STATE OF COLORADO

Gagnon - DNR, Nikie <nikie.gagnon@state.co.us>

Tucson South Inspection Report and Cost Estimate

1 message

Gagnon - DNR, Nikie <nikie.gagnon@state.co.us> Fri, Dec 13, 2024 at 8:14 PM
To: Wyatt Webster <wyatt.webster@holcim.com>

Hi Wyatt.
Please see the attached report for the October 30, 2024 inspection of the Tucson South mine site. As you know, part of our process is recalculating the bond after an inspection. In this case, the reclamation estimate increased since it was last calculated in 2021. Please review the estimate and reach out to me by January 6, 2025 if you have any questions about the revised bond estimate.

Best regards,

Nikie Gagnon

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Nikie Gagnon
Environmental Protection Specialist

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

Cell: 720.527.1640
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2 attachments

INSP-REPORT_M2004044_Tucson South_2024.pdf
5796K

M2004044_Tucson South_2024 Cost Estimate_summary.pdf
374K

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.

MINE NAME: Tucson South Resource	**MINE/PROSPECTING ID#:** M-2004-044	**MINERAL:** Sand and gravel	**COUNTY:** Adams
INSPECTION TYPE: Monitoring	**WEATHER:** Clear	**INSP. DATE:** October 30, 2024	**INSP. TIME:** 08:30
OPERATOR: Holcim - WCR, Inc.	**OPERATOR REPRESENTATIVE:** Wyatt Webster	**TYPE OF OPERATION:** 112c - Construction Regular Operation	
REASON FOR INSPECTION: Normal I&E Program	**BOND CALCULATION TYPE:** Complete Bond	**BOND AMOUNT:** $834,000.00	
DATE OF COMPLAINT: NA	**POST INSP. CONTACTS:** None	**JOINT INSP. AGENCY:** None	
INSPECTOR(S): Nikie Gagnon	**INSPECTOR'S SIGNATURE:** Nikie Gagnon	**SIGNATURE DATE:** December 13, 2024	

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) of the Act.

CORRECTIVE ACTIONS: The Division's reclamation cost estimate is enclosed with this report for the Operator's review. The Division requests that any questions or concerns regarding the estimated liability level be forwarded to the Division by January 6, 2025. The Division may issue a surety increase revision after January 6, 2025. In accordance with Rule 4.2.1(2), Holcim -WCR will have 60 days from the date on the surety increase notice to post the additional financial warranty.
CORRECTIVE ACTION DUE DATE: 1/06/25

OBSERVATIONS

The Tucson South Resource mine was inspected by Nikie Gagnon representing the Division of Reclamation, Mining and Safety (Division) as part of the Division's normal monitoring inspection program. Wyatt Webster representing Holcim-WCR, Inc. accompanied the Division during the inspection. The site is located approximately 1 mine west of the City of Brighton on E. 106th/CO Hwy 7. The operation permitted to affect 287.60 acres. The post-mine land use is developed water resources and pasture.

Gen. Compliance With Mine Plan:
Mining will occur in two phases in the west and east mining areas. The two areas are separated by Tucson Street, which runs north/south between the two mining areas. In the summer of 2022, slurry walls were installed in both mining areas to allow the site to be used for developed water resources upon closure (Reservoir A and B). According to the Operator, mining in the west side is nearing completion and reclamation work should be complete by the end of 2025. During this inspection, the Division observed active mining in the west area. An excavator was noted loading material into a haul trucks. Stockpiles of mined material are stored in the pit along with overburden. The Division observed an operator grading the south perimeter of the mined area to 3h:1V slope.

The east mining area was observed during this inspection. In preparation for mining, the operator started clearing vegetation and removed trees on the east side in 2023, outside the raptor nesting season. During the inspection, the Division observed an eagle roosting in a tree near the office and another flying around the east mining area.

Screening berms are well vegetated and line the south end of the east and west mining areas, along Highway 7. Trees have been planted in front of the topsoil berms for aesthetics and visual mitigation along Highway 7.

Material from the mine site is transported via a 0.7-mile conveyor to the Wattenberg Pit north of Tucson South, where the material is processed. The conveyor system was not operating during this inspection. Silt fences were observed installed along the conveyor route protecting the adjacent agriculture field from erosion. Area K located on the west side of the permit area, is included in the permit boundary, however, according to the operator, this area will not be disturbed or mined. No disturbance was observed in this area.

The operator continues to monitor air quality to ensure to compliance with the Adams County Conditional Use Permit. During the inspection, the Division observed a wind sensor in the southwest corner of the west mining area. The winds were calm, and dust was not observed blowing around the site.

Hydrologic Balance:
When encountered, groundwater in the west mining area is pumped to a settling pond located in the northeast corner of the east mining area. The ponds discharge to the South Platte River. During this inspection, except for a small amount of water in dewatering trenches along the east side of the active mining area, the west mining area was dry. A small pool of water was observed near the sump in the west mining area. The pump was not operating. The Division observed the settling pond in the east mining area. No water was observed in the pond or discharging to the river. Holcim has an approved Substitute Water Supply Plan (WDID 0202565) which allows for an exposed surface area of up to 3.0 acres. Depletions covered include evaporation, aggregate production, slurry wall construction, landscape irrigation and dust control.

The Operator has an active groundwater monitoring plan which includes collecting monthly water levels and submitting the data to the Division with the annual report. During this inspection, the Division observed groundwater monitoring wells installed around the exterior of the two mining areas.

Signs and Markers:

Mine signs were posted at the entrances to the east and west mining area as required by Rule 3.1.12(1). A barbed wire fence was installed around the two mining areas. A silt fence and posts mark the boundary between the east mining area and the adjacent private land. White plastic posts mark the edge of the slurry wall around each reservoir. Along the conveyor, the permit boundary was marked by t-posts and a silt fence.

Financial Warranty:

The Division holds an $834,000.00 bond for the site. After this inspection, the Division estimated the reclamation liability at the site to be $924,944.00 which is $90,944.00 more than the currently held financial warranty. **The Division's reclamation cost estimate is enclosed with this report for the Operator's review. The Division requests that any questions or concerns regarding the estimated liability level be forwarded to the Division by January 6, 2025.** The Division may issue a surety increase revision after January 6, 2025. In accordance with Rule 4.2.1(2), Holcim -WCR will have sixty (60) days from the date of the notice of surety increase to provide the additional financial warranty.

This concludes the Division's Inspection Report; a subset of photographs taken during the time of the inspection are included below. If you need additional information or have any questions, please contact me at Division of Reclamation, Mining and Safety, 1313 Sherman Street, Room 215, Denver, CO 80203, by telephone at 720-527-1640 or by email at nikie.gagnon@state.co.us.

GENERAL INSPECTION TOPICS

This list identifies the environmental and permit parameters inspected and gives a categorical evaluation of each. No problems or possible violations were noted during the inspection. The mine operation was found to be in full compliance with Mineral Rules and Regulations of the Colorado Mined Land Reclamation Board for the Extraction of Construction Materials and/or for Hard Rock, Metal and Designated Mining Operations. Any person engaged in any mining operation shall notify the office of any failure or imminent failure, as soon as reasonably practicable after such person has knowledge of such condition or of any impoundment, embankment, or slope that poses a reasonable potential for danger to any persons or property or to the environment; or any environmental protection facility designed to contain or control chemicals or waste which are acid or toxic-forming, as identified in the permit.

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

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

PHOTOGRAPHS


Photo 1: Looking south from the entrance at the mined slopes along the eastern boundary of the west mining area.


Photo 2: Looking across the west mining area from the north end near the conveyor.

Photo 3: Excavator observed loading a haul truck in the west mining area.

Photo 4: Groundwater sump in the northeast corner of the west mining area. Pump not operating.

Photo 5: Groundwater trenches moving water to the sump area in the northeast corner of the west mining area.

Photo 6: Double walled fuel tank adjacent to the office in the west mining area.

Photo 7: Equipment storage area in the west mining area, near the office.

Photo 8: Southeast corner of the west mining area. Screening berm placed around the mining area noted by arrow, and trees planted by operator.

Photo 9: Air quality monitor in the southwest corner of the permit area.

Photo 10: Looking north across the east permit area from Highway 7.

Photo 11: Looking south across the east permit area where vegetation clearing is occurring, and trees were removed in 2023.

Photo 12: Looking at monitoring well 8 in the southeast corner of the permit area.

Photo 13: Groundwater monitoring well #17 in the southwest corner of the west permit area.

Photo 14: Groundwater monitoring well #9 in the east mining area.

Photo 15: Discharge structure to the South Platte on the east side of the permit area.

Photo 16: Settling pond east side of the permit area. Discharge pipeline indicated by arrow.

Inspection Contact Address

Wyatt Webster
Holcim - WCR, Inc.
1687 Cole Blvd., Suite 300
Golden, CO 80401

Enclosure: 2024 Reclamation Cost Estimate

CC: Jared Ebert, Senior EPS, DRMS

COST SUMMARY WORK

Task description: **Reclamation Cost Estimate**

Site: **Tucson South Resource** Permit Action: 2024 Inspection Permit/Job#: M2004044

PROJECT IDENTIFICATION

Task #: 000 State: Colorado Abbreviation: None
Date: 12/13/2024 County: Adams Filename: M044-000
User: NCG

Agency or organization name: DRMS

TASK LIST (DIRECT COSTS)

Task	Description	Form Used	Fleet Size	Task Hours	Cost
001	Backfill remaining East Cell mining face and slide slopes	LOADER	2	78.41	$41,234
002	Rough grade disturbed area in East Cell (85' x 2300')	GRADER	1	1.95	$715
003	Replace topsoil on backfilled mining cell area above HWL	SCRAPER1	1	45.69	$70,483
004	Final grade East Cell (85' x 2300') + (800'+100')	GRADER	1	2.76	$1,010
005	Replace topsoil on internal haul roads and main site ent.	SCRAPER1	1	1.82	$2,805
006	Replace topsoil on conveyor route	SCRAPER1	1	9.54	$14,716
007	Replace topsoil on stockpile areas	SCRAPER1	1	3.03	$4,674
008	Scarify internal haul roads and conveyor route	GRADER	1	3.62	$1,325
009	Final grade all miscellaneous areas (8.3 acres x .5')	GRADER	1	3.62	$1,312
010	East Slurry Wall Contingency	NA	1	0.00	$145,800
011	Remove Tucson St Crossing	NA	1	0.00	$41,954
012	Remove 168th Crossing	NA	1	0.00	$37,005
013	Remove WCR 23.75 Crossing	NA	1	0.00	$21,816
014	Remove Aurora Crossing	NA	1	0.00	$15,000
015	Remove Struck Crossing	NA	1	0.00	$15,000
016	Remove Remaining Conveyor	DEMOLISH	1	80.00	$148,297
017	Revegetation of Affected Land	REVEGE	1	80.00	$154,253
018	Mobilization	MOBILIZE	1	8.76	$38,922
			SUBTOTALS:	**319.2**	**$756,321**

INDIRECT COSTS

OVERHEAD AND PROFIT:

Liability insurance:	2.02	Total =	$15,278
Performance bond:	1.05	Total =	$7,941
Job superintendent:	159.60	Total =	$12,651
Profit:	10.00	Total =	$75,632
		TOTAL O & P =	$111,503
		CONTRACT AMOUNT (direct + O & P) =	$867,824

LEGAL - ENGINEERING - PROJECT MANAGEMENT:

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

Engineering work and/or contract/bid preparation:	2.00	Total =	$17,356
Reclamation management and/or administration:	1.91		$16,575
CONTINGENCY:	3.00	Total =	$22,690
		TOTAL INDIRECT COST =	$168,624
		TOTAL BOND AMOUNT (direct + indirect) =	**$924,945**

WHEEL LOADER – LOAD AND CARRY WORK

Task description: **Backfill remaining East Cell mining face and slide slopes**

Site: **Tucson South Resource** Permit Action: 2024 Inspection Permit/Job#: M2004044

PROJECT IDENTIFICATION

Task #: 001 State: Colorado Abbreviation: None
Date: 12/13/2024 County: Adams Filename: M044-001
User: NCG

Agency or organization name: DRMS

HOURLY EQUIPMENT COST

Basic Machine: CAT 990H Horsepower: 621
Attachment 1: ROPS Cab Shift Basis: 1 per day
Data Source: (CRG)

Cost Breakdown:

		Utilization %
Ownership Cost/Hour:	$115.73	NA
Operating Cost/Hour:	$130.33	100
Operator Cost/Hour:	$56.84	NA
Total Unit Cost/Hour:	$302.90	

Total Fleet Cost/Hour: $605.80

MATERIAL QUANTITIES

Initial volume: 93,150 CCY Swell factor: 1.000
Loose volume: **93,150** LCY

Source of estimated volume: Exhibit L
Source of estimated swell factor: Cat Handbook

HOURLY PRODUCTION

Loader Cycle Time: Unadjusted Basic Cycle Time (load, dump, maneuver): 0.600 minutes

Cycle Time Factors		Factor (min.)	Source
Material:	Mixed material 0.02	0.020	(Cat HB)
Stockpile:	Conveyor or dozer piled 10 ft. high and up 0.00	0.000	(Cat HB)
Truck Ownership:	Common ownership of trucks and loaders -0.04	-0.040	(Cat HB)
Operation:	Constant operation -0.04	-0.040	(Cat HB)
Dump Target:	Nominal target 0.00	0.000	(Cat HB)

Net Cycle Time Adjustment: -0.060 minutes
Adjusted Basic Cycle Time: 0.540 minutes

Rolling Resistance – Road Conditions

Haul: Rutted dirt, little maintenance, no water, 2” tire penetration 5.0
Return: Rutted dirt, little maintenance, no water, 2” tire penetration 5.0

Haul and Return Time

	Length (feet)	Grade Res. (%)	Rolling Res. (%)	Total Res. (%)	Travel Time (minutes)	Source
Haul Route:	300	0.00	5.00	5.00	0.2493	(Cat HB)
Return Route:	300	0.00	5.00	5.00	0.2483	(Cat HB)

Total Travel Time:	0.4976	minutes
Total Cycle Time:	**1.0376**	minutes

Load Bucket Capacity

Rated Capacity:	11.25	LCY (heaped)
Bucket Fill Factor:	1.100	Other - rock/dirt mixtures (100-120%) 1.100
Adjusted Capacity:	**12.38**	LCY

Job Condition Correction Factors

Site Altitude: 4960 feet

		Source
Altitude Adj:	1.00	(CAT HB)
Job Efficiency:	0.83	(1 shift/day)
Net Correction:	0.83	multiplier

Unadjusted Hourly Unit Production:	715.58	LCY/Hour
Adjusted Hourly Unit Production:	593.93	LCY/Hour
Adjusted Hourly Fleet Production:	**1,187.86**	LCY/Hour

JOB TIME AND COST

Fleet size:	2	Loader(s)	Total job time:	**78.42**	Hours
Unit cost:	$0.510	/LCY	Total job cost:	**$47,506**	

MOTOR GRADER WORK

Task description: **Rough grade disturbed area in East Cell (85' x 2300')**

Site: **Tucson South Resource** Permit Action: 2024 Inspection Permit/Job#: M2004044

PROJECT IDENTIFICATION

Task #:	002	State:	Colorado	Abbreviation:	None
Date:	12/13/2024	County:	Adams	Filename:	M044-002
User:	NCG				

Agency or organization name: DRMS

HOURLY EQUIPMENT COST

Basic Machine:	CAT 16M	Horsepower:	297
Ripper Attachment:	Multi-Shank Ripper	Shift Basis:	1 per day
		Data Source:	(CRG)

Cost Breakdown:

		Utilization %
Ownership Cost/Hour:	$179.39	NA
Operating Cost/Hour:	$119.64	100
Ripper Ownership Cost/Hour:	$5.75	NA
Ripper Operating Cost/Hour:	$4.18	100
Operator Cost/Hour:	$56.70	NA
Total Unit Cost/Hour:	$365.66	
Total Fleet Cost/Hour:	**$365.66**	

MATERIAL QUANTITIES

Total Area to be graded or ripped: 4.48 acres

Source of estimated acreage: Exhibit L

HOURLY PRODUCTION

Average Grader Speed:	1.50	mph
Selected Application:	Ripping (0-3 mph) - 1.50	
Selected Blade Angle:	0	degrees
Effective Blade Length:	16.00	feet
Width of blade overlap per pass:	2.00	feet
Net grading or ripping width per pass:	14.00	feet
Unadjusted Hourly Unit Production:	2.5455	acres/hour

Job Condition Correction Factors

Site Altitude: 4960 feet

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

Adjusted Hourly Unit Production:	2.2909	acres/Hour
Adjusted Hourly Fleet Production:	**2.2909**	acres/Hour

JOB TIME AND COST

Fleet size:	1	Grader(s)	Total job time:	**1.96**	Hours
Unit cost:	$159.61	per acre	Total job cost:	**$715**	

MOTOR GRADER WORK

Task description: **Final grade East Cell (85' x 2300') + (800'+100')**

Site: **Tucson South Resource** Permit Action: 2024 Inspection Permit/Job#: M2004044

PROJECT IDENTIFICATION

Task #:	004	State:	Colorado	Abbreviation:	None
Date:	12/13/2024	County:	Adams	Filename:	M044-004
User:	NCG				

Agency or organization name: DRMS

HOURLY EQUIPMENT COST

Basic Machine:	CAT 16M	Horsepower:	297
Ripper Attachment:	Multi-Shank Ripper	Shift Basis:	1 per day
		Data Source:	(CRG)

Cost Breakdown:

		Utilization %
Ownership Cost/Hour:	$179.39	NA
Operating Cost/Hour:	$119.64	100
Ripper Ownership Cost/Hour:	$5.75	NA
Ripper Operating Cost/Hour:	$4.18	100
Operator Cost/Hour:	$56.70	NA
Total Unit Cost/Hour:	$365.66	
Total Fleet Cost/Hour:	**$365.66**	

MATERIAL QUANTITIES

Total Area to be graded or ripped: 6.33 acres

Source of estimated acreage: Exhibit L

HOURLY PRODUCTION

Average Grader Speed:	1.50	mph
Selected Application:	Ripping (0-3 mph) - 1.50	
Selected Blade Angle:	0	degrees
Effective Blade Length:	16.00	feet
Width of blade overlap per pass:	2.00	feet
Net grading or ripping width per pass:	14.00	feet
Unadjusted Hourly Unit Production:	2.5455	acres/hour

Job Condition Correction Factors — Site Altitude: 4960 feet

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

Adjusted Hourly Unit Production:	2.2909	acres/Hour
Adjusted Hourly Fleet Production:	**2.2909**	acres/Hour

JOB TIME AND COST

Fleet size:	1	Grader(s)	Total job time:	**2.76**	Hours
Unit cost:	$159.61	per acre	Total job cost:	**$1,010**	

MOTOR GRADER WORK

Task description: **Scarify internal haul roads and conveyor route**

Site: **Tucson South Resource** Permit Action: 2024 Inspection Permit/Job#: M2004044

PROJECT IDENTIFICATION

Task #: 008 State: Colorado Abbreviation: None
Date: 12/13/2024 County: Adams Filename: M044-008
User: NCG

Agency or organization name: DRMS

HOURLY EQUIPMENT COST

Basic Machine: CAT 16M Horsepower: 297
Ripper Attachment: Multi-Shank Ripper Shift Basis: 1 per day
Data Source: (CRG)

Cost Breakdown:

		Utilization %
Ownership Cost/Hour:	$179.39	NA
Operating Cost/Hour:	$119.64	100
Ripper Ownership Cost/Hour:	$5.75	NA
Ripper Operating Cost/Hour:	$4.18	100
Operator Cost/Hour:	$56.70	NA
Total Unit Cost/Hour:	$365.66	
Total Fleet Cost/Hour:	**$365.66**	

MATERIAL QUANTITIES

Total Area to be graded or ripped: 8.30 acres

Source of estimated acreage: Exhibit L

HOURLY PRODUCTION

Average Grader Speed:	1.50	mph
Selected Application:	Ripping (0-3 mph) - 1.50	
Selected Blade Angle:	0	degrees
Effective Blade Length:	16.00	feet
Width of blade overlap per pass:	2.00	feet
Net grading or ripping width per pass:	14.00	feet
Unadjusted Hourly Unit Production:	2.5455	acres/hour

Job Condition Correction Factors Site Altitude: 4960 feet

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

Adjusted Hourly Unit Production: 2.2909 acres/Hour
Adjusted Hourly Fleet Production: **2.2909** acres/Hour

JOB TIME AND COST

Fleet size: 1 Grader(s) Total job time: **3.62** Hours

Unit cost: $159.61 per acre Total job cost: **$1,325**

MOTOR GRADER WORK

Task description: **Final grade all miscellaneous areas (8.3 acres x .5')**

Site: **Tucson South Resource** Permit Action: 2024 Inspection Permit/Job#: M2004044

PROJECT IDENTIFICATION

Task #: 009 State: Colorado Abbreviation: None
Date: 12/13/2024 County: Adams Filename: M2004044
User: NCG

Agency or organization name: DRMS

HOURLY EQUIPMENT COST

Basic Machine: CAT 16M
Ripper Attachment: Multi-Shank Ripper

Horsepower: 297
Shift Basis: 1 per day
Data Source: (CRG)

Cost Breakdown:

		Utilization %
Ownership Cost/Hour:	$179.39	NA
Operating Cost/Hour:	$119.64	100
Ripper Ownership Cost/Hour:	$5.75	NA
Ripper Operating Cost/Hour:	$0.00	0
Operator Cost/Hour:	$57.29	NA
Total Unit Cost/Hour:	$362.07	
Total Fleet Cost/Hour:	**$362.07**	

MATERIAL QUANTITIES

Total Area to be graded or ripped: 8.30 acres

Source of estimated acreage: Exhibit L

HOURLY PRODUCTION

Average Grader Speed:	1.50	mph
Selected Application:	Finish grading (0-2.5 mph) - 1.5	
Selected Blade Angle:	0	degrees
Effective Blade Length:	16.00	feet
Width of blade overlap per pass:	2.00	feet
Net grading or ripping width per pass:	14.00	feet
Unadjusted Hourly Unit Production:	2.5455	acres/hour

Job Condition Correction Factors

Site Altitude: 4960 feet

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

Adjusted Hourly Unit Production: 2.2909 acres/Hour
Adjusted Hourly Fleet Production: **2.2909** acres/Hour

JOB TIME AND COST

Fleet size: 1 Grader(s) Total job time: **3.62** Hours

Unit cost: $158.05 per acre Total job cost: **$1,312**

SCRAPER TEAM WORK

Task description: **Replace topsoil on backfilled mining cell area above HWL**

Site: **Tucson South Resource** Permit Action: 2024 Inspection Permit/Job#: M2004044

PROJECT IDENTIFICATION

Task #: 003 State: Colorado Abbreviation: None
Date: 12/13/2024 County: Adams Filename: M044-003
User: NCG

Agency or organization name: DRMS

HOURLY EQUIPMENT

COSTShift basis: 1 per day

	Equipment Description
-Scraper:	Cat 637G w/push-pull
-Dozer:	Cat D9T - 9SU
Support Equipment -Load Area:	NA
-Dump Area:	NA
Road Maintenance –Motor Grader:	CAT 16M
-Water Truck:	Water Tanker, 10,000 Gal.

Cost Breakdown:

	Scraper Work Team		Support Equipment		Maintenance Equipment	
	Scraper	Dozer	Load Area	Dump Area	Motor Grader	Water Truck
%Utilization-machine:	100	100	NA	NA	25	25
Ownership cost/hour:	$281.32	$253.16	NA	NA	$179.39	$111.67
Operating cost/hour:	$319.35	$164.35	NA	NA	$29.91	$29.61
%Utilization-ripper:	NA	0	NA	NA	0	NA
Ripper own. cost/hour:	NA	$18.79	NA	NA	$5.75	$0.00
Ripper op. cost/hour:	NA	$0.00	NA	NA	$0.00	$0.00
Operator cost/hour:	$57.52	$40.04	NA	NA	$56.70	$38.91
Unit Subtotals:	$658.19	$476.34	NA	NA	$271.75	$180.19
Number of Units:	2	1	0	0	1	1
Group Subtotals:	Work:	$1,792.72	Support:	$0.00	Maint:	$451.94

Total work team cost/hour: **$2,244.66**

MATERIAL QUANTITIES

Initial volume: 49,610 CCY Swell factor: 1.000
Loose volume: **49,610** LCY

Source of estimated volume: Exhibit L
Source 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: 1.00 Minutes
Maneuver and Spread Time: 0.60 Minutes

Job Condition Correction: Site Altitude: 4960 feet

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

Travel Time:

Road Condition: Firm, smooth, rolling, dirt/lt. surfaced, watered, maintained 3.0

Haul Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	1000.00	0.00	3.00	3.00	2800	0.57

Haul Time: **0.57** minutes

Return Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	1000.00	0.00	3.00	3.00	2949	0.49

Return Time: **0.49** minutes

Total Scraper team cycle time: **2.66** minutes
Adjusted for job conditions: 1,085.86 LCY/Hour
Selected Number of Scrapers: 2 Scraper(s)
Adjusted single scraper team (unit) hourly production: 1,085.86 LCY/Hour
Adjusted multiple scraper team (fleet) hourly production: **1,085.86** LCY/Hour

Unadjusted unit production/hour: 1,308.27 LCY/Hour
Optimal Number of Scrapers per push dozer: ____

JOB TIME AND COST

Fleet size: 1 Team(s) Total job time: **45.69** Hours

Unit cost: $2.067 /LCY Total job cost: **$102,552**

SCRAPER TEAM WORK

Task description: **Replace topsoil on internal haul roads and main site ent.**

Site: **Tucson South Resource** Permit Action: 2024 Inspection Permit/Job#: M2004044

PROJECT IDENTIFICATION

Task #: 005 State: Colorado Abbreviation: None
Date: 12/13/2024 County: Adams Filename: M044-005
User: NCG

Agency or organization name: DRMS

HOURLY EQUIPMENT

COSTShift basis: 1 per day

	Equipment Description
-Scraper:	Cat 637G w/push-pull
-Dozer:	Cat D9T - 9SU
Support Equipment -Load Area:	NA
-Dump Area:	NA
Road Maintenance –Motor Grader:	CAT 16M
-Water Truck:	Water Tanker, 10,000 Gal.

Cost Breakdown:

	Scraper Work Team		Support Equipment		Maintenance Equipment	
	Scraper	Dozer	Load Area	Dump Area	Motor Grader	Water Truck
%Utilization-machine:	100	100	NA	NA	25	25
Ownership cost/hour:	$281.32	$253.16	NA	NA	$179.39	$111.67
Operating cost/hour:	$319.35	$164.35	NA	NA	$29.91	$29.61
%Utilization-ripper:	NA	0	NA	NA	0	NA
Ripper own. cost/hour:	NA	$18.79	NA	NA	$5.75	$0.00
Ripper op. cost/hour:	NA	$0.00	NA	NA	$0.00	$0.00
Operator cost/hour:	$57.52	$40.04	NA	NA	$56.70	$38.91
Unit Subtotals:	$658.19	$476.34	NA	NA	$271.75	$180.19
Number of Units:	2	1	0	0	1	1
Group Subtotals:	Work:	$1,792.72	Support:	$0.00	Maint:	$451.94

Total work team cost/hour: **$2,244.66**

MATERIAL QUANTITIES

Initial volume: 2,420 CCY Swell factor: 1.000
Loose volume: **2,420** LCY

Source of estimated volume: Exhibit L
Source of estimated swell factor: Cat Handbook

HOURLY PRODUCTION

Scraper Bowl (volume) Basis:

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

Cycle Time:

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

Job Condition Correction: Site Altitude: 4960 feet

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

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

Haul Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	300.00	0.00	3.00	3.00	2800	0.32

Haul Time: **0.32** minutes

Return Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	300.00	0.00	3.00	3.00	2949	0.25

Return Time: **0.25** minutes

Total Scraper team cycle time: **2.17** minutes
Adjusted for job conditions: 1,331.06 LCY/Hour
Selected Number of Scrapers: 2 Scraper(s)
Adjusted single scraper team (unit) hourly production: 1,331.06 LCY/Hour
Adjusted multiple scraper team (fleet) hourly production: **1,331.06** LCY/Hour

Unadjusted unit production/hour: 1,603.69 LCY/Hour
Optimal Number of Scrapers per push dozer: ___________

JOB TIME AND COST

Fleet size: 1 Team(s) Total job time: **1.82** Hours

Unit cost: $1.686 /LCY Total job cost: **$4,081**

SCRAPER TEAM WORK

Task description: **Replace topsoil on conveyor route**

Site: **Tucson South Resource** Permit Action: 2024 Inspection Permit/Job#: M2004044

PROJECT IDENTIFICATION

Task #: 006 State: Colorado Abbreviation: None
Date: 12/13/2024 County: Adams Filename: M044-006
User: NCG

Agency or organization name: DRMS

HOURLY EQUIPMENT

COSTShift basis: 1 per day

	Equipment Description
-Scraper:	Cat 637G w/push-pull
-Dozer:	Cat D9T - 9SU
Support Equipment -Load Area:	NA
-Dump Area:	NA
Road Maintenance –Motor Grader:	CAT 16M
-Water Truck:	Water Tanker, 10,000 Gal.

Cost Breakdown:

	Scraper Work Team		Support Equipment		Maintenance Equipment	
	Scraper	Dozer	Load Area	Dump Area	Motor Grader	Water Truck
%Utilization-machine:	100	100	NA	NA	25	25
Ownership cost/hour:	$281.32	$253.16	NA	NA	$179.39	$111.67
Operating cost/hour:	$319.35	$164.35	NA	NA	$29.91	$29.61
%Utilization-ripper:	NA	0	NA	NA	0	NA
Ripper own. cost/hour:	NA	$18.79	NA	NA	$5.75	$0.00
Ripper op. cost/hour:	NA	$0.00	NA	NA	$0.00	$0.00
Operator cost/hour:	$57.52	$40.04	NA	NA	$56.70	$38.91
Unit Subtotals:	$658.19	$476.34	NA	NA	$271.75	$180.19
Number of Units:	2	1	0	0	1	1
Group Subtotals:	Work:	$1,792.72	Support:	$0.00	Maint:	$451.94

Total work team cost/hour: **$2,244.66**

MATERIAL QUANTITIES

Initial volume: 8,200 CCY Swell factor: 1.000
Loose volume: **8,200** LCY

Source of estimated volume: 8-in over 7.7 acres, Rec Plan and Rec Cost
Source 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: 1.00 Minutes
Maneuver and Spread Time: 0.60 Minutes

Job Condition Correction: Site Altitude: 4960 feet

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

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

Haul Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	2000.00	0.00	3.00	3.00	2800	0.93

Haul Time: **0.93** minutes

Return Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	2000.00	0.00	3.00	3.00	2949	0.83

Return Time: **0.83** minutes

Total Scraper team cycle time: **3.36** minutes
Adjusted for job conditions: 859.64 LCY/Hour
Selected Number of Scrapers: 2 Scraper(s)
Adjusted single scraper team (unit) hourly production: 859.64 LCY/Hour
Adjusted multiple scraper team (fleet) hourly production: **859.64** LCY/Hour

Unadjusted unit production/hour: 1,035.71 LCY/Hour
Optimal Number of Scrapers per push dozer: ____

JOB TIME AND COST

Fleet size: 1 Team(s) Total job time: **9.54** Hours

Unit cost: $2.611 /LCY Total job cost: **$21,411**

SCRAPER TEAM WORK

Task description: **Replace topsoil on stockpile areas**

Site: **Tucson South Resource** Permit Action: 2024 Inspection Permit/Job#: M2004044

PROJECT IDENTIFICATION

Task #: 007 State: Colorado Abbreviation: None
Date: 12/13/2024 County: Adams Filename: M044-007
User: NCG

Agency or organization name: DRMS

HOURLY EQUIPMENT

COSTShift basis: 1 per day

	Equipment Description
-Scraper:	Cat 637G w/push-pull
-Dozer:	Cat D9T - 9SU
Support Equipment -Load Area:	NA
-Dump Area:	NA
Road Maintenance –Motor Grader:	CAT 16M
-Water Truck:	Water Tanker, 10,000 Gal.

Cost Breakdown:

	Scraper Work Team		Support Equipment		Maintenance Equipment	
	Scraper	Dozer	Load Area	Dump Area	Motor Grader	Water Truck
%Utilization-machine:	100	100	NA	NA	25	25
Ownership cost/hour:	$281.32	$253.16	NA	NA	$179.39	$111.67
Operating cost/hour:	$319.35	$164.35	NA	NA	$29.91	$29.61
%Utilization-ripper:	NA	0	NA	NA	0	NA
Ripper own. cost/hour:	NA	$18.79	NA	NA	$5.75	$0.00
Ripper op. cost/hour:	NA	$0.00	NA	NA	$0.00	$0.00
Operator cost/hour:	$57.52	$40.04	NA	NA	$56.70	$38.91
Unit Subtotals:	$658.19	$476.34	NA	NA	$271.75	$180.19
Number of Units:	2	1	0	0	1	1
Group Subtotals:	Work:	$1,792.72	Support:	$0.00	Maint:	$451.94

Total work team cost/hour: **$2,244.66**

MATERIAL QUANTITIES

Initial volume: 4,033 CCY Swell factor: 1.000
Loose volume: **4,033** LCY

Source of estimated volume: Exhibit L
Source 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: 1.00 Minutes
Maneuver and Spread Time: 0.60 Minutes

Job Condition Correction: Site Altitude: 4960 feet

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

Travel Time:

Road Condition: Firm, smooth, rolling, dirt/lt. surfaced, watered, maintained 3.0

Haul Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	300.00	0.00	3.00	3.00	2800	0.32

Haul Time: **0.32** minutes

Return Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	300.00	0.00	3.00	3.00	2949	0.25

Return Time: **0.25** minutes

Total Scraper team cycle time: **2.17** minutes
Adjusted for job conditions: 1,331.06 LCY/Hour
Selected Number of Scrapers: 2 Scraper(s)
Adjusted single scraper team (unit) hourly production: 1,331.06 LCY/Hour
Adjusted multiple scraper team (fleet) hourly production: **1,331.06** LCY/Hour

Unadjusted unit production/hour: 1,603.69 LCY/Hour
Optimal Number of Scrapers per push dozer: ___________

JOB TIME AND COST

Fleet size: 1 Team(s) Total job time: **3.03** Hours

Unit cost: $1.686 /LCY Total job cost: **$6,801**

DEMOLITION WORK

Task description: **Remove Remaining Conveyor**

Site: **Tucson South Resource** Permit Action: 2024 Inspection Permit/Job#: M2004044

PROJECT IDENTIFICATION

Task #: 016 State: Colorado Abbreviation: None

Date: 12/13/2024 County: Adams Filename: M2004044

User: NCG

Agency or organization name: DRMS

UNIT COSTS **Location adjustment: 100.00 %**

Structure or Item Description	Dimensions	Demolition Menu Selection	Quantity	Unit	Unit Cost	Total Cost
Conveyor	8582' x6' x 3'	Conveyor, demolition, off-site disposal in approved landfill, 30 mile haul	154,476.00	CF	$0.96	$148,296.96

Job Hours: **80.00** **Subtotal (unadjusted):** **$148,296.96** **Total Cost (adjusted for location):** **$148,296.96**

REVEGETATION WORK

Task description: **Revegetation of Affected Land**

Site: **Tucson South Resource** Permit Action: 2024 Inspection Permit/Job#: M2004044

PROJECT IDENTIFICATION

Task #: 017 State: Colorado Abbreviation: None
Date: 12/13/2024 County: Adams Filename: M2009044
User: NCG

Agency or organization name: DRMS

FERTILIZING

Materials

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

Application

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

TILLING

Description	Cost /Acre
Chisel plowing {DMG}	$102.41
Weed control spraying (MEANS 31 31 16.13 3100)	$338.80
Total Tilling Cost/Acre	**$441.21**

SEEDING

Seed Mix	Rate – PLS LBS / Acre	Seeds per SQ. FT	Cost /Acre
Big Bluestem - Kaw	1.70	5.07	$26.68
Blue Grama - Hachita	0.30	4.90	$8.59
Switchgrass - Blackwell	2.00	17.86	$26.44
Sideoats Grama - Vaughn	1.00	3.28	$24.59
Western Wheatgrass - Arriba	4.80	12.12	$43.36
Needlegrass, Green - Lodorm	1.50	6.23	$12.97
Totals Seed Mix	11.30	49.47	**$142.63**

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
Straw, delivered {MEANS 31 25 14.16 1200}	1.00	TON	$492.78	$492.78
Total Mulch Materials Cost/Acre				**$492.78**

Application

Description	Cost /Acre
Crimping, with tractor {DMG survey data}	$85.37
Total Mulch Application Cost/Acre	**$85.37**

NURSERY STOCK PLANTING

Common Name	No / Acre	Type and Size	Planting Cost	Fertilizer Pellet Cost	Cost /Acre
Chokecherry	0.39	Container, 1 gallon (MEANS)	$21.44	$2.40	$8.36
Cottonwood, Plains	0.35	Container, 5 gallon (MEANS)	$69.55	$2.40	$24.34
Willow, Sandbar	0.39	Container, 1 gallon (MEANS)	$24.04	$2.40	$9.38
Totals Nursery Stock Cost / Acre					**$42.08**

JOB TIME AND COST

No. of Acres: 103
Cost /Acre: $1,440.71
Estimated Failure Rate: 15%
Cost /Acre*: $379.27
*Selected Replanting Work Items: SEEDING

Initial Job Cost: **$148,393.13**
Reseeding Job Cost: **$5,859.72**
Total Job Cost: **$154,253**
Job Hours: **80.00**

EQUIPMENT MOBILIZATION/DEMOBILIZATION

Task description: **Mobilization**

Site: **Tucson South Resource** Permit Action: 2024 Inspection Permit/Job#: M2004044

PROJECT IDENTIFICATION

Task #: 018 State: Colorado Abbreviation: None
Date: 12/13/2024 County: Adams Filename: M2024044
User: NCG

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
Drill/Broadcast Seeder with Tractor	25.00	$41.02	$59.44	2	$200.92	$118.88	$500.00
CAT 16M	28.73	$185.14	$122.78	2	$615.84	$245.56	$500.00
Cat 637G w/push-pull	59.59	$281.32	$125.64	2	$813.92	$251.28	$1,000.00
Cat D9T - 9SU	66.13	$271.95	$125.64	2	$795.18	$251.28	$500.00
Cat 740	36.49	$108.25	$122.78	4	$924.12	$491.12	$1,000.00
CAT 990H high lift	83.34	$115.73	$125.64	1	$241.37	$125.64	$250.00
				Subtotals:	**$3,591.35**	**$1,483.76**	**$3,750.00**

ROADABLE EQUIPMENT:

Machine Description	Total Cost/hr/ unit	Fleet Size	Haul Trip Cost/hr/ fleet	Return Trip Cost/hr/ fleet
Water Tanker, 10,000 Gal.	$269.02	2	$538.04	$538.04
		Subtotals:	**$538.04**	**$538.04**

EQUIPMENT HAUL DISTANCE and Time

Nearest Major City or Town within project area region:	BRIGHTON	
Total one-way travel distance:	1.00	miles
Average Travel Speed:	45.00	mph
Total Non-Roadable Mob/Demob Cost * '* two round trips with haul rig:	$38,898.48	
Total Roadable Mob/Demob Cost ** ** one round trip, no haul rig:	$23.91	

Transportation Cycle Time:

	Non-Roadable Equipment	Roadable Equipment
Haul Time (Hours):	0.02	0.02
Return Time (Hours):	0.02	0.02
Loading Time (Hours):	2.17	NA
Unloading Time (Hours):	2.17	NA
Subtotals:	4.38	0.04

JOB TIME AND COST

Total job time: **8.77** Hours

Total job cost: **$38,922**