


**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: Loloff Mine	MINE/PROSPECTING ID#: M-1985-112	MINERAL: Sand and gravel	COUNTY: Weld
INSPECTION TYPE: Monitoring	INSPECTOR(S): Peter S. Hays	INSP. DATE: December 1, 2017	INSP. TIME: 11:00
OPERATOR: Loloff Construction, Inc.	OPERATOR REPRESENTATIVE: Kelly Hodges	TYPE OF OPERATION: 112c - Construction Regular Operation	

REASON FOR INSPECTION: Citizen Complaint	BOND CALCULATION TYPE: None	BOND AMOUNT: \$1,104,455.00
DATE OF COMPLAINT: NA	POST INSP. CONTACTS: None	JOINT INSP. AGENCY: None
WEATHER: Clear	INSPECTOR'S SIGNATURE: 	SIGNATURE DATE: December 22, 2017

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: Hydrologic Balance

PROBLEM: Problem: The dewatering activity at the Loloff Mine conducted prior to the installation of the slurry wall has caused disturbances to the prevailing hydrologic balance of the surrounding area and to the quantity of water in the groundwater system.

CORRECTIVE ACTIONS: Loloff Construction, Inc. must implement the approved mitigation plan for the site and work with the affected well owner to investigate and rehabilitate the wells within 30 days of the mailing date of this inspection report. This is a problem related to Rule 3.1.6(1) of the Mineral Rules and Regulations of the Colorado Mined Land Reclamation Board for the Extraction of Construction Materials and CRS 34-32.5-116(4)(h) of the Colorado Land Reclamation Act for the Extraction of Construction Materials. Failure to comply with the corrective action may result in the problem escalating to a possible violation and an enforcement hearing being scheduled in front of the Mined Land Reclamation Board.

CORRECTIVE ACTION DUE DATE: 1/22/18

INSPECTION TOPIC: Slides & Other Damage

PROBLEM: Problem: An erosion feature was observed along the west bank of the ditch located along the western boundary of the site. The Operator stated the erosion feature was created by a flood event through the adjacent Harrell property. The erosion feature is very close to the western permit boundary.

CORRECTIVE ACTIONS: The Operator must repair the damaged area before the area erodes beyond the permit boundary. Failure to repair the erosion feature may result in a possible violation of C.R.S. 34-32.5-116(4)(i) for failure to protect areas outside of the affected land from slides or damage during the mining and reclamation.

CORRECTIVE ACTION DUE DATE: 1/22/18

OBSERVATIONS

The Loloff Mine was inspected by Peter Hays with the Division of Reclamation, Mining and Safety (Division/DRMS) in response to a citizen complaint (CT-10) received on November 15, 2017 from Mr. Rocky Francis. The complaint letter was forwarded to the Operator on November 20, 2017. The Francis properties identified in the complaint are 351 East 8th Street and 701 Balsam Avenue in Greeley, CO. The Francis properties are located south of the Loloff Mine.

The complaint letter states the mining operation has affected Mr. Francis' groundwater wells and damaged the river bow (channel) which runs through his property. Mr. Francis states his wells (5) have gone dry and are not functional and the mining operation has caused the waterway which runs through his property to be plugged and choked (by sediment) from the Loloff Mine. Mr. Francis' letter request the reclamation bond be used to reclaim the groundwater wells and to clean the waterway.

A well protection and water level monitoring agreement dated July 3, 2013 was signed by Loloff Construction, Inc. and Mr. Francis to allow Loloff Construction to monitor the water depth and capacity of the wells at Loloff expense and mitigate any adverse impacts to the wells attributed to Loloff mining and reclamation activities. The groundwater monitoring program was approved as part of TR-01 on July 2, 2013. The Operator has not been collecting and reporting the required monthly groundwater monitoring data from the Francis wells. Loloff Construction, Inc. is required to provide monthly groundwater elevation data for the surrounding groundwater wells and western Derr Pit piezometers with the annual reports. The Operator provided the Division with partial groundwater depth measurement data for the Derr Pit monitoring wells only during the inspection. The Operator must continue the monitoring program for the Derr Pit monitoring wells and for the surrounding landowner's wells, in accordance with the approved plan and landowner agreements and submit the data with the annual report to the Division.

The approved Groundwater Impact Mitigation Plan for the site states should the levels in the existing wells change by 2-4 feet then Loloff Construction, Inc. will mitigate by recharging at locations along the pit to increase the levels of the groundwater so that the impact from dewatering is minimized. If the recharging method is not effective the mitigation measures would be:

1. Work with the well owners that is affected to re-set their existing pumps to a lower level in order to mitigate any flow impacts to the existing well.

2. If the method in Number 1 is not effective then drilling a new well or deepening the existing well or providing water service from the City of Greeley or North Weld Water.

Additionally, a specific mitigation plan for the Francis and Harrell wells states, if there is a drop of more than 2 feet in the Francis wells, Loloff Construction will work with the well owner to provide a solution to any problems they have with their wells.

The Operator is currently mitigating impacts to other wells surrounding the mine site by recharging groundwater from the mine site into the irrigation ditch along the western boundary. The recharging effect does not appear to have maintained the historic groundwater elevations in Mr. Francis' wells.

The Loloff Mine is approved for the installation of a slurry wall to create a reservoir. The slurry wall design and specifications for the site were approved by the Division on July 18, 2016. The Operator installed the slurry wall around the perimeter of the site in August 2017.

The Division believes sufficient evidence exists to support the Francis complaint that the previous dewatering activity at the Loloff Mine is affecting the groundwater wells located at 351 East 8th Street and 701 Balsam Ave. This is a problem related to Rule 3.1.6 of the Mineral Rules and Regulations of the Colorado Mined Land Reclamation Board for the Extraction of Construction Materials and CRS 34-32.5-116(4)(h) of the Colorado Land Reclamation Act for the Extraction of Construction Materials.

The Division met with Mr. Francis on his property prior to Loloff Mine site inspection to discuss his complaint.

Waterway

The waterway through the Francis properties was observed by the Division. Sediment deposits were observed throughout the inspected sections of the waterway.

The ditch along the western boundary of the Loloff Mine was observed below and above the dewatering discharge point. Sedimentation deposits consistent with the deposits observed in the Francis waterway were observed above the discharge point. Therefore, the Division concluded the mine dewatering into the ditch is not the source of sediment in the Francis waterway. The Operator provided the Division with water sampling data performed by Weld County Department of Public Health and Environment in 2017 during the inspection. The data indicated the Total Suspended Solids were below the detectable level in a majority of the samples. The Colorado Department of Public Health and Environment Water Quality Control Commission Rule 31 does not set a standard for Total Suspended Solids.

The five groundwater wells located on the Francis properties were observed by the Division.

Well #1 – 26555A – Stock

The Division observed the wellhead for Well #1, Permit # 26555A. The well was installed in October 1, 1996 to a depth of 44 feet below grade with a static water level of 7 feet below grade based on Division of Water Resources (DWR) records. The well was installed two feet into bedrock. The Division measured the depth to water at 16.78 feet (an increase of 5.86 feet from the Division's 2015 reading of 22.64 feet) and the depth to top of the pump at 35.50 feet below top of casing. No data has been collected or reported by the Operator for Well #1, so additional groundwater elevations are not available for the well. The change in water elevation from 7 feet to 16.78 feet below grade is greater than the required 2 feet elevation change required to

implement the approved mitigation plan. The installation of the slurry wall appears to be reducing the effects of the groundwater impacts on the well from dewatering activities.

Well #2 – 30562-F – Irrigation

The Division observed the wellhead and pump house for Well #2, Permit # 30562-F. The well is permitted to irrigate the 8 acre parcel located in the eastern portion of the Francis property at 351 East 8th Street. The well was installed in March 18, 1986 to a depth of 38.5 feet below grade with a static water level of 5 feet below grade based on DWR records. The well was completed to bedrock depth. The Division was unable to measure the water level or the depth of the well due to the lack to accessibility. No data has been collected or reported by the Operator for Well #2, so recent groundwater elevations are not available for the well.

Well #3 – 135883 – Domestic

The Division observed the wellhead for Well #3, Permit # 135883. The first beneficial use of the well was June 20, 1963. The well is the water supply for the shop/garage building and the original residence located north of the shop/garage according to Mr. Francis. The main residence on the property is on City of Greeley water. The well is 32 feet deep with a pumping rate of 40 gallons per minute and is approved for domestic use at 2 acre feet annually based on DWR records. The Division measured the depth to water at 15.00 feet (an increase of at least 2.75 feet from the Division 2015) and the depth to top of the pump at 17.75 feet below top of casing. The latest monitoring data for the well, reported by the Operator on April 1, 2015, indicated the depth to water was 20 feet and 9 inches. No data has been collected or reported by the Operator since the April 2015 measurement, so recent groundwater elevations are not available for the well. The static water level at the time of well construction is not available in the DWR records, however the measured depth of 17.75 feet below grade is greater than the required 2 feet elevation change required to implement the approved mitigation plan based on the historic static groundwater levels in wells in the area. The installation of the slurry wall appears to be reducing the effects of the groundwater impacts on the well from dewatering activities.

Well #4 – 223887 – Domestic (Kohlhoff)

The Division observed the wellhead in the basement of the residence at 701 Balsam for Well #4, Permit # 223887. The well is permitted for household, fire protection, watering of domestic animals and poultry and irrigation of not more than 5,000 square feet of home gardens and lawns. The well is a 20 feet deep hand dug well with a pumping rate of 15 gallons per minute based on Division of Water Resources (DWR) records. The date of first beneficial use in 1966. Well completion documents indicating the depth to groundwater at the time of construction are not available. The Division was unable to measure the water level or the depth of the well due to the lack to accessibility. The well is not included in the monitoring well program for the Loloff Mine. Mr. Francis stated the residence is supplied with water from North Weld Water for domestic use.

Well #5 – Unpermitted - Stock (Kohlhoff)

The Division observed a wellhead located north of the Kohlhoff residence. The Division determined the well is not permitted through the Division of Water Resources following the inspection. By law, every well in the state which diverts groundwater must have a well permit. The Operator will not be required to mitigate any impacts to the well since the well is unpermitted.

Loloff Mine

The Division met with Mr. Kelly Hodge with Loloff Construction, Inc. to discuss the citizen complaint at the Loloff Mine site. Mr. Hodge stated he has not spoken with Mr. Francis since June 6, 2017.

The mine site was actively mining and dewatering during the inspection. A dewatering pump and a discharge pipe were observed at approximately the middle of the western boundary of the mine site. The water was discharged into the ditch along the western boundary of the site, which continues through the Francis property. The discharge activity is permitted under NPDES permit # COG500375.

Monitoring wells #1 and #12 on the Derr Pit were observed and measured during the inspection. The measurements were consistent to the depth to groundwater data provided by the Operator at the start of the inspection. The depth to water in the wells has increased by 13 feet and 9 feet respectively from the June 2017 measurement to the November 2017 measurement. The installation of the slurry wall at the Loloff Mine appears to be reducing the effects of the groundwater impacts on the Derr Pit monitoring wells.

As cited as a problem above, an erosion feature was observed along the west bank of the ditch located along the western boundary of the site. The Operator stated the erosion feature was created by a flood event through the adjacent Harrell property. The Operator's statement was supported by weeds and debris deposited along the fence east of the ditch in the area of the erosion feature which appeared to be deposited by a stormwater event. The erosion feature is very close to the western permit boundary. The Operator must repair the damaged area before the area erodes beyond the permit boundary. Failure to repair the erosion feature may result in a possible violation of C.R.S. 34-32.5-116(4)(i) for failure to protect areas outside of the affected land from slides or damage during the mining and reclamation if the erosion feature progresses into the Harrell property. The Operator stabilized the east bank the ditch with rock to prevent the flood event from breaching the ditch and entering the pit.

Conclusions

Waterway

Mr. Francis stated during the inspection of his properties his preference is to clean out and restore the waterway with an independent contractor. He does not want the work completed by Loloff Construction, Inc. As stated above, the Division concluded the mine dewatering into the ditch is not the source of sediment in the Francis waterway therefore not action is required by the Operator.

Wells

The Francis wells are located approximately 400 feet (Wells #3 and #2), 450 feet (Well #1) and 200 feet (Well #4) from the south permit boundary. All four wells are located within the estimated cone of depression / radius of influence calculations, with recharge, of 566 feet. The radius of influence calculation, dated July 3, 2013, was submitted with TR-01. The Division believes the dewatering of the Loloff Mine has impacted the groundwater wells on the Francis properties based on the radius of influence model, the change in water elevation from the static levels reported in the DWR well permits compared to the limited groundwater monitoring data collected by the Operator and the observations for this report.

As cited as a problem requiring corrective action by the Operator on Page 1, Loloff Construction, Inc. must implement the approved mitigation plan for the site and work with Mr. Francis to investigate and rehabilitate the permitted wells on this property within 30 days of the mailing date of this inspection report. Failure to

comply with the corrective action may result in the problem escalating to possible violation and an enforcement hearing being scheduled in front of the Mined Land Reclamation Board.

The Slurry Wall Assessment report, dated July 13, 2015, by McGrane Water Engineering, LLC submitted as part of AM-01 indicates the Francis wells will not be impacted by shadowing or mounding effects from the slurry wall. The Operator is required to monitor the groundwater levels in the Francis wells to verify the installation of the slurry wall restores the Francis wells to historic groundwater elevations.

Overall, based on the observation from this report, the lack of groundwater monitoring data from the Operator and radius of influence calculation, dated July 3, 2013, provide by the Operator, the Division believes the Loloff Mine has caused disturbances to the prevailing hydrologic balance of the surrounding area and to the quantity of water in the groundwater system.

Mr. Francis stated during the inspection of his properties his preference is to hire a well company himself to investigate the irrigation well, Well #2, Permit # 30562-F. He does not want the work completed by Loloff Construction, Inc.

Photographs taken during the inspection and the inspection map created with the GPS data collected during the inspection are attached.

Inspection Contact Address

Mr. Kelly Hodges
Loloff Construction, Inc.
801 8th Street, Suite 130
Greeley, CO 80631

Ec: Wally Erickson, DRMS
Rocky Francis, landowner

PHOTOGRAPHS



View of wellhead for Well # 5 – Unpermitted well on former Kohlhoff property



View of wellhead for Well #1 - 26555A - Stock



View of wellhead for Well #3 - 135883 - Domestic



View of wellhead for Well #2 - 30562-F - Irrigation



View of sediment in the waterway south from land bridge on the Francis property



View of sediment in the ditch along the western boundary of the Loloff Pit



View of erosion feature along the ditch parallel to the Harrell property

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>N</u>	(RD) ROADS----- <u>N</u>
(HB) HYDROLOGIC BALANCE----- <u>PB</u>	(BG) BACKFILL & GRADING----- <u>Y</u>	(EX) EXPLOSIVES----- <u>N</u>
(PW) PROCESSING WASTE/TAILING---- <u>N</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>N</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>PB</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