

International Cyanide Management Institute

Corrective Action Plan Completion Report

**Agnico Eagle Mines Limited,
Detour Lake Mine**

Ontario, Canada

**Submitted to:
The International Cyanide Management Institute
1400 I Street, NW – Suite 550
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CORRECTIVE ACTION PLAN (CAP) COMPLETION REPORT

DETOUR LAKE MINE

1. Introduction

One of the components of the International Cyanide Management Institute (ICMI) is the development of a Corrective Action Plan (CAP) for those parts of the audit findings that have been found to be in substantial compliance and require focused responses to take the site to full compliance.

ICMI requirements indicate that full implementation of the Corrective Action Plan and adequate notification to the ICMI must be completed within one year of the posting on the Cyanide Code website of the Summary Audit Report of an operation found in Substantial Compliance.

The sections below detail the corrective actions, agreed by Detour Lake Mine and the Lead Auditor, necessary to bring Detour into full compliance, as indicated in the Detailed Audit Findings Report (DAFR) and the Summary Audit Report (SAR).

2. Corrective Action Plan

Standard of Practice 4.4: Implement measures to protect birds, other wildlife and livestock from adverse effects of cyanide process solutions.

This Standard of Practice was found to be substantially compliant for Detour Lake Mine.

- **4.4(2) Can the operation demonstrate that the cyanide concentration in open water in Tailings Storage Facilities, leach facilities and ponds does not exceed 50 mg/l WAD cyanide?**

Deficiency

Detour has adjusted the WAD (Weak Acid Dissociable) cyanide target in final tails during the summer months. Procedure PPO-SOP-11.3.5 “Managing of High CN WAD in Detox Discharge” allows for WAD cyanide levels between 42 mg/l up to 100 mg/l in the tails exiting the detox system, but always meeting the maximum WAD cyanide concentration of 50 mg/l at the decant ponds. Detour does not take samples at the spigots and in the water flowing across the beach area prior to entering the decant

pond to demonstrate that WAD cyanide concentrations entering the Tailings Management Area (TMA) are maintained below 50 mg/l.

Corrective Action

Detour needs to conduct sampling at the discharge point to the tailings storage facility (e.g., at the spigots) to demonstrate that WAD cyanide values during the summer months are maintained below 50 mg/l; and, depending on the analytical results, implement alternative compliance measures as needed. Evidence needs to be provided by October 2023.

Evidence provided to verify completion of corrective action:

Detour used a sampling drone to take samples during the summer months (May until October) of the spigots that discharge into the TMA. Samples for WAD cyanide analysis were taken on a weekly basis at different discharge locations around the TMA. Analytical results were provided to the auditors for review. WAD cyanide concentrations were generally below 50 mg/l, except for a few values in the month of July that exceeded 50 mg/l. Detour indicated that this was due to samples not being filtered properly which created inaccurate results when running the manual WAD cyanide analysis. Results for the months of August and September were below 50 mg/l WAD cyanide.

It is the professional opinion of the auditors that WAD cyanide concentrations entering the Tailings Management Area (TMA) are generally maintained below 50 mg/l, meeting the requirements of the Code. It is recommended that Detour continues sampling activities in the summer months (March – October) of the following years to evaluate results and implement alternative compliance measures, if needed.

Completion date: October 2023

Standard of Practice 4.8: Implement quality control/quality assurance procedures to confirm that cyanide facilities are constructed according to accepted engineering standards and specifications.

This Standard of Practice was found to be substantially compliant for Detour Lake Mine.

- **4.8(1) Were quality assurance and quality control programs implemented during construction and substantial modification of all cyanide facilities?**

Deficiency

A new Tailings Management Area (TMA) pipeline corridor going to Cell 2 was constructed during the recertification period; however, there were no QA/QC records available for review by the auditors in relation to earthworks, liner installation and fusion of the pipelines for this new cyanide facility. During preparation of the DAFR, Detour presented field records of pipeline fusion and a document including technical specifications and QA/QC activities to be conducted for the TMA, but no QA/QC records/report was provided to show that the facility was constructed according to specifications.

Corrective Action

Detour needs to provide complete QA/QC records for this facility or retain an appropriately qualified person to inspect this new section of the pipeline corridor and issue a report concluding that the continued operation within established parameters will protect against cyanide exposures and releases. Evidence needs to be provided by July 2023.

Evidence provided to verify completion of corrective action:

Detour provided evidence of QA/QC records of the TMA pipeline corridor going to Cell 2. Records included a cross section design of the pipeline corridor, photo log of the pipeline corridor construction including rockfill berms, tie-in to existing pipe and completed section of the corridor prior to installation of the plastic liner. The evidence included a report from Terrafix Geosynthetic Inc, dated July 2023 with QA/QC records of plastic liner installation along the pipeline corridor and as-built drawings. Field records of pipeline fusion were also presented as evidence.

It is the professional opinion of the auditors that the evidence provided fulfils the requirements of the Code. No additional action is required to be in full compliance.

Completion date: October 2023

Standard of Practice 6.2: Operate and monitor cyanide facilities to protect worker health and safety and periodically evaluate the effectiveness of health and safety measures.

This Standard of Practice was found to be substantially compliant for Detour Lake Mine.

- **6.2(2) Has the operation identified areas and activities where workers may be exposed to hydrogen cyanide gas or cyanide dust in excess of 10 parts per million (ppm) (11 mg/m³) on an instantaneous basis and 4.7 ppm (5 mg/m³) continuously over an 8-hour period, as cyanide, and require use of appropriate**

personal protective equipment in these areas when performing these activities?

Deficiency

During a review of personnel HCN records during the recertification period, it is noted that a significant number of HCN personnel badge readings during periods in 2020 and 2021 exceeded instantaneous readings of greater than 10 ppm during normal work activities and greater than 25 ppm, the evacuation plant limit indicated in PPO-SOP-1.6.4, which did not trigger plant evacuation. During the preparation of the DAFR, Detour provided findings from an investigation of their historical HCN records. It was determined that the historical readings had both instances of real and false alarms from the personnel badges.

Corrective Action

After the audit, Detour instigated a program to more frequently replace personnel badge sensors and to email shift supervisors instances of personnel badge readings greater than 4.7 ppm, once the badge historian is downloaded at the end of the shift. The intent of these programs is to remove instances of false alarms so that real alarms can be better investigated. Instances of badge readings greater than 10 ppm will be accompanied by a report submitted to Inet.

Detour must provide a Standard Operating Procedure (SOP) for the HCN sensor changeout process for review and then provide 30 days of HCN personnel badge historian data after the changeout process was initiated. All instances of greater than 10 ppm must be combined with an investigation report indicating the work that was being performed and the actions taken. For instances that are determined to be real, Detour must provide recommended operational controls to be installed or list the additional safety controls to be taken to ensure that employees are not exposed to situations greater than 10 ppm.

Detour must provide all SOPs which are modified to reflect the above changes, and then provide evidence that all Process Plant and Emergency Response Team (ERT) members have been trained to the most current versions of the modified SOPs. All evidence needs to be provided by July 2023.

Evidence provided to verify completion of corrective action:

Detour provided evidence that they had contacted the supplier of their HCN personnel badges, Industrial Scientific, in May 2023, who made them aware of a software bug which caused the system to record alarms events that had occurred during the standard bump test as an alarm event. After correcting the software bug, Detour conducted a study in June 2023 which indicated that a number of the badges also had faulty sensors. As a corrective measure, Detour created PPO-SOP-1.53

“HCN Badge Sensor Changeout,” which covers the steps needed to remove failing HCN badges from circulation. Detour also revised PPO-SOP-1.6.4 “Responding to Detection of High HCN Gas or Cyanide Solution Leaks” to include a reporting system where Supervisors are required to investigate and respond to incidents of high CN alarms. These reports are now tracked within their eCompliance system as a near miss.

After the changes were made, there were three instances of high CN alarms from the personnel in June 2023, representing a significant reduction. Each alarm was logged in the reporting system and investigated. All instances were deemed to be false readings due to other environmental issues.

The two aforementioned SOPs and the training records indicating that all of the Process Plant and Emergency Response Team (ERT) members had been trained on the new procedures were provided to the auditors for review. Based on the changes, the evaluation and tracking process for instances of high CN alarms is more thorough.

It is the professional opinion of the auditors that the evidence provided fulfils the requirements of the Code. No additional action is required to be in full compliance.

Completion date: April 2024

CAP Completion verified by:

Tito Campos, Lead Auditor

Signature:



Date: April 19th, 2024