

Memorandum

From: Rob Zuber, DRMS

To: C-1981-028 File

Date: May 20, 2025

Re: Bond compliance assessment for the Keenesburg Strip Mine

This memorandum addresses the question: is the Keenesburg Strip Mine (C-1981-028) sufficiently bonded? It is the product of a review of the following:

- The Permit Application Package (PAP) for this site, including the text for the Reclamation Plan (in Section 2.05) and the Reclamation Contour and Drainage Plan Map (Appendix Q-1)
- The Reclamation Cost Estimate (RCE) for the site that was updated with Midterm Review Number 8 (MT-08) and Bond Release Number 12 (SL-12) in 2024
- Monthly inspections that assess the on-the-ground conditions of the site, including the status of reclamation, health of vegetation, and presence of erosion

The current post-mining land use for the site is rangeland, with the option for industrial/commercial. There is the possibility that Coors Energy will develop a solar energy facility at the site, but that is contingent upon Weld County approval. The current RCE does not address this possibility; it includes tasks for reclamation of the site to rangeland, including application of topsoil and seeding the site with the approved seed mix.

The map included with a bond release application in 2024 (Bond Release Number 12, SL-12) illustrates the status of the parcels at the site, and it is included in the memo as an attachment. This map shows that a large portion of the site has been Phase I released, meaning that the Division has released backfill and grading tasks, but has not released tasks for applying topsoil or seeding.

The RCE was calculated using the Division's cost estimating software, CIRCES. The Cost Summary and individual tasks are included in the attachments.

Table 1 on the following page lists all of the tasks in the RCE, and divides them into three categories:

- Cost for tasks that have been completed
- Cost for tasks that have been partially completed
- Cost for tasks that have not been initiated

All of the tasks for ripping roads, hauling and spreading topsoil, and demolition have been completed, as confirmed by multiple inspections by the Division.

Seeding tasks in the table were divided into two categories, with half in the completed category and half in the partially completed category. The Division believes that this is conservative, meaning that a larger percentage could realistically be allotted to the completed category, because the site has been seeded, and inspections have revealed that reseeded is only needed in relatively small areas.

Table 1 Reclamation Tasks for the Keenesburg Strip Mine

Task	Brief description	Cost for tasks that have been completed	Cost for tasks that have been partially completed	Cost for tasks that have not been initiated
C02	Rip roads	\$3,155		
E02	Topsoil spoil area	\$304,624		
E03	Haul topsoil	\$26,359		
E05	Haul topsoil	\$50,058		
F01	Seed	\$51,852	\$51,852	
F01a	Seed	\$5,367	\$5,367	
G01	Demolition	\$4,564		
H01	Seal 7 wells			\$13,365
I01	Clean pond sediment		\$1,514	
I02	Water monitoring		\$27,642	
J01	Mob/Demob		\$23,002	
Total		\$445,978	\$109,376	\$13,365

As the table illustrates, most of the cost for reclamation at this site is for tasks that have been completed, even with the conservative assumption about seeding tasks. Many of these tasks will be, in the coming years, eligible for bond release. In the Division's opinion, this site is sufficiently bonded.

ATTACHMENTS

COST SUMMARY WORK

Task description: COST SUMMARY

Site: Keenesburg Strip Mine

Permit Action: SL12

Permit/Job#: C1981028

PROJECT IDENTIFICATION

Task #: 000

State: Colorado

Abbreviation: None

Date: 8/15/2024

County: Weld

Filename: C028-000

User: RDZ

Agency or organization name: DRMS

TASK LIST (DIRECT COSTS)

Task	Description	Form Used	Fleet Size	Task Hours	Cost
C02	Rip 10,480 feet of internal roads	RIPPER	1	6.49	\$3,155
E02	Topsoil Long Term Spoil Area	SCRAPER1	1	77.41	\$304,624
E03	Haul topsoil to "Other Areas" (parcel 42 and 43)	SCRAPER1	1	11.06	\$26,359
E05	Haul topsoil to interior access roads	SCRAPER1	1	21.01	\$50,058
F01	Seed 120.84 acres of disturbed area. (no PII bond rel)	REVEGE	1	70.00	\$103,703
F01a	Seed 17.93 acres Phase II release (parcels 32 and 33)	REVEGE	1	15.00	\$10,733
G01	Structural demolition	DEMOLISH	1	8.00	\$4,564
H01	Seal 7 wells	BOREHOLE	1	16.00	\$13,365
I01	Clean sediment from Pond 2, dispose in B-Pit	TRUCK1	1	1.38	\$1,514
I02	water monitoring	SITEMAINT ENANCE	1	30.00	\$27,642
J01	Mobilization and Demobilization of Equipment	MOBILIZE	1	15.60	\$23,002
<u>SUBTOTALS:</u>				271.95	\$568,719

INDIRECT COSTS

OVERHEAD AND PROFIT:

Liability insurance: 2.02

Total = \$11,488

Performance bond: 1.05

Total = \$5,972

Job superintendent: 135.97

Total = \$10,778

Profit: 10.00

Total = \$56,872

TOTAL O & P = \$85,110

CONTRACT AMOUNT (direct + O & P) = \$653,829

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

\$32,691

CONTINGENCY: 0.00

Total = \$0

TOTAL INDIRECT COST = \$118,301

TOTAL BOND AMOUNT (direct + indirect) = \$687,020

BULLDOZER RIPPING WORK

Task description: Rip 10,480 feet of internal roads

Site: Keenesburg Strip Mine

Permit Action: SL12

Permit/Job#: C1981028

PROJECT IDENTIFICATION

Task #: C02

State: Colorado

Abbreviation: None

Date: 8/15/2024

County: Weld

Filename: C028-C02

User: RDZ

Agency or organization name: DRMS

HOURLY EQUIPMENT COST

Basic Machine: Cat D9T - 9SU
Ripper Attachment: 3-Shank Ripper

Horsepower: 405
Shift Basis: 1 per day
Data Source: (CRG)

Cost Breakdown:

		Utilization %
Ownership Cost/Hour:	\$253.16	NA
Operating Cost/Hour:	\$164.35	100
Ripper Ownership Cost/Hour:	\$18.79	NA
Ripper Operating Cost/Hour:	\$9.48	100
Operator Cost/Hour:	\$40.04	NA
Total Unit Cost/Hour:	\$485.82	
Total Fleet Cost/Hour:	\$485.82	

MATERIAL QUANTITIES

Selected estimating method: Area

Alternate Methods:

Seismic: NA Bank Volume: NA BCY NA
Area: 4.80 acres Rip Depth (ft): 1.50 Volume: 11,616 BCY or CCY

Source of estimated quantity: Permit maps

HOURLY PRODUCTION

Seismic:

Seismic Velocity: NA feet/second

Area:

Average Ripping Depth: 1.50 feet/pass
Average Ripping Width: 7.67 feet/pass
Average Ripping Length: 500.00 feet/pass
Average Dozer Speed: 88.00 feet/minute
Average Maneuver Time: 0.25 minutes/pass
Production per unit area: 0.891 acres/hour

Job Condition Correction Factors

Unadjusted Hourly Unit Production: 0.891 Acres/hr
Site Altitude: 4,000 feet
Altitude Adj: 1.00 (CAT HB)
Job Efficiency: 0.83 (1 shift/day)
Net Correction: 0.83 multiplier
Adjusted Hourly Unit Production: 0.74 Acres/hr
Adjusted Hourly Fleet Production: **0.74** Acres/hr

JOB TIME AND COST

Fleet size: 1 Grader(s) Total job time: **6.49** Hours

Unit cost: \$657.289 Per acre Total job cost: **\$3,155**

SCRAPER TEAM WORKTask description: Topsoil Long Term Spoil AreaSite: Keenesburg Strip MinePermit Action: SL12Permit/Job#: C1981028**PROJECT IDENTIFICATION**Task #: E02State: ColoradoAbbreviation: NoneDate: 8/15/2024County: WeldFilename: C028-E02User: RDZAgency or organization name: DRMS**HOURLY EQUIPMENT**COSTShift basis: 1 per day

	Equipment Description
-Scraper:	Cat 637G w/push-pull
-Dozer:	NA
Support Equipment -Load Area:	Cat D9T - 9SU
-Dump Area:	Cat D9T - 9SU
Road Maintenance -Motor Grader:	CAT 14M
-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	100	100	100	100
Ownership cost/hour:	\$281.32	NA	\$253.16	\$253.16	\$129.81	\$17.11
Operating cost/hour:	\$319.35	NA	\$164.35	\$164.35	\$89.13	\$36.79
%Utilization-ripper:	NA	NA	NA	0	NA	NA
Ripper own. cost/hour:	NA	NA	\$0.00	\$18.79	\$0.00	\$0.00
Ripper op. cost/hour:	NA	NA	\$0.00	\$0.00	\$0.00	\$0.00
Operator cost/hour:	\$57.52	NA	\$40.04	\$40.04	\$56.70	\$38.91
Unit Subtotals:	\$658.19	NA	\$457.55	\$476.34	\$275.64	\$92.81
Number of Units:	4	0	1	1	1	1
Group Subtotals:	Work: \$2,632.76		Support: \$933.89		Maint: \$368.45	

Total work team cost/hour: \$3,935.10**MATERIAL QUANTITIES**Initial volume: 123,965

CCY

Swell factor: 1.060Loose volume: 131,403

LCY

Source of estimated volume: Est. area of LTSP and Parcel 25Source of estimated swell factor: Cat Handbook**HOURLY PRODUCTION****Scraper Bowl (volume) Basis:**

Material weight: 2,850 lbs/LCY
 Material description: Sand - Damp
 Rated Payload: 81,600 pounds
 Payload Capacity: 28.63 LCY

Struck Volume: 24.00 LCY
 Heaped Volume: 34.00 LCY
 Average Volume: 29.00 LCY
 Adjusted Capacity: 28.63 LCY

Cycle Time:

Scraper Loading Time: 1.00 Minutes
 Maneuver and Spread Time: 0.60 Minutes

Job Condition Correction:

Site Altitude: 4000 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	1900.00	0.00	3.00	3.00	2800	0.97

Haul Time: 0.97 minutesReturn Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	1900.00	0.00	3.00	3.00	2949	0.79

Return Time: 0.79 minutesTotal Scraper team cycle time: 3.36 minutesAdjusted for job conditions: 848.72 LCY/HourSelected Number of Scrapers: 4 Scraper(s)Adjusted single scraper team (unit) hourly production: 1,697.44 LCY/HourAdjusted multiple scraper team (fleet) hourly production: 1,697.44 LCY/HourUnadjusted unit production/hour: 1,022.56 LCY/Hour

Optimal Number of Scrapers per push dozer: _____

JOB TIME AND COSTFleet size: 1 Team(s)Total job time: 77.41 HoursUnit cost: \$2.318 /LCYTotal job cost: \$304,624

SCRAPER TEAM WORKTask description: Haul topsoil to "Other Areas" (parcel 42 and 43)Site: Keensburg Strip MinePermit Action: SL12Permit/Job#: C1981028**PROJECT IDENTIFICATION**Task #: E03State: ColoradoAbbreviation: NoneDate: 8/15/2024County: WeldFilename: C028-E03User: RDZAgency or organization name: DRMS**HOURLY EQUIPMENT**COSTShift basis: 1 per day

	Equipment Description
-Scraper:	Cat 637G w/push-pull
-Dozer:	NA
Support Equipment -Load Area:	Cat D9T - 9SU
-Dump Area:	Cat D9T - 9SU
Road Maintenance -Motor Grader:	CAT 14M
-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	25	100	25	25
Ownership cost/hour:	\$281.32	NA	\$253.16	\$253.16	\$129.81	\$17.11
Operating cost/hour:	\$319.35	NA	\$41.09	\$164.35	\$22.28	\$9.20
%Utilization-ripper:	NA	NA	NA	NA	NA	NA
Ripper own. cost/hour:	NA	NA	\$0.00	\$0.00	\$0.00	\$0.00
Ripper op. cost/hour:	NA	NA	\$0.00	\$0.00	\$0.00	\$0.00
Operator cost/hour:	\$57.52	NA	\$40.04	\$40.04	\$56.70	\$38.91
Unit Subtotals:	\$658.19	NA	\$334.28	\$457.55	\$208.79	\$65.22
Number of Units:	2	0	1	1	1	1
Group Subtotals:	Work:	\$1,316.38	Support:	\$791.83	Maint:	\$274.01

Total work team cost/hour: \$2,382.22**MATERIAL QUANTITIES**Initial volume: 8,155

CCY

Swell factor: 1.060Loose volume: 8,645

LCY

Source of estimated volume: 2018 ARRSource of estimated swell factor: Cat Handbook**HOURLY PRODUCTION**Scraper Bowl (volume) Basis:

Material weight:	<u>2,850 lbs/LCY</u>	Struck Volume:	<u>24.00</u>	LCY
Material description:	<u>Sand - Damp</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>28.63 LCY</u>	Adjusted Capacity:	<u>28.63</u>	LCY

Cycle Time:Scraper Loading Time: 1.00 MinutesManeuver and Spread Time: 0.60 MinutesJob Condition Correction:

Site Altitude: 4000 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	2300.00	0.00	3.00	3.00	2800	1.12

Haul Time: 1.12 minutesReturn Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	2300.00	0.00	3.00	3.00	2949	0.93

Return Time: 0.93 minutesTotal Scraper team cycle time: 3.65 minutesAdjusted for job conditions: 781.29 LCY/HourSelected Number of Scrapers: 2 Scraper(s)Adjusted single scraper team (unit) hourly production: 781.29 LCY/HourAdjusted multiple scraper team (fleet) hourly production: 781.29 LCY/HourUnadjusted unit production/hour: 941.31 LCY/Hour

Optimal Number of Scrapers per push dozer: _____

JOB TIME AND COSTFleet size: 1 Team(s)Total job time: 11.06 HoursUnit cost: \$3.049 /LCYTotal job cost: \$26,359

SCRAPER TEAM WORKTask description: **Haul topsoil to interior access roads**Site: **Keenesburg Strip Mine**Permit Action: **SL12**Permit/Job#: **C1981028****PROJECT IDENTIFICATION**Task #: **E05**
Date: **8/15/2024**
User: **RDZ**State: **Colorado**
County: **Weld**Abbreviation: **None**
Filename: **C028-E05**Agency or organization name: **DRMS****HOURLY EQUIPMENT**COSTShift basis: **1 per day**

	Equipment Description
-Scraper:	Cat 637G w/push-pull
-Dozer:	NA
Support Equipment -Load Area:	Cat D9T - 9SU
-Dump Area:	Cat D9T - 9SU
Road Maintenance -Motor Grader:	CAT 14M
-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	25	100	25	25
Ownership cost/hour:	\$281.32	NA	\$253.16	\$253.16	\$129.81	\$17.11
Operating cost/hour:	\$319.35	NA	\$41.09	\$164.35	\$22.28	\$9.20
%Utilization-ripper:	NA	NA	NA	NA	NA	NA
Ripper own. cost/hour:	NA	NA	\$0.00	\$0.00	\$0.00	\$0.00
Ripper op. cost/hour:	NA	NA	\$0.00	\$0.00	\$0.00	\$0.00
Operator cost/hour:	\$57.52	NA	\$40.04	\$40.04	\$56.70	\$38.91
Unit Subtotals:	\$658.19	NA	\$334.28	\$457.55	\$208.79	\$65.22
Number of Units:	2	0	1	1	1	1
Group Subtotals:	Work:	\$1,316.38	Support:	\$791.83	Maint:	\$274.01

Total work team cost/hour: **\$2,382.22****MATERIAL QUANTITIES**Initial volume: **15,488** CCY Swell factor: **1.060**
Loose volume: **16,417** LCYSource of estimated volume: **2008 ARR**
Source of estimated swell factor: **Cat Handbook****HOURLY PRODUCTION****Scraper Bowl (volume) Basis:**

Material weight:	2,850 lbs/LCY	Struck Volume:	24.00	LCY
Material description:	Sand - Damp	Heaped Volume:	34.00	LCY
Rated Payload:	81,600 pounds	Average Volume:	29.00	LCY
Payload Capacity:	28.63 LCY	Adjusted Capacity:	28.63	LCY

Cycle Time:

Scraper Loading Time: 1.00 Minutes
 Maneuver and Spread Time: 0.60 Minutes

Job Condition Correction:

Site Altitude: 4000 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	2300.00	0.00	3.00	3.00	2800	1.12

Haul Time: 1.12 minutesReturn Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	2300.00	0.00	3.00	3.00	2949	0.93

Return Time: 0.93 minutesTotal Scraper team cycle time: 3.65 minutesAdjusted for job conditions: 781.29 LCY/HourSelected Number of Scrapers: 2 Scraper(s)Adjusted single scraper team (unit) hourly production: 781.29 LCY/HourAdjusted multiple scraper team (fleet) hourly production: 781.29 LCY/HourUnadjusted unit production/hour: 941.31 LCY/Hour

Optimal Number of Scrapers per push dozer: _____

JOB TIME AND COSTFleet size: 1 Team(s)Total job time: 21.01 HoursUnit cost: \$3.049 /LCYTotal job cost: \$50,058

REVEGETATION WORKTask description: Seed 120.84 acres of disturbed area. (no PII bond rel)Site: Keenesburg Strip MinePermit Action: SL12Permit/Job#: C1981028**PROJECT IDENTIFICATION**Task #: F01State: ColoradoAbbreviation: NoneDate: 8/15/2024County: WeldFilename: C028-F01User: RDZAgency or organization name: DRMS**FERTILIZING****Materials**

Description	Units / Acre	Unit	Cost / Unit	Cost /Acre
Manure, delivery (average cost), per ton	0.03	ton	\$2,961.16	\$88.83
			Total Fertilizer Materials Cost/Acre	\$88.83

Application

Description	Cost /Acre
Manure, tractor spreader (MEANS 32 91 13.23 4450)	\$77.10
Total Fertilizer Application Cost/Acre	\$77.10

TILLING

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

SEEDING

Seed Mix	Rate – PLS LBS / Acre	Seeds per SQ. FT	Cost /Acre
Indiangrass - Cheyenne	1.50	4.57	\$18.46
Switchgrass - Blackwell	0.50	4.47	\$6.61
Blue Grama - Lovington	0.50	8.16	\$13.88
Indian Ricegrass - Paloma	1.00	3.24	\$20.53
Little Bluestem - Native	0.50	2.98	\$7.70
Sideoats Grama - Butte	1.50	4.92	\$36.23
Sand Bluestem - Garden Co.	2.00	5.19	\$48.45
Sorghum, Hybr. Frg. - Bundle King IV	5.00	2.87	\$5.49
Coneflower, Prairie	0.30	8.15	\$10.68
Thickspike Wheatgrass - Critana	0.30	1.06	\$2.44

Prairie Sandreed - Goshen	1.50	9.40	\$25.54
Totals Seed Mix	14.60	55.02	\$196.02

Application

Description	Cost / Acre
Drill Seeding (DRMS Survey Cost)	\$236.64
Total Seed Application Cost/Acre	\$236.64

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: 120.84 Cost /Acre: \$598.59
 Estimated Failure Rate: 60% Cost /Acre*: \$432.66
 *Selected Replanting Work Items: SEEDING

Initial Job Cost: **\$72,333.62**
 Reseeding Job Cost: **\$31,369.58**
 Total Job Cost: **\$103,703**
 Job Hours: **70.00**

REVEGETATION WORKTask description: Seed 17.93 acres Phase II release (parcels 32 and 33)Site: Keenesburg Strip MinePermit Action: SL12Permit/Job#: C1981028**PROJECT IDENTIFICATION**Task #: F01AState: ColoradoAbbreviation: NoneDate: 8/15/2024County: WeldFilename: C028-F01aUser: RDZAgency or organization name: DRMS**FERTILIZING****Materials**

Description	Units / Acre	Unit	Cost / Unit	Cost /Acre
Manure, delivery (average cost), per ton	0.03	ton	\$2,961.16	\$88.83
			Total Fertilizer Materials Cost/Acre	\$88.83

Application

Description	Cost /Acre
Manure, tractor spreader (MEANS 32 91 13.23 4450)	\$77.10
Total Fertilizer Application Cost/Acre	\$77.10

TILLING

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

SEEDING

Seed Mix	Rate – PLS LBS / Acre	Seeds per SQ. FT	Cost /Acre
Indiangrass - Cheyenne	1.50	4.57	\$18.46
Switchgrass - Blackwell	0.50	4.47	\$6.61
Blue Grama - Lovington	0.50	8.16	\$13.88
Indian Ricegrass - Paloma	1.00	3.24	\$20.53
Little Bluestem - Native	0.50	2.98	\$7.70
Sideoats Grama - Butte	1.50	4.92	\$36.23
Sand Bluestem - Garden Co.	2.00	5.19	\$48.45
Sorghum, Hybr. Frg. - Bundle King IV	5.00	2.87	\$5.49
Coneflower, Prairie	0.30	8.15	\$10.68
Thickspike Wheatgrass - Critana	0.30	1.06	\$2.44

Prairie Sandreed - Goshen	1.50	9.40	\$25.54
Totals Seed Mix	14.60	55.02	\$196.02

Application

Description	Cost / Acre
Drill Seeding (DRMS Survey Cost)	\$236.64
Total Seed Application Cost/Acre	\$236.64

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: 17.93 Cost /Acre: \$598.59
 Estimated Failure Rate: 0% Cost /Acre*: \$432.66
 *Selected Replanting Work Items: SEEDING

Initial Job Cost: **\$10,732.72**
 Reseeding Job Cost: **\$0.00**
 Total Job Cost: **\$10,733**
 Job Hours: **15.00**

DEMOLITION WORK

Task description: Structural demolition

Site: Keenesburg Strip Mine

Permit Action: SL12

Permit/Job#: C1981028

PROJECT IDENTIFICATION

Task #: G01

State: Colorado

Abbreviation: None

Date: 8/15/2024

County: Weld

Filename: C028-G01

User: RDZ

Agency or organization name: DRMS

UNIT COSTS

Location adjustment: 96.90 %

Structure or Item Description	Dimensions	Demolition Menu Selection	Quantity	Unit	Unit Cost	Total Cost
Powder magazine - cinder block walls	21' x 28' x 10'h	Bldg. (SN) demo./on-site disposal in existing pit or cut - Max. 10,000 ft. haul	5,880.00	CF	\$0.24	\$1,431.19
Powder magazine-concrete floor	21' x 28'	Demo. and on-site disposal in existing pit, 4 in. thick - Max. 10,000 ft. haul	588.00	SF	\$0.77	\$453.35
Skid mounted garage	28' x 26' x 18'h	Bldg. (SN) demo./on-site disposal in existing pit or cut - Max. 50 ft. push	13,104.00	CF	\$0.22	\$2,825.22

Job Hours: 8.00

Subtotal
(unadjusted): \$4,709.76

Total Cost
(adjusted for location): \$4,563.76

BOREHOLE SEALING WORK

Task description: Seal 7 wells

Site: Keenesburg Strip Mine

Permit Action: SL12

Permit/Job#: C1981028

PROJECT IDENTIFICATION

Task #: H01

State: Colorado

Abbreviation: None

Date: 8/15/2024

County: Weld

Filename: C028-H01

User: RDZ

Agency or organization name: DRMS

UNIT COSTS

Borehole Description	Sealing/Item Method	Diameter	Length	Quantity	Unit	Unit Cost	Total Cost
FPW1	Portland cement grout (Bag, material cost only...94 lb. bag)	8	60.5	17.80	bag	\$22.00	\$391.60
Water supply well	Portland cement grout (Bag, material cost only...94 lb. bag)	8	620	183.05	bag	\$22.00	\$4,027.10
DH96	Portland cement grout (Bag, material cost only...94 lb. bag)	5	55.58	5.93	bag	\$22.00	\$130.46
DH122	Portland cement grout (Bag, material cost only...94 lb. bag)	5	55.25	5.08	bag	\$22.00	\$111.76
SMW-2	Portland cement grout (Bag, material cost only...94 lb. bag)	4.75	97	10.17	bag	\$22.00	\$223.74
AMW-1	Portland cement grout (Bag, material cost only...94 lb. bag)	4.5	58.5	3.89	bag	\$22.00	\$85.58
AMW-2	Portland cement grout (Bag, material cost only...94 lb. bag)	6	49	8.47	bag	\$22.00	\$186.34
cut casing	Exposed casing removal - Calculate Circumference in Linear Feet	41.25	NA	129.59	LF	\$3.23	\$418.58
drill rig time	ATLAS COPCO ROC D7-11,4.0 in.	NA	NA	16.00	EA	\$432.61	\$6,921.76
water truck time	Water Tanker, 2,500 Gal.	NA	NA	16.00	EA	\$34.10	\$545.60
borehole markers	Borehole location/identification marker (EA, material cost only)	NA	NA	7.00	EA	\$46.00	\$322.00

Job Hours: 16.00

Total Cost: \$13,365.00

SITE MAINTENANCE

Task description: Water monitoring

Site: Keenesburg Strip Mine Permit Action: SL12 Permit/Job#: C1981028

PROJECT IDENTIFICATION

Task #: I02 State: Colorado Abbreviation: None
Date: 8/15/2024 County: Weld Filename: C028-I02
User: RDZ

Agency or organization name: DRMS

UNIT COSTS

Maintenance Item	Hours per Year	Menu Selection	Quantity	Unit	Unit Cost	Total Cost
water monitoring	6.00	USER PROVIDED ITEM	10.00	1	\$2,764.20	\$27,642.00

Job Hours: 30.00

Total Cost: \$27,642.00

EQUIPMENT MOBILIZATION/DEMOBILIZATIONTask description: **Mobilization and Demobilization of Equipment**Site: **Keenesburg Strip Mine**Permit Action: **SL12**Permit/Job#: **C1981028****PROJECT IDENTIFICATION**Task #: **J01**State: **Colorado**Abbreviation: **None**Date: **8/15/2024**County: **Weld**Filename: **C028-J01**User: **RDZ**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:	\$10.44	\$22.18	\$23.94
Operating Cost/Hour:	\$26.48	\$54.55	\$55.65
Operator Cost/Hour:	\$22.52	\$22.52	\$22.52
Helper Cost/Hour:	\$0.00	\$23.53	\$23.53
Total Unit Cost/Hour:	\$59.44	\$122.78	\$125.64

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 D9T - 9SU	66.13	\$271.95	\$125.64	1	\$397.59	\$125.64	\$500.00
ATLAS COPCO ROC D7-11,4.0 in.	1.25	\$191.64	\$59.44	1	\$251.08	\$59.44	\$250.00
CAT 14M	23.57	\$129.81	\$59.44	1	\$189.25	\$59.44	\$250.00
Cat 637G w/push- pull	59.59	\$281.32	\$125.64	1	\$406.96	\$125.64	\$1,000.00

Subtotals: **\$1,244.88** **\$370.16** **\$2,000.00****ROADABLE EQUIPMENT:**

Machine Description	Total Cost/hr/ unit	Fleet Size	Haul Trip Cost/hr/ fleet	Return Trip Cost/hr/ fleet
Water Tanker, 2,500 Gal.	\$73.01	1	\$73.01	\$73.01
Water Tanker, 3,500 Gal.	\$92.81	1	\$92.81	\$92.81
Fuel Tanker, 6x4, 210 HP	\$92.81	1	\$92.81	\$92.81
Lube Truck, 6x4, 250 HP	\$92.81	1	\$92.81	\$92.81

Subtotals: **\$351.44** **\$351.44**

EQUIPMENT HAUL DISTANCE and Time

Nearest Major City or Town within project area region:	<u>BRIGHTON</u>	
Total one-way travel distance:	<u>20.00</u>	miles
Average Travel Speed:	<u>50.00</u>	mph

Total Non-Roadable Mob/Demob Cost *	<u>\$22,720.35</u>
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* two round trips with haul rig:

Total Roadable Mob/Demob Cost **	<u>\$281.15</u>
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** one round trip, no haul rig:

Transportation Cycle Time:

	Non-Roadable Equipment	Roadable Equipment
Haul Time (Hours):	<u>0.40</u>	<u>0.40</u>
Return Time (Hours):	<u>0.40</u>	<u>0.40</u>
Loading Time (Hours):	<u>3.50</u>	<u>NA</u>
Unloading Time (Hours):	<u>3.50</u>	<u>NA</u>
Subtotals:	<u>7.80</u>	<u>0.80</u>

JOB TIME AND COST

Total job time:	<u>15.60</u>	Hours
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Total job cost:	<u>\$23,002</u>
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