




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

The Division of Reclamation, Mining and Safety 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: Green/Croissant Mine	MINE/PROSPECTING ID#: M-2001-022	MINERAL: Sand and gravel	COUNTY: Weld
INSPECTION TYPE: Monitoring	INSPECTOR(S): Peter S. Hays	INSP. DATE: June 6, 2019	INSP. TIME: 10:00
OPERATOR: Loveland Ready-Mix Concrete, Inc.	OPERATOR REPRESENTATIVE: Stephanie Fancher	TYPE OF OPERATION: 112c - Construction Regular Operation	

REASON FOR INSPECTION: Normal I&E Program	BOND CALCULATION TYPE: None	BOND AMOUNT: \$209,700.00
DATE OF COMPLAINT: NA	POST INSP. CONTACTS: None	JOINT INSP. AGENCY: None
WEATHER: Clear	INSPECTOR'S SIGNATURE: 	SIGNATURE DATE: June 24, 2019

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: Backfilling & Grading

PROBLEM: The approved Reclamation Plan requires the Operator to grade the Cell 4 slopes to a 3H:1V. The cell is full of water and therefore the Division is unable to verify the slope grading in Cell 4.

CORRECTIVE ACTIONS: The Operator shall provide survey data verifying the 3H:1V grade for the slopes of Cell 4 by the corrective action date.

CORRECTIVE ACTION DUE DATE: 7/24/19

INSPECTION TOPIC: Hydrologic Balance

PROBLEM: The Division has no evidence the Operator has an approved water augmentation plan for the exposed groundwater at the site. This is a problem related to 34-32.5-116(4)(h) of the Colorado Revised Statutes and 3.1.6(1)(a) of the Construction Materials Rules and Regulations governing injury to existing water rights.

CORRECTIVE ACTIONS: The Operator shall demonstrate the operation is in compliance with the Office of the State Engineer by the corrective action date.

CORRECTIVE ACTION DUE DATE: 7/24/19

OBSERVATIONS

The Green/Croissant Mine was inspected by Peter Hays with the Division of Reclamation, Mining and Safety (Division/DRMS) as part of the Division's monitoring inspection program. Ms. Stephanie Fancher with Loveland Ready Mix was present during the inspection. The Division previously inspected the site on November 17, 2016 for the pre-operational inspection for permit amendment (AM-01). An inspection map of Cell 4 based on the observations from this inspection is attached for reference.

The Division currently holds a financial warranty in the amount of \$209,700.00, which appeared adequate to perform reclamation at the site based on the observations from this inspection. The mine identification sign and boundary markers were observed as required by Rule 3.1.12.

The site is an 112c operation permitted for 92.90 acres. The site is divided into two (2) parcels owned by Loveland Ready-Mix Concrete, Inc. (LRM) - 48.0 acres and the leased Croissant property - 44.9 acres. The Division most recently approved a permit amendment to change the post-mining land use to industrial/commercial for the LRM owned portion of the site. The post-mining land use for the Croissant property remains wildlife habitat. The LRM property is divided into three (3) cells; Cells 1, 2 and 3 and the Croissant property contains Cell 4. The primary focus of this inspection was to evaluate the status of reclamation of Cell 4. The Division was contacted by Ms. Jamie McGill before the inspection to discuss the erosion of the south shoreline in Cell 4. Ms. McGill is in the process of purchasing the Croissant property from the Croissant family. Ms. McGill was not present during the inspection, however a copy of this inspection report will be forwarded to Ms. McGill by the Operator.

Croissant Property – Cell 4

The mining activity in the cell has concluded and the cell is in final reclamation. The Division observed the erosion of the south shoreline mentioned as a concern by Ms. McGill. The Division agrees the erosion is more than typical for an open-water lake due to wave action. The south shoreline was saturated, unstable and several areas of the shoreline had failed and slid into the lake. The Operator agrees there is a problem with the shoreline and had already contacted a consultant to evaluate the issue. The preliminary assessment was water from the wetlands located south of the shoreline as not able to pass through the shoreline resulting in the saturation and failure of the slope. The consultant recommended a permeable filter layer of gravel be added to slope to allow the groundwater to pass through the shoreline. This solution would require the Operator to remove the existing topsoil and vegetation, install the filter material, replace the topsoil and revegetate the affected shoreline areas.

Shoreline erosion typical of wave action erosion, approximately six (6) to twelve (12) inches in height was observed along the north, east and west shoreline in sections. The erosion areas were not saturated and the slopes were stable. The Operator will not be required to repair these erosion features, since they appear to be typical wave erosion features.

Two areas of the west shoreline were recently repaired by the Operator. The areas are located in the northwest corner of the lake and in the peninsula area of the west shoreline. The Operator believes the shoreline areas failed due to drains installed during the mining of Cell 4 not being removed during reclamation, which directed water toward the areas. The drains were removed and the shorelines were repaired by the Operator. The areas will be monitored by the Operator. The affected areas will need to be topsoiled and revegetated by the Operator in accordance with the approved Reclamation Plan.

The Cell 4 shoreline and upland areas were vegetated with the approved seed mixture in 2017 according to the Operator. Four (4) of the five (5) grass species included in the seed mixture were observed during the inspection; western wheatgrass, blue grama, pubescent wheatgrass and Indian ricegrass. The remaining grass species, sideoats grama, was not observed during the inspection. Noxious and annual weeds including; kochia, Canada thistle, downy brome (cheat grass), yellow sweet clover and hoary crest (white top) were observed during the inspection. Evidence of weed control spraying was observed during the inspection. The Operator stated monitoring and chemical weed control spraying would be completed this year.

The vegetation in the northeast portion of the Cell near the oil and gas well was poorly established with areas of bare ground. The Division recommends the Operator conduct soil samples to determine if soil amendments are need to establish vegetation in the area. Overall, the site vegetation was establishing well for two (2) growing seasons. The Division recommends the Operator continue to perform weed control methods, evaluate the areas of bare ground for soil amendments and inter-seed areas as required to establish self-sustaining vegetation at the site required for future release of the reclamation permit by the Division.

The approved Reclamation Plan requires the Cell 4 slopes to be reclaim to a 3H:1V slope. The lake was full of water preventing the Division from observing and verifying the slope. The Operator stated survey data for the shoreline grading was available. As cited as a problem, the Division will require the Operator to provide the survey data by the corrective action date.

LRM Property – Cells 1, 2 and 3

Mining activity is complete in Cells 1, 2 and 3. Cell 1 is used as a source for water. Cell 2 is divided into 3 sections. The western portion of Cell 2 is completely backfilled and is used for the recycled concrete operation and recycled concrete stockpile storage. The middle portion of Cell 2 is being backfilled with wash fines. The eastern portion of Cell 2 is used as a settling pond with a dewatering pump located in the northeastern corner of the pond. The southern end of the eastern portion of Cell 2 was backfilled with recycled concrete to allow access to an existing well head by an oil and gas company. Cell 3 has been reclaimed as a 5.51 acre open-water lake.

During the previous inspection, the Operator stated the final augmentation plan for the site, Case No. 09CW105, had been approved by the Water Court. The Division has not received a copy of the court approved augmentation plan from the Operator. As cited as a problem, the Division will require the Operator to submit a copy of the approved plan from the Division of Water Resources by the corrective action date.

Photographs taken during the inspection are attached.

PHOTOGRAPHS



Green/Croissant mine sign



View of Cell 4 shoreline from the northwest corner of the lake looking south



View of the repaired western shoreline of Cell 4 in the northwest corner looking north



View of the repaired western shoreline of Cell 4 near the peninsula looking south



View of Cell 4 shoreline from the southwest corner of the lake looking south



View of the shoreline erosion in the southwest corner of the Cell 4 lake looking southeast



View of the erosion in the south shoreline of the Cell 4 lake looking east



View of establishing vegetation in drill rows in the upland area south of the Cell 4 lake



View of eroded and failed slope in the southeast corner of the Cell 4 lake



View of establishing vegetation on the east shoreline of the Cell 4 lake looking north



View of establishing vegetation on the east shoreline of the Cell 4 lake looking north



Poorly vegetated and bare ground area near the oil and gas well
in the northeast corner of Cell 4 looking west



Poorly vegetated and bare ground area near the oil and gas well
in the northeast corner of Cell 4 looking southeast



View of vegetation along the north shoreline of Cell 4 looking west

GENERAL INSPECTION TOPICS

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

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

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

Inspection Contact Address

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Enclosure – Inspection Map




Ec: Michael Cunningham, DRMS

Green/Croissant Mine

M-2001-022

June 6, 2019 Inspection Map

Legend

-  Approx Cell 4 Boundary
-  Eroded and Saturated Shoreline
-  Repaired Shoreline

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Repaired Shoreline

Repaired Shoreline

Google Earth

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900 ft