

DKM



# Public Service Commission

## State of North Dakota

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### INSPECTION REPORT

DATE OF INSPECTION: March 23, 2009

TYPE OF INSPECTION: Partial

PERMITTEE - MINE: Falkirk Mining Company - Falkirk Mine

PERMITS INSPECTED: NAFK-8405

PERSONS ACCOMPANYING INSPECTORS: Joe Clarke, Dave Beck and Josie Milbrandt, Falkirk Mine; Randy Kowalski, ND Dept. of Health

INSPECTION CONDITIONS: The inspection was conducted between 2:50 p.m. and 4:00 p.m., CDT. Skies were overcast and the wind was strong. The temperature was near 32° F. Access was limited due to muddy conditions.

### GENERAL

The purpose of this inspection was to evaluate sediment Pond P-E13-01. Falkirk staff called the PSC on Friday, March 20<sup>th</sup> and reported that this pond had failed and that water was channeling through the embankment along the barrel principal spillway.

Pond P-E13-01 was constructed in 2007 and is a combination embankment/dugout type of pond with a drop inlet spillway. It has a 165 acre watershed and the current mine related disturbances within the watershed are limited to the main haulroad located directly north of the pond and 2 SPGM stockpiles. This pond serves as an NDPDES discharge point.

It was readily evident that the embankment fill material had washed away from around the drop inlet spillway. The breach in the embankment on the upstream side of the embankment was approximately 4 feet in diameter. The downstream side of the embankment could not be seen due to an accumulation of snow. The pond was holding water approximately 1.5 feet above the bottom of the riser, or approximately 6 feet above permanent pool elevation (PPE). The PPE marker was not seen, presumably it is under water. There were still considerable inflows into the pond from the melting snow within the watershed.

At the time of the inspection, the discharge through the breach was estimated at about 2000 gallons per minute. The discharge flows downstream from the pond approximately 50 feet before entering a culvert under Highway 200A. The runoff then traveled down an undisturbed natural drainageway into Coal Lake, located approximately one mile to the south. The permit boundary is about one-half mile downstream from the pond.

There was a thin (approximately 1/8" thick) layer of sediment deposited on the bottom of the drainageway where the discharge water from the pond had passed. In a few small areas, less than 100 square feet in size, it appeared that deposition of materials was greater than 1" but less than 2" in depth. A thin layer of sediment also was noted on the snow drifts in the drainageway where water had accumulated while breaking a path through the snow. A dugout pond is located in the undisturbed drainage channel approximately 1350 feet downstream from Pond P-E13-01. There was also a deposition of sediment on the ice of this pond. A head cut in the drainage immediately above the dugout pond is not attributed to the pond discharge, but it may have been enlarged from high flows. The downstream drainage channel was inspected to a distance of approximately 200 yards beyond the dugout.


Pumping water from the sediment pond to minimize or eliminate additional erosion through the embankment was discussed with Falkirk and Mr. Kowalski. It was agreed that the pond should be pumped down as much as possible to allow for storage of additional runoff. The water is to be pumped through the riser of the pond as a plunge pool exists at the outlet of the spillway. Since there apparently was no storage room in the adjacent sediment ponds, the discharge will be treated as an overflow. The immediate forecast at the time of the inspection was that the area could receive 1 to 2 inches of additional precipitation in the form of rain and snow.

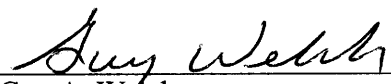
Falkirk staff indicated that they would need to bring the pump over land where SPGM had not been removed and that rutting may occur. Activities to monitor and maintain the pump may also create rutting on undisturbed land.

Mr. Kowalski indicated that a sample of the water discharging from the pond should be taken at this time. Falkirk reported taking a sample prior to this inspection.

As a result of this inspection, Notice of Violation (NOV) 0901 was issued to Falkirk for failure to prevent additional contributions of sediment to stream flow or to runoff outside the permit area, failure to minimize the deposition of sediment on undisturbed areas, and failure to control discharge from a sedimentation pond.

Photographs of the pond and drainageway are attached and on file with the Reclamation Division. A map of the area is also attached.

  
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Michael Berg, P.E.  
Environmental Engineer

  
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Guy A. Welch  
Environmental Scientist

cc: Joe Clarke  
OSM Casper Field Office  
McLean County Auditor  
Randy Kowalski, DOH

Sediment Pond P-E13-01, Permit NAFK-8405, and drainageway below the pond



