




MINERALS PROGRAM INSPECTION REPORT
PHONE: (303) 866-3567

The Division of Reclamation, Mining and Safety has conducted an inspection of the mining operation noted below. This report documents observations concerning compliance with the terms of the permit and applicable rules and regulations of the Mined Land Reclamation Board.

MINE NAME: Buffalo No 1	MINE/PROSPECTING ID#: M-1978-011	MINERAL: Clay (general)	COUNTY: Elbert
INSPECTION TYPE: Monitoring	INSPECTOR(S): Amy Eschberger	INSP. DATE: June 17, 2021	INSP. TIME: 12:45
OPERATOR: General Shale Brick, Inc.	OPERATOR REPRESENTATIVE: Jason McGraw	TYPE OF OPERATION: 112c - Construction Regular Operation	

REASON FOR INSPECTION: Normal I&E Program	BOND CALCULATION TYPE: Complete Bond	BOND AMOUNT: \$42,491.00
DATE OF COMPLAINT: NA	POST INSP. CONTACTS: None	JOINT INSP. AGENCY: None
WEATHER: Clear	INSPECTOR'S SIGNATURE: 	SIGNATURE DATE: August 27, 2021

The following inspection topics were identified as having Problems or Possible Violations. OPERATORS SHOULD READ THE FOLLOWING PAGES CAREFULLY IN ORDER TO ASSURE COMPLIANCE WITH THE TERMS OF THE PERMIT AND APPLICABLE RULES AND REGULATIONS. If a Possible Violation is indicated, you will be notified under separate cover as to when the Mined Land Reclamation Board will consider possible enforcement action.

INSPECTION TOPIC: Financial Warranty

PROBLEM: The financial warranty is not adequate to reclaim the site in accordance with the approved reclamation plan. This is a failure to maintain the proper financial warranty amount to complete reclamation of the affected lands pursuant to C.R.S. 34-32.5-117(4)(b) and Rule 4.2.1(1).

CORRECTIVE ACTIONS: The Division has re-evaluated the required financial warranty for reclaiming the site in accordance with the approved reclamation plan (see enclosed bond estimate). Any comments regarding the Division's bond estimate and/or evidence demonstrating reclamation work has been completed shall be submitted by the corrective action date. If, by the corrective action date, no comments or additional information has been received, a notice of surety increase will be mailed to the operator for the amount shown in the enclosed bond estimate. The operator will have 60 days from the date on the surety increase notice to post the additional financial warranty.

CORRECTIVE ACTION DUE DATE: October 26, 2021

OBSERVATIONS

This was a normal monitoring inspection of the Buffalo No. 1 site (Permit No. M-1978-011) conducted by Amy Eschberger of the Division of Reclamation, Mining and Safety (Division). The operator was represented by Jason McGraw during the inspection.

The permit area for this site originally consisted of 5 phases located in 3 different (noncontiguous) areas. Phases I, II, and V (comprised of 205 acres) were located on and around an orphan knoll located north of Co Rd 150. These phases were released from the permit area through a series of acreage reductions approved from 2000 to 2008. The current permit area includes only Phases III and IV (see enclosed Google Earth image showing Phases III and IV). Phase III (comprised of 10 acres) is located directly south of Co Rd 150 and has been actively mined since 1996 (see enclosed Google Earth image showing Phase III). Phase IV (comprised of 200 acres) is located approximately 1.5 miles southwest of Phase III and remains undisturbed. Only Phase III was visited during this inspection. Phase III is located approximately 11.5 miles northeast of Kiowa, CO. A permit sign is posted at the main site entrance. The permit boundary is delineated by barbed wire fencing and white posts (along the eastern boundary). **Photos 1-12** taken during the inspection are included with this report.

This is a 112c operation permitted for a total of 210 acres to mine clay for brick manufacturing. The site is campaign mined, during which clay is mined for a period of time, stockpiled on site, and transported to the operator's off-site facility for processing and brick manufacturing as needed. The site was not active during the inspection. According to the operator, the site was last mined in 2019, and since that time, the operation has been regularly hauling off from product stockpiles. The northern half of the permit area is currently used for stockpile storage. This stockpile area contained a clay stockpile, a large overburden stockpile, a well-vegetated topsoil stockpile, and a small stockpile of waste brick (grog). The Division authorized the importation of waste brick for use as inert backfill material through Technical Revision No. 1 (TR-1), approved on December 31, 2014. According to TR-1, no more than 4,500 cubic yards of waste brick will be stockpiled on site (not used in reclamation) at any time.

Mining is currently limited to the southern half of the permit area. This area includes a larger excavation in its western portion and a smaller excavation area in its eastern portion. The western highwall of the larger pit is partially backfilled to slopes of 3H:1V or flatter and appeared to be stable with volunteer grasses and some annual weeds. According to the operator, this backfill was placed from 2016 through 2019. A small (northern) portion of the western highwall remains with 1H:1V slopes. The eastern highwall of the larger pit is approximately 25 feet in height with 2H:1V slopes. The southern highwall of this pit is approximately 15 feet in height with 1H:1V slopes. Some standing water was observed on the pit floor. The operator maintains a CDPHE discharge permit, under which, any water retained on site for more than the 72 hour limit (required by the Division of Water Resources) can be pumped off site to the natural drainage system.

The smaller excavation in the eastern portion of the mining area includes an eastern highwall approximately 20 feet in height with 1H:1V slopes. According to previous inspection reports, a small stormwater pond had been present in the southeastern portion of the mining area. However, this pond was recently backfilled as it did not function as intended given the layout of the site. All stormwater now drains to the two excavation areas.

The site is currently accessed from the east via a private residential road that runs south off of Co Rd 150 and down the eastern edge of the permit area. The operation's use of this access road (rather than direct access off Co Rd 150, as originally approved) was authorized by the Division through Technical Revision No. 2 (TR-2), approved on March 6, 2015 (see enclosed Phase III mining plan map, approved in TR-2). This road is not included in the permit area as it was an existing road that will not be substantially upgraded to support the operation. In TR-2, the operator provided a copy of their access agreement with Victoria Whitman for this road.

The operation will continue mining the southern half of the Phase III permit area from west to east. Once this area has been mined out and backfilled, it will be used as the stockpile area while the northern half of the permit area (currently used for stockpiling) is mined. This prevents the operation from being able to retopsoil and revegetate the backfilled southern area until mining is completed at the site. At that time, the entire site will be retopsoiled and revegetated for final reclamation. According to the approved permit, the Phase III area will be completely mined and reclaimed prior to the operation moving into the Phase IV area. At this time, the operator believes it could be another 20-25 years before mining is completed in the Phase III area. Prior to moving into the Phase IV area, the operator will need to submit a Technical Revision to provide mining and reclamation plan maps and an updated bond estimate which address any planned disturbances for this area.

The approved post-mining land use for the site is rangeland. The reclamation plan calls for using the overburden material stockpiled on site to backfill pit highwalls to 3H:1V or flatter, ripping any compacted areas (e.g., stockpile areas, roads), replacing approximately 6 inches of topsoil on the disturbed land, and revegetating the land with a rangeland grass mixture consisting of Indian Ricegrass, Sideoats Grama, Pubescent Wheatgrass, and Western Wheatgrass. Any waste brick stockpiled on site will be blended with overburden material, placed in the pit in 5-10 foot lifts, and compacted.

The Division estimates total disturbance at the site to consist of 9.04 acres, including the 4.32 acre stockpile storage area and the 4.72 acre mining area. Reclamation of current disturbance would include using the on-site overburden material to backfill highwalls to 3H:1V (total length of approximately 1,080 feet), ripping the compacted stockpile area, replacing 6 inches of topsoil on the entire disturbed area, and revegetating the disturbed area with the approved grass seed mixture. Per TR-1, reclamation may also include backfilling the pits with no more than 4,500 cubic yards of waste brick stockpiled on site.

The currently held financial warranty in the amount of \$42,491.00 was last calculated in 2014 (in the Division's review of TR-1) for a total disturbance of 8.7 acres. After conducting this inspection, the Division reassessed the required financial warranty for reclaiming the site in accordance with the approved reclamation plan, and found this amount to be \$54,811.00, which is \$12,320.00 more than the currently held amount. **This is cited as a problem in this report (see page 1) for failure to maintain the proper financial warranty amount to complete reclamation of the affected land in accordance with the approved reclamation plan.** The operator is encouraged to review the enclosed bond estimate and submit any comments or evidence of reclamation work completed within 60 days of the date of this inspection report. If, by the 60-day deadline, the Division has not received any comments from the operator, a notice of Surety Increase will be issued for the amount calculated in the enclosed bond estimate. The operator will then have 60 days from the date of such notice to post the additional required financial warranty.

This concludes the report.

Any questions or comments regarding this inspection report should be forwarded to Amy Eschberger at the Colorado Division of Reclamation, Mining and Safety, 1313 Sherman Street, Room 215, Denver, CO 80203, via telephone at 303-866-3567, ext. 8129, or via email at amy.eschberger@state.co.us.

PHOTOGRAPHS



Photo 1. View looking west across undisturbed northern edge of Phase III permit area. Note barbed wire fence which delineates permit boundary.



Photo 2. View looking south, showing large vegetated topsoil stockpile (at right) stored in northern half of Phase III permit area, and access road (at left) not included in permit area. Note white post which delineates eastern permit boundary.



Photo 3. View looking north, showing large vegetated topsoil stockpile (at left) stored in northern half of Phase III permit area.



Photo 4. View looking north across stockpile storage area in northern half of Phase III permit area. Note clay stockpile (in background) and large overburden stockpile (at right) stored in this area.



Photo 5. View looking south at clay stockpile stored in northern half of Phase III permit area.



Photo 6. View looking north at large overburden stockpile stored in northern half of Phase III permit area.



Photo 7. View of small waste brick stockpile stored at southeastern edge of stockpile storage area in northern half of Phase III permit area.



Photo 8. View looking south across larger excavation in southern half of Phase III permit area. Note backfilled portion of western highwall (indicated) with 3H:1V or flatter slopes. Also note portion of western highwall that remains with 1H:1V slopes (at right).



Photo 9. View looking south at eastern highwall of larger excavation in southern half of Phase III permit area, which is approximately 25 feet in height with 2H:1V slopes.



Photo 10. View looking southwest across northern edge of larger excavation in southern half of Phase III permit area. Note unbackfilled portion of western highwall visible in background.



Photo 11. View looking southeast across mining area in southern half of Phase III permit area, showing eastern highwall of larger excavation (at right) and eastern highwall of smaller excavation above (at left).



Photo 12. View looking south across smaller excavation in southern half of Phase III permit area. Note eastern highwall (at left) which is approximately 20 feet in height with 1H:1V slopes.

GENERAL INSPECTION TOPICS

The following list identifies the environmental and permit parameters inspected and gives a categorical evaluation of each

(AR) RECORDS----- <u>Y</u>	(FN) FINANCIAL WARRANTY----- PB	(RD) ROADS----- <u>Y</u>
(HB) HYDROLOGIC BALANCE----- <u>Y</u>	(BG) BACKFILL & GRADING----- <u>Y</u>	(EX) EXPLOSIVES----- <u>NA</u>
(PW) PROCESSING WASTE/TAILING---- <u>N</u>	(SF) PROCESSING FACILITIES----- <u>N</u>	(TS) TOPSOIL----- <u>Y</u>
(MP) GENL MINE PLAN COMPLIANCE- <u>Y</u>	(FW) FISH & WILDLIFE----- <u>N</u>	(RV) REVEGETATION---- <u>N</u>
(SM) SIGNS AND MARKERS----- <u>Y</u>	(SP) STORM WATER MGT PLAN---- <u>Y</u>	(RS) RECL PLAN/COMP-- <u>Y</u>
(ES) OVERBURDEN/DEV. WASTE----- <u>Y</u>	(SC) EROSION/SEDIMENTATION--- <u>N</u>	(ST) STIPULATIONS----- <u>N</u>
(AT) ACID OR TOXIC MATERIALS----- <u>NA</u>	(OD) OFF-SITE DAMAGE----- <u>N</u>	

Y = Inspected / N = Not inspected / NA = Not applicable to this operation / PB = Problem cited / PV = Possible violation cited

Inspection Contact Address

Jason McGraw
General Shale Brick, Inc.
1845 W. Dartmouth Ave.
Denver, CO 80110

Encls: Google Earth image showing Phases III and IV
Google Earth image showing Phase III
Phase III Mining Plan Map, approved in TR-2
Division's bond estimate

CC: Michael Cunningham, DRMS

M-1978-011 / Buffalo No 1 / General Shale Brick, Inc. (112c)

Red Outline = 210 acres = Approved Permit Area (10 acres Phase III + 200 acres Phase IV)
(Image data from: 10/6/2019)

Phase III

Phase IV

Google Earth

© 2021 Google



1 mi

M-1978-011 / Buffalo No 1 / General Shale Brick, Inc. (112c)

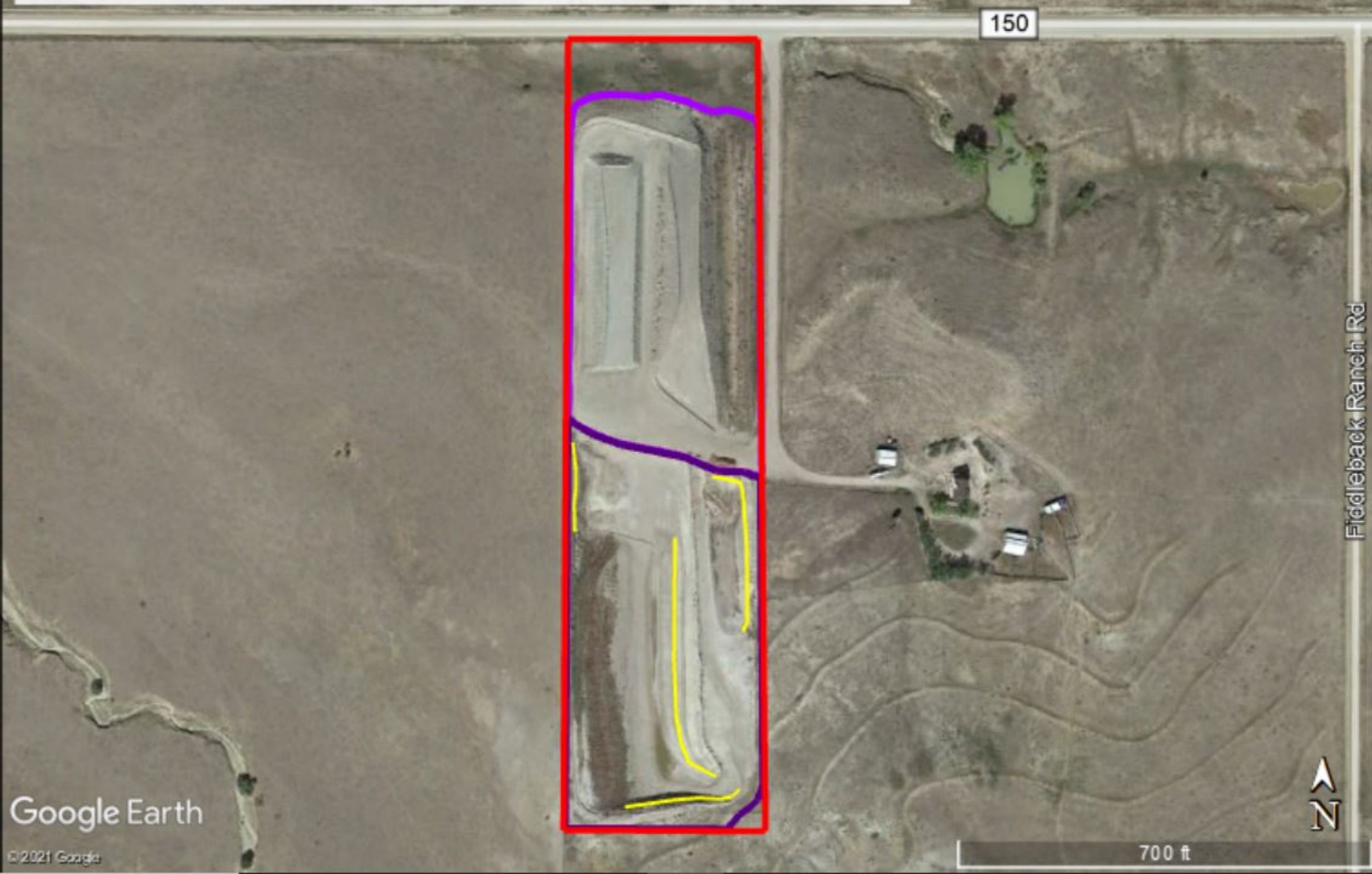
Red Outline = 10 acres = Phase III Permit Area

Dark Purple Outline = 4.72 acres = Approximate Pit Area Disturbance

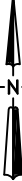
Light Purple Outline = 4.32 acres = Approximate Stockpile Area Disturbance

Yellow Lines = 1,080 feet = Approximate Total Highwall Length

(Image data from: 10/6/2019)







N

— DRMS Permit Boundary

—○—○— Fence Line

- - - - - Access Road

CONFIDENTIAL

THIS DRAWING IS THE PROPERTY OF GENERAL SHALE BRICK, INC.
AND SHALL NOT BE COPIED OR REPRODUCED IN WHOLE OR IN PART
OR DISCLOSED TO ANY THIRD PARTY OR USED IN ANY WAY WITHOUT
THE WRITTEN CONSENT OF GENERAL SHALE BRICK INC.

DRAWING FILE NAME
Buffalo 2015A.dwg

General Shale Brick, Inc.

1845 W. Dartmouth Ave
Denver, Colorado 80110
Phone (303) 783-3000

DRAWING TITLE			
Buffalo Mine M-1978-011 Exhibit C-2, Plat 3, Phase III Mine Plan Map			
CONTOUR INTERVAL:	DRAWING NUMBER:	REVISION:	A
5'	DRAWN BY: Jason E. McBrat	DATE:	February 10, 2015
APPROVAL BY:		SCALE:	1"=100'

SHT. 1 OF 1

COST SUMMARY WORK

Task description: Cost Summary

Site: Buffalo No 1

Permit Action: Inspection 6-17-2021

Permit/Job#: M1978011

PROJECT IDENTIFICATION

Task #: 000

State: Colorado

Abbreviation: None

Date: 8/26/2021

County: Elbert

Filename: M011-000

User: AME

Agency or organization name: DRMS

TASK LIST (DIRECT COSTS)

Task	Description	Form Used	Fleet Size	Task Hours	Cost
001	Haul scrap brick to pit, max 4,500 CY	SCRAPER1	1	5.62	\$2,569
002	Backfill west pit, west highwall	SCRAPER1	1	1.73	\$2,268
003	Backfill west pit, east highwall	SCRAPER1	1	4.38	\$5,740
004	Backfill west pit, south highwall	SCRAPER1	1	1.62	\$2,127
005	Backfill east pit, east highwall	SCRAPER1	1	3.57	\$4,671
006	Rip stockpile area, 4.32 acres	RIPPER	1	6.31	\$1,652
007	Replace topsoil on 4.32 acres (north area)	SCRAPER1	1	2.46	\$2,644
008	Replace topsoil on 4.72 acres (south area)	SCRAPER1	1	3.56	\$3,817
009	Revegetation of 9.04 acres	REVEGE	1	9.04	\$7,072
010	Mobilization/demobilization	MOBILIZE	1	8.40	\$11,912
<u>SUBTOTALS:</u>				46.69	\$44,472

INDIRECT COSTS

OVERHEAD AND PROFIT:

Liability insurance: 2.02

Total = \$898

Performance bond: 1.05

Total = \$467

Job superintendent: 20.00

Total = \$1,441

Profit: 10.00

Total = \$4,447

TOTAL O & P = \$7,253

CONTRACT AMOUNT (direct + O & P) = \$51,725

LEGAL - ENGINEERING - PROJECT MANAGEMENT:

Financial warranty processing (legal/related costs): \$500

Total = \$500

Engineering work and/or contract/bid preparation: 0.00

Total = \$0

Reclamation management and/or administration: 5.00

\$2,586

CONTINGENCY: 0.00

Total = \$0

TOTAL INDIRECT COST = \$10,339

TOTAL BOND AMOUNT (direct + indirect) = \$54,811

SCRAPER TEAM WORKTask description: **Backfill west pit, west highwall**Site: **Buffalo No 1**Permit Action: Inspection 6-17-2021Permit/Job#: M1978011**PROJECT IDENTIFICATION**Task #: 002State: ColoradoAbbreviation: NoneDate: 8/26/2021County: ElbertFilename: M011-002User: AMEAgency or organization name: DRMS**HOURLY EQUIPMENT**COSTShift basis: 1 per day

Equipment Description	
-Scraper:	Cat 637G
-Dozer:	NA
Support Equipment -Load Area:	NA
-Dump Area:	Cat D8T - 8SU
Road Maintenance -Motor Grader:	CAT 16M
-Water Truck:	Water Tanker, 3,500 Gal.

Cost Breakdown:**Scraper Work Team****Support Equipment****Maintenance Equipment**

	Scraper	Dozer	Load Area	Dump Area	Motor Grader	Water Truck
%Utilization-machine:	100	NA	NA	100	50	50
Ownership cost/hour:	\$218.34	NA	NA	\$97.46	\$70.80	\$17.15
Operating cost/hour:	\$208.00	NA	NA	\$97.63	\$28.16	\$14.60
%Utilization-ripper:	NA	NA	NA	NA	NA	NA
Ripper own. cost/hour:	NA	NA	NA	\$0.00	\$0.00	\$0.00
Ripper op. cost/hour:	NA	NA	NA	\$0.00	\$0.00	\$0.00
Operator cost/hour:	\$30.90	NA	NA	\$41.30	\$28.56	\$0.00
Unit Subtotals:	\$457.24	NA	NA	\$236.39	\$127.51	\$31.75
Number of Units:	2	0	0	1	1	1
Group Subtotals:	Work: \$914.48		Support: \$236.39		Maint: \$159.26	

Total work team cost/hour: **\$1,310.13****MATERIAL QUANTITIES**Initial volume: 2,222

CCY

Swell factor: 1.125Loose volume: **2,500**

LCY

Source of estimated volume: 150 ft L x 20 ft H, 1H:1V to 3H:1VSource of estimated swell factor: Cat Handbook**HOURLY PRODUCTION****Scraper Bowl (volume) Basis:**

Material weight: 2,650 lbs/LCY
 Material description: Decomposed rock - 25% Rock, 75% Earth
 Rated Payload: 81,600 pounds
 Payload Capacity: 30.79 LCY

Struck Volume: 24.00 LCY
 Heaped Volume: 34.00 LCY
 Average Volume: 29.00 LCY
 Adjusted Capacity: **29.00** LCY

Cycle Time:Scraper Loading Time: 0.80 MinutesManeuver and Spread Time: 0.60 MinutesJob Condition Correction:

Site Altitude: 5900 feet

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

Travel Time:Road Condition: Firm, smooth, rolling, dirt/lt. surfaced, watered, maintained 3.0Haul Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	420.00	3.00	3.00	6.00	1477	0.36

Haul Time: 0.36 minutesReturn Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	420.00	-3.00	3.00	0.00	2965	0.24

Return Time: 0.24 minutesTotal Scraper team cycle time: 2.00 minutesAdjusted for job conditions: 722.10 LCY/HourSelected Number of Scrapers: 2 Scraper(s)Adjusted single scraper team (unit) hourly production: 1,444.20 LCY/HourAdjusted multiple scraper team (fleet) hourly production: 1,444.20 LCY/HourUnadjusted unit production/hour: 870.00 LCY/Hour

Optimal Number of Scrapers per push dozer: _____

JOB TIME AND COSTFleet size: 1 Team(s)Total job time: 1.73 HoursUnit cost: \$0.907 /LCYTotal job cost: \$2,268

SCRAPER TEAM WORKTask description: **Backfill west pit, west highwall**Site: **Buffalo No 1**Permit Action: Inspection 6-17-2021Permit/Job#: M1978011**PROJECT IDENTIFICATION**Task #: 002State: ColoradoAbbreviation: NoneDate: 8/26/2021County: ElbertFilename: M011-002User: AMEAgency or organization name: DRMS**HOURLY EQUIPMENT**COSTShift basis: 1 per day

Equipment Description	
-Scraper:	Cat 637G
-Dozer:	NA
Support Equipment -Load Area:	NA
-Dump Area:	Cat D8T - 8SU
Road Maintenance -Motor Grader:	CAT 16M
-Water Truck:	Water Tanker, 3,500 Gal.

Cost Breakdown:

Scraper Work Team

Support Equipment

Maintenance Equipment

	Scraper	Dozer	Load Area	Dump Area	Motor Grader	Water Truck
%Utilization-machine:	100	NA	NA	100	50	50
Ownership cost/hour:	\$218.34	NA	NA	\$97.46	\$70.80	\$17.15
Operating cost/hour:	\$208.00	NA	NA	\$97.63	\$28.16	\$14.60
%Utilization-ripper:	NA	NA	NA	NA	NA	NA
Ripper own. cost/hour:	NA	NA	NA	\$0.00	\$0.00	\$0.00
Ripper op. cost/hour:	NA	NA	NA	\$0.00	\$0.00	\$0.00
Operator cost/hour:	\$30.90	NA	NA	\$41.30	\$28.56	\$0.00
Unit Subtotals:	\$457.24	NA	NA	\$236.39	\$127.51	\$31.75
Number of Units:	2	0	0	1	1	1
Group Subtotals:	Work: \$914.48		Support: \$236.39		Maint: \$159.26	

Total work team cost/hour: **\$1,310.13****MATERIAL QUANTITIES**Initial volume: 2,593

CCY

Swell factor: 1.125Loose volume: **2,917**

LCY

Source of estimated volume: 175 ft L x 20 ft H, 1H:1V to 3H:1VSource of estimated swell factor: Cat Handbook**HOURLY PRODUCTION****Scraper Bowl (volume) Basis:**

Material weight: 2,650 lbs/LCY
 Material description: Decomposed rock - 25% Rock, 75% Earth
 Rated Payload: 81,600 pounds
 Payload Capacity: 30.79 LCY

Struck Volume: 24.00 LCY
 Heaped Volume: 34.00 LCY
 Average Volume: 29.00 LCY
 Adjusted Capacity: **29.00** LCY

Cycle Time:Scraper Loading Time: 0.80 MinutesManeuver and Spread Time: 0.60 MinutesJob Condition Correction:

Site Altitude: 5900 feet

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

Travel Time:Road Condition: Firm, smooth, rolling, dirt/lt. surfaced, watered, maintained 3.0Haul Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	420.00	3.00	3.00	6.00	1477	0.36

Haul Time: 0.36 minutesReturn Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	420.00	-3.00	3.00	0.00	2965	0.24

Return Time: 0.24 minutesTotal Scraper team cycle time: 2.00 minutesAdjusted for job conditions: 722.10 LCY/HourSelected Number of Scrapers: 2 Scraper(s)Adjusted single scraper team (unit) hourly production: 1,444.20 LCY/HourAdjusted multiple scraper team (fleet) hourly production: 1,444.20 LCY/HourUnadjusted unit production/hour: 870.00 LCY/Hour

Optimal Number of Scrapers per push dozer: _____

JOB TIME AND COSTFleet size: 1 Team(s)Total job time: 2.02 HoursUnit cost: \$0.907 /LCYTotal job cost: \$2,646

SCRAPER TEAM WORKTask description: **Backfill west pit, east highwall**Site: **Buffalo No 1**Permit Action: Inspection 6-17-2021Permit/Job#: M1978011**PROJECT IDENTIFICATION**Task #: 003State: ColoradoAbbreviation: NoneDate: 8/26/2021County: ElbertFilename: M011-003User: AMEAgency or organization name: DRMS**HOURLY EQUIPMENT**COSTShift basis: 1 per day

Equipment Description	
-Scraper:	Cat 637G
-Dozer:	NA
Support Equipment -Load Area:	NA
-Dump Area:	Cat D8T - 8SU
Road Maintenance -Motor Grader:	CAT 16M
-Water Truck:	Water Tanker, 3,500 Gal.

Cost Breakdown:**Scraper Work Team****Support Equipment****Maintenance Equipment**

	Scraper	Dozer	Load Area	Dump Area	Motor Grader	Water Truck
%Utilization-machine:	100	NA	NA	100	50	50
Ownership cost/hour:	\$218.34	NA	NA	\$97.46	\$70.80	\$17.15
Operating cost/hour:	\$208.00	NA	NA	\$97.63	\$28.16	\$14.60
%Utilization-ripper:	NA	NA	NA	NA	NA	NA
Ripper own. cost/hour:	NA	NA	NA	\$0.00	\$0.00	\$0.00
Ripper op. cost/hour:	NA	NA	NA	\$0.00	\$0.00	\$0.00
Operator cost/hour:	\$30.90	NA	NA	\$41.30	\$28.56	\$0.00
Unit Subtotals:	\$457.24	NA	NA	\$236.39	\$127.51	\$31.75
Number of Units:	2	0	0	1	1	1
Group Subtotals:	Work: \$914.48		Support: \$236.39		Maint: \$159.26	

Total work team cost/hour: **\$1,310.13****MATERIAL QUANTITIES**Initial volume: 4,977

CCY

Swell factor: 1.125Loose volume: **5,599**

LCY

Source of estimated volume: 430 ft L x 25 ft H, 2H:1V to 3H:1VSource of estimated swell factor: Cat Handbook**HOURLY PRODUCTION****Scraper Bowl (volume) Basis:**

Material weight: 2,650 lbs/LCY
 Material description: Decomposed rock - 25% Rock, 75% Earth
 Rated Payload: 81,600 pounds
 Payload Capacity: 30.79 LCY

Struck Volume: 24.00 LCY
 Heaped Volume: 34.00 LCY
 Average Volume: 29.00 LCY
 Adjusted Capacity: **29.00** LCY

Cycle Time:Scraper Loading Time: 0.80 MinutesManeuver and Spread Time: 0.60 MinutesJob Condition Correction:

Site Altitude: 5900 feet

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

Travel Time:Road Condition: Firm, smooth, rolling, dirt/lt. surfaced, watered, maintained 3.0Haul Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	675.00	3.00	3.00	6.00	1477	0.53

Haul Time: 0.53 minutesReturn Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	675.00	-3.00	3.00	0.00	2965	0.33

Return Time: 0.33 minutesTotal Scraper team cycle time: 2.26 minutesAdjusted for job conditions: 639.03 LCY/HourSelected Number of Scrapers: 2 Scraper(s)Adjusted single scraper team (unit) hourly production: 1,278.05 LCY/HourAdjusted multiple scraper team (fleet) hourly production: 1,278.05 LCY/HourUnadjusted unit production/hour: 769.91 LCY/Hour

Optimal Number of Scrapers per push dozer: _____

JOB TIME AND COSTFleet size: 1 Team(s)Total job time: 4.38 HoursUnit cost: \$1.025 /LCYTotal job cost: \$5,740

SCRAPER TEAM WORKTask description: **Backfill west pit, south highwall**Site: **Buffalo No 1**Permit Action: Inspection 6-17-2021Permit/Job#: M1978011**PROJECT IDENTIFICATION**Task #: 004State: ColoradoAbbreviation: NoneDate: 8/26/2021County: ElbertFilename: M011-004User: AMEAgency or organization name: DRMS**HOURLY EQUIPMENT**COSTShift basis: 1 per day

Equipment Description	
-Scraper:	Cat 637G
-Dozer:	NA
Support Equipment -Load Area:	NA
-Dump Area:	Cat D8T - 8SU
Road Maintenance -Motor Grader:	CAT 16M
-Water Truck:	Water Tanker, 3,500 Gal.

Cost Breakdown:

Scraper Work Team

Support Equipment

Maintenance Equipment

	Scraper	Dozer	Load Area	Dump Area	Motor Grader	Water Truck
%Utilization-machine:	100	NA	NA	100	50	50
Ownership cost/hour:	\$218.34	NA	NA	\$97.46	\$70.80	\$17.15
Operating cost/hour:	\$208.00	NA	NA	\$97.63	\$28.16	\$14.60
%Utilization-ripper:	NA	NA	NA	NA	NA	NA
Ripper own. cost/hour:	NA	NA	NA	\$0.00	\$0.00	\$0.00
Ripper op. cost/hour:	NA	NA	NA	\$0.00	\$0.00	\$0.00
Operator cost/hour:	\$30.90	NA	NA	\$41.30	\$28.56	\$0.00
Unit Subtotals:	\$457.24	NA	NA	\$236.39	\$127.51	\$31.75
Number of Units:	2	0	0	1	1	1
Group Subtotals:	Work: \$914.48		Support: \$236.39		Maint: \$159.26	

Total work team cost/hour: **\$1,310.13****MATERIAL QUANTITIES**Initial volume: 1,667

CCY

Swell factor: 1.125Loose volume: **1,875**

LCY

Source of estimated volume: 200 ft L x 15 ft H, 1H:1V to 3H:1VSource of estimated swell factor: Cat Handbook**HOURLY PRODUCTION****Scraper Bowl (volume) Basis:**

Material weight: 2,650 lbs/LCY
 Material description: Decomposed rock - 25% Rock, 75% Earth
 Rated Payload: 81,600 pounds
 Payload Capacity: 30.79 LCY

Struck Volume: 24.00 LCY
 Heaped Volume: 34.00 LCY
 Average Volume: 29.00 LCY
 Adjusted Capacity: **29.00** LCY

Cycle Time:Scraper Loading Time: 0.80 MinutesManeuver and Spread Time: 0.60 MinutesJob Condition Correction:

Site Altitude: 5900 feet

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

Travel Time:Road Condition: Firm, smooth, rolling, dirt/lt. surfaced, watered, maintained 3.0Haul Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	900.00	3.00	3.00	6.00	1477	0.69

Haul Time: 0.69 minutesReturn Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	900.00	-3.00	3.00	0.00	2965	0.41

Return Time: 0.41 minutesTotal Scraper team cycle time: 2.50 minutesAdjusted for job conditions: 577.68 LCY/HourSelected Number of Scrapers: 2 Scraper(s)Adjusted single scraper team (unit) hourly production: 1,155.36 LCY/HourAdjusted multiple scraper team (fleet) hourly production: 1,155.36 LCY/HourUnadjusted unit production/hour: 696.00 LCY/Hour

Optimal Number of Scrapers per push dozer: _____

JOB TIME AND COSTFleet size: 1 Team(s)Total job time: 1.62 HoursUnit cost: \$1.134 /LCYTotal job cost: \$2,127

SCRAPER TEAM WORKTask description: **Backfill east pit, east highwall**Site: **Buffalo No 1**Permit Action: Inspection 6-17-2021Permit/Job#: M1978011**PROJECT IDENTIFICATION**Task #: 005State: ColoradoAbbreviation: NoneDate: 8/26/2021County: ElbertFilename: M011-005User: AMEAgency or organization name: DRMS**HOURLY EQUIPMENT**COSTShift basis: 1 per day

Equipment Description	
-Scraper:	Cat 637G
-Dozer:	NA
Support Equipment -Load Area:	NA
-Dump Area:	Cat D8T - 8SU
Road Maintenance -Motor Grader:	CAT 16M
-Water Truck:	Water Tanker, 3,500 Gal.

Cost Breakdown:**Scraper Work Team****Support Equipment****Maintenance Equipment**

	Scraper	Dozer	Load Area	Dump Area	Motor Grader	Water Truck
%Utilization-machine:	100	NA	NA	100	50	50
Ownership cost/hour:	\$218.34	NA	NA	\$97.46	\$70.80	\$17.15
Operating cost/hour:	\$208.00	NA	NA	\$97.63	\$28.16	\$14.60
%Utilization-ripper:	NA	NA	NA	NA	NA	NA
Ripper own. cost/hour:	NA	NA	NA	\$0.00	\$0.00	\$0.00
Ripper op. cost/hour:	NA	NA	NA	\$0.00	\$0.00	\$0.00
Operator cost/hour:	\$30.90	NA	NA	\$41.30	\$28.56	\$0.00
Unit Subtotals:	\$457.24	NA	NA	\$236.39	\$127.51	\$31.75
Number of Units:	2	0	0	1	1	1
Group Subtotals:	Work: \$914.48		Support: \$236.39		Maint: \$159.26	

Total work team cost/hour: **\$1,310.13****MATERIAL QUANTITIES**Initial volume: 4,444

CCY

Swell factor: 1.125Loose volume: **5,000**

LCY

Source of estimated volume: 300 ft L x 20 ft H, 1H:1V to 3H:1VSource of estimated swell factor: Cat Handbook**HOURLY PRODUCTION****Scraper Bowl (volume) Basis:**

Material weight: 2,650 lbs/LCY
 Material description: Decomposed rock - 25% Rock, 75% Earth
 Rated Payload: 81,600 pounds
 Payload Capacity: 30.79 LCY

Struck Volume: 24.00 LCY
 Heaped Volume: 34.00 LCY
 Average Volume: 29.00 LCY
 Adjusted Capacity: **29.00** LCY

Cycle Time:Scraper Loading Time: 0.80 MinutesManeuver and Spread Time: 0.60 MinutesJob Condition Correction:

Site Altitude: 5900 feet

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

Travel Time:Road Condition: Firm, smooth, rolling, dirt/lt. surfaced, watered, maintained 3.0Haul Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	480.00	3.00	3.00	6.00	1477	0.40

Haul Time: 0.40 minutesReturn Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	480.00	-3.00	3.00	0.00	2965	0.26

Return Time: 0.26 minutesTotal Scraper team cycle time: 2.06 minutesAdjusted for job conditions: 701.07 LCY/HourSelected Number of Scrapers: 2 Scraper(s)Adjusted single scraper team (unit) hourly production: 1,402.14 LCY/HourAdjusted multiple scraper team (fleet) hourly production: 1,402.14 LCY/HourUnadjusted unit production/hour: 844.66 LCY/Hour

Optimal Number of Scrapers per push dozer: _____

JOB TIME AND COSTFleet size: 1 Team(s)Total job time: 3.57 HoursUnit cost: \$0.934 /LCYTotal job cost: \$4,671

BULLDOZER RIPPING WORK

Task description: Rip stockpile area, 4.32 acres

Site: Buffalo No 1

Permit Action: Inspection 6-17-2021

Permit/Job#: M1978011

PROJECT IDENTIFICATION

Task #: 006

State: Colorado

Abbreviation: None

Date: 8/26/2021

County: Elbert

Filename: M011-006

User: AME

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:	\$97.46	NA
Operating Cost/Hour:	\$97.63	100
Ripper Ownership Cost/Hour:	\$15.19	NA
Ripper Operating Cost/Hour:	\$9.94	100
Operator Cost/Hour:	\$41.30	NA
Total Unit Cost/Hour:	\$261.52	
Total Fleet Cost/Hour:	\$261.52	

MATERIAL QUANTITIES

Selected estimating method: Area

Alternate Methods:

Seismic: NA Bank Volume: NA BCY NA
Area: 4.32 acres Rip Depth (ft): 1.00 Volume: 6,970 BCY or CCY

Source of estimated quantity: DRMS

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: 530.00 feet/pass
Average Dozer Speed: 88.00 feet/minute
Average Maneuver Time: 0.25 minutes/pass
Production per unit area: 0.824 acres/hour

Job Condition Correction Factors

Unadjusted Hourly Unit Production: 0.824 Acres/hr
Site Altitude: 5,900 feet
Altitude Adj: 1.00 (CAT HB)
Job Efficiency: 0.83 (1 shift/day)
Net Correction: 0.83 multiplier

Adjusted Hourly Unit Production: 0.68 Acres/hr

Adjusted Hourly Fleet Production: **0.68** Acres/hr

JOB TIME AND COST

Fleet size: 1 Grader(s) Total job time: **6.32** Hours

Unit cost: \$382.394 Per acre Total job cost: **\$1,652**

SCRAPER TEAM WORKTask description: **Replace topsoil on 4.32 acres (north area)**Site: **Buffalo No 1**Permit Action: Inspection 6-17-2021Permit/Job#: M1978011**PROJECT IDENTIFICATION**Task #: 007State: ColoradoAbbreviation: NoneDate: 8/26/2021County: ElbertFilename: M011-007User: AMEAgency or organization name: DRMS**HOURLY EQUIPMENT**COSTShift basis: 1 per day

	Equipment Description
-Scraper:	Cat 637G
-Dozer:	NA
Support Equipment -Load Area:	NA
-Dump Area:	NA
Road Maintenance -Motor Grader:	CAT 16M
-Water Truck:	Water Tanker, 3,500 Gal.

Cost Breakdown:**Scraper Work Team****Support Equipment****Maintenance Equipment**

	Scraper	Dozer	Load Area	Dump Area	Motor Grader	Water Truck
%Utilization-machine:	100	NA	NA	NA	50	50
Ownership cost/hour:	\$218.34	NA	NA	NA	\$70.80	\$17.15
Operating cost/hour:	\$208.00	NA	NA	NA	\$28.16	\$14.60
%Utilization-ripper:	NA	NA	NA	NA	NA	NA
Ripper own. cost/hour:	NA	NA	NA	NA	\$0.00	\$0.00
Ripper op. cost/hour:	NA	NA	NA	NA	\$0.00	\$0.00
Operator cost/hour:	\$30.90	NA	NA	NA	\$28.56	\$0.00
Unit Subtotals:	\$457.24	NA	NA	NA	\$127.51	\$31.75
Number of Units:	2	0	0	0	1	1
Group Subtotals:	Work: \$914.48		Support:	\$0.00	Maint:	\$159.26

Total work team cost/hour: **\$1,073.74****MATERIAL QUANTITIES**Initial volume: 3,485

CCY

Swell factor: 1.215Loose volume: **4,234**

LCY

Source of estimated volume: 4.32 ac x 6 in depthSource of estimated swell factor: Cat Handbook**HOURLY PRODUCTION****Scraper Bowl (volume) Basis:**

Material weight:	<u>1,600 lbs/LCY</u>	Struck Volume:	<u>24.00</u>	LCY
Material description:	<u>Top Soil</u>	Heaped Volume:	<u>34.00</u>	LCY
Rated Payload:	<u>81,600 pounds</u>	Average Volume:	<u>29.00</u>	LCY
Payload Capacity:	<u>51.00 LCY</u>	Adjusted Capacity:	<u>29.00</u>	LCY

Cycle Time:Scraper Loading Time: 0.80 MinutesManeuver and Spread Time: 0.60 MinutesJob Condition Correction:

Site Altitude: 5900 feet

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

Travel Time:Road Condition: Firm, smooth, rolling, dirt/lt. surfaced, watered, maintained 3.0Haul Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	125.00	3.00	3.00	6.00	1477	0.14

Haul Time: 0.14 minutesReturn Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	125.00	-3.00	3.00	0.00	2965	0.14

Return Time: 0.14 minutesTotal Scraper team cycle time: 1.68 minutesAdjusted for job conditions: 859.64 LCY/HourSelected Number of Scrapers: 2 Scraper(s)Adjusted single scraper team (unit) hourly production: 1,719.29 LCY/HourAdjusted multiple scraper team (fleet) hourly production: 1,719.29 LCY/HourUnadjusted unit production/hour: 1,035.71 LCY/Hour

Optimal Number of Scrapers per push dozer: _____

JOB TIME AND COSTFleet size: 1 Team(s)Total job time: 2.46 HoursUnit cost: \$0.625 /LCYTotal job cost: \$2,644

SCRAPER TEAM WORKTask description: **Replace topsoil on 4.72 acres (south area)**Site: **Buffalo No 1**Permit Action: Inspection 6-17-2021Permit/Job#: M1978011**PROJECT IDENTIFICATION**Task #: 008State: ColoradoAbbreviation: NoneDate: 8/26/2021County: ElbertFilename: M011-008User: AMEAgency or organization name: DRMS**HOURLY EQUIPMENT**COSTShift basis: 1 per day

Equipment Description	
-Scraper:	Cat 637G
-Dozer:	NA
Support Equipment -Load Area:	NA
-Dump Area:	NA
Road Maintenance -Motor Grader:	CAT 16M
-Water Truck:	Water Tanker, 3,500 Gal.

Cost Breakdown:**Scraper Work Team****Support Equipment****Maintenance Equipment**

	Scraper	Dozer	Load Area	Dump Area	Motor Grader	Water Truck
%Utilization-machine:	100	NA	NA	NA	50	50
Ownership cost/hour:	\$218.34	NA	NA	NA	\$70.80	\$17.15
Operating cost/hour:	\$208.00	NA	NA	NA	\$28.16	\$14.60
%Utilization-ripper:	NA	NA	NA	NA	NA	NA
Ripper own. cost/hour:	NA	NA	NA	NA	\$0.00	\$0.00
Ripper op. cost/hour:	NA	NA	NA	NA	\$0.00	\$0.00
Operator cost/hour:	\$30.90	NA	NA	NA	\$28.56	\$0.00
Unit Subtotals:	\$457.24	NA	NA	NA	\$127.51	\$31.75
Number of Units:	2	0	0	0	1	1
Group Subtotals:	Work: \$914.48		Support: \$0.00		Maint: \$159.26	

Total work team cost/hour: **\$1,073.74****MATERIAL QUANTITIES**Initial volume: 3,807

CCY

Swell factor: 1.215Loose volume: **4,626**

LCY

Source of estimated volume: 4.72 ac x 6 in depthSource of estimated swell factor: Cat Handbook**HOURLY PRODUCTION****Scraper Bowl (volume) Basis:**

Material weight: 1,600 lbs/LCY
 Material description: Top Soil
 Rated Payload: 81,600 pounds
 Payload Capacity: 51.00 LCY

Struck Volume: 24.00 LCY
 Heaped Volume: 34.00 LCY
 Average Volume: 29.00 LCY
 Adjusted Capacity: **29.00** LCY

Cycle Time:Scraper Loading Time: 0.80 MinutesManeuver and Spread Time: 0.60 MinutesJob Condition Correction:

Site Altitude: 5900 feet

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

Travel Time:Road Condition: Firm, smooth, rolling, dirt/lt. surfaced, watered, maintained 3.0Haul Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	650.00	3.00	3.00	6.00	1477	0.50

Haul Time: 0.50 minutesReturn Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	650.00	-3.00	3.00	0.00	2965	0.32

Return Time: 0.32 minutesTotal Scraper team cycle time: 2.22 minutesAdjusted for job conditions: 650.54 LCY/HourSelected Number of Scrapers: 2 Scraper(s)Adjusted single scraper team (unit) hourly production: 1,301.08 LCY/HourAdjusted multiple scraper team (fleet) hourly production: 1,301.08 LCY/HourUnadjusted unit production/hour: 783.78 LCY/Hour

Optimal Number of Scrapers per push dozer: _____

JOB TIME AND COSTFleet size: 1 Team(s)Total job time: 3.56 HoursUnit cost: \$0.825 /LCYTotal job cost: \$3,817

REVEGETATION WORKTask description: **Revegetation of 9.04 acres**Site: **Buffalo No 1**Permit Action: **Inspection 6-17-2021**Permit/Job#: **M1978011****PROJECT IDENTIFICATION**Task #: **009**State: **Colorado**Abbreviation: **None**Date: **8/26/2021**County: **Elbert**Filename: **M011-009**User: **AME**Agency or organization name: **DRMS****FERTILIZING****Materials**

Description	Units / Acre	Unit	Cost / Unit	Cost /Acre
Sodium nitrate, 16-0-0	250.00	pound	\$0.76	\$190.00
Triple superphosphate, 0-46-0	87.00	pound	\$0.46	\$40.02
			Total Fertilizer Materials Cost/Acre	\$230.02

Application

Description	Cost /Acre
Tractor towed spreader (MEANS 32 01 90.13 0120)	\$38.77
Total Fertilizer Application Cost/Acre	\$38.77

TILLING

Description	Cost /Acre
Disc harrowing, 6" deep (MEANS 32 91 13.23 6100)	\$114.56
Total Tilling Cost/Acre	\$114.56

SEEDING

Seed Mix	Rate – PLS LBS / Acre	Seeds per SQ. FT	Cost /Acre
Indian Ricegrass - Native	2.50	8.09	\$16.25
Sideoats Grama - Butte	1.80	5.91	\$16.20
Pubescent Wheatgrass - Greenleaf	3.60	7.44	\$13.14
Western Wheatgrass - Arriba	6.40	16.16	\$41.60
Totals Seed Mix	14.30	37.60	\$87.19

Application

Description	Cost /Acre
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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
			\$	\$
Total Mulch Materials Cost/Acre				\$0.00

Application

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

NURSERY STOCK PLANTING

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

JOB TIME AND COST

No. of Acres:	9.04	Cost /Acre:	\$702.54
Estimated Failure Rate:	25%	Cost /Acre*:	\$319.19
*Selected Replanting Work Items:	SEEDING		

Initial Job Cost:	\$6,350.96
Reseeding Job Cost:	\$721.37
Total Job Cost:	\$7,072
Job Hours:	9.04

EQUIPMENT MOBILIZATION/DEMOBILIZATIONTask description: Mobilization/demobilizationSite: Buffalo No 1Permit Action: Inspection 6-17-2021Permit/Job#: M1978011**PROJECT IDENTIFICATION**

Task #: 010 State: Colorado Abbreviation: None
 Date: 8/26/2021 County: Elbert Filename: M011-010
 User: AME

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:	\$21.28	\$37.94	\$47.67
Operating Cost/Hour:	\$26.55	\$50.48	\$56.21
Operator Cost/Hour:	\$20.54	\$20.54	\$20.54
Helper Cost/Hour:	\$0.00	\$23.53	\$23.53
Total Unit Cost/Hour:	\$68.37	\$132.49	\$147.95

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 637G	57.28	\$218.34	\$147.95	2	\$732.58	\$295.90	\$500.00
Cat D8T - 8SU	53.08	\$112.65	\$147.95	1	\$260.60	\$147.95	\$250.00
CAT 16M	28.73	\$70.80	\$132.49	1	\$203.29	\$132.49	\$250.00
Drill/Broadcast Seeder with Tractor	25.00	\$7.98	\$68.37	1	\$76.35	\$68.37	\$250.00

Subtotals: **\$1,272.82** **\$644.71** **\$1,250.00**

ROADABLE EQUIPMENT:

Machine Description	Total Cost/hr/ unit	Fleet Size	Haul Trip Cost/hr/ fleet	Return Trip Cost/hr/ fleet
Water Tanker, 3,500 Gal.	\$46.35	1	\$46.35	\$46.35

Subtotals: **\$46.35** **\$46.35**

EQUIPMENT HAUL DISTANCE and Time

Nearest Major City or Town within project area region:	<u>AURORA</u>	
Total one-way travel distance:	<u>55.00</u>	miles
Average Travel Speed:	<u>50.00</u>	mph

Total Non-Roadable Mob/Demob Cost *	<u>\$11,809.85</u>
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 ** two round trips with haul rig:

Total Roadable Mob/Demob Cost **	<u>\$101.97</u>
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 ** one round trip, no haul rig:

Transportation Cycle Time:

	Non-Roadable Equipment	Roadable Equipment
Haul Time (Hours):	<u>1.10</u>	<u>1.10</u>
Return Time (Hours):	<u>1.10</u>	<u>1.10</u>
Loading Time (Hours):	<u>1.00</u>	<u>NA</u>
Unloading Time (Hours):	<u>1.00</u>	<u>NA</u>
Subtotals:	<u>4.20</u>	<u>2.20</u>

JOB TIME AND COST

Total job time:	<u>8.40</u>	Hours
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Total job cost:	<u>\$11,912</u>
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