




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: Barlow Pit	MINE/PROSPECTING ID#: M-1974-092	MINERAL: Sand and gravel	COUNTY: Morgan
INSPECTION TYPE: Monitoring	INSPECTOR(S): Jared L. Ebert	INSP. DATE: October 12, 2017	INSP. TIME: 09:30
OPERATOR: Dorn Ready Mix Corp.	OPERATOR REPRESENTATIVE: Doug Downing	TYPE OF OPERATION: 112c - Construction Regular Operation	
REASON FOR INSPECTION: Normal I&E Program	BOND CALCULATION TYPE: Complete Bond	BOND AMOUNT: \$6,000.00	
DATE OF COMPLAINT: NA	POST INSP. CONTACTS: None	JOINT INSP. AGENCY: None	
WEATHER: Clear	INSPECTOR'S SIGNATURE: 	SIGNATURE DATE: October 19, 2017	

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

Y = Inspected and found in compliance / N = Not inspected / NA = Not applicable to this operation / PB = Problem cited / PV = Possible violation cited, UR = Under Review

OBSERVATIONS

This was a monitoring inspection of the Barlow Pit, DRMS Permit No. M-1974-092 operated by Dorn Ready Mix Corp. This is a 40 acre 112c mining operation in Morgan County. I, Jared Ebert with the Colorado Division of Reclamation Mining and Safety (DRMS or Division) conducted the inspection. Mr. Doug Downing of Dorn Ready Mix Corp. accompanied me during the inspection.

Backfilling and Grading:

According to Mr. Dowling the 2013 flood caused significant damage to the pit slopes that were reclaimed on the south and east end of the site. Mr. Dowling has placed concrete rip-rap on the southern and eastern pit slopes above and below the water line to stabilize the area and protect the area from future flood damage. A berm of material has been placed along the southern slope of the pit. The pit slopes appear steeper than a 3H:1V angle above and below the waterline. Mr. Dowling indicated that he is aware of the slope requirement and will backfill the pit slope to the required angle. Mr. Dowling has fixed the east pit slope that was breached during the 2013 flood. This area has been backfilled and revegetated. The area is stable.

Financial Warranty:

The Division currently holds a financial warranty of \$6,000 for the site. The financial warranty amount set for this site has not been updated since the permit was issued. Given this, the Division has evaluated the financial warranty amount to determine if it is adequate to fulfill the requirements of the Reclamation Plan. The Division has estimated the cost to fulfill the reclamation plan requirements to be \$27,960.00. This amount is \$21,960.00 more than the current financial warranty held for the site. The cost estimate is enclosed with this report for the Permittee's review. The Division requests that the Permittee review the cost estimate and provide any comments, questions or concerns to the Division by **November 3rd, 2017**. The Division may issue a surety increase notice to the Permittee after **November 3rd, 2017**. If so, the Permittee shall have up to sixty (60) days to post the additionally required financial warranty from the date of the written notice from the Division.

Gen. Compliance With Mine Plan:

This is a suction dredge operation. The dredge did not appear to be running at the time of the inspection, however mine personal were working on the dredge at the time of the inspection. According to the last annual report submitted in September of 2017 about a 14.13 acre lake has been created through the mining operation. Based on the site observations and the most recent Google Earth© aerial photo, this appears to be an accurate measure of the area of exposed groundwater.

Processing equipment is located northwest of the excavation. Stockpiles of various products were located near the plant. It appears the most recent excavation occurred at the southwest corner of the site.

Reclamation Success:

The vegetation around the pit slope has established with a variety of grasses and the area is stable.

Topsoil:

Stockpiles of topsoil are located north of the pit and processing area and in the southeast corner of the site. These piles were stable and vegetated.

PHOTOGRAPHS



Figure 1. From the southwest corner of the pit looking north.



Figure 2. From the southwest corner of the pit looking east.



Figure 3. Approximate location of where the eastern pit slope breached.



Figure 4. From the eastern pit slope looking south.



Figure 5. From the northeast corner of the pit looking west.



Figure 6. From the northeast corner of the pit looking southeast.

Inspection Contact Address

Doug Downing
Dorn Ready Mix Corp.
19671 Rd R 7
Fort Morgan, CO 80701

Enclosure: *1.) 2017 Cost Estimate - CIRCES*

CC: None

COST SUMMARY WORK

Task description: Cost Summary

Site: Barlow Pit Permit Action: 2017 Estimate Permit/Job#: M1974092

PROJECT IDENTIFICATION

Task #: 000 State: Colorado Abbreviation: None
 Date: 10/19/2017 County: Morgan Filename: M092-000
 User: JLE

Agency or organization name: DRMS

TASK LIST (DIRECT COSTS)

Task	Description	Form Used	Fleet Size	Task Hours	Cost
001a	Grade Pond Slope	DOZER	1	13.47	\$2,585.00
001b	Grade slope to 3H:1V below water line	SITEMAINT ENANCE	1	40.00	\$2,673.20
002	Topsoil the plant area	SCRAPER1	1	7.00	\$5,988.00
003	Seeding	REVEGE	1	7.00	\$3,734.00
004	Mobilization and Demobilization of Equipment	MOBILIZE	1	2.68	\$6,300.00
<u>SUBTOTALS:</u>				70.15	\$21,280

INDIRECT COSTS

OVERHEAD AND PROFIT:

Liability insurance: 2.02	Total =	<u>\$429.86</u>
Performance bond: 1.05	Total =	<u>\$223.44</u>
Job superintendent: 35.08	Total =	<u>\$2,562.23</u>
Profit: 10.00	Total =	<u>\$2,128.00</u>
	TOTAL O & P =	<u>\$5,343.53</u>
	CONTRACT AMOUNT (direct + O & P) =	<u>\$26,623.53</u>

LEGAL - ENGINEERING - PROJECT MANAGEMENT:

Financial warranty processing (legal/related costs): <u>0.00</u>	Total =	<u>0.00</u>
Engineering work and/or contract/bid preparation: <u>0.00</u>	Total =	<u>\$0.00</u>
Reclamation management and/or administration: <u>5.00</u>		<u>\$1,331.18</u>

CONTINGENCY: 0.00 Total = \$0.00

TOTAL INDIRECT COST = \$6,674.71

TOTAL BOND AMOUNT (direct + indirect) = \$27,954.71

Bond to be set at: \$27,960.00

BULLDOZER WORK

Task description: Grade Pond Slope

Site: Barlow Pit

Permit Action: 2017 Estimate

Permit/Job#: M1974092

PROJECT IDENTIFICATION

Task #: 001A

State: Colorado

Abbreviation: None

Date: 10/18/2017

County: Morgan

Filename: M092-001a

User: JLE

Agency or organization name: DRMS

HOURLY EQUIPMENT COST

Basic Machine: Cat D8T - 8SU

Horsepower: 310

Blade Type: Semi-Universal

Attachment: NA

Shift Basis: 1 per day

Data Source: (CRG)

Cost Breakdown:

		<u>Utilization %</u>
Ownership Cost/Hour:	\$83.81	NA
Operating Cost/Hour:	\$66.17	100
Ripper own.		
Cost/Hour:	\$0.00	NA
Ripper op. Cost/Hour:	\$0.00	0
Operator Cost/Hour:	\$41.85	NA
Total unit Cost/Hour:	\$191.83	
Total Fleet Cost/Hour:	\$191.83	

MATERIAL QUANTITIES

Initial Volume: 11,126

Swell factor: 1.099

Loose volume: **12,226** LCY

Source of estimated volume: Division of Reclamation, Mining & Safety

Source of estimated swell factor: Cat Handbook

HOURLY PRODUCTION

Average push distance: 50 feet

Unadjusted hourly production: 1,400.0 LCY/hr

Materials consistency description: Compacted fill or embankment 0.9

Average push gradient: -20 %

Average site altitude: 4,250 feet

Material weight: 3,400 lbs/LCY

Weight description: Sand and gravel - Wet

<u>Job Condition Correction Factor</u>		<u>Source</u>
Operator Skill:	0.750	(AVG.)
Material consistency:	0.900	(CAT HB)
Dozing method:	1.200	(SLOT)
Visibility:	1.000	(AVG.)
Job efficiency:	0.830	(1 SHIFT/DAY)
Spoil pile:	1.000	(DOZ-OC)
Push gradient:	1.426	(CAT HB)
Altitude:	1.000	(CAT HB)
Material Weight:	0.676	(CAT HB)
Blade type:	1.000	(PAT)

Net correction: 0.6481

Adjusted unit production: 907.34 LCY/hr
Adjusted fleet production: **907.34** LCY/hr

JOB TIME AND COST

Fleet size: 1 Dozer(s)
Unit cost: \$0.211/LCY

Total job time: **13.47** Hours
Total job cost: **\$2,585**

SITE MAINTENANCE

Task description: Grade slope to 3H:1V below water line

Site: Barlow Pit Permit Action: 2017 Estimate Permit/Job#: M1974092

PROJECT IDENTIFICATION

Task #: 001B State: Colorado Abbreviation: None
Date: 10/19/2017 County: Morgan Filename: M092-001b
User: JLE
Agency or organization name: DRMS

UNIT COSTS

Maintenance Item	Hours per Year	Menu Selection	Quantity	Unit	Unit Cost	Total Cost
Excavator	40.00	Cat 307D 7'-3" Stick	40.00	EA	\$66.83	\$2,673.20

Job Hours: 40.00

Total Cost: \$2,673.20

SCRAPER TEAM WORK

Task description: Topsoil the plant area

Site: Barlow Pit

Permit Action: 2017 Estimate

Permit/Job#: M1974092

PROJECT IDENTIFICATION

Task #: 002

State: Colorado

Abbreviation: None

Date: 10/19/2017

County: Morgan

Filename: M092-002

User: JLE

Agency 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:	NA
-Dump Area:	Cat D8T - 8SU
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	NA	100	100	100
Ownership cost/hour:	\$99.75	NA	NA	\$83.81	\$28.02	\$24.01
Operating cost/hour:	\$118.23	NA	NA	\$66.17	\$28.28	\$34.13
% Utilization-ripper:	NA	NA	NA	NA	NA	NA
Ripper own. cost/hour:	NA	NA	NA	\$0.00	\$0.00	\$0.00
Ripper op. cost/hour:	NA	NA	NA	\$0.00	\$0.00	\$0.00
Operator cost/hour:	\$31.26	NA	NA	\$41.85	\$28.90	\$21.39
Unit Subtotals:	\$249.24	NA	NA	\$191.83	\$85.20	\$79.53
Number of Units:	2	0	0	1	1	1
Group Subtotals:	Work:	\$498.48	Support:	\$191.83	Maint:	\$164.73

Total work team cost/hour: **\$855.04**

MATERIAL QUANTITIES

Initial volume: 6,144

CCY

Swell factor: 1.000

Loose volume: **6,144**

LCY

Source of estimated volume: Division of Reclamation, Mining & Safety

Source of estimated swell factor: Cat Handbook

HOURLY PRODUCTION

Scraper Bowl (volume) Basis:

Material weight: 1,600 lbs/LCY

Struck Volume: 15.70

LCY

Material description: Top Soil

Heaped Volume: 22.00

LCY

Rated Payload: 52,800 pounds

Average Volume: 18.85

LCY

Payload Capacity: 33.00 LCY

Adjusted Capacity: **18.85**

LCY

Cycle Time:

Scraper Loading Time: 0.90 Minutes
Maneuver and Spread Time: 0.60 Minutes

Job Condition Correction:

Site Altitude: 4250 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 3.0

Haul Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	500.00	0.00	3.00	3.00	2824	0.35

Haul Time: 0.35 minutes

Return Route:

Seg #	Haul Distance (Ft)	Grade (%)	Roll. Res (%)	Total Res (%)	Velocity (fpm)	Travel Time (min)
1	500.00	0.00	3.00	3.00	2874	0.29

Return Time: 0.29 minutes

Total Scraper team cycle time: 2.14 minutes
Adjusted for job conditions: 877.32 LCY/Hour
Selected Number of Scrapers: 2 Scraper(s)
Adjusted single scraper team (unit) hourly production: 877.32 LCY/Hour
Adjusted multiple scraper team (fleet) hourly production: 877.32 LCY/Hour

Unadjusted unit production/hour: 1,057.01 LCY/Hour
Optimal Number of Scrapers per push dozer: _____

JOB TIME AND COST

Fleet size: 1 Team(s) Total job time: 7.00 Hours
Unit cost: \$0.975 /LCY Total job cost: \$5,988

REVEGETATION WORK

Task description: Seeding

Site: Barlow Pit

Permit Action: 2017 Estimate

Permit/Job#: M1974092

PROJECT IDENTIFICATION

Task #: 003

State: Colorado

Abbreviation: None

Date: 10/19/2017

County: Morgan

Filename: M092-003

User: JLE

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}	\$90.60
Total Tilling Cost/Acre	\$90.60

SEEDING

Seed Mix	Rate – PLS LBS / Acre	Seeds per SQ. FT	Cost /Acre
Intermediate Wheatgrass - Oahe	20.00	42.70	\$76.80
Totals Seed Mix	20.00	42.70	\$76.80

Application

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

MULCHING and MISCELLANEOUS

Materials

Description	Units / Acre	Unit	Cost / Unit	Cost /Acre
Herbicide - Rodeo @ 2.0 pt/ac	1.00	ACRE	\$3.81	\$3.81
Total Mulch Materials Cost/Acre				\$3.81

Application

Description	Cost /Acre
Weed spray, truck, aquatic area, nox. [DMG]	\$68.50
Total Mulch Application Cost/Acre	
	\$68.50

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:	7	Cost /Acre:	\$471.71
Estimated Failure Rate:	20%	Cost /Acre*:	\$308.80
*Selected Replanting Work Items:	SEEDING		

Initial Job Cost:	\$3,301.97
Reseeding Job Cost:	\$432.32
Total Job Cost:	\$3,734
Job Hours:	7.00

EQUIPMENT MOBILIZATION/DEMobilIZATION

Task description: Mobilization and Demobilization of Equipment

Site: Barlow Pit

Permit Action: 2017 Estimate

Permit/Job#: M1974092

PROJECT IDENTIFICATION

Task #: 004

State: Colorado

Abbreviation: None

Date: 10/19/2017

County: Morgan

Filename: M092-004

User: JLE

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:

<u>Available Rig Capacities</u>	<u>0-25 Tons</u>	<u>26-50 Tons</u>	<u>51+ Tons</u>
Ownership Cost/Hour:	\$16.63	\$18.37	\$22.33
Operating Cost/Hour:	\$44.38	\$46.13	\$50.07
Operator Cost/Hour:	\$27.66	\$27.66	\$27.66
Helper Cost/Hour:	\$0.00	\$25.39	\$25.39
Total Unit Cost/Hour:	\$88.67	\$117.55	\$125.45

NON ROADABLE EQUIPMENT:

<u>Machine Description</u>	<u>Weight/ Unit (TONS)</u>	<u>Owner ship Cost/hr/ unit</u>	<u>Haul Rig Cost/hr/unit</u>	<u>Fleet Size</u>	<u>Haul Trip Cost/hr/ fleet</u>	<u>Return Trip Cost/hr/ fleet</u>	<u>DOT Permit Cost/ fleet</u>
Cat D8T - 8SU	47.71	\$83.81	\$117.55	1	\$201.36	\$117.55	\$250.00
Cat 627G w/push-pull	43.48	\$99.75	\$117.55	2	\$434.60	\$235.10	\$500.00
CAT 12M	16.01	\$28.02	\$88.67	1	\$116.69	\$88.67	\$250.00
Drill/Broadcast Seeder with Tractor	25.00	\$12.22	\$88.67	2	\$201.78	\$177.34	\$500.00
Cat 307D 7'-3" Stick	7.95	\$15.64	\$88.67	1	\$104.31	\$88.67	\$250.00

Subtotals: **\$1,058.74** **\$707.33** **\$1,750.00**

ROADABLE EQUIPMENT:

Machine Description	Total Cost/hr/ unit	Fleet Size	Haul Trip Cost/hr/ fleet	Return Trip Cost/hr/ fleet
Water Tanker, 5,000 Gal.	\$79.53	1	\$79.53	\$79.53
Fuel Tanker, 4x2, 170 HP	\$22.62	2	\$45.24	\$45.24

Subtotals: **\$124.77** **\$124.77**

EQUIPMENT HAUL DISTANCE and Time

Nearest Major City or Town within project area region: FORT MORGAN
Total one-way travel distance: 5.00 miles
Average Travel Speed: 55.00 mph

Total Non-Roadable Mob/Demob Cost * \$6,277.38
* * two round trips with haul rig:
Total Roadable Mob/Demob Cost ** \$22.69
** one round trip, no haul rig:

Transportation Cycle Time:

	Non- Roadable Equipment	Roadable Equipment
Haul Time (Hours):	0.09	0.09
Return Time (Hours):	0.09	0.09
Loading Time (Hours):	0.58	NA
Unloading Time (Hours):	0.58	NA
Subtotals:	1.34	0.18

JOB TIME AND COST

Total job time: 2.68 Hours

Total job cost: \$6,300