



COLORADO

Division of Reclamation,
Mining and Safety

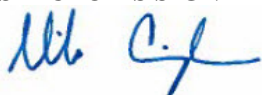
Department of Natural Resources

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: Western Aggregates	MINE/PROSPECTING ID#: M-1988-108	MINERAL: Shale	COUNTY: Jefferson
INSPECTION TYPE: Monitoring	INSPECTOR(S): Michael A. Cunningham	INSP. DATE: February 27, 2018	INSP. TIME: 10:00
OPERATOR: TRNLWB, LLC	OPERATOR REPRESENTATIVE: Chris Wilkins	TYPE OF OPERATION: 112c - Construction Regular Operation	

REASON FOR INSPECTION: Normal I&E Program	BOND CALCULATION TYPE: Complete Bond	BOND AMOUNT: \$464,162.00
DATE OF COMPLAINT: NA	POST INSP. CONTACTS: None	JOINT INSP. AGENCY: None
WEATHER: Clear	INSPECTOR'S SIGNATURE: 	SIGNATURE DATE: March 30, 2018

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: Gen. Compliance With Mine Plan

PROBLEM/POSSIBLE VIOLATION: Problem: The Operator is placing solid waste from the processing plant on the mine slopes instead of disposing of the material in stowage chambers as approved in the Mining Plan. This is a problem pursuant to C.R.S. 34-32.5-112 (1)(c)(VI) for failure to follow the Mining Plan.

CORRECTIVE ACTIONS: The operator shall submit a Technical Revision, with the required \$216 revision fee, to update and clarify the approved Mining Plan to reflect existing and proposed activities by the corrective action date. Additional requirements of the Technical Revision are outlined in the body of this report.

CORRECTIVE ACTION DUE DATE: 5/31/18

INSPECTION TOPIC: Gen. Compliance With Mine Plan

PROBLEM/POSSIBLE VIOLATION: Problem: The Realite Plus storage area is not being utilized as approved in the Mining Plan. The Operator did not construct a clay pad or stormwater containment pond as required by the Mining Plan. This is a problem pursuant to C.R.S. 34-32.5-112 (1)(c)(VI) for failure to follow the Mining Plan.

CORRECTIVE ACTIONS: The operator shall submit a Technical Revision, with the required \$216 revision fee, to update and clarify the approved Mining Plan to reflect existing and proposed activities by the corrective action date. Additional requirements of the Technical Revision are outlined in the body of this report.

CORRECTIVE ACTION DUE DATE: 5/31/18

INSPECTION TOPIC: Gen. Compliance With Mine Plan

PROBLEM/POSSIBLE VIOLATION: Problem: The processing plant and associated structures are not included within the permit boundary. This is a problem pursuant to C.R.S. 34-32.5-116(4)(i) for failure to protect areas outside of the affected land from slides or damages occurring during the mining operation.

CORRECTIVE ACTIONS: The Operator shall provide a justification for not including the processing plant and associated structures within the mine permit boundary by the corrective action date.

CORRECTIVE ACTION DUE DATE: 5/31/18

INSPECTION TOPIC: Revegetation

PROBLEM/POSSIBLE VIOLATION: Problem: There are state-listed noxious weeds present on site. This is a problem for failure to employ weed control methods for state listed noxious weed species within the permitted area, and to reduce the spread of weeds to nearby areas as required by Section 3.1.10 (6) of the rule.

CORRECTIVE ACTIONS: The operator shall develop a weed control and management plan in accordance with Section 3.1.10 (6) of the Rule. This plan should be developed in consultation with the county extension agency, or weed control district office and should include specific control measures to be applied, a schedule for when control measures will be applied and a post-treatment monitoring plan. This weed control plan shall be submitted to the Division as a Technical Revision to the approved plan with the appropriate Technical Revision fee of \$216.00 by the corrective action date.

CORRECTIVE ACTION DUE DATE: 5/01/18

OBSERVATIONS

The inspection was conducted by Michael Cunningham of the Division of Reclamation, Mining and Safety (Division). Chris Wilkins and Chase Bracy were present on behalf of TRNLWB, LLC. The Western Aggregates site is located approximately 11 miles north of Golden, Colorado in Jefferson County. The operation is permitted for 181.21 acres. The commodity of interest is shale and the post-mining land use is industrial/commercial.

Financial Warranty:

The Division currently holds a financial warranty in the amount of \$464,162.00. The adequacy of the financial warranty will be evaluated when the Mining and Reclamation Plans are updated through the Technical Revision process discussed within this report.

Gen. Compliance With Mine Plan:

The permit area for Western Aggregates mine is divided into two non-contiguous areas. The active mine is located to the west of State Highway 93 and is comprised of 106.21 acres and a storage area comprised of 75 acres is located on the east side of State Highway 93.

Mine Area

Mining within the pit is progressing towards the south. Shale is trucked from the pit to the conveyor line, which transports the mined material under State Highway 93 to the processing plant. The processing plant and portions of the conveyor line are not located within the mine permit boundary. The Division observed impounded water within three separate areas on the pit floor. The Operator has previously submitted documentation which demonstrates that up to 366 acre/feet of water per year may be stored within the pit. The Operator has mined the pit to a depth of 100 feet and the pit currently accounts for 50 acres of disturbance.

The Mining Plan calls for trucking 50 to 70 tons of solid waste from the processing plant's lime flue gas scrubbing system to the pit. The solid waste is authorized to be disposed of in excavated chambers located adjacent to the pit. The waste disposal chambers are to be excavated into the shale and the solid wastes are to be capped with compacted shale fines at 4 to 5 foot vertical lifts. During the inspection, the Operator informed the Division the solid wastes from the processing plant were being end-dumped onto the mine slopes from the top of the pit. The practice of placing unconsolidated fines (solid waste) onto the pit slopes is not approved in the Mining Plan. The solid wastes which are end-dumped onto the mine slopes are dispersed across the entire length of the slope and enter into the standing water on the pit floor. The purpose of encapsulating the solid waste was to prevent leachate from potentially impacting groundwater quality.

The approved Reclamation Plan calls for backfilling the mine slopes with overburden to establish the final slopes of 2.5H:1V and does not allow for slopes to be established by backfilling solid waste from the plant. The Division has concerns regarding the long-term stability of the mine slopes as well potential impacts to the hydrologic balance. The failure to follow the Mining and Reclamation Plans has been cited as a problem and will require corrective action from the Operator; additional details regarding the corrective action may be found on the first page of this report. The Operator will be required to submit a Technical Revision which addresses the following items:

- a) Provide an engineering analysis which demonstrates the slopes which have been backfilled with solid wastes are stable as required by Rule 3.1.5(3) and 3.1.5(9).
- b) Develop an appropriate geochemical evaluation of the solid waste which is being disposed of at the mine site. This type of evaluation is necessary to determine the intended fate of all disposed solid wastes. The geochemical evaluation shall identify the sample collection methods as well as the analytical detection methods which will be utilized.
- c) Demonstrate compliance with applicable federal and Colorado water quality laws and regulations as required by Rule 3.1.6. The Operator may demonstrate compliance by providing the results of any applicable water quality analysis which has been performed at the mine, including stormwater discharge sampling. If water quality data is not available to demonstrate impacts to the hydrologic balance have been minimized, then the Operator shall develop a comprehensive water quality sampling program which identifies sampling and analytical protocols to be used.

Storage Area

The 75 acre storage area lies immediately south of the processing plant and was added to the permit area through Amendment No. 2. The storage area was to contain a clay pad on which Realite Plus materials were to be stored. According to the current Operator, a clay pad was never constructed and the area was not used to store Realite Plus materials as intended. The Operator is utilizing the area to store coal, which is used in the processing plant, as well as lightweight aggregate product stockpiles. Approximately 7.4 acres of the 75 acre parcel are being used for stockpiles. Surface water runoff from the stockpile storage area was to be routed to a pond designed to contain a 100-year 24-hour storm event. The stormwater pond was not constructed and there is no containment of stormwater from the stockpile area.

The footprint of a redi-mix plant is located immediately to the south of the stockpile storage area and accounts for approximately 3 acres of the 75 acre parcel. The redi-mix plant has been removed and all that remains is the concrete foundation. The redi-mix plant is not an approved component of the mining operation and the financial warranty does not account for reclamation of this area.

The failure to follow the approved Mining Plan has been cited as a problem and will require corrective action from the Operator; additional details regarding the corrective action may be found on the first page of this report. The Operator will be required to submit a Technical Revision which addresses the following items:

- a) Update the Mining Plan to reflect how the product storage area is currently being utilized, including a list of all materials which are being stored.
- b) Describe how sediment and stormwater runoff from the stockpile area will be contained.
- c) Update the Reclamation Plan to account for the reclamation of the redi-mix plant area, including an update of the financial warranty estimate.

As previously noted, the processing plant and portions of the conveyor line are not located within the mine permit boundary. In addition, there is not a clear delineation between the product stockpiles located adjacent to the plant and the stockpile area described above. The Construction Materials Rules define affected lands as the surface of an area within the state where a mining operation is being or will be conducted, which surface is disturbed as a result of an operation. Affected lands include, but shall not be limited to, private ways, roads, land excavations; exploration sites; drill sites or workings; refuse banks or spoil piles; evaporation or settling ponds; work, parking, storage, or waste discharge areas; and areas in which structures, facilities, equipment, machines, tools, or other materials or property that result from or are used in such operations are situated. All affected lands must be included in the mine permit boundary. This matter has been cited as a problem and will require corrective action from the Operator; additional details regarding the corrective action may be found on the first page of this report. If the Division determines the processing plant and associated structures are affected lands as defined by Rule 1.1(3), an Amendment application must be submitted to incorporate this area into the mine permit boundary.

Revegetation:

The Division observed diffuse knapweed and common mullein throughout the site, which are both state-listed noxious weeds. Pursuant to Rule 3.1.10(6), methods of weed control shall be employed for all prohibited noxious weed species. The presence of noxious weeds has been cited as a problem and will require corrective action; please see the first page of this report for additional information.

Signs and Markers:

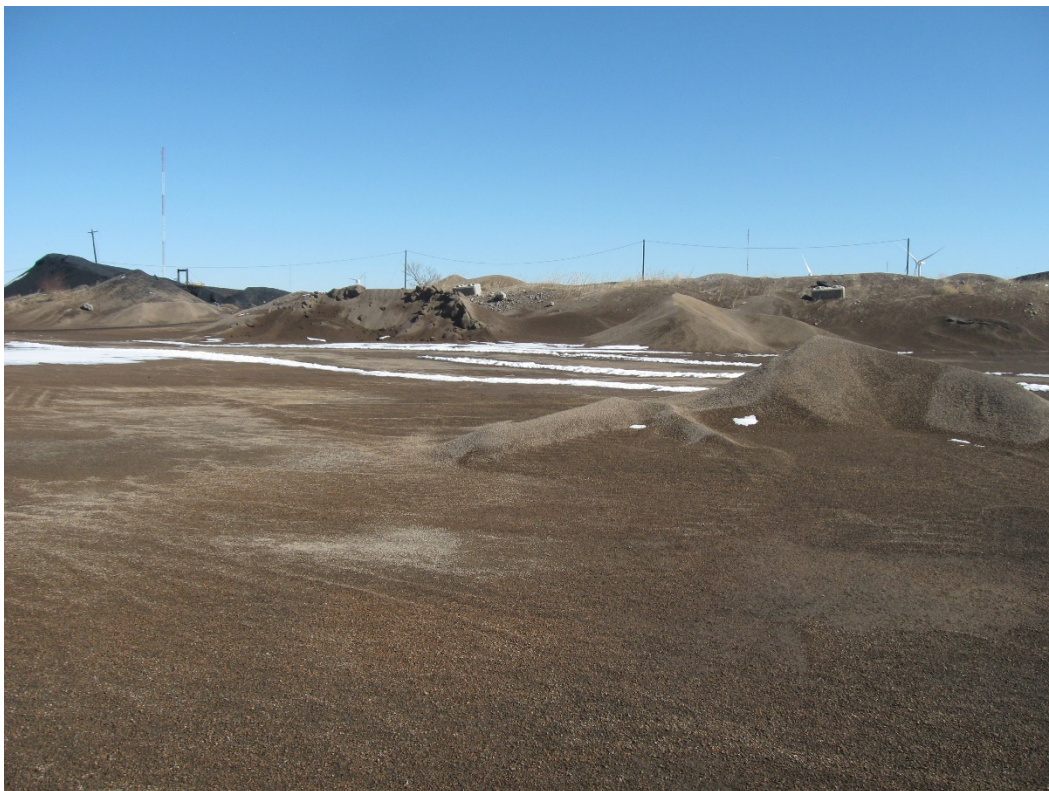
The permit sign was posted at the site entrance and the boundary of the affected area was clearly delineated as required by Rule 3.1.12.

This concluded the inspection.

PHOTOGRAPHS



1. Permit sign posted at site entrance.



2. Product storage area, south of processing plant.



3. Overview of pit, photo taken facing north.



4. Southern pit wall.



5. Impounded water within pit.



6. Processed material plant which will be recycled, stored adjacent to pit.



7. Northern end of pit, photo taken facing east.



Solid waste end-dumped from top of pit.

8. Solid waste from processing plant placed onto mine slopes.

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>N</u>	(RD) ROADS----- <u>N</u>
(HB) HYDROLOGIC BALANCE----- <u>N</u>	(BG) BACKFILL & GRADING----- <u>N</u>	(EX) EXPLOSIVES----- <u>N</u>
(PW) PROCESSING WASTE/TAILING---- <u>N</u>	(SF) PROCESSING FACILITIES----- <u>N</u>	(TS) TOPSOIL----- <u>N</u>
(MP) GENL MINE PLAN COMPLIANCE- <u>PB</u>	(FW) FISH & WILDLIFE----- <u>N</u>	(RV) REVEGETATION---- <u>PB</u>
(SM) SIGNS AND MARKERS----- <u>Y</u>	(SP) STORM WATER MGT PLAN---- <u>N</u>	(RS) RECL PLAN/COMP-- <u>N</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 and found in compliance / N = Not inspected / NA = Not applicable to this operation / PB = Problem cited / PV = Possible violation cited

Inspection Contact Address

Chris Wilkins
TRNLWB, LLC
11728 Highway 93
Boulder, CO 80303

CC: Wally Erickson, DRMS