



STATE OF  
COLORADO

Reilley - DNR, Robin <robin.reilley@state.co.us>

## Inspection Report 2023 August and RCE Pioneer Farms

1 message

**Reilley - DNR, Robin** <robin.reilley@state.co.us>

Wed, Aug 9, 2023 at 11:48 AM

To: Kurt THURMANN <kurt.thurmann@holcim.com>, neil.whitmer@holcim.com, Robin Reilley - DNR <robin.reilley@state.co.us>, "trey.poulson@holcim.com" <trey.poulson@holcim.com>, "elliot.hudson@holcim.com" <elliot.hudson@holcim.com>

Good Morning Kurt,

Please find the Division's inspection report and reclamation cost estimate attached for your review. Once you get the mapping completed we will revisit the cost estimate. Please update the permit as outlined in the inspection report with a Technical Revision as soon as possible. Here is a link that may help:

<https://drms.colorado.gov/forms/minerals-program-forms>

I'm available to answer questions as they come up.

Thank you

Robin Reilley, M.S. GISP  
Environmental Protection Specialist II



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

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**INSPECTION\_PioneerFarms\_2023.pdf**

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## COLORADO

Division of Reclamation,  
Mining and Safety


Department of Natural Resources

### 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.

<b>MINE NAME:</b> Pioneer Farm	<b>MINE/PROSPECTING ID#:</b> M-2000-080	<b>MINERAL:</b> Sand	<b>COUNTY:</b> Arapahoe
<b>INSPECTION TYPE:</b> Monitoring	<b>WEATHER:</b> Clear	<b>INSP. DATE:</b> August 2, 2023	<b>INSP. TIME:</b> 08:30
<b>OPERATOR:</b> Holcim - WCR, Inc.	<b>OPERATOR REPRESENTATIVE:</b> Kurt Thurman, Elliot Hudson, Trey Poulson	<b>TYPE OF OPERATION:</b> 112c - Construction Regular Operation	

<b>REASON FOR INSPECTION:</b> Normal I&E Program	<b>BOND CALCULATION TYPE:</b> Complete Bond	<b>BOND AMOUNT:</b> \$78,245.00
<b>DATE OF COMPLAINT:</b> NA	<b>POST INSP. CONTACTS:</b> None	<b>JOINT INSP. AGENCY:</b> None
<b>INSPECTOR(S):</b> Robin Reilley, GISP	<b>INSPECTOR'S SIGNATURE:</b> 	<b>SIGNATURE DATE:</b> August 9, 2023

**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:** Signs & Markers

**PROBLEM/POSSIBLE VIOLATION:** Problem: Affected area boundary markers were not in place. This is a problem for failure to maintain boundary markers around the affected area as required by Section 3.1.12(2) of the rule.

**CORRECTIVE ACTIONS:** The operator shall conduct a survey and replace the boundary markers in the correct location(s). The operator shall provide proof to the Division that this has been done by the corrective action date. The operator shall submit a Technical Revision to update the Mining and Reclamation Plans.

**CORRECTIVE ACTION DUE DATE:** 9/30/23

## **OBSERVATIONS**

The Pioneer Farm site was inspected by Robin Reilley with the Division of Reclamation, Mining and Safety (Division/DRMS). The inspection was completed as part of the Division's routine monitoring inspection program. The site was previously inspected by the Division in May of 2021 as part of the Division's routine monitoring program.

Kurt Thurman, and Elliot Hudson representing the operator Holcim-WCR, Inc. accompanied me during the inspection. We were later joined by Trey Poulson also of Holcim-WCR. The weather was warm, and the sky clear. The site is located just east of Bennett at the Circle K exit from I70 and at the intersection of S. Manila and East Quincy Avenue.

Pioneer Farm is a 310 acre 112c mining operation on privately owned land. The commodity mined at the site is topsoil and fill material. The site is surrounded by rural residential and agricultural land with the approved post mining land use of cropland and industrial commercial. A mine sign designated as Pioneer Farms was observed as required by Rule 3.1.12. The operator showed me the new mine sign that will be posted. Once posted, a photo will be sent to confirm. There is a separate sign designating Holcim as the operator across from the required DRMS sign. The permit boundary is marked by fencing along the west, south and east. Along the north edge a road marks the boundary. Boxelder Creek flows north along the western border of the site. A storm water permit allows discharge to the creek

The mine is approved to disturb 36 acres at any one time with 12 acres being pre-stripped, 12 acres being mined and leveled, and 12 acres in reclamation. As per the May 2021 inspection, it appears that the mine has disturbed close to 121 acres during the life of mine with 70 acres being cultivated by the land owner. The Division estimated the remaining 51 acres were either being reclaimed, actively being mined or pre-stripped ahead of mining.

An oil well pad and cropped areas for winter wheat are situated inside permit area. During the May 2021 inspection it was observed that there is a solar farm of approximately 11 acres, located within both the permit and affected land boundaries. The solar farm was installed in 2019, with a 10 year lease agreement signed by the previous land owner. The previous operator was involved with negotiations pertaining to the solar farm and did not anticipate mining that area for another 10 or more years. The Mining and Reclamation Plan Maps need to be updated to reflect the current location of the solar farm.

As stated above the permit area is 310 acres but during the file review in preparation for the 2021 inspection it was determined that it was not specified what the affected land area acreage was to be. The Division estimates the affected area is to be near 260 acres. A Technical Revision (TR) to update the Mining and Reclamation Plan Maps to clarify the permit and affected land areas should be submitted to avoid confusion and possible problems during bond release in the future. The Division recommends the operator submit a TR to update the Mine Plan if necessary to allow for disturbing more area at any one time.

The site is active most of year. At the time of the inspection the site was active. Trucks were being loaded and were hauling stockpiled material. Topsoil and fill material were piled at the entrance due to wet conditions at loading site. Reclaimed and active areas were moist and muddy and not completely accessible at the time of inspection. A screener was placed in the active area.

Affected areas were not explicitly marked at the time of inspection. This was discussed with the operator. Holcim recently purchased the site and are in the process of understanding and marking where stripping, mining, and reclamation activities will occur. A drone flight is scheduled for later in the month of August. This will allow demarcation of affected areas and will serve as a map for planning purposes. The operator committed to apprising DRMS of the results of the drone flight with an appropriate map of areas and acreages scheduled for permitted activities. All mining appears to have occurred within the permit boundaries.

The Division evaluated the financial warranty and determined the current bond amount held by the Division is not adequate at this time. The Division provided the updated Reclamation Cost Estimate to the operator during the inspection. The draft cost estimate represents an \$11,004.00 increase in required liability over the previous estimate. However, the Division will wait until the operator provides mapping details through submission of the TR to reevaluate the bond calculation. In the event the operator does not submit the TR in a timely manner the Division will issue a surety increase for the calculated amount.

Photographs taken during the inspection are attached.

Signs and Markers:

Affected area boundary markers were not in place. This is a problem for failure to maintain boundary markers around the affected area as required by Section 3.1.12(2) of the rule.



**Photo 1:** Mine sign exhibiting the previous operator's name.



**Photo 2:** Overview of site captured from 2023 annual report submitted to DRMS in January 2023.





**Photo 3:** Topsoil (dark soil), and fill (light material), piles located at entrance ready for loading.



**Photo 4:** Topsoil piled in loading area. Highwall is to the right in the photo.





**Photo 4:** Loading area for excavated material.



**Photo 5:** Grassy piles of excavated material waiting to be screened.





**Photo 6:** Conoco well and associated infrastructure within permit area.



**Photo 7:** Looking west to areas that have been reclaimed.



### GENERAL INSPECTION TOPICS

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

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

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

#### Inspection Contact Address

Kurt Thurman, Elliot Hudson, Trey Poulson  
Holcim - WCR, Inc.  
1687 Cole Blvd  
Golden, CO 80401

Enclosure

CC:

## COST SUMMARY WORK

Task description: \_\_\_\_\_

Site: Pioneer Farm

Permit Action: Insp 2023

Permit/Job#: M2000080

### PROJECT IDENTIFICATION

Task #: 000

State: Colorado

Abbreviation: None

Date: 5/17/2023

County: Arapahoe

Filename: M080-000

User: RAR

Agency or organization name: DRMS

### TASK LIST (DIRECT COSTS)

Task	Description	Form Used	Fleet Size	Task Hours	Cost
001	Grading, Leveling and Erosion Repair 20 acres Active Mining	SITEMAINT ENANCE	1	20.00	\$3,810
002	Finish Grade Affected Land	GRADER	1	24.44	\$3,706
003	Spread Topsoil Over Mine Area 20 acres	SCRAPER1	1	17.95	\$26,286
004	Spread topsoil over scale house area	DOZER	1	4.78	\$870
006	Revegetation	REVEGE	1	5.75	\$14,871
007	Mobilization of Equipment	MOBILIZE	1	3.45	\$7,819
SUBTOTALS:				76.37	\$57,362

### INDIRECT COST

#### OVERHEAD AND PROFIT

Liability insurance: 2.02  
Performance bond: 1.05  
Job superintendent: 38.19  
Profit: 10.00

Total = \$1,159

Total = \$602

Total = \$2,869

Total = \$5,736

TOTAL O & P = \$10,366

CONTRACT AMOUNT (direct + O & P) = \$67,728

### LEGAL - ENGINEERING - PROJECT MANAGEMENT:

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

Total = \$500

Engineering work and/or contract/bid preparation: 8.59

Total = \$5,818

Reclamation management and/or administration: 6.20

\$4,199

CONTINGENCY: 0.00

Total = \$0

TOTAL INDIRECT COST = \$20,883

TOTAL BOND AMOUNT (direct + indirect) = \$78,245



## SITE MAINTENANCE

Task description: Grading, Leveling and Erosion Repair 20 acres Active Mining

Site: Pioneer Farm

Permit Action: Insp 2023

Permit/Job#: M2000080

### PROJECT IDENTIFICATION

Task #: 001

State: Colorado

Abbreviation: None

Date: 5/17/2023

County: Arapahoe

Filename: 001

User: RAR

Agency or organization name: DRMS

### UNIT COSTS

Maintenance Item	Hours per Year	Menu Selection	Quantity	Unit	Unit Cost	Total Cost
Grading, Leveling, Erosion Repair 20 Acres Active mining	20.00	Cat D6T XL	20.00	EA	\$190.49	\$3,809.80

Job Hours: 20.00

Total Cost: \$3,809.80

# DRAFT

MOTOR GRADER WORKTask description: Finish Grade Affected LandSite: Pioneer FarmPermit Action: Insp 2023Permit/Job#: M2000080PROJECT IDENTIFICATIONTask #: 002State: ColoradoAbbreviation: NoneDate: 5/17/2023County: ArapahoeFilename: 002User: RARAgency or organization name: DRMSHOURLY EQUIPMENT COSTBasic Machine: CAT 12MHorsepower: 158

Ripper Attachment: \_\_\_\_\_

Shift Basis: 1 per dayData Source: (CRG)Cost Breakdown:

		Utilization %
Ownership Cost/Hour:	\$57.51	NA
Operating Cost/Hour:	\$47.24	100
Ripper Ownership Cost/Hour:	\$0.00	NA
Ripper Operating Cost/Hour:	\$0.00	
Operator Cost/Hour:	\$46.87	NA
Total Unit Cost/Hour:	\$151.62	
Total Fleet Cost/Hour:	\$151.62	

MATERIAL QUANTITIESTotal Area to be graded or ripped: 40.00 acresSource of estimated acreage: TR2HOURLY PRODUCTION

Average Grader Speed:	<u>1.50</u>	mph
Selected Application:	<u>Finish grading (0-2.5 mph) - 1.5</u>	
Selected Blade Angle:	<u>0</u>	degrees
Effective Blade Length:	<u>12.00</u>	feet
Width of blade overlap per pass:	<u>2.00</u>	feet
Net grading or ripping width per pass:	<u>10.00</u>	feet
Unadjusted Hourly Unit Production:	<u>1.8182</u>	acres/hour

Job Condition Correction FactorsSite Altitude: 5790 feet

Altitude Adj:	<u>1.00</u>	Source
Job Efficiency:	<u>0.90</u>	(CAT HB)
Net Correction:	<u>0.9000</u>	(1sh/d, fav.)
		multiplier

Adjusted Hourly Unit Production: 1.6364 acres/HourAdjusted Hourly Fleet Production: 1.6364 acres/HourJOB TIME AND COSTFleet size: 1

Grader(s)

Total job time: 24.44

Hours



Unit cost: \$92.66 per acreTotal job cost: \$3,706**SCRAPER TEAM WORK**Task description: Spread Topsoil Over Mine Area 20 acresSite: Pioneer FarmPermit Action: Insp 2023Permit/Job#: M2000080**PROJECT IDENTIFICATION**Task #: 003State: ColoradoAbbreviation: NoneDate: 5/17/2023County: ArapahoeFilename: 003User: RARAgency or organization name: DRMS**HOURLY EQUIPMENT**COSTShift basis: 1 per day

	Equipment Description
-Scraper:	Cat 627G w/push-pull
-Dozer:	NA
Support Equipment -Load Area:	Cat D6T XL
-Dump Area:	NA
Road Maintenance -Motor Grader:	CAT 12M
-Water Truck:	Water Tanker, 5,000 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	NA	50	50
Ownership cost/hour:	\$227.06	NA	\$77.51	NA	\$57.51	\$37.19
Operating cost/hour:	\$252.32	NA	\$64.62	NA	\$23.62	\$25.65
%Utilization-ripper:	NA	NA	NA	NA	NA	NA
Ripper own. cost/hour:	NA	NA	\$0.00	NA	\$0.00	\$0.00
Ripper op. cost/hour:	NA	NA	\$0.00	NA	\$0.00	\$0.00
Operator cost/hour:	\$47.07	NA	\$40.04	NA	\$46.87	\$38.91
Unit Subtotals:	\$526.45	NA	\$181.97	NA	\$128.00	\$101.75
Number of Units:	2	0	1	0	1	1
Group Subtotals:	Work:	\$1,052.90	Support:	\$181.97	Maint:	\$229.75

Total work team cost/hour: \$1,464.62**MATERIAL QUANTITIES**Initial volume: 16,200

CCY

Swell factor: 1.000Loose volume: 16,200

LCY

Source of estimated volume: 6" over 20 acresSource of estimated swell factor: Cat Handbook**HOURLY PRODUCTION****Scraper Bowl (volume) Basis:**

Material weight: 1,600 lbs/LCY  
 Material description: Top Soil  
 Rated Payload: 52,800 pounds

Struck Volume: 15.70 LCY  
 Heaped Volume: 22.00 LCY  
 Average Volume: 18.85 LCY

Payload Capacity: 33.00 LCYAdjusted Capacity: 18.85 LCYCycle Time:Scraper Loading Time: 0.90 MinutesManeuver and Spread Time: 0.60 MinutesJob Condition Correction:

Site Altitude: 5790 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	400.00	0.00	3.00	3.00	2824	0.32

Haul Time: 0.32 minutesReturn Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	400.00	0.00	3.00	3.00	2874	0.26

Return Time: 0.26 minutesTotal Scraper team cycle time: 2.23 minutesAdjusted for job conditions: 902.63 LCY/HourSuggested Number of Scrapers: 1 Scraper(s)Adjusted single scraper team (unit) hourly production: 902.63 LCY/HourAdjusted multiple scraper team (fleet) hourly production: 902.63 LCY/HourUnadjusted unit production/hour: 1,087.50 LCY/HourOptimal Number of Scrapers per push  
dozer: \_\_\_\_\_JOB TIME AND COSTFleet size: 1 Team(s)Total job time: 17.95 HoursUnit cost: \$1.623 /LCYTotal job cost: \$26,286



BULLDOZER WORKTask description: Spread topsoil over scale house areaSite: Pioneer FarmPermit Action: Insp 2023Permit/Job#: M2000080PROJECT IDENTIFICATIONTask #: 004State: ColoradoAbbreviation: NoneDate: 5/17/2023County: ArapahoeFilename: 004User: RARAgency or organization name: DRMSHOURLY EQUIPMENT COSTBasic Machine: Cat D6T XLHorsepower: 185Blade Type: Semi-UniversalAttachment: NAShift Basis: 1 per dayData Source: (CRG)Cost Breakdown:

		<u>Utilization %</u>
Ownership Cost/Hour:	\$77.31	NA
Operating Cost/Hour:	\$64.62	100
Ripper ov	\$0.00	A
Cost/Ho		
Ripper op. Cost/Ho	\$0.00	A
Operator Cost/Ho	\$40.04	A
Total unit Cost/Hour:	\$111.97	
Total Fleet Cost/Hour:	<b>\$181.97</b>	

MATERIAL QUANTITIESInitial Volume: 800Swell factor: 1.000Loose volume: 800 LCYSource of estimated volume: Estimate 1 acre 6-inches

Source of estimated swell

factor: Cat HandbookHOURLY PRODUCTIONAverage push distance: 150 feet

Unadjusted hourly

production: 212.5 LCY/hr

Materials consistency

description: Partly consolidated stockpile 1.1

Average push

gradient: 0 %Average site altitude: 5,790 feetMaterial weight: 1,600 lbs/LCY

Weight description: Top SoilJob Condition Correction Factor

		<u>Source</u>
Operator Skill:	0.750	(AVG.)
Material consistency:	1.100	(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: 0.7877Adjusted unit  
production: 167.39 LCY/hrAdjusted fleet  
production: 167.39 LCY/hrJOB TIME AND COSTFleet size: 1 Dozers  
Unit cost: \$417/LCYTotal job time: 4.78 HoursTotal job cost: \$870**DRAFT**

REVEGETATION WORKTask description: RevegetationSite: Pioneer FarmPermit Action: Insp 2023Permit/Job#: M2000080PROJECT IDENTIFICATIONTask #: 006State: ColoradoAbbreviation: NoneDate: 5/17/2023County: ArapahoeFilename: 006User: RARAgency or organization name: DRMSFERTILIZING**Materials**

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

**Application**

Description	Cost /Acre
	\$
<b>Total Fertilizer Application Cost/Acre</b>	<b>\$0.00</b>

TILLING

Description	Cost /Acre
Chisel plowing {DMG}	\$98.43
<b>Total Tilling Cost/Acre</b>	<b>\$98.43</b>

SEEDING

Seed Mix	Rate – PLS LBS / Acre	Seeds per SQ. FT	Cost /Acre
Wheat, Winter - Tam 107	60.00	55.10	\$16.50
<b>Totals Seed Mix</b>	<b>60.00</b>	<b>55.10</b>	<b>\$16.50</b>

**Application**

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

**MULCHING and MISCELLANEOUS****Materials**

Description	Units / Acre	Unit	Cost / Unit	Cost /Acre
			\$	\$
<b>Total Mulch Materials Cost/Acre</b>				<b>\$0.00</b>

**Application**

Description	Cost /Acre
	\$
<b>Total Mulch Application Cost/Acre</b>	<b>\$0.00</b>

**NURSERY STOCK PLANTING**

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

**JOB TIME AND COST**

No. of Acres:	40	Cost /Acre:	\$346.93
Estimated Failure Rate:	10%	Cost /Acre*:	\$248.50
*Selected Replanting Work Items:		SEEDING	

Initial Job Cost:	<b>\$13,877.20</b>
Reseeding Job Cost:	<b>\$994.00</b>
Total Job Cost:	<b>\$14,871</b>
Job Hours:	<b>5.75</b>



**EQUIPMENT MOBILIZATION/DEMOBILIZATION**Task description: **Mobilization of Equipment**Site: **Pioneer Farm**Permit Action: **Insp 2023**Permit/Job#: **M2000080****PROJECT IDENTIFICATION**Task #: **007**State: **Colorado**Abbreviation: **None**Date: **5/17/2023**County: **Arapahoe**Filename: **007**User: **RAR**Agency or organization name: **DRMS****EQUIPMENT TRANSPORT RIG COST**Shift basis: **1 per day**Cost Data Source: **CRG Data**Truck Tractor Description: **GENERIC ON-HIGHWAY TRUCK TRACTOR, 6X4, DIESEL POWERED,  
400 HP (2ND HALF, 2006)**Truck Trailer Description: **GENERIC FOLDING GOOSENECK, DROP DECK EQUIPMENT  
TRAILER (25T, 50T, AND 100T)****Cost Breakdown:**

Available Rig Capacities	0-25 Tons	26-50 Tons	51+ Tons
Ownership Cost/Hour:	\$15.25	\$23.06	\$37.58
Operating Cost/Hour:	\$5.26	\$3.78	\$51.41
Operator Cost/Hour:	\$7.71	\$7.71	\$27.71
Helper Cost/Hour:	\$0.00	\$0.22	\$20.22
Total Unit Cost/Hour:	\$8.22	\$101.82	\$136.92

**NON ROADABLE EQUIPMENT:**

Machine Description	Weight/ Unit (TONS)	Owner ship Cost/hr/ unit	Haul Rig Cost/hr/unit	Fleet Size	Haul Trip Cost/hr/ fleet	Return Trip Cost/hr/ fleet	DOT Permit Cost/ fleet
Cat D6T XL	23.25	\$77.31	\$68.22	1	\$145.53	\$68.22	\$1,000.00
CAT 12M	16.01	\$57.51	\$68.22	1	\$125.73	\$68.22	\$250.00
Cat 627G w/push-pull	43.48	\$227.06	\$101.82	2	\$657.76	\$203.64	\$500.00
Drill/Broadcast Seeder with Tractor	25.00	\$6.25	\$68.22	2	\$148.94	\$136.44	\$500.00

Subtotals: **\$1,077.96** **\$476.52** **\$2,250.00****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.	\$14.23	1	\$14.23	\$14.23
Fuel Tanker, 4x2, 170 HP	\$30.60	1	\$30.60	\$30.60

Subtotals: **\$44.83** **\$44.83**

**EQUIPMENT HAUL DISTANCE and Time**

Nearest Major City or Town within project area region: AURORA

Total one-way travel distance: 20.00 miles

Average Travel Speed: 55.00 mph

Total Non-Roadable Mob/Demob Cost \* \$7,786.45

    '\* two round trips with haul rig:

Total Roadable Mob/Demob Cost \*\* \$32.60

    \*\* one round trip, no haul rig:

**Transportation Cycle Time:**

	Non-Roadable Equipment	Roadable Equipment
Haul Time (Hours):	0.36	0.36
Return Time (Hours):	0.36	0.36
Loading Time (Hours):	0.50	NA
Unloading Time (Hours):	0.50	NA
Subtotals:	1.73	0.73

**JOB TIME AND COST**

Total job time: 3.45 Hours

Total job cost: \$7,819

# DRAFT

## COST SUMMARY WORK

Task description: \_\_\_\_\_

Site: Pioneer Farm

Permit Action: Insp 2023

Permit/Job#: M2000080

### PROJECT IDENTIFICATION

Task #: 000

State: Colorado

Abbreviation: None

Date: 5/17/2023

County: Arapahoe

Filename: M080-000

User: RAR

Agency or organization name: DRMS

### TASK LIST (DIRECT COSTS)

Task	Description	Form Used	Fleet Size	Task Hours	Cost
001	Grading, Leveling and Erosion Repair 20 acres Active Mining	SITEMAINT ENANCE	1	20.00	\$3,810
002	Finish Grade Affected Land	GRADER	1	24.44	\$3,706
003	Spread Topsoil Over Mine Area 20 acres	SCRAPER1	1	17.95	\$26,286
004	Spread topsoil over scale house area	DOZER	1	4.78	\$870
006	Revegetation	REVEGE	1	5.75	\$14,871
007	Mobilization of Equipment	MOBILIZE	1	3.45	\$7,819
SUBTOTALS:				76.37	\$57,362

### INDIRECT COST

#### OVERHEAD AND PROFIT

Liability insurance: 2.02  
Performance bond: 1.05  
Job superintendent: 38.19  
Profit: 10.00

Total = \$1,159

Total = \$602

Total = \$2,869

Total = \$5,736

TOTAL O & P = \$10,366

CONTRACT AMOUNT (direct + O & P) = \$67,728

### LEGAL - ENGINEERING - PROJECT MANAGEMENT:

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

Total = \$500

Engineering work and/or contract/bid preparation: 8.59

Total = \$5,818

Reclamation management and/or administration: 6.20

\$4,199

CONTINGENCY: 0.00

Total = \$0

TOTAL INDIRECT COST = \$20,883

**TOTAL BOND AMOUNT (direct + indirect) = \$78,245**

## SITE MAINTENANCE

Task description: Grading, Leveling and Erosion Repair 20 acres Active Mining

Site: Pioneer Farm

Permit Action: Insp 2023

Permit/Job#: M2000080

### PROJECT IDENTIFICATION

Task #: 001

State: Colorado

Abbreviation: None

Date: 5/17/2023

County: Arapahoe

Filename: 001

User: RAR

Agency or organization name: DRMS

### UNIT COSTS

Maintenance Item	Hours per Year	Menu Selection	Quantity	Unit	Unit Cost	Total Cost
Grading, Leveling, Erosion Repair 20 Acres Active mining	20.00	Cat D6T XL	20.00	EA	\$190.49	\$3,809.80

Job Hours: 20.00

Total Cost: \$3,809.80

# DRAFT



MOTOR GRADER WORKTask description: Finish Grade Affected LandSite: Pioneer FarmPermit Action: Insp 2023Permit/Job#: M2000080PROJECT IDENTIFICATIONTask #: 002State: ColoradoAbbreviation: NoneDate: 5/17/2023County: ArapahoeFilename: 002User: RARAgency or organization name: DRMSHOURLY EQUIPMENT COSTBasic Machine: CAT 12MHorsepower: 158

Ripper Attachment: \_\_\_\_\_

Shift Basis: 1 per dayData Source: (CRG)Cost Breakdown:

		Utilization %
Ownership Cost/Hour:	\$57.51	NA
Operating Cost/Hour:	\$47.24	100
Ripper Ownership Cost/Hour:	\$0.00	NA
Ripper Operating Cost/Hour:	\$0.00	
Operator Cost/Hour:	\$46.87	NA
Total Unit Cost/Hour:	\$151.62	
Total Fleet Cost/Hour:	\$151.62	

MATERIAL QUANTITIESTotal Area to be graded or ripped: 40.00 acresSource of estimated acreage: TR2HOURLY PRODUCTION

Average Grader Speed:	<u>1.50</u>	mph
Selected Application:	<u>Finish grading (0-2.5 mph) - 1.5</u>	
Selected Blade Angle:	<u>0</u>	degrees
Effective Blade Length:	<u>12.00</u>	feet
Width of blade overlap per pass:	<u>2.00</u>	feet
Net grading or ripping width per pass:	<u>10.00</u>	feet
Unadjusted Hourly Unit Production:	<u>1.8182</u>	acres/hour

Job Condition Correction FactorsSite Altitude: 5790 feet

Altitude Adj:	<u>1.00</u>	Source
Job Efficiency:	<u>0.90</u>	(CAT HB)
Net Correction:	<u>0.9000</u>	(1sh/d, fav.)
		multiplier

Adjusted Hourly Unit Production: 1.6364 acres/HourAdjusted Hourly Fleet Production: 1.6364 acres/HourJOB TIME AND COSTFleet size: 1

Grader(s)

Total job time: 24.44

Hours

Unit cost: \$92.66 per acreTotal job cost: \$3,706**SCRAPER TEAM WORK**Task description: Spread Topsoil Over Mine Area 20 acresSite: Pioneer FarmPermit Action: Insp 2023Permit/Job#: M2000080**PROJECT IDENTIFICATION**Task #: 003State: ColoradoAbbreviation: NoneDate: 5/17/2023County: ArapahoeFilename: 003User: RARAgency or organization name: DRMS**HOURLY EQUIPMENT**COSTShift basis: 1 per day

	Equipment Description
-Scraper:	Cat 627G w/push-pull
-Dozer:	NA
Support Equipment -Load Area:	Cat D6T XL
-Dump Area:	NA
Road Maintenance -Motor Grader:	CAT 12M
-Water Truck:	Water Tanker, 5,000 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	NA	50	50
Ownership cost/hour:	\$227.06	NA	\$77.51	NA	\$57.51	\$37.19
Operating cost/hour:	\$252.32	NA	\$64.62	NA	\$23.62	\$25.65
%Utilization-ripper:	NA	NA	NA	NA	NA	NA
Ripper own. cost/hour:	NA	NA	\$0.00	NA	\$0.00	\$0.00
Ripper op. cost/hour:	NA	NA	\$0.00	NA	\$0.00	\$0.00
Operator cost/hour:	\$47.07	NA	\$40.04	NA	\$46.87	\$38.91
Unit Subtotals:	\$526.45	NA	\$181.97	NA	\$128.00	\$101.75
Number of Units:	2	0	1	0	1	1
Group Subtotals:	Work:	\$1,052.90	Support:	\$181.97	Maint:	\$229.75

Total work team cost/hour: \$1,464.62**MATERIAL QUANTITIES**Initial volume: 16,200

CCY

Swell factor: 1.000Loose volume: 16,200

LCY

Source of estimated volume: 6" over 20 acresSource of estimated swell factor: Cat Handbook**HOURLY PRODUCTION****Scraper Bowl (volume) Basis:**

Material weight: 1,600 lbs/LCY  
 Material description: Top Soil  
 Rated Payload: 52,800 pounds

Struck Volume: 15.70 LCY  
 Heaped Volume: 22.00 LCY  
 Average Volume: 18.85 LCY

Payload Capacity: 33.00 LCYAdjusted Capacity: 18.85 LCYCycle Time:Scraper Loading Time: 0.90 MinutesManeuver and Spread Time: 0.60 MinutesJob Condition Correction:

Site Altitude: 5790 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	400.00	0.00	3.00	3.00	2824	0.32

Haul Time: 0.32 minutesReturn Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	400.00	0.00	3.00	3.00	2874	0.26

Return Time: 0.26 minutesTotal Scraper team cycle time: 2.23 minutesAdjusted for job conditions: 902.63 LCY/HourSuggested Number of Scrapers: 1 Scraper(s)Adjusted single scraper team (unit) hourly production: 902.63 LCY/HourAdjusted multiple scraper team (fleet) hourly production: 902.63 LCY/HourUnadjusted unit production/hour: 1,087.50 LCY/HourOptimal Number of Scrapers per push  
dozer: \_\_\_\_\_JOB TIME AND COSTFleet size: 1 Team(s)Total job time: 17.95 HoursUnit cost: \$1.623 /LCYTotal job cost: \$26,286

BULLDOZER WORKTask description: Spread topsoil over scale house areaSite: Pioneer FarmPermit Action: Insp 2023Permit/Job#: M2000080PROJECT IDENTIFICATIONTask #: 004State: ColoradoAbbreviation: NoneDate: 5/17/2023County: ArapahoeFilename: 004User: RARAgency or organization name: DRMSHOURLY EQUIPMENT COSTBasic Machine: Cat D6T XLHorsepower: 185Blade Type: Semi-UniversalAttachment: NAShift Basis: 1 per dayData Source: (CRG)Cost Breakdown:

		<u>Utilization %</u>
Ownership Cost/Hour:	\$77.31	NA
Operating Cost/Hour:	\$64.62	100
Ripper ov	\$0.00	A
Cost/Ho		
Ripper op. Cost/Ho	\$0.00	A
Operator Cost/Ho	\$40.04	A
Total unit Cost/Hour:	\$111.97	
Total Fleet Cost/Hour:	<b>\$181.97</b>	

MATERIAL QUANTITIESInitial Volume: 800Swell factor: 1.000Loose volume: 800 LCYSource of estimated volume: Estimate 1 acre 6-inches

Source of estimated swell

factor: Cat HandbookHOURLY PRODUCTIONAverage push distance: 150 feet

Unadjusted hourly

production: 212.5 LCY/hrMaterials consistency description: Partly consolidated stockpile 1.1Average push gradient: 0 %Average site altitude: 5,790 feetMaterial weight: 1,600 lbs/LCY



Weight description: Top SoilJob Condition Correction Factor

		<u>Source</u>
Operator Skill:	0.750	(AVG.)
Material consistency:	1.100	(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: 0.7877Adjusted unit  
production: 167.39 LCY/hrAdjusted fleet  
production: 167.39 LCY/hrJOB TIME AND COSTFleet size: 1 Dozers  
Unit cost: \$417/LCYTotal job time: 4.78 HoursTotal job cost: \$870**DRAFT**

REVEGETATION WORKTask description: RevegetationSite: Pioneer FarmPermit Action: Insp 2023Permit/Job#: M2000080PROJECT IDENTIFICATIONTask #: 006State: ColoradoAbbreviation: NoneDate: 5/17/2023County: ArapahoeFilename: 006User: RARAgency or organization name: DRMSFERTILIZING**Materials**

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

**Application**

Description	Cost /Acre
	\$
<b>Total Fertilizer Application Cost/Acre</b>	<b>\$0.00</b>

TILLING

Description	Cost /Acre
Chisel plowing {DMG}	\$98.43
<b>Total Tilling Cost/Acre</b>	<b>\$98.43</b>

SEEDING

Seed Mix	Rate – PLS LBS / Acre	Seeds per SQ. FT	Cost /Acre
Wheat, Winter - Tam 107	60.00	55.10	\$16.50
<b>Totals Seed Mix</b>	<b>60.00</b>	<b>55.10</b>	<b>\$16.50</b>

**Application**

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

**MULCHING and MISCELLANEOUS****Materials**

Description	Units / Acre	Unit	Cost / Unit	Cost /Acre
			\$	\$
<b>Total Mulch Materials Cost/Acre</b>				<b>\$0.00</b>

**Application**

Description	Cost /Acre
	\$
<b>Total Mulch Application Cost/Acre</b>	<b>\$0.00</b>

**NURSERY STOCK PLANTING**

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

**JOB TIME AND COST**

No. of Acres:	40	Cost /Acre:	\$346.93
Estimated Failure Rate:	10%	Cost /Acre*:	\$248.50
*Selected Replanting Work Items:		SEEDING	

Initial Job Cost:	<b>\$13,877.20</b>
Reseeding Job Cost:	<b>\$994.00</b>
Total Job Cost:	<b>\$14,871</b>
Job Hours:	<b>5.75</b>

**EQUIPMENT MOBILIZATION/DEMOBILIZATION**Task description: **Mobilization of Equipment**Site: **Pioneer Farm**Permit Action: **Insp 2023**Permit/Job#: **M2000080****PROJECT IDENTIFICATION**Task #: **007**State: **Colorado**Abbreviation: **None**Date: **5/17/2023**County: **Arapahoe**Filename: **007**User: **RAR**Agency or organization name: **DRMS****EQUIPMENT TRANSPORT RIG COST**Shift basis: **1 per day**Cost Data Source: **CRG Data**Truck Tractor Description: **GENERIC ON-HIGHWAY TRUCK TRACTOR, 6X4, DIESEL POWERED,  
400 HP (2ND HALF, 2006)**Truck Trailer Description: **GENERIC FOLDING GOOSENECK, DROP DECK EQUIPMENT  
TRAILER (25T, 50T, AND 100T)****Cost Breakdown:**

Available Rig Capacities	0-25 Tons	26-50 Tons	51+ Tons
Ownership Cost/Hour:	\$15.25	\$23.06	\$37.58
Operating Cost/Hour:	\$5.26	\$3.78	\$51.41
Operator Cost/Hour:	\$7.71	\$7.71	\$27.71
Helper Cost/Hour:	\$0.00	\$0.22	\$20.22
Total Unit Cost/Hour:	\$8.22	\$101.82	\$136.92

**NON ROADABLE EQUIPMENT:**

Machine Description	Weight/ Unit (TONS)	Owner ship Cost/hr/ unit	Haul Rig Cost/hr/unit	Fleet Size	Haul Trip Cost/hr/ fleet	Return Trip Cost/hr/ fleet	DOT Permit Cost/ fleet
Cat D6T XL	23.25	\$77.31	\$68.22	1	\$145.53	\$68.22	\$1,000.00
CAT 12M	16.01	\$57.51	\$68.22	1	\$125.73	\$68.22	\$250.00
Cat 627G w/push-pull	43.48	\$227.06	\$101.82	2	\$657.76	\$203.64	\$500.00
Drill/Broadcast Seeder with Tractor	25.00	\$6.25	\$68.22	2	\$148.94	\$136.44	\$500.00

Subtotals: **\$1,077.96** **\$476.52** **\$2,250.00****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.	\$14.23	1	\$14.23	\$14.23
Fuel Tanker, 4x2, 170 HP	\$30.60	1	\$30.60	\$30.60

Subtotals: **\$44.83** **\$44.83**



**EQUIPMENT HAUL DISTANCE and Time**

Nearest Major City or Town within project area region: AURORA

Total one-way travel distance: 20.00 miles

Average Travel Speed: 55.00 mph

Total Non-Roadable Mob/Demob Cost \* \$7,786.45

    '\* two round trips with haul rig:

Total Roadable Mob/Demob Cost \*\* \$32.60

    \*\* one round trip, no haul rig:

**Transportation Cycle Time:**

	Non-Roadable Equipment	Roadable Equipment
Haul Time (Hours):	0.36	0.36
Return Time (Hours):	0.36	0.36
Loading Time (Hours):	0.50	NA
Unloading Time (Hours):	0.50	NA
Subtotals:	1.73	0.73

**JOB TIME AND COST**

Total job time: 3.45 Hours

Total job cost: \$7,819

# DRAFT