110	2,110.00	LF	\$7.03	\$14,833.30
14H-RI-E Bridge Plug	PVC plug - 8 in. diameter borehole	7	1	1.00	EA	\$84.15	\$84.15
						\$	\$

Job Hours: CTJTTotal Cost: CTotalCost

BOREHOLE SEALING WORK

Task description: Borehole P&A

Site: Nahcolite Project

Permit Action: TR-49

Permit/Job#: M1983194

PROJECT IDENTIFICATION

Task #: 02A

State: Colorado

Abbreviation: None

Date: 9/22/2022

County: Rio Blanco

Filename: 02a

User: THM

Agency or organization name: DRMS

UNIT COSTS

Borehole Description	Sealing/Item Method	Diameter	Length	Quantity	Unit	Unit Cost	Total Cost
3M-TDR	Portland cement grout - 4 in. (labor, equip, materials)	4	1876	1,876.00	LF	\$5.55	\$10,411.80
89-1	Portland cement grout - 4 in. (labor, equip, materials)	4	1627	1,627.00	LF	\$5.55	\$9,029.85
89-2	Portland cement grout - 4 in. (labor, equip, materials)	4	1417	1,417.00	LF	\$5.55	\$7,864.35
89-3	Portland cement grout - 4 in. (labor, equip, materials)	4	347	347.00	LF	\$5.55	\$1,925.85
90-1	Portland cement grout - 8 in. (labor, equip, materials)	8.9	1417	1,417.00	LF	\$7.03	\$9,961.51
90-3	Portland cement grout - 4 in. (labor, equip, materials)	4	1627	1,627.00	LF	\$5.55	\$9,029.85
90-4	Portland cement grout - 4 in. (labor, equip, materials)	4	1417	1,417.00	LF	\$5.55	\$7,864.35
BG-1	Portland cement grout - 4 in. (labor, equip, materials)	4	1627	1,627.00	LF	\$5.55	\$9,029.85
BG-4	Portland cement grout	4	1627	1,627.00	LF	\$5.55	\$9,029.85

	- 4 in. (labor, equip, materials)						
DS-2	Portland cement grout - 4 in. (labor, equip, materials)	4	1876	1,876.00	LF	\$5.55	\$10,411.80
DS-3	Portland cement grout - 4 in. (labor, equip, materials)	4	1876	1,876.00	LF	\$5.55	\$10,411.80
EX-2	Portland cement grout - 4 in. (labor, equip, materials)	4	1876	1,876.00	LF	\$5.55	\$10,411.80
IRI-1	Portland cement grout - 4 in. (labor, equip, materials)	4	347	347.00	LF	\$5.55	\$1,925.85
IRI-4	Portland cement grout - 4 in. (labor, equip, materials)	4	1417	1,417.00	LF	\$5.55	\$7,864.35
IRI-5	Portland cement grout - 4 in. (labor, equip, materials)	4.1	347	347.00	LF	\$5.55	\$1,925.85
IRI-6	Portland cement grout - 4 in. (labor, equip, materials)	4	1627	1,627.00	LF	\$5.55	\$9,029.85
IRI-7	Portland cement grout - 4 in. (labor, equip, materials)	4	1876	1,876.00	LF	\$5.55	\$10,411.80
IRI-8	Portland cement grout - 4 in. (labor, equip, materials)	4	347	347.00	LF	\$5.55	\$1,925.85
12H-I	Portland cement grout - 8 in. (labor, equip, materials)	7	2100	2,100.00	LF	\$7.03	\$14,763.00
12H-I Bridge Plug	PVC plug - 8 in. diameter borehole	7	1	1.00	EA	\$84.15	\$84.15
12H-R	Portland cement grout - 8 in. (labor,	7	2100	2,100.00	LF	\$7.03	\$14,763.00

	equip, materials)						
12H-R Bridge Plug	PVC plug - 8 in. diameter borehole	7	1	1.00	EA	\$84.15	\$84.15
BG-6	Portland cement grout - 4 in. (labor, equip, materials)	4	1639	1,639.00	LF	\$5.55	\$9,096.45
WSW-2	Portland cement grout - 8 in. (labor, equip, materials)	7	1460	1,460.00	LF	\$7.03	\$10,263.80
DVPW-1(A)	Portland cement grout - 6 in. (labor, equip, materials)	6.4	1900	1,900.00	LF	\$6.32	\$12,008.00
DVPW-1(A) Bridge Plug	PVC plug - 6 in. diameter borehole	6.4	1	1.00	EA	\$61.43	\$61.43
DVPW-1(B)	Portland cement grout - 6 in. (labor, equip, materials)	6.4	1900	1,900.00	LF	\$6.32	\$12,008.00
DVPW-1(B) Bridge Plug	PVC plug - 6 in. diameter borehole	6.4	1	1.00	EA	\$61.43	\$61.43
13H-RI-E (13H-R)	Portland cement grout - 8 in. (labor, equip, materials)	7	2100	2,100.00	LF	\$7.03	\$14,763.00
13H-RI-E Bridge Plug	PVC plug - 8 in. diameter borehole	7	1	1.00	EA	\$84.15	\$84.15
14H-RI-E (14H-R)	Portland cement grout - 8 in. (labor, equip, materials)	7	2110	2,110.00	LF	\$7.03	\$14,833.30
14H-RI-E Bridge Plug	PVC plug - 8 in. diameter borehole	7	1	1.00	EA	\$84.15	\$84.15
WSW-3	Portland cement grout - 8 in. (labor, equip, materials)	7	1420	1,420.00	LF	\$7.03	\$9,982.60
WSW-4	Portland cement grout - 8 in. (labor, equip, materials)	7	1431	1,431.00	LF	\$7.03	\$10,059.93
DS-8 (I, Phase I)	Portland	4	1882	1,882.00	LF	\$5.55	\$10,445.10

	cement grout - 4 in. (labor, equip, materials)						
AG-1 (J, Phase 1)	Portland cement grout - 4 in. (labor, equip, materials)	4	1487	1,487.00	LF	\$5.55	\$8,252.85
BG-7 (K, Phase 1)	Portland cement grout - 4 in. (labor, equip, materials)	4	1593	1,593.00	LF	\$5.55	\$8,841.15
DS-9 (M, Phase 1)	Portland cement grout - 4 in. (labor, equip, materials)	4	1917	1,917.00	LF	\$5.55	\$10,639.35
DS-7	Portland cement grout - 4 in. (labor, equip, materials)	4	1897	1,897.00	LF	\$5.55	\$10,528.35
O-GWM-A (O, Phase 2)	Portland cement grout - 8 in. (labor, equip, materials)	7	1294	1,294.00	LF	\$7.03	\$9,096.82
DS-6	Portland cement grout - 4 in. (labor, equip, materials)	4	1882	1,882.00	LF	\$5.55	\$10,445.10
IRI-9	Portland cement grout - 4 in. (labor, equip, materials)	4	1710	1,710.00	LF	\$5.55	\$9,490.50
IRI-11	Portland cement grout - 4 in. (labor, equip, materials)	4	1550	1,550.00	LF	\$5.55	\$8,602.50
15H-I	Portland cement grout - 6 in. (labor, equip, materials)	6.4	1960	1,960.00	LF	\$6.32	\$12,387.20
15H-I Bridge Plug	PVC plug - 6 in. diameter borehole	6.4	1	1.00	EA	\$61.43	\$61.43
15H-RI (15H-R)	Portland cement grout - 6 in. (labor, equip, materials)	6.4	1960	1,960.00	LF	\$6.32	\$12,387.20
15H-RI Bridge Plug	PVC plug - 6 in. diameter	6.4	1	1.00	EA	\$61.43	\$61.43

	borehole						
16H-I	Portland cement grout - 6 in. (labor, equip, materials)	6.4	1960	1,960.00	LF	\$6.32	\$12,387.20
16H-I Bridge Plug	PVC plug - 6 in. diameter borehole	6.4	1	1.00	EA	\$61.43	\$61.43
16H-R	Portland cement grout - 8 in. (labor, equip, materials)	8.9	1960	1,960.00	LF	\$7.03	\$13,778.80
16H-R Bridge Plug	PVC plug - 8 in. diameter borehole	8.9	1	1.00	EA	\$84.15	\$84.15
17H-I	Portland cement grout - 6 in. (labor, equip, materials)	6.4	1960	1,960.00	LF	\$6.32	\$12,387.20
17H-I Bridge Plug	PVC plug - 6 in. diameter borehole	6.4	1	1.00	EA	\$61.43	\$61.43
17H-R	Portland cement grout - 10 in. (labor, equip, materials)	9	2000	2,000.00	LF	\$9.75	\$19,500.00
17H-R Bridge Plug	PVC plug - 10 in. diameter borehole	9	1	1.00	EA	\$115.29	\$115.29
12H-IR	Portland cement grout - 10 in. (labor, equip, materials)	9	2100	2,100.00	LF	\$9.75	\$20,475.00
12H-IR Bridge Plug	PVC plug - 10 in. diameter borehole	9	1	1.00	EA	\$115.29	\$115.29
13H-IR	Portland cement grout - 10 in. (labor, equip, materials)	9	2100	2,100.00	LF	\$9.75	\$20,475.00
13H-IR Bridge Plug	PVC plug - 10 in. diameter borehole	9	1	1.00	EA	\$115.29	\$115.29
15H-SSMW	Portland cement grout - 4 in. (labor, equip, materials)	4	1760	1,760.00	LF	\$5.55	\$9,768.00
17H-SSMW	Portland	4	1720	1,720.00	LF	\$5.55	\$9,546.00

	cement grout - 4 in. (labor, equip, materials)						
DS-10	Portland cement grout - 4 in. (labor, equip, materials)	4	1882	1,882.00	LF	\$5.55	\$10,445.10
14H-1V	Portland cement grout - 8 in. (labor, equip, materials)	8.9	2130	2,130.00	LF	\$7.03	\$14,973.90
14H-1V Bridge Plug	PVC plug - 8 in. diameter borehole	8.9	1	1.00	EA	\$84.15	\$84.15
15H-1V	Portland cement grout - 8 in. (labor, equip, materials)	8.9	1898	1,898.00	LF	\$7.03	\$13,342.94
16H-1V	Portland cement grout - 8 in. (labor, equip, materials)	8.9	1976	1,976.00	LF	\$7.03	\$13,891.28
17H-1V	Portland cement grout - 8 in. (labor, equip, materials)	8.9	2100	2,100.00	LF	\$7.03	\$14,763.00
15H-IR-E	Portland cement grout - 8 in. (labor, equip, materials)	8.9	2135	2,135.00	LF	\$7.03	\$15,009.05
15H-IR-E Bridge Plug	PVC plug - 8 in. diameter borehole	8.9	1	1.00	EA	\$84.15	\$84.15
16H-IR-E	Portland cement grout - 8 in. (labor, equip, materials)	8.9	2131	2,131.00	LF	\$7.03	\$14,980.93
16H-IR-E Bridge Plug	PVC plug - 8 in. diameter borehole	8.9	1	1.00	EA	\$84.15	\$84.15
17H-IR-E	Portland cement grout - 8 in. (labor, equip, materials)	8.9	2138	2,138.00	LF	\$7.03	\$15,030.14
17H-IR-E Bridge Plug	PVC plug - 8 in. diameter borehole	8.9	1	1.00	EA	\$84.15	\$84.15
BG-11	Portland cement grout	7.625	1677	1,677.00	LF	\$7.03	\$11,789.31

	- 8 in. (labor, equip, materials)						
PA-1	Portland cement grout - 8 in. (labor, equip, materials)	6.75	490	490.00	LF	\$7.03	\$3,444.70
AG-2	Portland cement grout - 8 in. (labor, equip, materials)	6.75	1230	1,230.00	LF	\$7.03	\$8,646.90
BG-10	Portland cement grout - 8 in. (labor, equip, materials)	6.75	1420	1,420.00	LF	\$7.03	\$9,982.60
17H-1V SSMW	Portland cement grout - 6 in. (labor, equip, materials)	4.5	1775.6	1,775.60	LF	\$6.32	\$11,221.79

Job Hours: 610.00Total Cost: \$649,434.00

BULLDOZER WORKTask description: **Regrade Process Ponds**Site: **Nahcolite Project**Permit Action: **TR-49**Permit/Job#: **M1983194****PROJECT IDENTIFICATION**Task #: **03A**State: **Colorado**Abbreviation: **None**Date: **9/22/2022**County: **Rio Blanco**Filename: **03a**User: **THM**Agency or organization name: **DRMS****HOURLY EQUIPMENT COST**Basic Machine: **Cat D8T - 8SU**Horsepower: **310**Blade Type: **Semi-Universal**Attachment: **NA**Shift Basis: **1 per day**Data Source: **(CRG)****Cost Breakdown:**

		<u>Utilization %</u>
Ownership Cost/Hour:	<u>\$124.85</u>	<u>NA</u>
Operating Cost/Hour:	<u>\$97.63</u>	<u>100</u>
Ripper own. Cost/Hour:	<u>\$0.00</u>	<u>NA</u>
Ripper op. Cost/Hour:	<u>\$0.00</u>	<u>0</u>
Operator Cost/Hour:	<u>\$41.30</u>	<u>NA</u>

Total unit Cost/Hour: **\$263.78**Total Fleet Cost/Hour: **\$527.56****MATERIAL QUANTITIES**Initial Volume: **66,147**Swell factor: **1.115**Loose volume: **73,754 LCY**Source of estimated volume: **TR-42**Source of estimated swell factor: **Cat Handbook****HOURLY PRODUCTION**Average push distance: **175 feet**Unadjusted hourly production: **562.2 LCY/hr**Materials consistency description: **Compacted fill or embankment 0.9**Average push gradient: **0 %**Average site altitude: **6,600 feet**Material weight: **2,100 lbs/LCY**Weight description: **Earth - Loam****Job Condition Correction Factor**

		<u>Source</u>
Operator Skill:	<u>0.750</u>	<u>(AVG.)</u>
Material consistency:	<u>0.900</u>	<u>(CAT HB))</u>
Dozing method:	<u>1.000</u>	<u>(GEN.)</u>
Visibility:	<u>1.000</u>	<u>(AVG.)</u>

Job efficiency:	0.830	(1 SHIFT/DAY)
Spoil pile:	0.600	(FND-SF)
Push gradient:	1.000	(CAT HB)
Altitude:	1.000	(CAT HB)
Material Weight:	1.095	(CAT HB)
Blade type:	1.000	(PAT)

Net correction: 0.3681

Adjusted unit production: 206.95 LCY/hr

Adjusted fleet production: 413.9 LCY/hr

JOB TIME AND COST

Fleet size: 2 Dozer(s)

Unit cost: \$1.275/LCY

Total job time: 178.19 Hours

Total job cost: \$94,008

BULLDOZER RIPPING WORK

Task description: Decompact Process Pond

Site: Nahcolite Project

Permit Action: TR-49

Permit/Job#: M1983194

PROJECT IDENTIFICATION

Task #: 03B

State: Colorado

Abbreviation: None

Date: 9/22/2022

County: Rio Blanco

Filename: 03b

User: THM

Agency or organization name: DRMS

HOURLY EQUIPMENT COST

Basic Machine: Cat D8T - 8SU
Ripper Attachment: 3-Shank Ripper

Horsepower: 310

Shift Basis: 1 per day

Data Source: (CRG)

Cost Breakdown:

		Utilization %
Ownership Cost/Hour:	\$124.85	NA
Operating Cost/Hour:	\$97.63	100
Ripper Ownership Cost/Hour:	\$13.10	NA
Ripper Operating Cost/Hour:	\$7.30	100
Operator Cost/Hour:	\$41.30	NA
Total Unit Cost/Hour:	\$284.18	
Total Fleet Cost/Hour:	\$568.36	

MATERIAL QUANTITIES

Selected estimating method: Area

Alternate Methods:

Seismic: NA Bank Volume: NA BCY NA
Area: 8.00 acres Rip Depth (ft): 2.00 Volume: 25,813 BCY or CCY

Source of estimated quantity: TR-42

HOURLY PRODUCTION

Seismic:

Seismic Velocity: NA feet/second

Area:

Average Ripping Depth: 2.56 feet/pass
Average Ripping Width: 7.08 feet/pass
Average Ripping Length: 100.00 feet/pass
Average Dozer Speed: 88.00 feet/minute
Average Maneuver Time: 0.25 minutes/pass
Production per unit area: 0.703 acres/hour

Job Condition Correction Factors

Unadjusted Hourly Unit Production: 0.703 Acres/hr
Site Altitude: 6,600 feet
Altitude Adj: 1.00 (CAT HB)
Job Efficiency: 0.83 (1 shift/day)
Net Correction: 0.83 multiplier

Adjusted Hourly Unit Production: 0.58 Acres/hr
Adjusted Hourly Fleet Production: 1.17 Acres/hr

JOB TIME AND COST

Fleet size: 2 Grader(s) Total job time: 6.85 Hours

Unit cost: \$486.739 Per acre Total job cost: \$3,894

BULLDOZER WORKTask description: Topsoil Process PondSite: Nahcolite ProjectPermit Action: TR-49Permit/Job#: M1983194**PROJECT IDENTIFICATION**Task #: 03CState: ColoradoAbbreviation: NoneDate: 9/22/2022County: Rio BlancoFilename: 03cUser: THMAgency or organization name: DRMS**HOURLY EQUIPMENT COST**Basic Machine: Cat D8T - 8SUHorsepower: 310Blade Type: Semi-UniversalAttachment: NAShift Basis: 1 per dayData Source: (CRG)**Cost Breakdown:**

		<u>Utilization %</u>
Ownership Cost/Hour:	\$124.85	NA
Operating Cost/Hour:	\$97.63	100
Ripper own. Cost/Hour:	\$0.00	NA
Ripper op. Cost/Hour:	\$0.00	0
Operator Cost/Hour:	\$41.30	NA

Total unit Cost/Hour: \$263.78Total Fleet Cost/Hour: \$527.56**MATERIAL QUANTITIES**Initial Volume: 15,327Swell factor: 1.000Loose volume: 15,327 LCYSource of estimated volume: 19 ac @ 6" depthSource of estimated swell factor: Cat Handbook**HOURLY PRODUCTION**Average push distance: 150 feetUnadjusted hourly production: 634.3 LCY/hrMaterials consistency description: Loose stockpile 1.2Average push gradient: 0 %Average site altitude: 6,600 feetMaterial weight: 1,600 lbs/LCYWeight description: Top Soil**Job Condition Correction Factor**

		<u>Source</u>
Operator Skill:	0.750	(AVG.)
Material consistency:	1.200	(CAT HB)
Dozing method:	1.000	(GEN.)
Visibility:	1.000	(AVG.)

Job efficiency:	0.830	(1 SHIFT/DAY)
Spoil pile:	0.800	(FND-RF)
Push gradient:	1.000	(CAT HB)
Altitude:	1.000	(CAT HB)
Material Weight:	1.438	(CAT HB)
Blade type:	1.000	(PAT)

Net correction: 0.8593

Adjusted unit production: 545.05 LCY/hr

Adjusted fleet production: 1090.1 LCY/hr

JOB TIME AND COST

Fleet size: 2 Dozer(s)

Unit cost: \$0.484/LCY

Total job time: 14.06 Hours

Total job cost: \$7,418

REVEGETATION WORKTask description: **Reveg Process Pond**Site: **Nahcolite Project**Permit Action: **TR-49**Permit/Job#: **M1983194****PROJECT IDENTIFICATION**Task #: **03D**State: **Colorado**Abbreviation: **None**Date: **9/22/2022**County: **Rio Blanco**Filename: **03d**User: **THM**Agency or organization name: **DRMS****FERTILIZING****Materials**

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

Application

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

TILLING

Description	Cost / Acre
Disc harrowing, 6" deep (MEANS 32 91 13.23 6100)	\$117.18
Weed control spraying (MEANS 31 31 16.13 3100)	\$290.40
Total Tilling Cost/Acre	\$407.58

SEEDING

Seed Mix	Rate – PLS LBS / Acre	Seeds per SQ. FT	Cost / Acre
Alkali Sacaton	0.10	3.90	\$2.85
Crested Wheatgrass - Ephraim	4.00	18.37	\$17.30
Blue Wildrye - Arlington or Elkton	1.50	5.17	\$9.99
Russian Wildrye - Bozoiisky	1.50	6.03	\$9.72
Hard Fescue - Discovery	1.00	12.97	\$2.93
Pubescent Wheatgrass - Luna	1.50	3.10	\$5.10
Yellow Sweet Clover - Madrid	0.50	2.98	\$1.41
Tall Wheatgrass - Jose	1.80	3.26	\$6.08
Thickspike Wheatgrass - Critana	4.30	15.20	\$29.56

Sweetvetch, Utah or Northern	0.10	0.05	\$7.50
Western Wheatgrass - Barton	1.50	3.79	\$10.50
Yarrow, Western	0.20	12.16	\$8.36
Totals Seed Mix	18.00	86.97	\$111.29

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	\$3.04	\$6.08
Straw, delivered {MEANS 31 25 14.16 1200}	2.00	TON	\$421.36	\$842.72
Total Mulch Materials Cost/Acre				\$848.80

Application

Description	Cost /Acre
Crimping, with tractor {DMG survey data}	\$73.00
Power mulcher (MEANS 32 91 13.16 0350)	\$141.57
Weed spray, truck, non-aquatic area, nox. [DMG]	\$62.72
Total Mulch Application Cost/Acre	\$277.29

NURSERY STOCK PLANTING

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

JOB TIME AND COST

No. of Acres: 19 Cost /Acre: \$1,876.96
 Estimated Failure Rate: 30% Cost /Acre*: \$1,876.96
 *Selected Replanting Work Items: TILLING,SEEDING,MULCHING

Initial Job Cost: \$35,662.24
 Reseeding Job Cost: \$10,698.67
 Total Job Cost: \$46,361
 Job Hours: 28.50

BULLDOZER WORKTask description: **Regrade Plant Area**Site: **Nahcolite Project**Permit Action: **TR-49**Permit/Job#: **M1983194****PROJECT IDENTIFICATION**Task #: **04A**State: **Colorado**Abbreviation: **None**Date: **9/22/2022**County: **Rio Blanco**Filename: **04a**User: **THM**Agency or organization name: **DRMS****HOURLY EQUIPMENT COST**Basic Machine: **Cat D8T - 8SU**Horsepower: **310**Blade Type: **Semi-Universal**Attachment: **NA**Shift Basis: **1 per day**Data Source: **(CRG)****Cost Breakdown:**

		<u>Utilization %</u>
Ownership Cost/Hour:	<u>\$124.85</u>	<u>NA</u>
Operating Cost/Hour:	<u>\$97.63</u>	<u>100</u>
Ripper own. Cost/Hour:	<u>\$0.00</u>	<u>NA</u>
Ripper op. Cost/Hour:	<u>\$0.00</u>	<u>0</u>
Operator Cost/Hour:	<u>\$41.30</u>	<u>NA</u>

Total unit Cost/Hour: **\$263.78**Total Fleet Cost/Hour: **\$527.56****MATERIAL QUANTITIES**Initial Volume: **13,229**Swell factor: **1.115**Loose volume: **14,750 LCY**Source of estimated volume: **TR-42 8.2 ac @ 12"**Source of estimated swell factor: **Cat Handbook****HOURLY PRODUCTION**Average push distance: **150 feet**Unadjusted hourly production: **634.3 LCY/hr**Materials consistency description: **Compacted fill or embankment 0.9**Average push gradient: **0 %**Average site altitude: **6,600 feet**Material weight: **2,100 lbs/LCY**Weight description: **Earth - Loam****Job Condition Correction Factor**

		<u>Source</u>
Operator Skill:	<u>0.750</u>	<u>(AVG.)</u>
Material consistency:	<u>0.900</u>	<u>(CAT HB)</u>
Dozing method:	<u>1.000</u>	<u>(GEN.)</u>
Visibility:	<u>1.000</u>	<u>(AVG.)</u>

Job efficiency:	0.830	(1 SHIFT/DAY)
Spoil pile:	0.800	(FND-RF)
Push gradient:	1.000	(CAT HB)
Altitude:	1.000	(CAT HB)
Material Weight:	1.095	(CAT HB)
Blade type:	1.000	(PAT)

Net correction: 0.4908

Adjusted unit production: 311.31 LCY/hr

Adjusted fleet production: 622.62 LCY/hr

JOB TIME AND COST

Fleet size: 2 Dozer(s)

Unit cost: \$0.847/LCY

Total job time: 23.69 Hours

Total job cost: \$12,498

BULLDOZER RIPPING WORK

Task description: Decompact Plant Area

Site: Nahcolite Project

Permit Action: TR-49

Permit/Job#: M1983194

PROJECT IDENTIFICATION

Task #: 04B

State: Colorado

Abbreviation: None

Date: 9/22/2022

County: Rio Blanco

Filename: 04b

User: THM

Agency or organization name: DRMS

HOURLY EQUIPMENT COST

Basic Machine: Cat D8T - 8SU
Ripper Attachment: 3-Shank Ripper

Horsepower: 310

Shift Basis: 1 per day

Data Source: (CRG)

Cost Breakdown:

		Utilization %
Ownership Cost/Hour:	\$124.85	NA
Operating Cost/Hour:	\$97.63	100
Ripper Ownership Cost/Hour:	\$13.10	NA
Ripper Operating Cost/Hour:	\$7.30	100
Operator Cost/Hour:	\$41.30	NA
Total Unit Cost/Hour:	\$284.18	
Total Fleet Cost/Hour:	\$568.36	

MATERIAL QUANTITIES

Selected estimating method: Area

Alternate Methods:

Seismic: NA Bank Volume: NA BCY NA
Area: 8.20 acres Rip Depth (ft): 2.00 Volume: 26,459 BCY or CCY

Source of estimated quantity: TR-42

HOURLY PRODUCTION

Seismic:

Seismic Velocity: NA feet/second

Area:

Average Ripping Depth: 2.56 feet/pass
Average Ripping Width: 7.08 feet/pass
Average Ripping Length: 100.00 feet/pass
Average Dozer Speed: 88.00 feet/minute
Average Maneuver Time: 0.25 minutes/pass
Production per unit area: 0.703 acres/hour

Job Condition Correction Factors

Unadjusted Hourly Unit Production: 0.703 Acres/hr
Site Altitude: 6,600 feet
Altitude Adj: 1.00 (CAT HB)
Job Efficiency: 0.83 (1 shift/day)
Net Correction: 0.83 multiplier

Adjusted Hourly Unit Production: 0.58 Acres/hr
Adjusted Hourly Fleet Production: 1.17 Acres/hr

JOB TIME AND COST

Fleet size: 2 Grader(s) Total job time: 7.02 Hours

Unit cost: \$486.739 Per acre Total job cost: \$3,991

BULLDOZER WORKTask description: Topsoil Plant AreaSite: Nahcolite ProjectPermit Action: TR-49Permit/Job#: M1983194**PROJECT IDENTIFICATION**Task #: 04CState: ColoradoAbbreviation: NoneDate: 9/22/2022County: Rio BlancoFilename: 04cUser: THMAgency or organization name: DRMS**HOURLY EQUIPMENT COST**Basic Machine: Cat D8T - 8SUHorsepower: 310Blade Type: Semi-UniversalAttachment: NAShift Basis: 1 per dayData Source: (CRG)**Cost Breakdown:**

		<u>Utilization %</u>
Ownership Cost/Hour:	\$124.85	NA
Operating Cost/Hour:	\$97.63	100
Ripper own. Cost/Hour:	\$0.00	NA
Ripper op. Cost/Hour:	\$0.00	0
Operator Cost/Hour:	\$41.30	NA

Total unit Cost/Hour: \$263.78Total Fleet Cost/Hour: \$527.56**MATERIAL QUANTITIES**Initial Volume: 6,615Swell factor: 1.000Loose volume: 6,615 LCYSource of estimated volume: 8.2 ac @ 6" depthSource of estimated swell factor: Cat Handbook**HOURLY PRODUCTION**Average push distance: 150 feetUnadjusted hourly production: 634.3 LCY/hrMaterials consistency description: Loose stockpile 1.2Average push gradient: 0 %Average site altitude: 6,600 feetMaterial weight: 1,600 lbs/LCYWeight description: Top Soil**Job Condition Correction Factor**

		<u>Source</u>
Operator Skill:	0.750	(AVG.)
Material consistency:	1.200	(CAT HB)
Dozing method:	1.000	(GEN.)
Visibility:	0.800	(POOR)

Job efficiency:	0.830	(1 SHIFT/DAY)
Spoil pile:	0.800	(FND-RF)
Push gradient:	1.000	(CAT HB)
Altitude:	1.000	(CAT HB)
Material Weight:	1.438	(CAT HB)
Blade type:	1.000	(PAT)

Net correction: 0.6875

Adjusted unit production: 436.08 LCY/hr

Adjusted fleet production: 872.16 LCY/hr

JOB TIME AND COST

Fleet size: 2 Dozer(s)

Unit cost: \$0.605/LCY

Total job time: 7.58 Hours

Total job cost: \$4,001

REVEGETATION WORKTask description: Reveg Plant AreaSite: Nahcolite ProjectPermit Action: TR-49Permit/Job#: M1983194**PROJECT IDENTIFICATION**Task #: 04DState: ColoradoAbbreviation: NoneDate: 9/22/2022County: Rio BlancoFilename: 04dUser: THMAgency or organization name: DRMS**FERTILIZING****Materials**

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

Application

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

TILLING

Description	Cost /Acre
Disc harrowing, 6" deep (MEANS 32 91 13.23 6100)	\$117.18
Weed control spraying (MEANS 31 31 16.13 3100)	\$290.40
Total Tilling Cost/Acre	\$407.58

SEEDING

Seed Mix	Rate – PLS LBS / Acre	Seeds per SQ. FT	Cost /Acre
Alkali Sacaton	0.10	3.90	\$2.85
Crested Wheatgrass - Ephraim	4.00	18.37	\$17.30
Blue Wildrye - Arlington or Elkton	1.50	5.17	\$9.99
Russian Wildrye - Bozoiisky	1.50	6.03	\$9.72
Hard Fescue - Discovery	1.00	12.97	\$2.93
Pubescent Wheatgrass - Luna	1.50	3.10	\$5.10
Yellow Sweet Clover - Madrid	0.50	2.98	\$1.41
Tall Wheatgrass - Jose	1.80	3.26	\$6.08
Thickspike Wheatgrass - Critana	4.30	15.20	\$29.56

Sweetvetch, Utah or Northern	0.10	0.05	\$7.50
Western Wheatgrass - Barton	1.50	3.79	\$10.50
Yarrow, Western	0.20	12.16	\$8.36
Totals Seed Mix	18.00	86.97	\$111.29

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	\$3.04	\$6.08
Straw, delivered {MEANS 31 25 14.16 1200}	2.00	TON	\$421.36	\$842.72
Total Mulch Materials Cost/Acre				\$848.80

Application

Description	Cost /Acre
Crimping, with tractor {DMG survey data}	\$73.00
Power mulcher (MEANS 32 91 13.16 0350)	\$141.57
Weed spray, truck, non-aquatic area, nox. [DMG]	\$62.72
Total Mulch Application Cost/Acre	\$277.29

NURSERY STOCK PLANTING

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

JOB TIME AND COST

No. of Acres:	8.2	Cost /Acre:	\$1,876.96
Estimated Failure Rate:	30%	Cost /Acre*:	\$1,876.96
*Selected Replanting Work Items:	TILLING,SEEDING,MULCHING		
Initial Job Cost:	\$15,391.07		
Reseeding Job Cost:	\$4,617.32		
Total Job Cost:	\$20,008		
Job Hours:	12.30		

BULLDOZER WORKTask description: Regrade Well PadsSite: Nahcolite ProjectPermit Action: TR-49Permit/Job#: M1983194**PROJECT IDENTIFICATION**Task #: 05AState: ColoradoAbbreviation: NoneDate: 9/22/2022County: Rio BlancoFilename: 05aUser: THMAgency or organization name: DRMS**HOURLY EQUIPMENT COST**Basic Machine: Cat D8T - 8SUHorsepower: 310Blade Type: Semi-UniversalAttachment: NAShift Basis: 1 per dayData Source: (CRG)**Cost Breakdown:**

		<u>Utilization %</u>
Ownership Cost/Hour:	<u>\$124.85</u>	<u>NA</u>
Operating Cost/Hour:	<u>\$97.63</u>	<u>100</u>
Ripper own. Cost/Hour:	<u>\$0.00</u>	<u>NA</u>
Ripper op. Cost/Hour:	<u>\$0.00</u>	<u>0</u>
Operator Cost/Hour:	<u>\$41.30</u>	<u>NA</u>
Total unit Cost/Hour:	<u>\$263.78</u>	
Total Fleet Cost/Hour:	<u>\$527.56</u>	

MATERIAL QUANTITIESInitial Volume: 142,393Swell factor: 1.115Loose volume: 158,768 LCYSource of estimated volume: 44.13 ac of pads grade 24" depthSource of estimated swell factor: Cat Handbook**HOURLY PRODUCTION**Average push distance: 75 feetUnadjusted hourly production: 1,017.1 LCY/hrMaterials consistency description: Compacted fill or embankment 0.9Average push gradient: 0 %Average site altitude: 6,600 feetMaterial weight: 2,100 lbs/LCYWeight description: Earth - Loam**Job Condition Correction Factor**

		<u>Source</u>
Operator Skill:	<u>0.750</u>	<u>(AVG.)</u>
Material consistency:	<u>0.900</u>	<u>(CAT HB))</u>
Dozing method:	<u>1.000</u>	<u>(GEN.)</u>
Visibility:	<u>1.000</u>	<u>(AVG.)</u>

Job efficiency:	0.830	(1 SHIFT/DAY)
Spoil pile:	0.800	(FND-RF)
Push gradient:	1.000	(CAT HB)
Altitude:	1.000	(CAT HB)
Material Weight:	1.095	(CAT HB)
Blade type:	1.000	(PAT)

Net correction: 0.4908

Adjusted unit production: 499.19 LCY/hr

Adjusted fleet production: 998.38 LCY/hr

JOB TIME AND COST

Fleet size: 2 Dozer(s)

Unit cost: \$0.528/LCY

Total job time: 159.03 Hours

Total job cost: \$83,896

BULLDOZER WORKTask description: Topsoil Well PadsSite: Nahcolite ProjectPermit Action: TR-49Permit/Job#: M1983194**PROJECT IDENTIFICATION**Task #: 05BState: ColoradoAbbreviation: NoneDate: 9/22/2022County: Rio BlancoFilename: 05bUser: THMAgency or organization name: DRMS**HOURLY EQUIPMENT COST**Basic Machine: Cat D8T - 8SUHorsepower: 310Blade Type: Semi-UniversalAttachment: NAShift Basis: 1 per dayData Source: (CRG)**Cost Breakdown:**

		<u>Utilization %</u>
Ownership Cost/Hour:	\$124.85	NA
Operating Cost/Hour:	\$97.63	100
Ripper own. Cost/Hour:	\$0.00	NA
Ripper op. Cost/Hour:	\$0.00	0
Operator Cost/Hour:	\$41.30	NA

Total unit Cost/Hour: \$263.78Total Fleet Cost/Hour: \$527.56**MATERIAL QUANTITIES**Initial Volume: 35,598Swell factor: 1.000Loose volume: 35,598 LCYSource of estimated volume: 44.13 ac @ 6" depthSource of estimated swell factor: Cat Handbook**HOURLY PRODUCTION**Average push distance: 150 feetUnadjusted hourly production: 634.3 LCY/hrMaterials consistency description: Loose stockpile 1.2Average push gradient: 0 %Average site altitude: 6,600 feetMaterial weight: 1,600 lbs/LCYWeight description: Top Soil**Job Condition Correction Factor**

		<u>Source</u>
Operator Skill:	0.750	(AVG.)
Material consistency:	1.200	(CAT HB)
Dozing method:	1.000	(GEN.)
Visibility:	1.000	(AVG.)

Job efficiency:	0.830	(1 SHIFT/DAY)
Spoil pile:	0.800	(FND-RF)
Push gradient:	1.000	(CAT HB)
Altitude:	1.000	(CAT HB)
Material Weight:	1.438	(CAT HB)
Blade type:	1.000	(PAT)

Net correction: 0.8593

Adjusted unit production: 545.05 LCY/hr

Adjusted fleet production: 1090.1 LCY/hr

JOB TIME AND COST

Fleet size: 2 Dozer(s)

Unit cost: \$0.484/LCY

Total job time: 32.66 Hours

Total job cost: \$17,228

REVEGETATION WORKTask description: Reveg Well PadsSite: Nahcolite ProjectPermit Action: TR-49Permit/Job#: M1983194**PROJECT IDENTIFICATION**Task #: 05CState: ColoradoAbbreviation: NoneDate: 9/22/2022County: Rio BlancoFilename: 05cUser: THMAgency or organization name: DRMS**FERTILIZING****Materials**

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

Application

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

TILLING

Description	Cost /Acre
Disc harrowing, 6" deep (MEANS 32 91 13.23 6100)	\$117.18
Weed control spraying (MEANS 31 31 16.13 3100)	\$290.40
Total Tilling Cost/Acre	\$407.58

SEEDING

Seed Mix	Rate – PLS LBS / Acre	Seeds per SQ. FT	Cost /Acre
Alkali Sacaton	0.10	3.90	\$2.85
Crested Wheatgrass - Ephraim	4.00	18.37	\$17.30
Blue Wildrye - Arlington or Elkton	1.50	5.17	\$9.99
Russian Wildrye - Bozoikey	1.50	6.03	\$9.72
Hard Fescue - Discovery	1.00	12.97	\$2.93
Pubescent Wheatgrass - Luna	1.50	3.10	\$5.10
Yellow Sweet Clover - Madrid	0.50	2.98	\$1.41
Tall Wheatgrass - Jose	1.80	3.26	\$6.08
Thickspike Wheatgrass - Critana	4.30	15.20	\$29.56

Sweetvetch, Utah or Northern	0.10	0.05	\$7.50
Western Wheatgrass - Barton	1.50	3.79	\$10.50
Yarrow, Western	0.20	12.16	\$8.36
Totals Seed Mix	18.00	86.97	\$111.29

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	\$3.04	\$6.08
Straw, delivered {MEANS 31 25 14.16 1200}	2.00	TON	\$421.36	\$842.72
Total Mulch Materials Cost/Acre				\$848.80

Application

Description	Cost /Acre
Crimping, with tractor {DMG survey data}	\$73.00
Power mulcher (MEANS 32 91 13.16 0350)	\$141.57
Weed spray, truck, non-aquatic area, nox. [DMG]	\$62.72
Total Mulch Application Cost/Acre	\$277.29

NURSERY STOCK PLANTING

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

JOB TIME AND COST

No. of Acres: 44.13 Cost /Acre: \$1,876.96
 Estimated Failure Rate: 30% Cost /Acre*: \$1,876.96
 *Selected Replanting Work Items: TILLING,SEEDING,MULCHING

Initial Job Cost: \$82,830.24
 Reseeding Job Cost: \$24,849.07
 Total Job Cost: \$107,679
 Job Hours: 66.20

BULLDOZER RIPPING WORK

Task description: Decompact Roads

Site: Nahcolite Project

Permit Action: TR-49

Permit/Job#: M1983194

PROJECT IDENTIFICATION

Task #: 06A

State: Colorado

Abbreviation: None

Date: 9/22/2022

County: Rio Blanco

Filename: 06a

User: THM

Agency or organization name: DRMS

HOURLY EQUIPMENT COST

Basic Machine: Cat D8T - 8SU
Ripper Attachment: 3-Shank Ripper

Horsepower: 310
Shift Basis: 1 per day
Data Source: (CRG)

Cost Breakdown:

		Utilization %
Ownership Cost/Hour:	\$124.85	NA
Operating Cost/Hour:	\$97.63	100
Ripper Ownership Cost/Hour:	\$13.10	NA
Ripper Operating Cost/Hour:	\$7.30	100
Operator Cost/Hour:	\$41.30	NA
Total Unit Cost/Hour:	\$284.18	
Total Fleet Cost/Hour:	\$568.36	

MATERIAL QUANTITIES

Selected estimating method: Area

Alternate Methods:

Seismic: NA Bank Volume: NA BCY NA
Area: 3.76 acres Rip Depth (ft): 2.00 Volume: 12,132 BCY or CCY

Source of estimated quantity: TR-46 D&A Provided Table

HOURLY PRODUCTION

Seismic:

Seismic Velocity: NA feet/second

Area:

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
Average Maneuver Time:	0.25	minutes/pass
Production per unit area:	0.748	acres/hour

Job Condition Correction Factors

Unadjusted Hourly Unit Production:	0.748	Acres/hr
Site Altitude:	6,600	feet
Altitude Adj:	1.00	(CAT HB)
Job Efficiency:	0.83	(1 shift/day)
Net Correction:	0.83	multiplier

Adjusted Hourly Unit Production:	0.62	Acres/hr
Adjusted Hourly Fleet Production:	1.24	Acres/hr

JOB TIME AND COST

Fleet size: 2 Grader(s) Total job time: 3.03 Hours

Unit cost: \$457.481 Per acre Total job cost: \$1,720

BULLDOZER WORKTask description: Topsoil roadsSite: Nahcolite ProjectPermit Action: TR-49Permit/Job#: M1983194**PROJECT IDENTIFICATION**Task #: 06BState: ColoradoAbbreviation: NoneDate: 9/22/2022County: Rio BlancoFilename: 06bUser: THMAgency or organization name: DRMS**HOURLY EQUIPMENT COST**Basic Machine: Cat D8T - 8SUHorsepower: 310Blade Type: Semi-UniversalAttachment: NAShift Basis: 1 per dayData Source: (CRG)**Cost Breakdown:**

		<u>Utilization %</u>
Ownership Cost/Hour:	\$124.85	NA
Operating Cost/Hour:	\$97.63	100
Ripper own. Cost/Hour:	\$0.00	NA
Ripper op. Cost/Hour:	\$0.00	0
Operator Cost/Hour:	\$41.30	NA

Total unit Cost/Hour: \$263.78Total Fleet Cost/Hour: \$527.56**MATERIAL QUANTITIES**Initial Volume: 3,033Swell factor: 1.000Loose volume: 3,033 LCYSource of estimated volume: 3.76 ac @ 6" depthSource of estimated swell factor: Cat Handbook**HOURLY PRODUCTION**Average push distance: 150 feetUnadjusted hourly production: 634.3 LCY/hrMaterials consistency description: Loose stockpile 1.2Average push gradient: 0 %Average site altitude: 6,600 feetMaterial weight: 1,600 lbs/LCYWeight description: Top Soil**Job Condition Correction Factor**

		<u>Source</u>
Operator Skill:	0.900	(AB.AVG.)
Material consistency:	1.200	(CAT HB)
Dozing method:	1.000	(GEN.)
Visibility:	1.000	(AVG.)

Job efficiency:	0.830	(1 SHIFT/DAY)
Spoil pile:	0.800	(FND-RF)
Push gradient:	1.000	(CAT HB)
Altitude:	1.000	(CAT HB)
Material Weight:	1.438	(CAT HB)
Blade type:	1.000	(PAT)

Net correction: 1.0312

Adjusted unit production: 654.09 LCY/hr

Adjusted fleet production: 1308.18 LCY/hr

JOB TIME AND COST

Fleet size: 2 Dozer(s)

Unit cost: \$0.403/LCY

Total job time: 2.32 Hours

Total job cost: \$1,223

REVEGETATION WORKTask description: Reveg RoadsSite: Nahcolite ProjectPermit Action: TR-49Permit/Job#: M1983194**PROJECT IDENTIFICATION**Task #: 06CState: ColoradoAbbreviation: NoneDate: 9/22/2022County: Rio BlancoFilename: 06cUser: THMAgency or organization name: DRMS**FERTILIZING****Materials**

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

Application

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

TILLING

Description	Cost /Acre
Disc harrowing, 6" deep (MEANS 32 91 13.23 6100)	\$117.18
Weed control spraying (MEANS 31 31 16.13 3100)	\$290.40
Total Tilling Cost/Acre	\$407.58

SEEDING

Seed Mix	Rate – PLS LBS / Acre	Seeds per SQ. FT	Cost /Acre
Alkali Sacaton	0.10	3.90	\$2.85
Crested Wheatgrass - Ephraim	4.00	18.37	\$17.30
Blue Wildrye - Arlington or Elkton	1.50	5.17	\$9.99
Russian Wildrye - Bozoiisky	1.50	6.03	\$9.72
Hard Fescue - Discovery	1.00	12.97	\$2.93
Pubescent Wheatgrass - Luna	1.50	3.10	\$5.10
Yellow Sweet Clover - Madrid	0.50	2.98	\$1.41
Tall Wheatgrass - Jose	1.80	3.26	\$6.08
Thickspike Wheatgrass - Critana	4.30	15.20	\$29.56

Sweetvetch, Utah or Northern	0.10	0.05	\$7.50
Western Wheatgrass - Barton	1.50	3.79	\$10.50
Yarrow, Western	0.20	12.16	\$8.36
Totals Seed Mix	18.00	86.97	\$111.29

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	\$3.04	\$6.08
Straw, delivered {MEANS 31 25 14.16 1200}	2.00	TON	\$421.36	\$842.72
Total Mulch Materials Cost/Acre				\$848.80

Application

Description	Cost /Acre
Crimping, with tractor {DMG survey data}	\$73.00
Power mulcher (MEANS 32 91 13.16 0350)	\$141.57
Weed spray, truck, non-aquatic area, nox. [DMG]	\$62.72
Total Mulch Application Cost/Acre	\$277.29

NURSERY STOCK PLANTING

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

JOB TIME AND COST

No. of Acres:	3.76	Cost /Acre:	\$1,876.96
Estimated Failure Rate:	30%	Cost /Acre*:	\$1,876.96
*Selected Replanting Work Items:	TILLING,SEEDING,MULCHING		
Initial Job Cost:	\$7,057.37		
Reseeding Job Cost:	\$2,117.21		
Total Job Cost:	\$9,175		
Job Hours:	5.60		

EQUIPMENT MOBILIZATION/DEMOBILIZATIONTask description: **Initial Mobilization**Site: **Nahcolite Project**Permit Action: **TR-49**Permit/Job#: **M1983194****PROJECT IDENTIFICATION**Task #: **07A**State: **Colorado**Abbreviation: **None**Date: **9/22/2022**County: **Rio Blanco**Filename: **07a**User: **THM**Agency or organization name: **DRMS****EQUIPMENT TRANSPORT RIG COST**Shift basis: **1 per day**
Cost Data Source: **CRG Data**Truck Tractor Description: **GENERIC ON-HIGHWAY TRUCK TRACTOR, 6X4, DIESEL POWERED,
400 HP (2ND HALF, 2006)**Truck Trailer Description: **GENERIC FOLDING GOOSENECK, DROP DECK EQUIPMENT
TRAILER (25T, 50T, AND 100T)****Cost Breakdown:**

Available Rig Capacities	0-25 Tons	26-50 Tons	51+ Tons
Ownership Cost/Hour:	\$15.25	\$23.06	\$37.58
Operating Cost/Hour:	\$25.26	\$30.83	\$51.41
Operator Cost/Hour:	\$27.71	\$27.71	\$27.71
Helper Cost/Hour:	\$0.00	\$20.22	\$20.22
Total Unit Cost/Hour:	\$68.22	\$101.82	\$136.92

NON ROADABLE EQUIPMENT:

Machine Description	Weight/ Unit (TONS)	Owner ship Cost/hr/ unit	Haul Rig Cost/hr/unit	Fleet Size	Haul Trip Cost/hr/ fleet	Return Trip Cost/hr/ fleet	DOT Permit Cost/ fleet
Cat D8T - 8SU	53.08	\$137.95	\$136.92	2	\$549.74	\$273.84	\$500.00
Drill/Broadcast Seeder with Tractor	25.00	\$6.25	\$68.22	1	\$74.47	\$68.22	\$250.00
Power Mulcher (Bowie LD-90)	6.00	\$14.79	\$68.22	1	\$83.01	\$68.22	\$250.00
Grove RT650E, 105', 45.4 MT	28.74	\$127.07	\$101.82	1	\$228.89	\$101.82	\$250.00
Broderson IC-200- 2F, 45', 13.6MT	8.68	\$35.88	\$68.22	1	\$104.10	\$68.22	\$250.00
Cat 345D L 12'- 10" Stick	54.31	\$110.45	\$136.92	1	\$247.37	\$136.92	\$250.00
CAT 973D	29.07	\$153.23	\$101.82	1	\$255.05	\$101.82	\$250.00

Subtotals: **\$1,542.63** **\$819.06** **\$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.	\$69.59	1	\$69.59	\$69.59
Generic 12-18 cy, 6x4	\$113.40	3	\$340.20	\$340.20

Subtotals:	\$409.79	\$409.79
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EQUIPMENT HAUL DISTANCE and Time

Nearest Major City or Town within project area region:	<u>RIFLE</u>	
Total one-way travel distance:	<u>60.00</u>	miles
Average Travel Speed:	<u>40.00</u>	mph

Total Non-Roadable Mob/Demob Cost *	<u>\$14,170.33</u>
'* two round trips with haul rig:	
Total Roadable Mob/Demob Cost **	<u>\$1,229.37</u>
'** one round trip, no haul rig:	

Transportation Cycle Time:

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

JOB TIME AND COST

Total job time:	<u>8.00</u>	Hours
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Total job cost:	<u>\$15,400</u>
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EQUIPMENT MOBILIZATION/DEMOBILIZATIONTask description: **Secondary Mobilization**Site: **Nahcolite Project**Permit Action: **TR-49**Permit/Job#: **M1983194****PROJECT IDENTIFICATION**Task #: **07B**State: **Colorado**Abbreviation: **None**Date: **9/22/2022**County: **Rio Blanco**Filename: **07b**User: **THM**Agency or organization name: **DRMS****EQUIPMENT TRANSPORT RIG COST**Shift basis: **1 per day**Cost Data Source: **CRG Data**Truck Tractor Description: **GENERIC ON-HIGHWAY TRUCK TRACTOR, 6X4, DIESEL POWERED,
400 HP (2ND HALF, 2006)**Truck Trailer Description: **GENERIC FOLDING GOOSENECK, DROP DECK EQUIPMENT
TRAILER (25T, 50T, AND 100T)****Cost Breakdown:**

Available Rig Capacities	0-25 Tons	26-50 Tons	51+ Tons
Ownership Cost/Hour:	\$15.25	\$23.06	\$37.58
Operating Cost/Hour:	\$25.26	\$30.83	\$51.41
Operator Cost/Hour:	\$27.71	\$27.71	\$27.71
Helper Cost/Hour:	\$0.00	\$20.22	\$20.22
Total Unit Cost/Hour:	\$68.22	\$101.82	\$136.92

NON ROADABLE EQUIPMENT:

Machine Description	Weight/ Unit (TONS)	Owner ship Cost/hr/ unit	Haul Rig Cost/hr/unit	Fleet Size	Haul Trip Cost/hr/ fleet	Return Trip Cost/hr/ fleet	DOT Permit Cost/ fleet
Drill/Broadcast Seeder with Tractor	25.00	\$6.25	\$68.22	1	\$74.47	\$68.22	\$250.00
Power Mulcher (Bowie LD-90)	6.00	\$14.79	\$68.22	1	\$83.01	\$68.22	\$250.00

Subtotals: **\$157.48** **\$136.44** **\$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.	\$69.59	1	\$69.59	\$69.59

Subtotals: **\$69.59** **\$69.59**

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 * \$2,196.72
 * two round trips with haul rig:
 Total Roadable Mob/Demob Cost ** \$208.77
 ** one round trip, no haul rig:

Transportation Cycle Time:

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

JOB TIME AND COST

Total job time: 8.00 Hours

Total job cost: \$2,405