


Corrective Action Completion Report

Chirano Gold Mining Limited

<p style="text-align: center;">  CORRECTIVE ACTION PLAN ICMC Certification Audit – Chirano Mine </p>	<p> Control No.: <u>CGML-ICMC-CAR-01</u> Date issued: 20 December 2016 </p>
<p>ICMC Standard of Practice Section Reference: 4.1(1)</p>	
<p>Description of Deficiency: Cyanide Containers Storage Pad</p>	
<p>The process water used in the mill is a mixture of decant water from the TSF and overflow from the pre-leach thickener. The cyanide concentration in this process water has been maintained consistently in the general range of 0.005 to 0.01 mg/L, i.e., well below 0.5 mg/L WAD over the past three years, and therefore the mill and pre-leach thickener have not been considered cyanide facilities. However, analytical results for process water showed concentrations of 16.6 mg/L and 6.5 mg/L WAD, respectively in February and March 2016, returning to 0.008 mg/L in April 2016. The results of a root cause analysis completed subsequent to the field component of the audit determined that the elevated levels in the thickener resulted from a need to return slurry (containing loaded carbon) from the event pond back into the process. This is occasionally necessary when national power issues and operational upsets result in slurry having to be directed to the event pond.</p> <p>To ensure that process water is not impacted by such events in the future CGML updated Procedure CP-CM/013 Process Water WAD Cyanide Monitoring and Management to require sampling of the event pond after such an event and prior to the slurry being pumped from the event pond to determine how and when slurry in the event pond may be pumped back to the process and to monitor process water and thickener overflow to ensure that process water in the mill does not exceed the threshold value of 0.5 mg/L. Nevertheless, even with this procedure in place, results of daily analysis were showing WAD cyanide in process water at concentrations between 0.3 mg/L and 1.3 mg/L even though in the thickener overflow concentrations were being maintained consistently below 0.5 mg/L.</p> <p>CGML realized that the decant/reclaim water does not mix well with the thickener overflow in the ponds before sampling was completed and this may explain the elevated readings still being found. To obtain a truer representation of the WAD cyanide levels in the mill CGML initiated a sampling program of the mill slurry. A preliminary result of a sample collected on 2 August showed that WAD cyanide concentration in the mill was below the WAD cyanide threshold for a cyanide facility of 0.5 mg/L.</p>	
<p>Corrective Action Required (describe/attach supplemental information as necessary):</p>	
<p>To be fully compliant with this requirement of the Code CGML needs to provide evidence to demonstrate that WAD cyanide concentrations in the mill are consistency maintained below 0.5 mg/L. Alternatively CGML must consider the mill to be a cyanide facility and provide evidence to confirm that the facility was constructed according to accepted engineering standards and specifications as per Section 4.8 of the Cyanide Code, and that management and operating</p>	

systems are in place to protect human health and the environment including contingency planning and inspection and preventative maintenance procedures.

Evidence Required for Verification of Corrective Action Completion:

- Data collected over a 3 month period (daily and/or weekly sampling as appropriate) to demonstrate that the process water used in the mill is consistently maintained below 0.5 mg/L WAD cyanide; or
- QA/QC and engineering sign-off of facility construction, or evaluation report by an appropriately qualified person that the mill facility, if continued to operate within established parameters will be protective against cyanide exposures and releases: and operating procedures are in place to protect workers and prevent releases to the environment.

Evidence Provided to Verify Completion of Corrective Action:

CGMC selected to operate the process plant as a cyanide facility and retained Knight Piésold Consulting to conduct an engineering evaluation of the processing plant mill to confirm that the facility was constructed according to accepted engineering standards and specifications as per Section 4.8 of the Cyanide Code and can continue to be safely operated according to existing procedures. Knight Piésold conducted an engineering review of concrete containment structures for the processing plant mills between 27 September 2016 and 6 October 2016. The inspection identified several deficiencies in the concrete structures, including cracks, gaps and poor sealant. Repairs to the containment was subsequently performed. The inspection and maintenance work were documented in Knight Piésold reports entitled:

- Mill Containment Facilities 1 and 2 Visual Inspection Report Chirano Gold Mines Limited, Knight Piésold Consulting, dated 1 November 2016,
- Mill Containment Facilities 1 and 2 Chirano Gold Mines Limited Maintenance Work, Knight Piésold Consulting, dated 11 December 2016.

The 11 December report concluded that after completion of the maintenance work, the concrete mill containment structures visually appear to be in a good condition to retain possible process water releases from flowing through the structures into the environment. The reports were prepared, approved and signed by Knight Piésold engineers.

Corrective Action Completion Date: 31 January 2017

Approved:
Lead Auditor
Date: 20 December 2016



Approved:
Auditee Representative
Date: 20 December 2016

