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

1313 Sherman St. Room 215
Denver, CO 80203

April 23, 2021

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

**Re: Nahcolite Project, Permit No. M-1983-194, Technical Revision Approval, Revision No. TR-46**

Dear Mr. Daehling:

On April 23, 2021 the Division of Reclamation, Mining and Safety approved the Technical Revision application submitted to the Division on April 19, 2021, addressing the following:

*Request to drill up-gradient monitoring wells PA-1, AG-2, and BG-10 on new pad (1.18 ac of disturbance)*

The terms of the Technical Revision No. 46 approved by the Division are hereby incorporated into Permit No. M-1983-194. All other conditions and requirements of Permit No. M-1983-194 remain in full force and effect.

If the revised liability amount exceeds the performance bond currently held (see below), please submit additional bond. The revision will not be final until the bond is approved by the Division.

| | |
|---|---|
| Bond Held: | $3,671,965.00 |
| Prior Liability: | $3,671,965.00 |
| Change in Liability: | $0.00 |
| **Revised Liability:** | $3,671,965.00 |

If you have any questions, please contact me.

Sincerely,

Amy Yeldell

Amy C. Yeldell
Environmental Protection Specialist

CC:
Jerry Daub
Paul Daggett

COLORADO
Division of Reclamation, Mining and Safety
Department of Natural Resources
1313 Sherman Street, Room 215
Denver, CO 80203

April 22, 2021

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

***RE: Nahcolite Project, Permit No. M-1983-194, TR-46 Reclamation Cost Estimate-Changes to Bond***

Dear Mr. Daehling:

This reclamation cost update was in response to the technical revision request (TR-46) which was submitted on April 19, 2021 as well as the updated figures provided in the attached Daub & Associates Inc. table. The Division is mandated to recalculate the reclamation cost estimate to ensure that the Financial Warranty adequately, reflects the actual current cost of fulfilling the requirements of the approved reclamation plan.

Below is a table summarizing input values that have been updated with technical revision (TR-46) as compared to previous technical revision (TR-45). This table does not account for price changes resulting from inflation or other RS Means cost changes.

| Task | Form Used | Change | Justification |
|---|---|---|---|
| 02a | Borehole | + | Added PA-1, AG-2, and BG-10<br>Remove BG-5 and BG-9 (removed under TR-45 13H-I, 14H-I, 10H-I, 10H-R, and 10H-1V) |
| 05a | Dozer | - | Credit for partially reclaimed pads and addition of new pad as provided in D&A updated table<br>New total of 142,393 CY to be graded over 44.13 ac |
| 05b | Dozer | - | Credit for partially reclaimed pads and addition of new pad as provided in D&A updated table<br>Per TR-46 477 CY of topsoil estimated to construct a 1.18 ac pad. 3” is less than Rec plan which requires 6” and is 952 CY.<br>New total 44.13 ac of pads @ 6” depth is 35,598 CY |

| | | | |
|---|---|---|---|
| 05c | Reveg | - | Add PA-1, AG-2, BG-10 Pad, remove reclaimed BG-5 and BG-9 pads and interim reclamation od DS-10<br>New total Reveg 44.13 ac |
| 06a | Ripper, | - | Credit for partially reclaimed roads as provided in D&A updated table<br>New total 3.76 ac |
| 06b | Dozer | - | Credit for partially reclaimed roads as provided in D&A updated table<br>New total 3.76 ac @ 6” is 3,033 CY |
| 06c | Reveg | - | Credit for partially reclaimed roads as provided in D&A updated table<br>New total Reveg 3.76 ac |

Please feel free to contact me with any further questions.

Sincerely,

Amy Yeldell

***Amy Yeldell***
Environmental Protection Specialist

# Natural Soda, LLC
# Road Pad Reclamation Tracking Spreadsheet

| WELL PADS | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **DISTURBED** | | | **INTERIM RECLAMATION** (How does NS monitor Interim Reclamation status?) | | | **UNDERGOING FINAL RECLAMATION** RR should visit these areas and offer opinions for add'l reclamation efforts or determine if they should be moved to Monitored column. | | | **FINAL RECLAMATION & VEGETATION STUDY (first grow & first monitor year)** RR should visit these areas or review his notes and determine if they should be monitored again or are in need of add'l reclamation efforts. | | | **MEETS RECLAMATION GOALS (yr met BLM goals)** | | | **RECOGNIZED AS RECLAIMED BY AGENCIES** | | |
| **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) (P&A'd 2019) | 88,287 | 2.03 | 2M-TDR, 3M-TDR | 5,554 | 0.13 | C (08/15, 08/19: cheat grass & not enuf forbs & perennials) | 28,725 | 0.66 | 93-2M (2011 & 2013-19) | 12,505 | 0.29 | 4-2V & 93-3V (2013,14,15) | 131,882 | 3.03 | 1A-5HR (13,14,15) | 68,443 | 1.57 |
| 5H | 98,187 | 2.25 | 89-1 | 14,961 | 0.34 | G (05/16, 08/19: Russi. Thistle) | 26,321 | 0.60 | Q (2016 & 2019) | 24,786 | 0.57 | 91-1V (2013,14,15) | 8,746 | 0.20 | 1A-4HI (2013) | 29,896 | 0.69 |
| 7H | 76,787 | 1.76 | 90-1 | 38,490 | 0.88 | U (05/16, 08/19:Russi Thist) | 25,075 | 0.58 | 4-3H(V) (2013) | 39,927 | 0.92 | 4A-5M, 4A-6V (2013,14,15 chk w/ BLM) | 26,122 | 0.60 | 3A-5V (13,14,15) | 64,843 | 1.49 |
| 7H-1V (see 15H-1V) | 0 | 0.00 | 90-2 | 18,509 | 0.42 | BG-8 (DS-4) P&A 2017, 2018 1st grow yr | 45,021 | 1.03 | | | 0.00 | 4A-1V (2018, 11yrs of rec) | 57,885 | 1.33 | 5H-1V (2012 & 2014-19, 19) | 35,862 | 0.82 |
| 10H-13H | 290,596 | 6.67 | 90-5H | 8,791 | 0.20 | MW-1, PW-1, PW-2 (RR to ck 07 or 08 2016) | 24,278 | 0.56 | | | 0.00 | | | | | | 0.00 |
| 14H | 98,457 | 2.26 | BG-4 | 20,343 | 0.47 | IRI-3 (P&A 2015, RR to ck 07 or 08 2016) | 6,872 | 0.16 | | | 0.00 | E (2016 & 2019, 19) | 25,379 | 0.58 | 1/24/20 D&A sent DRMS a list of successfully reclaimed acreage, have drms/blm sign-off on acreage, and return a copy of list to D&A. | | 0.00 |
| 88-1V | 19,714 | 0.45 | BG-6 (see RR 2015 rept) | 25,439 | 0.58 | | | 0.00 | | | 0.00 | H (2015 & 2019, 19) | 28,880 | 0.66 | | | 0.00 |
| 15H-17H | 207,133 | 4.76 | DS-2 | 6,659 | 0.15 | 93-4H&91-2H (2008 & 2013-19) | 88,994 | 2.04 | | | 0.00 | N (2015 & 2019, 19) | 29,639 | 0.68 | | | 0.00 |
| 12H-13H-IR (1-3A, 2B-3C) | 74,053 | 1.70 | DS-3 | 6,524 | 0.15 | BG-5 (see RR 2015 rept) | 38,668 | 0.89 | | | 0.00 | P (2016 & 2019, 19) | 24,581 | 0.56 | | | 0.00 |
| 14H-1V | 49,289 | 1.13 | DS-6 (Aug 2015, Good Response) | 25,160 | 0.58 | BG-9 (DS-5) (see RR 2015 rept) | 29,973 | 0.69 | | | 0.00 | R (2016 & 2019, 19) | 26,013 | 0.60 | | | 0.00 |
| 15H-1V | 63,204 | 1.45 | DS-7, 2A-2V (Aug 2015, Fair Response) | 38,045 | 0.87 | | | 0.00 | | | 0.00 | 94-1M (2020) | 56,433 | 1.30 | | | 0.00 |
| 16H-17H-IR-E (as-blt) | 114,095 | 2.62 | I (DS-8) (Aug 2015, Good Response) | 26,732 | 0.61 | | | 0.00 | | | 0.00 | A (2016, 2020) | 24,345 | 0.56 | | | 0.00 |
| 16-17H-1V (38,500 sq ft (0.88 acres)) of existing 1A-4HI pad) | 208,401 | 4.78 | K (BG-7) (Aug 2015, Good Response) | 27,870 | 0.64 | | | 0.00 | | | 0.00 | D (2015, 2020) | 27,853 | 0.64 | | | 0.00 |
| | | 0.00 | M (DS-9) (Aug 2015, Good Response) | 29,224 | 0.67 | | | 0.00 | | | 0.00 | IRI-2 (P&A 2017, 2020) is acerage in CIRCES? | | 0.00 | | | 0.00 |
| | | 0.00 | WSW-2 | 30,389 | 0.70 | | | 0.00 | | | 0.00 | T (05, 2016, 2020) | 31,010 | 0.71 | | | 0.00 |
| | | 0.00 | WSW-3 (May 2016, Good Response) | 32,647 | 0.75 | | | 0.00 | | | 0.00 | | | | | | 0.00 |
| | | 0.00 | WSW-4 (Aug 2015, Good Response) | 32,789 | 0.75 | | | 0.00 | | | 0.00 | | | 0.00 | | | 0.00 |
| | | 0.00 | WSW-5 (O-GMW-A) (Aug 2015, Good Response) | 28,854 | 0.66 | | | 0.00 | | | 0.00 | | | 0.00 | | | 0.00 |
| | | 0.00 | 15H-SSMW | 24,594 | 0.56 | | | 0.00 | | | 0.00 | | | 0.00 | | | 0.00 |
| | | 0.00 | 17H-SSMW Pad | 12,791 | 0.29 | | | 0.00 | | | 0.00 | | | 0.00 | | | 0.00 |
| | | 0.00 | DS-10 Pad | 28,404 | 0.65 | | | 0.00 | | | 0.00 | | | 0.00 | | | 0.00 |
| | | 0.00 | PA-1 AG-2 BG-10 Upgradient Monitor Pad (Proposed) | 51,401 | 1.18 | | | 0.00 | | | 0.00 | | | 0.00 | | | 0.00 |
| | | 0.00 | | | 0.00 | | | 0.00 | | | 0.00 | | | 0.00 | | | 0.00 |
| | | 0.00 | | | 0.00 | | | 0.00 | | | 0.00 | | | 0.00 | | | 0.00 |
| | | 0.00 | | | 0.00 | | | 0.00 | | | 0.00 | | | 0.00 | | | 0.00 |
| **TOTAL** | **1,388,203** | **31.87** | **TOTAL** | **534,170** | **12.26** | **TOTAL** | **313,927** | **7.21** | **TOTAL** | **77,218** | **1.77** | **TOTAL** | **498,768** | **11.45** | **TOTAL** | **199,044** | **4.57** |

| | | |
|---|---|---|
| **Pad/Road DISTURBED** | **34.36** | Task 05A, 05B, & 05C needs: regrade, topsoil, & reveg, Roads will need decompation |
| **Pad/Road INTERIM RECLAMATION** | **13.52** | |
| **Pad/Road UNDERGOING FINAL RECLAMATION** | **8.12** | Acreage that does not need regrading, topsoil, or reveg |
| **Pad/Road FINAL RECLAMATION & VEGETATION STUDY** | **1.77** | |
| **Pad/Road MEETS RECLAMATION GOALS** | **14.72** | |
| **Pad/Road RECOGNIZED AS RECLAMED BY AGENCIES** | **4.57** | |
| **Vertical Check sum (ac)** | **77.07** | **Horizontal Check Sum (ac)** **77.07** |

# Natural Soda, LLC
# Road Pad Reclamation Tracking Spreadsheet

| ROADS and PIPELINES | | | | | | ROADS and PIPELINES | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| DISTURBED | | | INTERIM RECLAMATION | | | UNDERGOING FINAL RECLAMATION | | | FINAL RECLAMATION & VEGETATION STUDY (first grow & first monitor year) RR should visit these areas or review his notes and determine if they should be monitored again or are in need of add'l reclamation efforts. | | | MEETS RECLAMATION GOALS (yr met BLM goals) | | | RECOGNIZED AS RECLAIMED BY AGENCIES | | |
| 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 |
| RD A | 23,690 | 0.54 | RD D | 1,044 | 0.02 | RD A rdp | 928 | 0.02 | | | 0.00 | RD E ~960' rdp (2019) | 10,649 | 0.24 | | | 0.00 |
| RD B | 38,042 | 0.87 | RD G | 8,168 | 0.19 | RD G rdp | 1,050 | 0.02 | | | 0.00 | RD H ~585' rdp (2019) | 11,542 | 0.26 | | | 0.00 |
| RD C | 18,711 | 0.43 | RD H | 6,168 | 0.14 | RD H-C rdp (2019) | 10,103 | 0.23 | | | 0.00 | RD N-C ~960' rdp (2019) | 10,196 | 0.23 | | | 0.00 |
| RD E | 778 | 0.02 | RD I | 1,528 | 0.04 | RD U-T rdp | 27,602 | 0.63 | | | 0.00 | RD P ~3050' rdp (2019) | 4,607 | 0.11 | | | 0.00 |
| RD F | 900 | 0.02 | RD I rdp (DS-8) | 1,476 | 0.03 | | | 0.00 | | | 0.00 | RD Q rdp (2019) | 30,284 | 0.70 | | | 0.00 |
| RD K | 1,808 | 0.04 | RD J (old: 578) | 924 | 0.02 | | | 0.00 | | | 0.00 | RD R rdp? ~1550' | | | | | 0.00 |
| RD 14H | 421 | 0.01 | RD M rdp (DS-9) | 8,247 | 0.19 | | | 0.00 | | | 0.00 | WSW-3 pipeline | 21,521 | 0.49 | | | 0.00 |
| RD 15-17 | 13,252 | 0.30 | RD M-K rdp (DS-9/BG-7) | 8,719 | 0.20 | | | 0.00 | | | 0.00 | WSW-4 pipeline | 53,675 | 1.23 | | | 0.00 |
| RD 15H-SSMW | 1,464 | 0.03 | RD O rdp | 11,436 | 0.26 | | | 0.00 | | | 0.00 | | | 0.00 | | | 0.00 |
| 16/17H-1V | 7,404 | 0.17 | RD DS-6 rdp | 453 | 0.01 | | | 0.00 | | | 0.00 | | | 0.00 | | | 0.00 |
| DS-10 | 1,300 | 0.03 | RD WSW-3 rdp | 2,297 | 0.05 | | | 0.00 | | | 0.00 | | | 0.00 | | | 0.00 |
| Upgradient Monitor Pad Road (Proposed) | 840 | 0.02 | RD WSW-4 rdp | 152 | 0.00 | | | 0.00 | | | 0.00 | | | 0.00 | | | 0.00 |
| | | 0.00 | RD 17H-SSMW | 4,415 | 0.10 | | | 0.00 | | | 0.00 | | | 0.00 | | | 0.00 |
| | | 0.00 | | | 0.00 | | | 0.00 | | | 0.00 | | | 0.00 | | | 0.00 |
| | | 0.00 | | | 0.00 | | | 0.00 | | | 0.00 | | | 0.00 | | | 0.00 |
| | | 0.00 | | | 0.00 | | | 0.00 | | | 0.00 | | | 0.00 | | | 0.00 |
| | | 0.00 | | | 0.00 | | | 0.00 | | | 0.00 | | | 0.00 | | | 0.00 |
| | | 0.00 | | | 0.00 | | | 0.00 | | | 0.00 | | | 0.00 | | | 0.00 |
| | | 0.00 | | | 0.00 | | | 0.00 | | | 0.00 | | | 0.00 | | | 0.00 |
| | | 0.00 | | | 0.00 | | | 0.00 | | | 0.00 | | | 0.00 | | | 0.00 |
| | | 0.00 | | | 0.00 | | | 0.00 | | | 0.00 | | | 0.00 | | | 0.00 |
| | | 0.00 | | | 0.00 | | | 0.00 | | | 0.00 | | | 0.00 | | | 0.00 |
| | | 0.00 | | | 0.00 | | | 0.00 | | | 0.00 | | | 0.00 | | | 0.00 |
| | | 0.00 | | | 0.00 | | | 0.00 | | | 0.00 | | | 0.00 | | | 0.00 |
| | | 0.00 | | | 0.00 | | | 0.00 | | | 0.00 | | | 0.00 | | | 0.00 |
| TOTAL | 108,610 | 2.49 | TOTAL | 55,027 | 1.26 | TOTAL | 39,683 | 0.91 | TOTAL | 0 | 0.00 | TOTAL | 142,474 | 3.27 | TOTAL | 0 | 0.00 |

# COST SUMMARY WORK

Task description: **Updated values based on TR-46 and site progress**

Site: **Nahcolite Project** Permit Action: TR-46 Permit/Job#: M1983194

## PROJECT IDENTIFICATION

Task #: ACY State: Colorado Abbreviation: None
Date: 4/20/2021 County: Rio Blanco Filename: M194-ACY
User: ACY

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 | $1,851,261 |
| 02a | Borehole P&A | BOREHOLE | 1 | 610.00 | $637,066 |
| | | | | | |
| 03a | Regrade Process Ponds | DOZER | 2 | 178.19 | $88,129 |
| 03b | Decompact Process Pond | RIPPER | 2 | 6.85 | $3,678 |
| 03c | Topsoil Process Pond | DOZER | 2 | 14.06 | $6,954 |
| 03d | Reveg Process Pond | REVEGE | 1 | 28.50 | $36,722 |
| | | | | | |
| 04a | Regrade Plant Area | DOZER | 2 | 23.69 | $11,717 |
| 04b | Decompact Plant Area | RIPPER | 2 | 7.02 | $3,770 |
| 04c | Topsoil Plant Area | DOZER | 2 | 7.58 | $3,751 |
| 04d | Reveg Plant Area | REVEGE | 1 | 12.30 | $15,848 |
| | | | | | |
| 05a | Regrade Well Pads | DOZER | 2 | 159.03 | $78,649 |
| 05b | Topsoil Well Pads | DOZER | 2 | 32.66 | $16,151 |
| 05c | Reveg Well Pads | REVEGE | 1 | 66.20 | $85,291 |
| | | | | | |
| 06a | Decompact Roads | RIPPER | 2 | 3.02 | $1,625 |
| 06b | Topsoil roads | DOZER | 2 | 2.32 | $1,147 |
| 06c | Reveg Roads | REVEGE | 1 | 5.60 | $7,267 |
| | | | | | |
| 12a | Initial Mobilization | MOBILIZE | 1 | 8.00 | $14,744 |
| 12b | Secondary Mobilization | MOBILIZE | 1 | 8.00 | $2,374 |
| | | | **SUBTOTALS:** | **1253.02** | **$2,866,145** |

## INDIRECT COSTS

OVERHEAD AND PROFIT:

| | | | |
|---|---|---|---|
| Liability insurance: | 2.02 | Total = | $57,896 |
| Performance bond: | 1.05 | Total = | $30,095 |
| Job superintendent: | 626.51 | Total = | $43,574 |
| Profit: | 10.00 | Total = | $286,614 |
| | | TOTAL O & P = | $418,179 |
| | | CONTRACT AMOUNT (direct + O & P) = | $3,284,324 |

LEGAL - ENGINEERING - PROJECT MANAGEMENT:

| | | | |
|---|---|---|---|
| Financial warranty processing (legal/related costs): | $500 | Total = | $500 |
| Engineering work and/or contract/bid preparation: | 5.23 | Total = | $171,770 |
| Reclamation management and/or administration: | 4.00 | | $131,373 |
| CONTINGENCY: | 3.00 | Total = | $85,984 |
| | | TOTAL INDIRECT COST = | $807,806 |
| | | **TOTAL BOND AMOUNT (direct + indirect) =** | **$3,673,951** |

# DEMOLITION WORK

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

Site: **Nahcolite Project** Permit Action: TR-46 Permit/Job#: M1983194

## PROJECT IDENTIFICATION

Task #: 01A
Date: 4/20/2021
User: ACY

State: Colorado
County: Rio Blanco

Abbreviation: None
Filename: M194-01a

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 | $0.68 | $1,317,848.50 |
| 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 | $0.68 | $308,203.75 |
| 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 | $1.19 | $54,116.80 |
| Removal of Storage Dome Slab | 95'L x 95'W x8" | Demo. and on-site disposal in excavated pit, 8 in. thick - Max. 200 ft. push | 9,025.00 | SF | $1.19 | $10,757.80 |
| 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 | $0.68 | $13,199.76 |
| 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 | $1.19 | $2,317.25 |
| 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 | $0.68 | $737.64 |
| Pipelines averaged to 10" diam | 34,948 LF | Pipe, steel, welded connections - 10 in. diameter pipe | 34,948.00 | LF | $6.50 | $227,162.00 |

**Job Hours:** **80.00**

**Subtotal (unadjusted)**: **$1,938,493.50**

**Total Cost (adjusted for location)**: **$1,851,261.29**

# BOREHOLE SEALING WORK

Task description: **Borehole P&A**

Site: **Nahcolite Project** Permit Action: TR-46 Permit/Job#: M1983194

## PROJECT IDENTIFICATION

Task #: 02A
Date: 4/20/2021
User: ACY

State: Colorado
County: Rio Blanco

Abbreviation: None
Filename: M194-02a

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 in. (labor, equip, materials) | 4 | 1627 | 1,627.00 | LF | $5.55 | $9,029.85 |
| 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 | $82.45 | $82.45 |
| 12H-R | Portland cement grout - 8 in. (labor, equip, materials) | 7 | 2100 | 2,100.00 | LF | $7.03 | $14,763.00 |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 12H-R Bridge Plug | PVC plug - 8 in. diameter borehole | 7 | 1 | 1.00 | EA | $82.45 | $82.45 |
| 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 | $60.19 | $60.19 |
| 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 | $60.19 | $60.19 |
| 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 | $82.45 | $82.45 |
| 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 | $82.45 | $82.45 |
| 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 1) | Portland cement grout - 4 in. (labor, equip, materials) | 4 | 1882 | 1,882.00 | LF | $5.55 | $10,445.10 |
| 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-1 Bridge Plug | PVC plug - 6 in. diameter borehole | 6.4 | 1 | 1.00 | EA | $60.19 | $60.19 |
| 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 borehole | 6.4 | 1 | 1.00 | EA | $60.19 | $60.19 |
| 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 | $60.19 | $60.19 |
| 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 | $82.45 | $82.45 |
| 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 | $60.19 | $60.19 |
| 17H-R | Portland cement grout - 10 in. (labor, equip, materials) | 9 | 2000 | 2,000.00 | LF | $9.57 | $19,140.00 |
| 17H-R Bridge Plug | PVC plug - 10 in. diameter borehole | 9 | 1 | 1.00 | EA | $112.95 | $112.95 |
| 12H-IR | Portland cement grout - 10 in. (labor, equip, materials) | 9 | 2100 | 2,100.00 | LF | $9.57 | $20,097.00 |
| 12H-IRBridge Plug | PVC plug - 10 in. diameter borehole | 9 | 1 | 1.00 | EA | $112.95 | $112.95 |
| 13H-IR | Portland cement grout - 10 in. (labor, equip, materials) | 9 | 2100 | 2,100.00 | LF | $9.57 | $20,097.00 |
| 13H-IR Bridge Plug | PVC plug - 10 in. diameter borehole | 9 | 1 | 1.00 | EA | $112.95 | $112.95 |
| 15H-SSMW | Portland cement grout - 4 in. (labor, equip, materials) | 4 | 1760 | 1,760.00 | LF | $5.55 | $9,768.00 |
| 17H-SSMW | Portland cement grout - 4 in. (labor, equip, materials) | 4 | 1720 | 1,720.00 | LF | $5.55 | $9,546.00 |
| 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 | $82.45 | $82.45 |
| 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 | $82.45 | $82.45 |
| 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 | $82.45 | $82.45 |
| 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 | $82.45 | $82.45 |
| BG-11 | Portland cement grout - 8 in. (labor, equip, materials) | 7.625 | 1677 | 1,677.00 | LF | $7.03 | $11,789.31 |
| 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 |

**Job Hours**: **610.00** **Total Cost**: **$637,067.00**

# BULLDOZER WORK

Task description: **Regrade Process Ponds**

Site: **Nahcolite Project** Permit Action: TR-46 Permit/Job#: M1983194

## PROJECT IDENTIFICATION

Task #: 03A State: Colorado Abbreviation: None
Date: 4/20/2021 County: Rio Blanco Filename: M194-03a
User: ACY

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:

| | | Utilization % |
|---|---|---|
| Ownership Cost/Hour: | $116.22 | NA |
| Operating Cost/Hour: | $89.77 | 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: $247.28
Total Fleet Cost/Hour: **$494.57**

## 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 | | Source |
|---|---|---|
| Operator Skill: | 0.750 | (AVG.) |
| Material consistency: | 0.900 | (CAT HB)) |
| Dozing method: | 1.000 | (GEN.) |
| Visibility: | 1.000 | (AVG.) |

| | | |
|---|---|---|
| Job efficiency: | 0.830 | (1 SHIFT/DAY) |
| Spoil pile: | 0.600 | (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: $1.195/LCY

Total job time: **178.19** Hours
Total job cost: **$88,129**

# BULLDOZER RIPPING WORK

Task description: **Decompact Process Pond**

Site: **Nahcolite Project** Permit Action: TR-46 Permit/Job#: M1983194

## PROJECT IDENTIFICATION

Task #: 03B State: Colorado Abbreviation: None
Date: 4/20/2021 County: Rio Blanco Filename: M194-03b
User: ACY

Agency or organization name: DRMS

## HOURLY EQUIPMENT COST

Basic Machine: Cat D8T - 8SU Horsepower: 310
Ripper Attachment: 3-Shank Ripper Shift Basis: 1 per day
Data Source: (CRG)

Cost Breakdown:

| | | Utilization % |
|---|---|---|
| Ownership Cost/Hour: | $116.22 | NA |
| Operating Cost/Hour: | $89.77 | 100 |
| Ripper Ownership Cost/Hour: | $12.00 | NA |
| Ripper Operating Cost/Hour: | $9.18 | 100 |
| Operator Cost/Hour: | $41.30 | NA |
| Total Unit Cost/Hour: | $268.46 | |
| Total Fleet Cost/Hour: | **$536.91** | |

## 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: $459.814 Per acre Total job cost: **$3,678**

BULLDOZER WORK

Task description: **Topsoil Process Pond**

Site: **Nahcolite Project** Permit Action: TR-46 Permit/Job#: M1983194

## PROJECT IDENTIFICATION

| | | | | | |
|---|---|---|---|---|---|
| Task #: | 03C | State: | Colorado | Abbreviation: | None |
| Date: | 4/20/2021 | County: | Rio Blanco | Filename: | M194-03c |
| User: | ACY | | | | |

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:

| | | Utilization % |
|---|---|---|
| Ownership Cost/Hour: | $116.22 | NA |
| Operating Cost/Hour: | $89.77 | 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: $247.28
Total Fleet Cost/Hour: **$494.57**

## MATERIAL QUANTITIES

Initial Volume: 15,327
Swell factor: 1.000
Loose volume: **15,327** LCY

Source of estimated volume: 19 ac @ 6" depth
Source of estimated swell factor: Cat Handbook

## HOURLY PRODUCTION

Average push distance: 150 feet
Unadjusted hourly production: 634.3 LCY/hr

Materials consistency description: Loose stockpile 1.2

Average push gradient: 0 %
Average site altitude: 6,600 feet

Material weight: 1,600 lbs/LCY

Weight description: Top Soil

| Job Condition Correction Factor | | Source |
|---|---|---|
| Operator Skill: | 0.750 | (AVG.) |
| Material consistency: | 1.200 | (CAT HB) |
| Dozing method: | 1.000 | (GEN.) |
| Visibility: | 1.000 | (AVG.) |

| | | |
|---|---|---|
| Job efficiency: | 0.830 | (1 SHIFT/DAY) |
| Spoil pile: | 0.800 | (FND-RF) |
| Push gradient: | 1.000 | (CAT HB) |
| Altitude: | 1.000 | (CAT HB) |
| Material Weight: | 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: $0.454/LCY

Total job time: **14.06** Hours
Total job cost: **$6,954**

# REVEGETATION WORK

Task description: **Reveg Process Pond**

Site: **Nahcolite Project** Permit Action: TR-46 Permit/Job#: M1983194

## PROJECT IDENTIFICATION

Task #: 03D State: Colorado Abbreviation: None
Date: 4/20/2021 County: Rio Blanco Filename: M194-03d
User: ACY

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) | $107.16 |
| Weed control spraying (MEANS 31 31 16.13 3100) | $193.60 |
| **Total Tilling Cost/Acre** | **$300.76** |

## 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 - Bozoisky | 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 | $2.92 | $5.84 |
| Straw, delivered {MEANS 31 25 14.16 1200} | 2.00 | TON | $301.00 | $602.00 |
| **Total Mulch Materials Cost/Acre** | | | | **$607.84** |

**Application**

| **Description** | **Cost /Acre** |
|---|---|
| Crimping, with tractor {DMG survey data} | $70.17 |
| Power mulcher (MEANS 32 91 13.16 0350) | $101.93 |
| Weed spray, truck, non-aquatic area, nox. [DMG] | $62.72 |
| **Total Mulch Application Cost/Acre** | **$234.82** |

## 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
Estimated Failure Rate: 30%
*Selected Replanting Work Items: TILLING,SEEDING,MULCHING

Cost /Acre: $1,486.71
Cost /Acre*: $1,486.71

Initial Job Cost: **$28,247.49**
Reseeding Job Cost: **$8,474.25**
Total Job Cost: **$36,722**
Job Hours: **28.50**

BULLDOZER WORK

Task description: **Regrade Plant Area**

Site: **Nahcolite Project** Permit Action: TR-46 Permit/Job#: M1983194

## PROJECT IDENTIFICATION

| | | | | | |
|---|---|---|---|---|---|
| Task #: | 04A | State: | Colorado | Abbreviation: | None |
| Date: | 4/20/2021 | County: | Rio Blanco | Filename: | M194-04a |
| User: | ACY | | | | |

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:

| | | Utilization % |
|---|---|---|
| Ownership Cost/Hour: | $116.22 | NA |
| Operating Cost/Hour: | $89.77 | 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: $247.28
Total Fleet Cost/Hour: **$494.57**

## 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 | | Source |
|---|---|---|
| Operator Skill: | 0.750 | (AVG.) |
| Material consistency: | 0.900 | (CAT HB)) |
| Dozing method: | 1.000 | (GEN.) |
| Visibility: | 1.000 | (AVG.) |

| | | |
|---|---|---|
| Job efficiency: | 0.830 | (1 SHIFT/DAY) |
| Spoil pile: | 0.800 | (FND-RF) |
| Push gradient: | 1.000 | (CAT HB) |
| Altitude: | 1.000 | (CAT HB) |
| Material Weight: | 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: $0.794/LCY

Total job time: **23.69** Hours
Total job cost: **$11,717**

# BULLDOZER RIPPING WORK

Task description: **Decompact Plant Area**

Site: **Nahcolite Project** Permit Action: TR-46 Permit/Job#: M1983194

## PROJECT IDENTIFICATION

Task #: 04B
Date: 4/20/2021
User: ACY

State: Colorado
County: Rio Blanco

Abbreviation: None
Filename: M194-04b

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: | $116.22 | NA |
| Operating Cost/Hour: | $89.77 | 100 |
| Ripper Ownership Cost/Hour: | $12.00 | NA |
| Ripper Operating Cost/Hour: | $9.18 | 100 |
| Operator Cost/Hour: | $41.30 | NA |
| Total Unit Cost/Hour: | $268.46 | |
| Total Fleet Cost/Hour: | **$536.91** | |

## MATERIAL QUANTITIES

Selected estimating method: Area

Alternate Methods:

Seismic: NA
Area: 8.20 acres

Bank Volume: NA BCY NA
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: $459.814 Per acre Total job cost: **$3,770**

BULLDOZER WORK

Task description: **Topsoil Plant Area**

Site: **Nahcolite Project** Permit Action: TR-46 Permit/Job#: M1983194

## PROJECT IDENTIFICATION

Task #: 04C State: Colorado Abbreviation: None
Date: 4/20/2021 County: Rio Blanco Filename: M194-04c
User: ACY

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:

| | | Utilization % |
|---|---|---|
| Ownership Cost/Hour: | $116.22 | NA |
| Operating Cost/Hour: | $89.77 | 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: $247.28
Total Fleet Cost/Hour: **$494.57**

## MATERIAL QUANTITIES

Initial Volume: 6,615
Swell factor: 1.000
Loose volume: **6,615** LCY

Source of estimated volume: 8.2 ac @ 6" depth
Source of estimated swell factor: Cat Handbook

## HOURLY PRODUCTION

Average push distance: 150 feet
Unadjusted hourly production: 634.3 LCY/hr

Materials consistency description: Loose stockpile 1.2

Average push gradient: 0 %
Average site altitude: 6,600 feet

Material weight: 1,600 lbs/LCY

Weight description: Top Soil

| Job Condition Correction Factor | | Source |
|---|---|---|
| Operator Skill: | 0.750 | (AVG.) |
| Material consistency: | 1.200 | (CAT HB) |
| Dozing method: | 1.000 | (GEN.) |
| Visibility: | 0.800 | (POOR) |

| | | |
|---|---|---|
| Job efficiency: | 0.830 | (1 SHIFT/DAY) |
| Spoil pile: | 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: $0.567/LCY

Total job time: **7.58** Hours
Total job cost: **$3,751**

# REVEGETATION WORK

Task description: **Reveg Plant Area**

Site: **Nahcolite Project** Permit Action: TR-46 Permit/Job#: M1983194

## PROJECT IDENTIFICATION

Task #: 04D State: Colorado Abbreviation: None
Date: 4/20/2021 County: Rio Blanco Filename: M194-04d
User: ACY

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) | $107.16 |
| Weed control spraying (MEANS 31 31 16.13 3100) | $193.60 |
| **Total Tilling Cost/Acre** | **$300.76** |

## 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 - Bozoisky | 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 | $2.92 | $5.84 |
| Straw, delivered {MEANS 31 25 14.16 1200} | 2.00 | TON | $301.00 | $602.00 |
| **Total Mulch Materials Cost/Acre** | | | | **$607.84** |

**Application**

| **Description** | **Cost /Acre** |
|---|---|
| Crimping, with tractor {DMG survey data} | $70.17 |
| Power mulcher (MEANS 32 91 13.16 0350) | $101.93 |
| Weed spray, truck, non-aquatic area, nox. [DMG] | $62.72 |
| **Total Mulch Application Cost/Acre** | **$234.82** |

## 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: $1,486.71
Estimated Failure Rate: 30% — Cost /Acre*: $1,486.71
*Selected Replanting Work Items: TILLING,SEEDING,MULCHING

Initial Job Cost: **$12,191.02**
Reseeding Job Cost: **$3,657.31**
Total Job Cost: **$15,848**
Job Hours: **12.30**

BULLDOZER WORK

Task description: **Regrade Well Pads**

Site: **Nahcolite Project** Permit Action: TR-46 Permit/Job#: M1983194

## PROJECT IDENTIFICATION

Task #: 05A State: Colorado Abbreviation: None
Date: 4/20/2021 County: Rio Blanco Filename: M194-05a
User: ACY

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:

| | | Utilization % |
|---|---|---|
| Ownership Cost/Hour: | $116.22 | NA |
| Operating Cost/Hour: | $89.77 | 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: $247.28
Total Fleet Cost/Hour: **$494.57**

## MATERIAL QUANTITIES

Initial Volume: 142,393
Swell factor: 1.115
Loose volume: **158,768** LCY

Source of estimated volume: 44.13 ac of pads grade 24" depth
Source of estimated swell factor: Cat Handbook

## HOURLY PRODUCTION

Average push distance: 75 feet
Unadjusted hourly production: 1,017.1 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 | | Source |
|---|---|---|
| Operator Skill: | 0.750 | (AVG.) |
| Material consistency: | 0.900 | (CAT HB)) |
| Dozing method: | 1.000 | (GEN.) |
| Visibility: | 1.000 | (AVG.) |

| | | |
|---|---|---|
| Job efficiency: | 0.830 | (1 SHIFT/DAY) |
| Spoil pile: | 0.800 | (FND-RF) |
| Push gradient: | 1.000 | (CAT HB) |
| Altitude: | 1.000 | (CAT HB) |
| Material Weight: | 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: $0.495/LCY

Total job time: **159.03** Hours
Total job cost: **$78,649**

BULLDOZER WORK

Task description: **Topsoil Well Pads**

Site: **Nahcolite Project** Permit Action: TR-46 Permit/Job#: M1983194

## PROJECT IDENTIFICATION

| | | | | | |
|---|---|---|---|---|---|
| Task #: | 05B | State: | Colorado | Abbreviation: | None |
| Date: | 4/20/2021 | County: | Rio Blanco | Filename: | M194-05b |
| User: | ACY | | | | |

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:

| | | Utilization % |
|---|---|---|
| Ownership Cost/Hour: | $116.22 | NA |
| Operating Cost/Hour: | $89.77 | 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: $247.28
Total Fleet Cost/Hour: **$494.57**

## MATERIAL QUANTITIES

Initial Volume: 35,598
Swell factor: 1.000
Loose volume: **35,598** LCY

Source of estimated volume: 44.13 ac @ 6" depth
Source of estimated swell factor: Cat Handbook

## HOURLY PRODUCTION

Average push distance: 150 feet
Unadjusted hourly production: 634.3 LCY/hr

Materials consistency description: Loose stockpile 1.2

Average push gradient: 0 %
Average site altitude: 6,600 feet

Material weight: 1,600 lbs/LCY

Weight description: Top Soil

| Job Condition Correction Factor | | Source |
|---|---|---|
| Operator Skill: | 0.750 | (AVG.) |
| Material consistency: | 1.200 | (CAT HB) |
| Dozing method: | 1.000 | (GEN.) |
| Visibility: | 1.000 | (AVG.) |

| | | |
|---|---|---|
| Job efficiency: | 0.830 | (1 SHIFT/DAY) |
| Spoil pile: | 0.800 | (FND-RF) |
| Push gradient: | 1.000 | (CAT HB) |
| Altitude: | 1.000 | (CAT HB) |
| Material Weight: | 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: $0.454/LCY

Total job time: **32.66** Hours
Total job cost: **$16,151**

# REVEGETATION WORK

Task description: **Reveg Well Pads**

Site: **Nahcolite Project** Permit Action: TR-46 Permit/Job#: M1983194

## PROJECT IDENTIFICATION

Task #: 05C State: Colorado Abbreviation: None
Date: 4/20/2021 County: Rio Blanco Filename: M194-05c
User: ACY

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) | $107.16 |
| Weed control spraying (MEANS 31 31 16.13 3100) | $193.60 |
| **Total Tilling Cost/Acre** | **$300.76** |

## 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 - Bozoisky | 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 | $2.92 | $5.84 |
| Straw, delivered {MEANS 31 25 14.16 1200} | 2.00 | TON | $301.00 | $602.00 |
| **Total Mulch Materials Cost/Acre** | | | | **$607.84** |

**Application**

| Description | Cost /Acre |
|---|---|
| Crimping, with tractor {DMG survey data} | $70.17 |
| Power mulcher (MEANS 32 91 13.16 0350) | $101.93 |
| Weed spray, truck, non-aquatic area, nox. [DMG] | $62.72 |
| **Total Mulch Application Cost/Acre** | **$234.82** |

## 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: $1,486.71
Estimated Failure Rate: 30% Cost /Acre*: $1,486.71
*Selected Replanting Work Items: TILLING,SEEDING,MULCHING

Initial Job Cost: **$65,608.51**
Reseeding Job Cost: **$19,682.55**
Total Job Cost: **$85,291**
Job Hours: **66.20**

# BULLDOZER RIPPING WORK

Task description: **Decompact Roads**

Site: **Nahcolite Project** Permit Action: TR-46 Permit/Job#: M1983194

## PROJECT IDENTIFICATION

| | | | | | |
|---|---|---|---|---|---|
| Task #: | 06A | State: | Colorado | Abbreviation: | None |
| Date: | 4/20/2021 | County: | Rio Blanco | Filename: | M194-06a |
| User: | ACY | | | | |

Agency or organization name: DRMS

## HOURLY EQUIPMENT COST

| | | | |
|---|---|---|---|
| Basic Machine: | Cat D8T - 8SU | Horsepower: | 310 |
| Ripper Attachment: | 3-Shank Ripper | Shift Basis: | 1 per day |
| | | Data Source: | (CRG) |

Cost Breakdown:

| | | Utilization % |
|---|---|---|
| Ownership Cost/Hour: | $116.22 | NA |
| Operating Cost/Hour: | $89.77 | 100 |
| Ripper Ownership Cost/Hour: | $12.00 | NA |
| Ripper Operating Cost/Hour: | $9.18 | 100 |
| Operator Cost/Hour: | $41.30 | NA |
| Total Unit Cost/Hour: | $268.46 | |
| Total Fleet Cost/Hour: | **$536.91** | |

## 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: | $432.175 | Per acre | Total job cost: | **$1,625** | |

BULLDOZER WORK

Task description: **Topsoil roads**

Site: **Nahcolite Project** Permit Action: TR-46 Permit/Job#: M1983194

## PROJECT IDENTIFICATION

Task #: 06B State: Colorado Abbreviation: None
Date: 4/20/2021 County: Rio Blanco Filename: M194-06b
User: ACY

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:

| | | Utilization % |
|---|---|---|
| Ownership Cost/Hour: | $116.22 | NA |
| Operating Cost/Hour: | $89.77 | 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: $247.28
Total Fleet Cost/Hour: **$494.57**

## MATERIAL QUANTITIES

Initial Volume: 3,033
Swell factor: 1.000
Loose volume: **3,033** LCY

Source of estimated volume: 3.76 ac @ 6" depth
Source of estimated swell factor: Cat Handbook

## HOURLY PRODUCTION

Average push distance: 150 feet
Unadjusted hourly production: 634.3 LCY/hr

Materials consistency description: Loose stockpile 1.2

Average push gradient: 0 %
Average site altitude: 6,600 feet

Material weight: 1,600 lbs/LCY

Weight description: Top Soil

Job Condition Correction Factor

| | | Source |
|---|---|---|
| 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: | | |
| Push gradient: | 1.000 | (CAT HB) |
| Altitude: | 1.000 | (CAT HB) |
| Material Weight: | 1.438 | (CAT HB) |
| Blade type: | 1.000 | (PAT) |

Net correction: NA

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

## **JOB TIME AND COST**

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

Total job time: Hours
Total job cost: **0**

# REVEGETATION WORK

Task description: **Reveg Roads**

Site: **Nahcolite Project** Permit Action: TR-46 Permit/Job#: M1983194

## PROJECT IDENTIFICATION

Task #: 06C State: Colorado Abbreviation: None
Date: 4/20/2021 County: Rio Blanco Filename: M194-06c
User: ACY

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) | $107.16 |
| Weed control spraying (MEANS 31 31 16.13 3100) | $193.60 |
| **Total Tilling Cost/Acre** | **$300.76** |

## 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 - Bozoisky | 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 | $2.92 | $5.84 |
| Straw, delivered {MEANS 31 25 14.16 1200} | 2.00 | TON | $301.00 | $602.00 |
| **Total Mulch Materials Cost/Acre** | | | | **$607.84** |

**Application**

| **Description** | **Cost /Acre** |
|---|---|
| Crimping, with tractor {DMG survey data} | $70.17 |
| Power mulcher (MEANS 32 91 13.16 0350) | $101.93 |
| Weed spray, truck, non-aquatic area, nox. [DMG] | $62.72 |
| **Total Mulch Application Cost/Acre** | **$234.82** |

## 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: $1,486.71
Estimated Failure Rate: 30% Cost /Acre*: $1,486.71
*Selected Replanting Work Items: TILLING,SEEDING,MULCHING

Initial Job Cost: **$5,590.03**
Reseeding Job Cost: **$1,677.01**
Total Job Cost: **$7,267**
Job Hours: **5.60**

# EQUIPMENT MOBILIZATION/DEMOBILIZATION

Task description: **Initial Mobilization**

Site: **Nahcolite Project** Permit Action: TR-46 Permit/Job#: M1983194

## PROJECT IDENTIFICATION

Task #: 12A State: Colorado Abbreviation: None
Date: 4/20/2021 County: Rio Blanco Filename: M194-12a
User: ACY

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: | $17.20 | $29.63 | $38.69 |
| Operating Cost/Hour: | $26.56 | $47.02 | $55.69 |
| Operator Cost/Hour: | $23.63 | $23.63 | $23.63 |
| Helper Cost/Hour: | $0.00 | $23.53 | $23.53 |
| Total Unit Cost/Hour: | $67.39 | $123.81 | $141.54 |

## NON ROADABLE EQUIPMENT:

| Machine Description | Weight/ Unit (TONS) | Owner ship Cost/hr/ unit | Haul Rig Cost/hr/unit | Fleet Size | Haul Trip Cost/hr/ fleet | Return Trip Cost/hr/ fleet | DOT Permit Cost/ fleet |
|---|---|---|---|---|---|---|---|
| Cat D8T - 8SU | 53.08 | $128.22 | $141.54 | 2 | $539.52 | $283.08 | $500.00 |
| Drill/Broadcast Seeder with Tractor | 25.00 | $6.72 | $67.39 | 1 | $74.11 | $67.39 | $250.00 |
| Power Mulcher (Bowie LD-90) | 6.00 | $11.19 | $67.39 | 1 | $78.58 | $67.39 | $250.00 |
| Grove RT650E, 105', 45.4 MT | 28.74 | $61.74 | $123.81 | 1 | $185.55 | $123.81 | $250.00 |
| Broderson IC-200-2F, 45', 13.6MT | 8.68 | $18.78 | $67.39 | 1 | $86.17 | $67.39 | $250.00 |
| Cat 345D L 12'-10" Stick | 54.31 | $77.54 | $141.54 | 1 | $219.08 | $141.54 | $250.00 |
| CAT 973D | 29.07 | $82.82 | $123.81 | 1 | $206.63 | $123.81 | $250.00 |
| | | | | Subtotals: | **$1,389.64** | **$874.41** | **$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. | $68.59 | 1 | $68.59 | $68.59 |
| Generic 12-18 cy, 6x4 | $107.41 | 3 | $322.23 | $322.23 |
| | | Subtotals: | **$390.82** | **$390.82** |

## 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 * ‘* two round trips with haul rig: | $13,571.43 | |
| Total Roadable Mob/Demob Cost ** ** one round trip, no haul rig: | $1,172.46 | |

Transportation Cycle Time:

| | Non-Roadable Equipment | Roadable 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: **$14,744**

# EQUIPMENT MOBILIZATION/DEMOBILIZATION

Task description: **Secondary Mobilization**

Site: **Nahcolite Project** Permit Action: TR-46 Permit/Job#: M1983194

## PROJECT IDENTIFICATION

Task #: 12B State: Colorado Abbreviation: None
Date: 4/20/2021 County: Rio Blanco Filename: M194-12b
User: ACY

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: | $17.20 | $29.63 | $38.69 |
| Operating Cost/Hour: | $26.56 | $47.02 | $55.69 |
| Operator Cost/Hour: | $23.63 | $23.63 | $23.63 |
| Helper Cost/Hour: | $0.00 | $23.53 | $23.53 |
| Total Unit Cost/Hour: | $67.39 | $123.81 | $141.54 |

## NON ROADABLE EQUIPMENT:

| Machine Description | Weight/ Unit (TONS) | Owner ship Cost/hr/ unit | Haul Rig Cost/hr/unit | Fleet Size | Haul Trip Cost/hr/ fleet | Return Trip Cost/hr/ fleet | DOT Permit Cost/ fleet |
|---|---|---|---|---|---|---|---|
| Drill/Broadcast Seeder with Tractor | 25.00 | $6.72 | $67.39 | 1 | $74.11 | $67.39 | $250.00 |
| Power Mulcher (Bowie LD-90) | 6.00 | $11.19 | $67.39 | 1 | $78.58 | $67.39 | $250.00 |
| | | | | Subtotals: | **$152.69** | **$134.78** | **$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. | $68.59 | 1 | $68.59 | $68.59 |
| | | Subtotals: | **$68.59** | **$68.59** |

## 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 * '* two round trips with haul rig: | $2,167.79 | |
| Total Roadable Mob/Demob Cost ** ** one round trip, no haul rig: | $205.77 | |

Transportation Cycle Time:

| | Non-Roadable Equipment | Roadable 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: | **$2,374** | |