Denison Environmental Services
a division of Denison Mines Inc.

MEMORANDUM

Faro Mine Closure

TO: Jon Bronson, Kaori Torigai, File
DATE: 8 January 2010
FROM: Jay Cherian
SUBJECT: Preliminary X3, X10 Review

Background

Staining was observed in the Rose Creek Diversion Channel (RCDC) just downstream of X3. The staining was reddish in colour, indicating the possibility of iron precipitating from groundwater seepage in the creek.

In the location that the staining was observed and at the time of year that the staining was observed, it is likely that the water table in the neighbouring tailings containment area was higher than that of the RCDC. It was therefore assumed that a likely source of the groundwater seepage was the tailings area.

This preliminary review summarizes the results of steps taken to review the history of staining observations along the RCDC and water quality in the creek, to determine whether or not an immediate Care and Maintenance response was necessary.

Figure 1, attached, shows the results of a preliminary water quality review of select parameters in the RCDC upstream and downstream of the observed staining. The last date shown in the figures is for the last sampling event that had been undertaken at the time of the writing of this memo: December 1, 2009. The staining was observed in late December 2009, which is after this date. Results have nevertheless been reviewed for historic trends that may have been observable prior to staining having been visible.

Assessment

Figure 1 shows that for all the parameters selected (iron, sulphate, copper, nickel, lead, magnesium, sodium, zinc), with the possible exception of magnesium, iron and zinc, the concentrations of X3 and X10 are comparable. Statistical analysis would be required to determine whether or not the differences are significant between for magnesium, iron and zinc. In addition, the results for all parameters, including zinc show generally that trends at X3 parallel trends at

X10, indicating that no increasing trend in concentrations at X10 with respect to X3 is observable.

While detailed statistical analysis of the iron, magnesium and zinc may show that there is some loading to the RCDC within the reach from X3 to X10, it can be concluded from the preliminary review that the loading rate is not increasing with respect to historic rates.

Overall, water quality at X3 and X10 is comparable with historic water quality and it is possible that statistical analysis shows improved water quality generally, likely due to the capture of groundwater prior to recharge to the North Fork of Rose Creek, downstream from the Rock Drain, in the S-Wells area.

Anecdotal evidence solicited from site staff, indicates that similar staining has been observed in the past in the RCDC, although the exact location and extent was not clear.

Follow-Up Recommendations

It is recommended that water quality at X3 and X10 be compared again after January monitoring events (the first working week of January), to include results after the staining was observed. From the comparison assessment further recommendations will be made.

Preliminary assessment, which excludes post staining data, does not show an immediate Care and Maintenance issue with respect to the possibility of slow degradation of the tailings containment compoundment and RCDC. Therefore, no immediate Care and Maintenance response, other than continued monitoring and additional follow-up assessment, is recommended.

The existence of evidence of possible seepage from the tailings to the Rose Creek Diversion Channel does have possible implications with respect long term site operations and to closure of the site, since current plans are to leave the existing RCDC unlined.

It is recommended that efforts be made to determine the extent and verify the source of the seepage, as part of closure planning. As a preliminary step, DES Care and Maintenance staff have marked the location of the seepage area. It is proposed that an additional sampling location be established immediately downstream of the observed stain area, as the first step towards establishing a record of water quality. It is recommended that samples of the seepage / recharge source water be collected and tested to the extent that it is possible to determine the source. The parameters recommended for testing would be the same as for X3 and X10 (includes metals, pH, EC, sulphate and sodium), as would the frequency (monthly).

It is recommended that the scope of a seepage source determination project be undertaken outside of the scope of DES Care and Maintenance.

This review process will be repeated after January testing results have been returned.

Regards,

Jay Cherian,
Environmental Coordinator
Faro Mine Complex

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Figure 1a - h: Comparison of X3 and X10 for Select Water Quality Parameters