

# SUMMARY AUDIT REPORT

for the July 2012  
International Cyanide Management Code Certification Audit



**Prepared for:**  
Kinross Gold Corporation/  
Chirano Gold Mines Ltd.

**Submitted to:**  
International Cyanide Management Institute  
1400 I Street, NW, Suite 550  
Washington, DC 20005, USA

**FINAL**  
May 11, 2013



**ENVIRON International**  
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## SUMMARY AUDIT REPORT

**Name of Mine:** Chirano Mine

**Name of Mine Owner:** Kinross Gold Corporation

**Name of Mine Operator:** Chirano Gold Mines Ltd. (CGML)

**Name of Responsible Manager:** Ken Norris, Vice President/General Manager

**Address:** PO Box 57, Bibiani  
Western Region,  
Ghana

**Telephone:** 233 (0) 244 332734-38

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### **Location detail and description of operation:**

Kinross Gold (Kinross) acquired its ownership stake in the Chirano mine in 2010 as part of the acquisition of Red Back Mining, Inc. The mine is located in southwestern Ghana, approximately 100 kilometers southwest of the city of Kumasi. The mine lies within the Bibiani gold belt, and consists of several conventional open pit mining sites as well as underground workings. Ore is transported to a centrally-located processing plant, where it is crushed and milled before undergoing conventional carbon in leach (CIL) processing. Process tailings are transported to an engineered tailings storage facility (TSF-1); the first raise of a second tailings facility (TSF-2) has recently been completed. Cyanide facilities include a warehouse for storage of cyanide reagent in solid briquette form, a cyanide mixing and storage facility, the CIL processing circuit, a clarifier and tailings box, a lined Event Pond, tailings and reclaim water return pipelines, a pipeline spill collection pond, the two TSFs, several raw water/reclaim water settling and management ponds, and various other process water control features and connecting pipelines.

The general location of the Chirano mining operation is shown on the following figure:



**SUMMARY AUDIT REPORT**  
***Auditors' Finding***

**The operation is:**            in full compliance  
                                  ■ in substantial compliance\*  
                                  not in compliance

with the *International Cyanide Management Code*.

\* Note: The Corrective Action Plan required to bring the operation into full compliance is enclosed with this Summary Audit Report as Attachment A. "Corrective Action Requests", and must be fully implemented within one year of the submittal date of this audit.

**Audit Company:**        **ENVIRON International**  
                                  605 1<sup>st</sup> Avenue, Suite 300  
                                  Seattle, Washington 98104  
                                  USA

**Audit Team Leader:** Glenn Mills  
                                  e-mail: [gmills@environcorp.com](mailto:gmills@environcorp.com)

**Names and Signatures of Other Auditors**

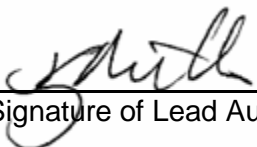


John Lambert  
e-mail: [jlambert@environcorp.com](mailto:jlambert@environcorp.com)

**Date(s) of Audit:** July 15-July 23, 2012

I attest that I meet the criteria for knowledge, experience and conflict of interest for Code Verification Audit Team Leader, established by the International Cyanide Management Institute and that all members of the audit team meet the applicable criteria established by the *International Cyanide Management Institute* for Code Verification Auditors. I attest that this Detailed Audit Report accurately describes the findings of the verification audit. I further attest that the verification audit was conducted in a professional manner in accordance with the *International Cyanide Management Code Verification Protocol for Gold Mine Operations* and using standard and accepted practices for health, safety and environmental audits.

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\_\_\_\_\_  
Signature of Lead Auditor

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## SUMMARY AUDIT REPORT

**1. PRODUCTION Encourage responsible cyanide manufacturing by purchasing from manufacturers who operate in a safe and environmentally protective manner.**

### ***Standard of Practice***

**1.1 Purchase cyanide from manufacturers employing appropriate practices and procedures to limit exposure of their workforce to cyanide, and to prevent releases of cyanide to the environment.**

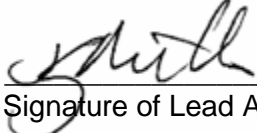
The operation is:           ■ in full compliance  
                                      in substantial compliance  
                                      not in compliance...with Standard of Practice 1.1

### ***Discuss the basis for this Finding/Deficiencies Identified:***

CGML currently purchases cyanide exclusively from Orica Australia Pty Ltd (Orica) under a Purchase Order (PO) arrangement, with modifications periodically issued to address changes in pricing and delivery quantities. The current basic PO specifically requires the Seller to maintain Code certification. Orica's current Code certification status was verified by review of the ICMI website (see [http://www.cyanidecode.org/signatory\\_producer\\_orica.php](http://www.cyanidecode.org/signatory_producer_orica.php)). Deliveries are received generally every two weeks; ownership of the cyanide is assumed at the point the waybill is signed by CGML Purchasing Department representatives.

At the time of the audit, a current PO with Orica (CGM 022317) was in effect, although the auditors were advised that CGML anticipates changing its source of cyanide to Cyanco in early 2013. The current the arrangement with Orica has been extended until final delivery arrangements with Cyanco can be satisfactorily completed. CGML had an executed contract with Cyanco, along with executed Specific Purchase Conditions applicable to the Chirano site. Review of the Cyanco contract indicates that it also includes language requiring the producer to be certified to the Code. Cyanco recently built a new production facility in Pearland, Texas and will supply Chirano via its West Africa supply chain. Discussions with Kinross Corporate and review of information supplied by Cyanco indicated that all required audits have been satisfactorily completed. Review of the International Cyanide Management Institute (ICMI) website prior to the submittal of this report confirmed that Cyanco's Pearland, Texas based production facility and all links in its Ghana supply chain are certified to the ICMC.

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**2. TRANSPORTATION Protect communities and the environment during cyanide transport.**

**Standards of Practice**

**2.1 Establish clear lines of responsibility for safety, security, release prevention, training and emergency response in written agreements with producers, distributors and transporters.**

The operation is: ■ in full compliance  
in substantial compliance  
not in compliance...with Standard of Practice 2.1.

**Discuss the basis for the Finding/Deficiencies Identified:**

The current PO with Orica does not specifically designate responsibilities for packaging; however, given the guidance provided in the *Auditor Guidance for Use of the Gold Mining Operations Verification Protocol* (ICMI, July 2012), this Standard of Practice is considered to be in full compliance through the end of Orica's current supplier agreement (December 31, 2012), on the basis of the verification of current Code certification status for Orica's entire Ghanaian supply chain.

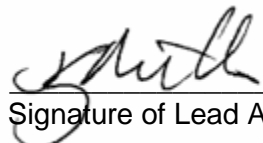
Review of the language of the new Cyanco contract indicates that responsibilities for items 2.1(a) through 2.1(l) will reside with Cyanco and their certified supply chain, less 2.1(h) (unloading at the operation), which will be CGML's responsibility. The mine will take ownership of the cyanide at the point the waybill is signed. Cyanco recently built a new production facility in Pearland, Texas and will supply Chirano via its West Africa supply chain. Discussions with Kinross Corporate and review of information supplied by Cyanco indicated that all required audits have been satisfactorily completed. Review of the ICMI website prior to the submittal of this report confirmed that Cyanco's Pearland, Texas based production facility and all links in its Ghana supply chain are certified to the ICMC.

**2.2 Require that cyanide transporters implement appropriate emergency response plans and capabilities, and employ adequate measures for cyanide management.**

The operation is: ■ in full compliance  
in substantial compliance  
not in compliance...with Standard of Practice 2.2.

**Discuss the basis for the Finding/Deficiencies Identified:**

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See 2.1 above; the current PO with Orica will remain in effect until arrangements with Cyanco can be finalized. Orica's West African supply chain is currently certified to the Code, as verified on the ICMI website.

Samples of bills of lading (custody records) were examined for 2012 and confirm that Barbex Technical Services (Barbex) is the only road transporter that Orica is using for delivery of cyanide to CGML. The bills of lading provided by Barbex only document chain of custody from the point that containers are (directly) loaded from Orica's storage and production transfer facility in Tarkwa. Upstream chain of custody documentation prior to delivery to the Port of Takoradi is not provided to CGML. However, evaluation of the ICMI website indicated that Orica's entire West African supply chain has been certified. Maintenance of chain of custody records for each element of the supply chain is addressed as an element of each of the corresponding Code supply chain Summary Audit Reports (SARs), which were examined on the ICMI website and determined to be acceptable.

The January 2011 contract with Cyanco indicates that Code certification will be required for all transporters in its West African supply chain. Discussions with Kinross Corporate and review of information supplied by Cyanco indicated that all required audits have been satisfactorily completed. Review of the International Cyanide Management Institute (ICMI) website prior to the submittal of this report confirmed that Cyanco's Pearland, Texas based production facility and all links in its Ghana supply chain are certified to the ICMC.

**3. HANDLING AND STORAGE Protect workers and the environment during cyanide handling and storage.**

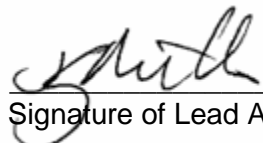
***Standards of Practice***

**3.1 Design and construct unloading, storage and mixing facilities consistent with sound, accepted engineering practices and quality control and quality assurance procedures, spill prevention and spill containment measures.**

The operation is:  in full compliance  
 in substantial compliance  
 not in compliance...with Standard of Practice 3.1.

***Discuss the basis for this Finding/Deficiencies Identified:***

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Cyanide is unloaded within the security perimeter of the warehouse area; intermodal containers were lifted from the trailer with a crane and placed on the ground. Containers are opened, and after an atmosphere check for HCN, cyanide is moved to a separate storage bay at the north end of a roofed, open-front concrete-floored warehouse. CGML was in the process of installing an additional security fence and gate across the entrance to the storage bay. Concrete block half walls had been installed across the sides of the bay, and a sump was provided in one corner for capture of any cleanup or wash-down residues.

The cyanide warehouse is located within the security perimeter of the warehousing area, which in turn is well within the security perimeter of the mill/process plant site. The cyanide mixing and storage tanks are located within a bunded concrete impoundment adjacent to the CIL plant; there are no surface waters within 500 meters. The cyanide mixing and storage tanks are both fitted with high-level alarms and a permanently plumbed overflow pipe reporting to the containment. Tank levels can be remotely monitored from an enclosed operational control center located on the upper deck of the CIL area. Cyanide mixing and storage tanks are located on a bunded concrete pad.

**3.2 Operate unloading, storage and mixing facilities using inspections, preventive maintenance and contingency plans to prevent or contain releases and control and respond to worker exposures.**

The operation is:     ■ in full compliance  
                              in substantial compliance  
                              not in compliance...with Standard of Practice 3.2.

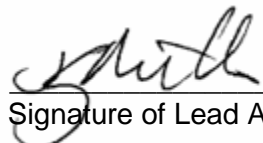
***Discuss the basis for this Finding/Deficiencies Identified:***

Procedures require that cyanide packaging materials be collected and stored in a warehouse bay adjacent to the cyanide storage area, and shipped back to the Barbex distribution warehouse for controlled disposal. No packaging materials are directly disposed of by CGML.

CGML has revised its rinsing protocols to include an integral bag rinse arrangement, which allows an empty bag to be lowered over the spray head three times using the hoist mechanism, with rinseate reporting directly to the mixing tank. Records review indicates that operators have been properly trained in the use of this system.

Under the current arrangement with Orica, empty cyanide crates, moisture barrier bags and plastic strapping, and empty (cut and rinsed) supersacks are returned shipped back to the Barbex distribution warehouse for controlled disposal. From discussion with

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Kinross corporate and review documents clarifying the Cyanco agreement, it is understood that this practice will continue under the Cyanco contract, and containers will be returned to the new transporter (Vehrad Transport & Haulage, Ltd.) for controlled disposal.

Cyanide mixing events are conducted by a team of two in full PPE, with video monitoring by the processing plant operator. CGML has installed a sodium hydroxide line to the mixing tank, along with a sampling port for checking pH, and the governing SOP requires adjusting the pH of each mix to at least 10.5.

Current SOPs required intermodal containers to be lifted from the trailer with a crane and placed on the ground. Containers were then opened, and an atmosphere check for HCN conducted. Cyanide crates were then individually moved to a separate storage bay at the north end of a roofed, open-front concrete-floored warehouse. Crates are not permitted to be stacked more than three high; CGML practices a "last in, last out" issuing process to ensure that the oldest stocks of cyanide are used first. CGML was in the process of building a concrete unloading ramp that would permit direct removal of cyanide by forklift without necessitating removal of intermodal containers from their delivery trailers by crane.

**4. OPERATIONS Manage cyanide process solutions and waste streams to protect human health and the environment.**

***Standards of Practice***

**4.1 Implement management and operating systems designed to protect human health and the environment including contingency planning and inspection and preventive maintenance procedures.**

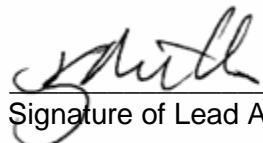
The operation is:           ■ in full compliance  
  in substantial compliance  
  not in compliance...with Standard of Practice 4.1.

***Discuss the basis for the Finding/Deficiencies Identified:***

A suite of Standard Operating Procedures (SOPs) has been developed to manage CGML's cyanide operations, which consist of the following:

- the cyanide receiving area and warehouse;
- cyanide mixing facility, with mixing and solution storage tanks;
- the CIL circuit (leach tank, nine adsorption tanks, and the desorption circuit);

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- the Event Pond;
- tailings and reclaim water pipeline, with associated pumping stations;
- tailings pipeline leak collection pond;
- TSF-1 and TSF-2;
- the Decant Water (settling) Pond;
- the Raw Water (settling) Pond; and
- associated piping systems and other infrastructure.

CGML does not use heap leaching mineral separation, cyanide regeneration, or cyanide detoxification processes. With respect to the latter, it is understood that CGML relies on dilution methods using raw water and decant/reclaim water to achieve residual cyanide concentrations in the tailings stream that permit maintenance of residual cyanide concentrations in the TSFs within Ghanaian permit requirements (5 ppm Total cyanide, and 10 ppm thiocyanate), and well below the 50 ppm permitted in open ponds by the Code under Standard of Practice 4.4. Key operating practices for TSF-1 and the fresh water reservoir (a.k.a. the Water Storage Facility or WSF) are defined in the *Chirano Gold Project Tailings Storage Facility & Water Storage Facility Operating Manual* (Knight Piésold, April 2005).

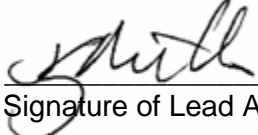
TSF-1 and TSF-2 were both designed by Knight Piésold (Ghana); CGML has maintained detailed design and construction reports for each phase of TSF construction that are reflected in the *Chirano Gold Project Tailings Storage Facility & Water Storage Facility Operating Manual*. This manual contains specific directions on the monitoring of freeboard, which is reflected in checklists for daily inspections of TSF-1 and TSF-2.

The process plant was originally designed by Lycopodium Minerals QLD Pty, Ltd., Australia (Lycopodium) and underwent a major redesign in 2008-2009. Commissioning of the updated process plant was conducted on an operable system basis, and key assumptions and design parameters were documented in each final operable system commissioning inspection packages and are reflected in the operation of commissioned systems.

Additional procedural direction is provided in the detailed checklists prepared for daily inspections of the tailings/reclaim water pipelines and spill collection pond; TSFs; Raw Water Pond; Decant Water Pond; and associated infrastructure. CGML has also implemented a computer-supported preventive maintenance program.

CGML has just created the *Chirano Gold Mines Limited Change Management Procedure*, which is designed to control all temporary and permanent changes that may introduced environmental or health and safety hazards (which by definition include all changes involving the potential release of cyanide) or affect operational efficiency. It is understood that this procedure is meant to apply for all changes for which a formal risk

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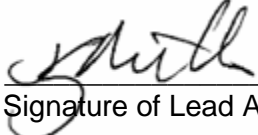
assessment has not been required by the *CGML Risk Management Plan*. The *Change Management Procedure* introduces the use of a change management requires form, which may be initiated by any staff member, and identifies the proposed change, the potential environmental, health and safety, community relations, and operational/cost impacts of the change. The requires undergoes an initial vetting by the head of the requester's department, and then is subject to a multidisciplinary review and final signoff by the originator, HSE Manager, Safety Superintendent, Environmental Superintendent, Mechanical Engineering Superintendent, Occupation Hygienist, Ventilation Officer, Section Manger, and processing Manager. Major facility changes identified by this process that would also involve significant capital expenditures will also be subject to the Kinross Authorization for Expenditure (AFE) process, as defined in the *Kinross Gold Corporation Non-Routine Spending and Capital Management Policy* (February 2011). CGML has implemented contingency procedures that addresses potential water balance upsets, appropriate actions to take in response to observed deviations in SOP implementation, or when temporary closures or a significant cessation of operation might be required. Water balance upsets are managed in accordance with Section 10 of the *Tailings Storage Facility and Water Storage Facility Operating Manual* (Knight Piésold, 2005) and Appendix F of the *Tailings Stage II Operations Manual* (Knight Piésold, 2012). CGML also developed a new procedure, CM/PP/40-30, "Short-Term and Medium-Term Temporary Closure."

CGML conducts daily inspections of the mixing and storage area, the CIL, tailings box, and thickeners areas; the Event Pond; the tailings and reclaim water pipelines; TSF-1 and TSF-2, as well as the Raw Water Pond/Decant Water Pond and their associated settling basins. In addition, Knight Piésold has been contracted to conduct quarterly reviews of the water balance, which results in detailed reports that provide guidance on specific processing and water management adjustments.

CGML retains completion inspection checksheets for daily facility inspections which indicate the inspector's name and date, results of the observations made, and provides space for the inclusion of notes on any required actions. Inspection checksheets are submitted for supervisory review; action items (typically maintenance requests) are addressed in daily meetings.

CGML is currently using a "Mainpac" computerized Preventive Maintenance (PM) system, but are planning to convert to J.D. Edwards software in 2013. CGML will maintain the Mainpac archiving functions for historical reference purposes. The Mainpac system contains routine planned PM actions for all major systems involving management of cyanide; work orders are automatically generated to guide specific PM actions by maintenance staff. In addition, work orders can also be directly generated in response to operational performance issues or inspection issues; the requested action is vetted by the maintenance planner in discussion with the originator or the originator's

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supervisor and acted on accordingly. Work orders are prioritized for action; all cyanide issues are automatically assigned the highest priority for action. The Mainpac software is capable of tracking all open work orders by area or completion status.

CGML operates on grid power, but maintains six 2250 kva backup diesel generators capable of provided emergency power for all critical cyanide management functions. The generator sets are inspected by electrical and mechanical technicians on a daily basis and run-tested monthly.

**4.2 Introduce management and operating systems to minimize cyanide use, thereby limiting concentrations of cyanide in mill tailings.**

The operation is:                   ■ in full compliance  
  in substantial compliance  
  not in compliance...with Standard of Practice 4.2.

***Discuss the basis for this Finding/Deficiencies Identified:***

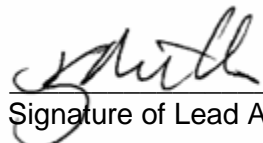
To minimize the consumption of cyanide ore from the underground mine is blended with ore from the open pit to minimize sulphides content in the ore sent to the cyanidation plant. As the sulphide content has been correlated with the percent of gold in the ore the ore is mixed to achieve a maximum gold content of 3 g/tonne in the blended ore.

Based on the ore characteristics obtained through routine tests conducted by the metallurgical laboratory, optimum cyanide addition rates have been determined to maximize gold recovery. Cyanide addition rates are closely monitored using a manual titration process, conducted on samples collected by mill personnel every 2 hrs from slurry in the Leach Tank and Tank TK9. In addition samples are collected for titration analysis from the Leach Tank and each of the adsorption tanks (TK1 through TK9) at the start and end of each 12 hr shift. The cyanide addition rate to the Leach Tank is adjusted manually to maintain the cyanide concentration within the minimum and maximum set points of 150 ppm to 200 ppm. CGML has determined that maintaining cyanide concentrations within this range results in residual cyanide concentrations of between less than 100 ppm in TK9. The cyanide addition rate is adjusted as necessary to maintain concentrations in TK9 below 100 ppm.

Tails from the CIL circuit are directed to the tailings hopper. The tails are diluted with reclaim water from the TSFs prior to discharge to the TSFs.

Cyanide addition rates are closely monitored and controlled manually by the Mill operators. Samples are collected every 2 hours from the Leach Tank and Absorption

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Tank TK9, and at the start and end of each shift from the Leach Tank and nine Adsorption tanks for titration analysis. The results are reported on the *Leach and Adsorption Log Sheet*.

**4.3 Implement a comprehensive water management program to protect against unintentional releases.**

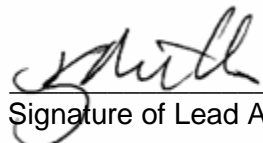
The operation is:                   ■ in full compliance  
  in substantial compliance  
  not in compliance...with Standard of Practice 4.3.

***Discuss the basis for the Finding/Deficiencies Identified:***

CGML has contracted with Knight Piésold Ghana Limited (Knight Piésold) to develop and maintain a probabilistic water balance model for the site; the latest version of the water balance was prepared in 2010 as part of the detailed design effort for the new tailings facility (TSF-2). The water balance model was developed in Microsoft Excel, with an @RISK add-on to facilitate Monte Carlo simulations and statistical analyses. The model considers the management of water in the Water Storage Facility (WSF) reservoir; flow from the Suraw River to the WSF; TSF-1 and -2; and the CIL plant. Water inflows considered in the model include fresh makeup water (from the WSF); reclaim water pumped from the TSF-1 and -2 Decant Ponds; rainfall and run on/runoff; collected seepage, and the water entrained in the processed ore. Outflows from the system largely consist of seepage losses and evaporation. The water balance currently considers the predicted configuration of TSF-1 and -2 from the present date through 2019; actual recorded data have been entered into the model from September 2005 to the current date. TSF-1 operated at full capacity until TSF- 2 was commissioned in January 2012.

The water balance model considers actual and predicted deposition rates, and can be modified for actual throughput to date on a monthly basis or whenever considered necessary. A 1:100 year 24 hour storm event has been considered in establishing freeboard requirements to prevent TSF over- topping. In the unlikely event that the total minimum freeboard is completely consumed, the spillway has been designed to accommodate a 1:1,000 year 24 hour storm. In both cases, the storm event is modeled using a rainfall distribution that is characteristic of severe storms in tropical/equatorial regions. The monthly data used in the model are based on annual records from the Sefwi Bekwai weather station (about 12 km south of the mine site) dating back to 1970. Site specific data have been available since 1996. All catchment areas have been considered in the model, which, according to Knight Piésold, also considers the varying degree of infiltration of the upstream catchments, as well as those within the TSFs themselves.

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Knight Piésold has made the conservative assumption that all seepage losses are collected and pumped back to the reclaim ponds on the TSF surfaces. According to Knight Piésold, the model considers the effect of pond size on evaporation; staged construction and pond curve analyses; maximum pond elevations; the assumed initial, final and average settled dry density of the tailings; beach slopes; percentage of solids in the tailings, and the percentage of water contained in the ore.

CGML conducts daily inspections of TSF-1 and TSF-2, as well as the tailings pipeline emergency pond, the Event Pond, and the Raw Water and Decant Water (settling) Ponds.

In addition, Knight Piésold has been contracted by CGML to conduct quarterly reviews of the water balance; prior to such assessments, CGML compiles the following supporting data for Knight Piésold review:

- milled dry tonnes of ore;
- percentage solids in tailings (average);
- rainfall;
- piezometer data;
- reclaimed water usage volumes;
- raw water usage volumes;
- pond level survey; and
- chemical analysis for supernatant pond, seepage points, monitoring boreholes, the Suraw river, and the WSF.

Knight Piésold prepares audit reports from these evaluates that provides guidance on water balance implementation and specific processing and water management practice adjustments.

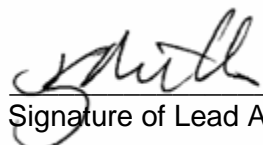
#### **4.4 Implement measures to protect birds, other wildlife and livestock from adverse effects of cyanide process solutions.**

The operation is:                   ■ in full compliance  
  in substantial compliance  
  not in compliance...with Standard of Practice 4.4.

#### ***Discuss the basis for the Finding/Deficiencies Identified:***

The TSFs, Raw Water Pond, Decant Pond and Event Pond are the only facilities where open solutions are stored. Review of analysis records of monthly sampling of spigot

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discharge to the TSF and reclaim water pumped to the Decant Pond confirmed that these water bodies do not contain WAD CN concentrations exceeding 50 mg/l. If monthly analysis showed an upward trend of WAD CN concentration in the spigot discharge, adjustments would be made to the water volume added at the tailings box to maintain discharge concentrations less than 50 mg/l and the sampling frequency increased until the discharge concentrations stabilized.

CGML has implemented a new procedure, CM/PP/RG-CN-009, "Tailings WAD Cyanide Monitoring and Management" which sets a weekly frequency for CN monitoring in the tails, and sets trigger levels at the TSF spigots. If trigger levels are noted, monitoring increases to daily and water is added to dilute the tailings to acceptable levels. Trigger points were set on the basis of historical performance data. Training records for acted operators were also provided. Review of WAD CN concentration in the deposited tailings over the past two years showed no excursions above 50 mg/L.

The Raw Water Pond receives only fresh water from the Water Storage Reservoir located immediately southeast of TSF-2. The Event Pond is used for emergencies and routinely for temporary storage of solutions during maintenance operations. Procedure CM/PP/001, "Process Area Event Pond Inspections", requires weekly inspections, removal of accumulated sediments and solution within one week, and sampling and analysis for WAD cyanide if a second event were to occur before all solution from a previous event can be completely removed. Data for measured values in the solution observed in the event pond were provided, and averaged 0.02 mg/L WAD CN.

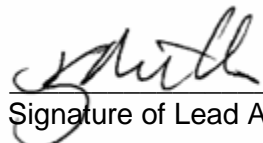
**4.5 Implement measures to protect fish and wildlife from direct and indirect discharges of cyanide process solutions to surface water.**

The operation is:                   ■ in full compliance  
  in substantial compliance  
  not in compliance...with Standard of Practice 4.5.

***Discuss the basis for the Finding/Deficiencies Identified:***

The operation has no direct discharge to surface water as the process circuit at CGML functions as a closed circuit with zero discharge. The Reclaim and Event ponds are constructed with HDPE liner and the TSF embankment dams are designed with a silty clay core and cutoff trench and operated to minimize the height of the phreatic surface within the dam. Underdrains have been placed within the TSF base to promote drainage and consolidation of the tailings. These underdrains flow to a collection tower and fluid draining from the tails is pumped back to the supernatant pond.

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Samples of stormwater are collected monthly from immediately northeast of TSF-1 and from the Suraw River at the southern end of TSF-2. Groundwater samples are collected monthly from three wells located immediately downgradient, west and southwest of TSF-2. An ephemeral seep in drainage channel located along the southern embankment of TSF-2 is also sampled monthly when conditions allow. Results of analysis 2011 and first half of 2012 show total cyanide, free cyanide and WAD CN are all less than the detection level of 0.01 mg/L, that is, less than the 0.022 mg/L limit set by the ICMC.

**4.6 Implement measures designed to manage seepage from cyanide facilities to protect the beneficial uses of ground water.**

The operation is:                   ■ in full compliance  
  in substantial compliance  
  not in compliance...with Standard of Practice 4.6.

***Discuss the basis for the Finding/Deficiencies Identified:***

There are currently no regulatory standards in Ghana for the protection of groundwater. However as local communities may have groundwater wells for drinking water CGML uses the Ghanaian Water Quality Standards. The process circuit functions as a closed circuit with zero discharge and there is no indirect seepage. Groundwater wells located downgradient of the process plant and TSFs are sampled monthly and the results show total CN, WAD CN and free cyanide are all below the Ghanaian Drinking Water standards of 1 mg/L, 0.6 mg/L and 0.2 mg/L, respectively.

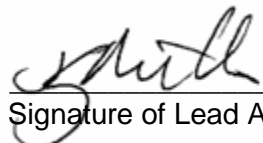
**4.7 Provide spill prevention or containment measures for process tanks and pipelines.**

The operation is:                   in full compliance  
  ■ in substantial compliance  
  not in compliance...with Standard of Practice 4.7.

***Discuss the basis for the Finding/Deficiencies Identified:***

The cyanide mixing and storage tank, leach tanks, and nine adsorption tanks in the CIL area are all constructed within a bunded concrete impoundment. The impoundment area is constructed with a number of concrete sumps with dedicated pumps that permit spills to be pumped immediately back into the process. Additional containment capacity is provided by a permanently connected Event Pond.

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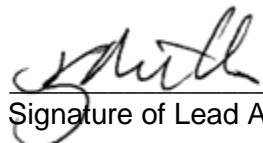
Review of capacity calculations prepared by CGML in response to the auditors' request indicated that the CIL impoundment plus the Event Pond do not provide containment capacity sufficient to contain a nominal 110% of the largest contained tank plus piping system flow back. The largest tank in the combined impoundment (the primary leach tank), which was added as part of a series of process modifications made after the facility was first commissioned. CGML will therefore need to modify the existing CIL + Event Pond containment arrangement, connect the CIL impoundment to additional containment facilities, or construct a new containment facility to provide the volume of emergency containment for the CIL area required by the ICMC; please see CAR **CGML-ICMC-CAR-01**.

From subsequent discussions with Kinross and CGML management made prior to the submittal of this DAFR, it is understood that the tailings pipeline emergency pond, which lies several hundred meters down gradient of the CIL containment, can be connected via a valved gravity line to provide capacity well in excess of the required reserve on a permanent basis. As this pond is maintained in a pumped-down condition and the tailings and reclaim water lines would be shut down in any emergency shutdown of the CIL area, the full containment volume of this pond would be available in response to a tank failure in the CIL. It is also understood that prior to the submittal date of this SAR, CGML has made arrangements with a contractor for the installation of such a line. In the meantime, discussions with Kinross management confirm that the mine has a 10" OD HDPE line immediately available that can be temporarily placed between the CIL impoundment and the tailings pipeline emergency pond. CGML also has a portable suction pump in the mill area that can be rapidly mobilized to the CIL containment to evacuate spilled solution through the temporary pipeline in the event of a catastrophic failure of the new primary leach tank. In an emergency, the existing sump pump back systems associated with the other tanks in the CIL containment area would also be operated to use available tank capacity to reduce the volume that might be accumulating in the secondary containment. Remaining spillage within the containment would be directed first to the existing mill area Event Pond, and the new arrangement used only if the additional capacity provided by the tailings pipeline emergency pond proved to be necessary to manage the spill event. It may also be noted that during the audit, the mine completed the cleanout of the existing Event Pond and has revised its processes to ensure that the maximum available spill containment capacity is maintained in that pond.

The lack of the full containment capacity required by the ICMC in this instance does not, in the auditors' judgment, constitute an immediate risk to the health and safety of the workforce or to the environment while corrective actions are being completed, for the following reasons:

- CGML recognized the containment capacity issue during the audit, took immediate steps towards a permanent resolution, and made

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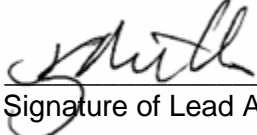
arrangements for placement of a temporary pipeline and suction pump that can be quickly connected between the CIL impoundment and the tailings pipeline emergency pond in the event of a catastrophic failure of any tank in the CIL impoundment, pending completion of the construction of a permanent valved gravity pipeline;

- the CIL impoundment already provides a substantial amount of containment capacity;
- sumps and pumpback systems already exist within the CIL containment that permit a rapid response to a potential process upset by routing some solution to available volumes within adjacent solution tanks;
- the existing Event Pond already has the ability to receive accumulated precipitation and excess spillage from within the CIL impoundment;
- the spill scenario of concern is related to the low probability catastrophic failure of CGML's newest leach tank, which (along with the other tanks in the CIL impoundment) was observed to be well-constructed and maintained, and subject to routine daily visual and periodic UT wall thickness inspections; and
- sump pumps in the impoundment as well as the portable pump that would be used in any emergency evacuation are also subject to routine preventive maintenance under a well-organized computer-based system, which is slated to be upgraded to a JD Edwards system in 2013.

In the auditors' judgment, the fact that CGML had not identified the impact of post-commissioning process modifications on their available containment capacity prior to the audit resulted from a management oversight that occurred when modifications were first made. The auditors view the actions taken by CGML in response to this oversight (and committed to as part of the CAR resolution process) as evidence of a good faith effort to resolve an issue that first came to light during the ICMC audit process, and demonstrates CGML's ability and intent to properly implement this standard of practice going forward.

SOPs for operation of the CIL and mixing/storage tanks provide general direction on returning any spillage to the process; no discharge to the environment is permitted. Because the event pond is meant to provide storage capacity in case of emergency and process upsets, CGML has established procedures to inspect the pond frequently, and to ensure that process solution and sediments are promptly removed after process upsets.

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The tailings and reclaim water pipelines between the processing plant and the TSFs are placed in an unlined earthen trench, with the low point of the pipelines reporting to a, HDPE- lined emergency collection pond. It is understood that a capital expenditure request is to be submitted under the 2013 budget for the construction of an HDPE liner over the entire run of the trench and pipeline. At the time of the audit, the portion of the trench closest to the process plant was overgrown with vegetation, hindering the ability to conduct visual inspections pending the installation of the HDPE liner. However, CGML cleaned the overgrown area of trench prior to the submittal of this report, and developed a combined daily inspection procedure/form for monitoring the pipelines for potential leaks. This was verified via review of dated site photographs, along with review of the new inspection form/procedure and a sample of results from initial pipeline inspections.

It is also understood that after the accidental tailings pipeline breach and spill that occurred in 2008, CGML channelized a portion of the Suraw River near the toe of TSF-1 (the Suraw River being be a low-flow waterway except in the rainy seasons) and installed a series of large-diameter knife gates to permit the rapid isolation of any potential future tailings pipeline spills before they can impact downstream residents. A special SOP was created to guide general spill response auctions as well as the specific closure of the knife gates in the lined river channel. Apart from this specific area of the Suraw River, there are no areas in which the tailings or reclaim water pipelines present a significant risk to surface water. All other process solution pipelines are either within containment or are readily accessible for inspections for potential solution leaks.

Cyanide mixing, storage and process solution tanks are all constructed of carbon steel; process pipelines are typically constructed of carbon steel or HDPE; the tailings and reclaim pipelines are constructed of HDPE.

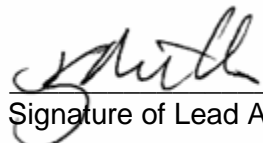
**4.8 Implement quality control/quality assurance procedures to confirm that cyanide facilities are constructed according to accepted engineering standards and specifications.**

The operation is:                      in full compliance  
  ■ in substantial compliance  
  not in compliance...with Standard of Practice 4.8.

***Describe the basis for the Finding/Deficiencies Identified:***

TSF 1 and TSF 2 were both designed by Knight Piésold (Ghana) and are supported by detailed design reports for each phase of construction, as well as by construction reports that document acceptance of the as-built facilities by the Knight Piésold design engineer.

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In the auditors' judgment, the documentation provided indicates that an appropriate measure of quality control and quality assurance (QA/QC) were applied to both the design and construction acceptance efforts.

The process plant was originally designed by Lycopodium; it is understood from discussions with the Engineering Manger that the process plant underwent a major overhaul in 2008-2009 that touched virtually every component; these changes were also designed by Lycopodium. Commissioning of the updated process plant was conducted on an operable system basis, and QA/QC Manager approvals are typically included with each operable system as-built approval package.

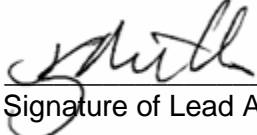
Suitability of materials and adequacy of ground preparation and natural liner systems were addressed as part of the TSF -1 and TSF-2 construction, as well as the original Lycopodium design of the process plant and the major modifications undertaken in 2008-2009.

QA/QC records are retained on file by CGML for TSF-1, TSF-2, the original Lycopodium process plant design, and the Lycopodium-designed 2008-2009 modifications. No QA/QC records are available for Event Pond, Decant Water Pond, Raw Water Pond, associated sedimentation ponds, pumps and connecting pipelines, the tailings and reclaim water return pipelines, and the tailings pipeline spill containment pond.

Knight Piésold and Lycopodium construction records/as built drawing/specification packages indicate approval by the responsible design engineer and/or assigned QA/QC Manager. No approval documentation is available for the Event Pond, Decant Water Pond, Raw Water Pond, associated sedimentation ponds, pumps and connecting pipelines, the tailings and reclaim water return pipelines, and the tailings pipeline spill containment pond. The adequacy of these designs has not been reviewed and approved by an appropriately qualified person; please see Appendix A, CAR **CGML-ICMC-CAR-02**.

In the auditor's judgment, the absence of specific QA/QC records for these facilities pending proper completion of an independent engineering review does not represent a substantial or immediate risk to the environment or the health and safety of the workforce. The overall functionality of these facilities is amenable to regular visual inspection, as they were constructed in an organized, openly accessible layout in cleared areas within the fenced security perimeter of site process area, within 150 m of the site's engineering, operations, and environmental offices. The auditors' physical inspection of these facilities during the onsite portion of the audit indicated that they were being maintained in generally good condition, had appropriate signage and no apparent occupational health and safety issues, and were fulfilling their intended reclaim water quality, conveyance, and/or spill management functions. In addition, it may be noted

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that most of the smaller of these facilities were directly constructed by CGML operations personnel after the mill and CIL facilities were first commissioned. Discussions with operations staff and the chief metallurgist indicated that these modifications were made in order to better control spills and upsets and to ensure satisfactory reclaim water quality prior to being recycled to the mill and process plant area.

In the auditors' judgment, the lack of an independent, documented QA/QC overcheck for this work indicates a lack of familiarity with the requirements of this particular standard of practice, not a lack of good faith or expertise on the part of the auditee with respect to the safe management of reclaim water quality, spills, and/or upsets, or to achieving and maintaining compliance with the noted standard of practice. The auditors' judgment in this regard is presented only as an assessment of potential risk informed by experience in prior ICMC audits, and should not be construed as any sort of substitution for the independent review by a qualified person that is required by the referenced standard of practice and by the requirements noted in CAR **CGML- ICMC-CAR-02**.

**4.9 Implement monitoring programs to evaluate the effects of cyanide use on wildlife, surface and ground water quality.**

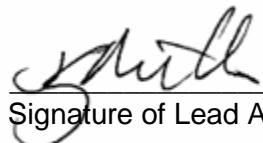
The operation is:                   ■ in full compliance  
  in substantial compliance  
  not in compliance...with Standard of Practice 4.9.

*Describe the basis for the Finding/Deficiencies Identified:*

CGML has developed and implemented an *Environmental Monitoring Plan, Surface and Groundwater (EMP)* that provides detailed written procedures for surface water and groundwater sampling and has procedures in place to monitor for wildlife mortality during shift inspections of the TSFs. The EMP was developed by qualified and experienced Environmental Department staff under the direction of the Environmental Manager. The EMP sets out the surface and groundwater monitoring program for sampling stations designated in accordance with the EPA Environmental Rating Methodology for Mining Companies (AKOBEN 2008).

CGML monitors surface water and groundwater on a monthly schedule. The sampling program includes points of compliance, surveillance monitoring and control reference points; operational points within the mine take area and upgradient of compliance points, and points of beneficial use (e.g., potable water supplies). The EMP shows the locations of sampling points on a site plan and summarizes the sampling frequencies and parameters to be monitored on a table. The EMP also provides procedures on entries into field log books and onto sample collection forms; chain-of-custody protocol;

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sampling naming convention; field measurement and observation; sampling methods; sample preservation, labeling and shipment; and analytical methods.

Wildlife monitoring is integrated into the shift inspections performed at the Event Pond and TSFs. Wildlife observances and mortalities are documented on the inspection log sheets for each of these facilities. If mortality is suspected to be associated with cyanide a tissue analysis would be undertaken. All mortalities are reported to EPA. To date there have been no reported cyanide related wildlife mortalities.

**5. DECOMMISSIONING Protect communities and the environment from cyanide through development and implementation of decommissioning plans for cyanide facilities.**

***Standards of Practice***

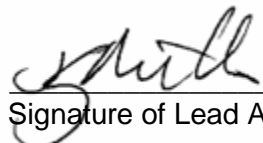
**5.1 Plan and implement procedures for effective decommissioning of cyanide facilities to protect human health, wildlife and livestock.**

The operation is:                   ■ in full compliance  
  in substantial compliance  
  not in compliance...with Standard of 5.1.

***Describe the basis for the Finding/Deficiencies Identified:***

CGML has prepared a comprehensive *Cyanide Decommissioning/Closure and Post-Closure Land-Use Plan*. The *Plan* is a revision-controlled document, and in its current iteration presents conceptual procedures for closing all cyanide management facilities, as well as a framework for planning and developing conceptual procedures into specific closure task work assignments prior to shutdown. The *Cyanide Decommissioning/Closure and Post-Closure Land-Use Plan* requires appropriate updates of HSE training, closure procedures, and emergency response procedures three months prior to shutdown, in order to accommodate specific decommissioning task activities. The *Plan* also requires a review of socioeconomic impacts 6 months prior to shutdown. It also requires a qualitative/semi-quantitative risk assessment of the final configuration of TSF 1 and TSF 12 months prior to closure, which is to be informed by current water balance information, geotechnical evaluations of the physical structure of the TSFs, and other performance data. The risk assessment is to be performed by an independent geotechnical engineering consultants or internal experts, and the results will be used to guide the final selection of appropriate closure methods (including the selection of appropriate cyanide detoxification technologies to support process plant rinsing operations, as may be required) and sequencing of other specific closure tasks.

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The *Cyanide Decommissioning/Closure and Post-Closure Land-Use Plan* includes a conceptual discussion of the sequencing of closure actions, as well as a more detailed preliminary mine closure and rehabilitation schedule, which is broken out into progressive restoration, pre-closure, and post-closure phase activities. The *Plan* has been in effect since January of 2011, and requires a number of discrete actions in advance of closure to ensure that planning and procedures is appropriate for the actual configuration of cyanide management facilities at the time of closure. Conceptual procedures are to be updated and more fully developed into series of discrete work-controlling tasks at least 3 months prior to shutdown. In addition, the *Plan* includes a decommissioning cost estimate that considers the most current conceptualization of anticipated decommissioning and closure procedures and copies of the financial guarantee required by the Ghanaian Environmental Protection Agency (EPA); the latter must be updated annually and must reflect any anticipated changes to the decommissioning and closure approach.

**5.2 Establish an assurance mechanism capable of fully funding cyanide-related decommissioning activities.**

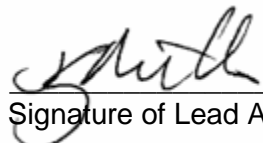
The operation is:                   ■ in full compliance  
  in substantial compliance  
  not in compliance...with Standard of Practice 5.2.

***Describe the basis for this Finding/Deficiencies Identified:***

The *Cyanide Decommissioning/Closure and Post-Closure Land-Use Plan* contains a decommissioning cost estimate for all CGML facilities (including cyanide management infrastructure) that projects costs for progressive rehabilitation, preclosure, and postclosure phases of the project.

Closure costs associated with closure of CGML's cyanide management facilities are estimated on a third-party basis and are documented in the asset retirement obligation (ARO) documentation provided to Kinross Corporate on an annual basis. They are based on the same data that support the closure estimate provided to the Ghanaian EPA. The Ghanaian Environmental Protection Agency (EPA) requires an annually updated financial guarantee that is substantially in excess of the amount of funding required to close CGML's cyanide-related infrastructure, to the extent specified by the Code (i.e., decommissioning of equipment, removal of residual reagent, and measures for controlling or managing surface water and groundwater). CGML has obtained a financial guarantee from Societe Generale (Canada) that, in combination with its cash on hand in its Ghanaian accounts, exceeds the projected total cost of closure, and

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substantially exceeds the latest estimate of cyanide facility-only closure that is documented in CGML's current ARO input to Kinross Corporate. Copies of the financial guarantee and cash-on-hand statement are appended to the current *Cyanide Decommissioning/Closure and Post-Closure Land-Use Plan*. The financial guarantee must be renewed annually and must reflect and must reflect any anticipated changes to the decommissioning and closure approach.

**6. WORKER SAFETY Protect workers' health and safety from exposure to cyanide.**

***Standards of Practice***

**6.1 Identify potential cyanide exposure scenarios and take measures as necessary to eliminate, reduce and control them.**

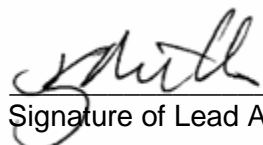
The operation is:           ■ in full compliance  
  in substantial compliance  
  not in compliance...with Standard of Practice 6.1.

***Describe the basis for the Finding/Deficiencies Identified:***

CGML has developed documented standard operating procedures for all operating tasks associated with unloading, mixing, storage, plant process operations, and entry into confined spaces. Procedures specify the use of appropriate personal protective equipment (PPE) and requirements for pre-work inspections prior to cyanide unloading and mixing operations and as part of confined space entry and Job Safety Analysis/Safe Work Permit procedures when undertaking non-routine tasks. Equipment decontamination is covered under the Job Safety Analysis and Safety Permit procedures. Before working on cyanide tanks or pipelines a Job Safety Analysis is required to be completed and a Safety Work Permit issued by the authorizing senior supervisor.

There are several ways that workers have an opportunity to provide input into developing and evaluating health and safety procedures. These include participating in worker review teams during development of procedures, discussing issues during toolbox meetings, submitting Hazard Reports when a hazardous condition is identified and posting ideas to the suggestion box. In addition, CGML has just created the *Chirano Gold Mines Limited Change Management Procedure*, which is designed to control all temporary and permanent changes that may introduce health and safety or environmental hazards, which by definition include all changes involving the potential release of cyanide. It is understood that this procedure is meant to apply for all changes for which a formal risk assessment has not been required by the *CGML Risk Management Plan*.

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The *Change Management Procedure* introduces the use of a change management requires form, which may be initiated by any staff member, and identifies the proposed change, the potential environmental, health and safety, community relations, and operational/cost impacts of the change. The requires undergoes an initial vetting by the head of the requester's department, and then is subject to a multidisciplinary review and final signoff by the originator, HSE Manager, Safety Superintendent, Environmental Superintendent, Mechanical Engineering Superintendent, Occupation Hygienist, Ventilation Officer, Section Manger, and processing Manager. Major facility changes identified by this process that would also involve significant capital expenditures will also be subject to the Kinross AFE process, as defined in the *Kinross Gold Corporation Non-Routine Spending and Capital Management Policy* (February 2011).

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

The operation is:                      in full compliance  
  ■ in substantial compliance  
  not in compliance...with Standard of Practice 6.2.

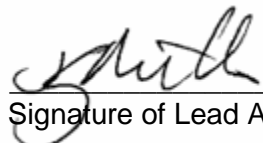
***Describe the basis for the Finding/Deficiencies Identified:***

To prevent the generation of HCN gas CIL operators make regular checks of HCN levels and pH. Samples of pulp are collected from the Leach Tank and Adsorption Tank TK9 every 2 hrs for pH analysis, and from the Leach Tank and all nine adsorption tanks at the beginning and end of each shift. The lime feed automatically adjusts to maintain pH in the leach circuit. Review of data for the period April 2012 to data indicates that pH in the CIL circuit has been generally maintained with few excursions.

Areas where CGML identified a potential risk from HCN generation and worker exposure are the Acid Strip Plant, the cyanide addition point at the Leach Tank, and the Gold Room. A fixed HCN monitor has been installed at the Cyanide Mix Plant; a portable HCN monitor is also used during mix operations.

For protection of the workers, the fixed HCN monitors are calibrated to alarm at 4.7 ppm and 10 ppm. Workers also wear full-face respirators fitted with appropriate cartridges and carry portable HCN monitors, similarly calibrated, when handling cyanide during unloading and mixing and when conducting tasks where there is a significant risk of cyanide exposure. Workers are trained to evacuate an area when HCN levels exceed 10 ppm.

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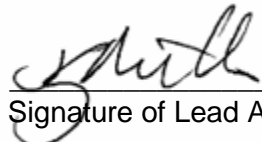
The procedure requires workers to wear full face respirators and appropriate PPE before re-entering an area to investigate an upset and prohibits re-entry and requires the erection of barriers if HCN gas concentrations exceed 60ppm. Re-entry is only be permitted when HCN levels decrease below 60 ppm, or if Self-Contained Breathing Apparatus (SCBA) is used. However, at the time of the site audit there is no SCBA capability at the plant site. If an incident were to occur that involved a man down in a high HCN gas situation at least 15 minutes would be required to mobilize SCBA capability from the mine site. To reduce the response time in the event of a cyanide exposure emergency CGML will need to obtain and maintain SCBA equipment at the process plant and train plant operators and/or ERT members in the use of this equipment in high HCN gas environments. In addition, CGML has a respiratory training program; however, is not formal and training is not recorded and records maintained. There is no scheduled change out procedure for respirator cartridges so there is a potential risk for cartridges to no longer provide protection from cyanide exposure. CGML needs to purchase SCBA equipment and implement a formal respirator program CGML needs to implement a formal respirator program that includes requirements for initial and refresher fit-testing and associated recordkeeping. Please see Appendix A, CAR **CGML-ICMC-CAR-03**; in order to achieve full compliance under this Standard of Practice, CGML must:

- acquire and maintain at the plant site sufficient SCBA units to be able to respond quickly in a high HCN gas situation;
- train operators and/or ERT members in use and maintenance of SCBA; and
- implement a formal, documented respirator training and fit testing program for affected personnel.

In addition to CGML employees being fit tested and trained in the use of respiratory protection equipment by the Plant Safety Officer as discussed above, operating procedures require that workers evacuate a work area if HCN concentrations exceed 10 ppm. Workers are therefore extremely unlikely to be exposed to HCN concentrations in excess of 4.7 ppm over an 8 hr period. It is therefore the auditors' judgment that the observed condition does not constitute an immediate or substantial risk to workforce health and safety or to the environment during the implementation of the formalized program requested by CAR **CGML-ICMC-CAR-03**.

CGML has 18 portable HCN monitors and one multi-gas monitor with HCN sensor at the plant site, as well as seven new HCN monitors and two multi-gas monitors in stock. The Safety Department is responsible for maintaining and calibrating the units and has the standard gas for calibration. At the time of the site audit the portable monitors were set to be calibrated every 180 days. However, review of the manufacturer's manual for

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these monitors revealed that, for detection of HCN gas, calibration is recommended every 90 days. CGML needs to modify the calibration schedule for the portable monitors to comply with the manufacturer's recommended frequency of 90 days when the monitors are used for detection of HCN; please see Appendix A, CAR **CGML-ICMC-CAR-04**.

At the time of the site audit the fixed HCN monitors were being calibrated through checking readings against portable HCN monitor readings as CGML did not have the correct calibration gas connector for the units to permit calibration. The Code requires that HCN monitors are calibrated as per the manufacturer's recommendation. CGML needs to provide copies of calibration records for all fixed HCN monitors; please see also Appendix A, CAR **CGML-ICMC-CAR-04**. It should be noted that in the auditor's judgment, the fixed monitors, although not being calibrated as per the manufacturer's recommendations, were being maintained in an operational status, and therefore the observed condition did not constitute an immediate or substantial risk to workforce health and safety or to the environment.

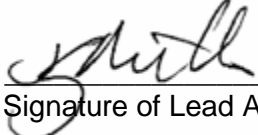
Cyanide hazard warning signs are adequately posted on security gates/fencing to the plant site, mix area and warehouse compound; on the cyanide storage building; and on CIL and mix/storage tanks. Piping is also well signed to identify the contents. Cyanide lines are colour coded and labeled to identify content and indicate flow direction. "No drinking or eating" signage is prominently posted throughout the plant. Procedure permits smoking outside of the plant but smoking is prohibited within the plant, offices or in vehicles. Signage is amply posted on pipelines to identify the solutions conveyed (e.g., cyanide, process water). Cyanide warning signage was also in place at prominent locations around TSFs to warn villagers of cyanide and not to use or drink the water.

During the audit waste food and drink containers were observed on the upper deck of the CIL tanks indicating that signage was not being followed. CGML immediately removed the waste containers and the issue of drinking and eating in cyanide areas was discussed at the next toolbox meeting.

Shower /eyewash stations are located at the warehouse, cyanide mix plant, elution area, and CIL tanks. Each station is fitted with a Pro-Source pressure tank to regulate the water pressure at 24 PSI and a water pressure gauge. The operation of the shower/eyewash stations are checked weekly by Maintenance and by plant operators prior to unloading or a mix operation. The weekly checklist was designed to confirm that operators routinely check eyewash functionality.

All fire extinguishers in the cyanide use areas are dry chemical ABC extinguishers. Extinguishers are inspected on a monthly basis by Safety. Each extinguisher has an inspection tag and inspections were observed to be up to date. MSDSs are maintained

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at the warehouse and are posted at prominent areas where cyanide is handled. In addition, there is signage that provides information on cyanide safety including safe handling, cyanide poisoning symptoms, rescue procedures; and first aid measures.

The CGML *General Incident Reporting and Investigation* procedure sets out the process for reporting and investigating all health, safety and environmental incidents, including those that involve cyanide. Investigations are required to be completed by competent persons. Competency is determined through training. The procedure describes the steps involved including: preliminary notification, gathering information, roles and responsibilities of investigators, casual analysis, and remedial action.

### **6.3 Develop and implement emergency response plans and procedures to respond to worker exposure to cyanide.**

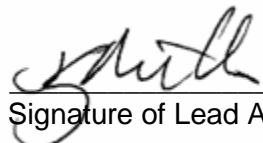
The operation is:                   ■ in full compliance  
  in substantial compliance  
  not in compliance...with Standard of Practice 6.3.

*Describe the basis for this Finding/Deficiencies Identified:*

Emergencies are reported to Security who will activate an emergency siren to notify workers to evacuate to a designated assembly area. There is also a load speaker system at the plant to communicate with workers and supervisors and managers have radios and/or cell phones. Shower/eyewash stations and medical oxygen kits are strategically located about the plant for first aid response. The shower/eyewash stations and medical oxygen kits are maintained and inspected regularly. The cyanide antidote used by CGML is hydroxocobalamin (Cyanokit). This drug is to be administered by a trained nurse or doctor and is stored and maintained at the clinic located approximately 5 minutes from the Plant Site.

CGML's "*Emergency Response Procedures – Surface*" is the overarching emergency response plan (ERP). This plan is supplemented by site-specific response plans for the process plant and underground mining operation. The "*Process Plant Emergency Response Procedure*" addresses evacuation and response procedures for emergencies at the plant site. First aid response for cyanide exposure is documented in SOP – *First Aid Medical Treatment Procedure*. Cyanide exposure first response procedures are also provided on signs posted in prominent areas of the plant. CGML's medical clinic is manned by a doctor and four nurses on 24 hrs call in the event of an emergency. The clinic is capable of handling most cyanide exposure incidents but has also made a formal arrangement with Bibiani District Hospital (BDH) for their assistance to treat a

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cyanide exposure patient. An ambulance equipped with medical oxygen and manned by a dedicated driver is available around the clock for patient transport.

CGML has also developed and implemented Procedure CM/PP/002: “*Process Area Emergency Response Drills and Drill Evaluation*”. The procedure describes drill planning, scheduling, design, evaluation, and reporting, as well as preparation and execution of corrective action plans. The procedure also requires that at least one major drill must be conducted that includes a cyanide spill and cyanide exposure and treatment. Major drills are defined as those that involve both the Emergency Response Team and the workforce at the Process Plant.

CGML conducted a major drill on 16 October 2012. This drill simulated a man down event at the Cyanide Mix Plant. A number of areas of response improvement were identified and a corrective action plan implemented. The corrective action plan designated responsibilities and target dates for completion of the various actions. Review of the *Emergency Response Major Drill/Incident Evaluation Report* for the drill indicated that all corrective actions had been completed by 31 January 2013.

**7. EMERGENCY RESPONSE Protect communities and the environment through the development of emergency response strategies and capabilities.**

***Standards of Practice***

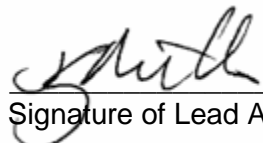
**7.1 Prepare detailed emergency response plans for potential cyanide releases.**

The operation is:                   ■ in full compliance  
  in substantial compliance  
  not in compliance...with Standard of Practice 7.1.

***Describe the basis for the Finding/Deficiencies Identified:***

CGML’s “*Emergency Response Procedures – Surface*” is the overarching emergency response plan (ERP). This plan provides instruction for emergency call-our procedure, security control responsibilities, general responsibilities of employees, supervisors, superintendents and managers, and medical evacuation and emergency referral cases. This plan is supplemented by site-specific response plans for the process plant and underground mining operation. The “*Process Plant Emergency Response Procedure*” (ERP-P) provides process personnel with a logical and comprehensive description of how to respond in the event of an emergency within the plant area. Separate

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procedures have also been developed to address specific plant and cyanide emergency situations including emergency evacuation, handling dry and liquid cyanide spills and slurry spills into the Suraw River, and cyanide first aid.

The ERP-P considers potential cyanide failure scenarios appropriate for the site's-specific environmental and operating circumstances. For each scenario the ERP-P presents the roles and responsibilities, and actions to be taken in the event of the emergency, including CIL and detox plant, tailings dam, pond, and tailings pipeline emergencies. Transportation spills are the responsibility of Orica and their transporter, Barbex. CGML is responsible for onsite transportation related to unloading and transfer of cyanide into the warehouse and transfer of the cyanide to the mix plant for each mix.

Emergencies are reported to Security who are required to activate an emergency siren to notify workers to evacuate to a designated assembly area. There is also a loud speaker system at the plant to communicate with workers and supervisors and managers have radios and/or cell phones. HSE officers and plant supervisors have direct responsibility of initiating an evacuation if warranted. In the event of an emergency the shift supervisor is responsible to shut down the plant as required.

The ERP provides response actions to address various potential cyanide incidents. The Kinross Crisis Management System provides communication requirements that vary depending on the overall level of severity of an incident. For low severity incidents such as a minor spill or an injury that does not result in lost time or hospitalization, communication would be within the Site Crisis Management Team. For medium severity incidents the Regional Crisis Management Team would be involved and for high severity incidents, such as a multiple fatality or situation that could impact a local community, the Corporate Crisis Management Team would become involved. In the event of a situation that may affect a downstream community the Security Manager will contact the local authorities and, in consultation with the HR&CR Manager, will arrange to inform all persons downstream.

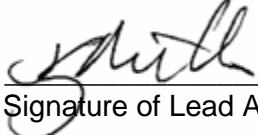
## **7.2 Involve site personnel and stakeholders in the planning process.**

The operation is:                   ■ in full compliance  
  in substantial compliance  
  not in compliance...with Standard of Practice 7.2.

### ***Describe the basis for the Finding/Deficiencies Identified:***

The ERP-P for the process plant has been prepared by process plant supervisors and managers with assistance from the Safety Superintendent to provide integration into the overall ERP and Kinross Crisis Management System. The ERP-P is newly developed

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and supplements CGML's overall ERP to provide process plant personnel with a logical and comprehensive description of how to respond in the event of an emergency within the process plant operation. The development and implementation of the ERP-P is the responsibility of the Area Manager (aka Process Manager) with input from his management team. His responsibilities include training process personnel in the appropriate aspects of the ERP-P. The ERP-P is required to be reviewed at least annually. The review team will comprise managers from Processing, Engineering, Production, Metallurgy, Maintenance and Safety.

CGML has an extensive community outreach program which includes training in cyanide awareness and first response in the event of a cyanide incident such as a transportation spill occurring near a community. Local communities in the area of CGML's operations are administered by a paramount tribal chief, and three other paramount chiefs are responsible for other nearby communities. CGML maintains an "open door" policy regarding stakeholder concerns, and CGML representatives regularly attend the quarterly council meetings held by each paramount chief. CGML has also established a "Community Consultative Committee" that meets regularly to discuss mining-related issues; stakeholder participants include local tribal chiefs or subchiefs, representatives from the paramount chiefs, the police, the Bureau of National Investigation, and elected representatives from the district assembly.

CGML is also in contact with local fire and police departments as part of community dialogue initiatives. Although CGML maintain firefighting capability, the Fire Department in Wiaso, located approximately 30 minutes from the plant site may be called upon in the event of a large emergency. The Fire Department is familiar with the site through conducting periodic fire protection inspections. In the event of a cyanide exposure, the medical clinic has made formal arrangements with a regional hospital for provision of additional patient treatment, care or observation. There are a number of military personnel are located onsite that would also be available to provide assistance in an extreme event requiring their intervention.

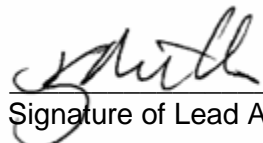
**7.3 Designate appropriate personnel and commit necessary equipment and resources for emergency response.**

The operation is:                      in full compliance  
  ■ in substantial compliance  
  not in compliance...with Standard of Practice 7.3.

***Describe the basis for the Finding/Deficiencies Identified:***

The ERP-P designates the Area Manager (a.k.a. Process Manager) as the Incident Controller and in his absence the most senior person onsite would be his designate.

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CGML recently formed a dedicated ERT for the process plant. The ERT comprises 26 workers from various departments including warehouse, engineering, security, processing, and clerical. A training program for ERT members has been developed. At the time of the field component of the audit the ERT had completed First Aid training, Cyanide training, and Hazardous Chemical Response training and was scheduled to undertake SCBA training by the ERT trainers from the Chirano Mine site; see Appendix A and CAR **CGML-ICMC-CAR-03** under standard of practice 6.2.

General roles and responsibilities of employees, supervisors, superintendents and managers during an emergency response, as well as 24 hr contact information are presented in overall ERP. Also provided are lists of type and location of emergency response equipment, and contact information for key contractors and equipment suppliers. Although CGML maintain their own emergency response capability and therefore do not have designated roles and responsibilities for outside entities, the ERP also includes contact information for outside responders including police, mine rescue, medical centres, Medevac air service and armed forces. The ERP-P also provides requirements for inspection and testing emergency equipment.

#### **7.4 Develop procedures for internal and external emergency notification and reporting.**

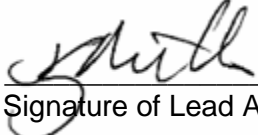
The operation is:                   ■ in full compliance  
  in substantial compliance  
  not in compliance...with Standard of Practice 7.4.

#### ***Describe the basis for the Finding/Deficiencies Identified:***

As noted in Section 7.3, the ERP provides contact information for internal ERT and coordinators as well as outside responders and resources including Fire Service, Police, Medical, Aviation, Armed Forces, Mine Rescue and Inspector of Mines. The Crisis Management System provides contact information for Kinross Area, Regional and Corporate Crisis Management Team members.

Communication procedures are in place to respond to emergencies. When an emergency is reported Security Control will immediately announce an emergency and declare a radio silence to allow for only communications relevant to the emergency; inform the Medical Superintendent of any medical concern; call the Incident Controller and the ERT; and call managers and emergency response coordinators relevant to the emergency. The Incident Controller will provide instruction as necessary to communicate with outside responders and implement the Emergency and Crisis Management System. In the event of an incident on a public road, Security will

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immediately inform the local authorities and initiate actions to assist the local authorities to prevent access to scene of the emergency. The Area Manager is responsible for ensuring that contact information is up to date. The Kinross Crisis Management System provides internal and external communication requirements with regional and corporate managers, regulatory agencies, outside responders, communities and media, which vary depending on the overall level of severity of an incident. Communication with communities in the event of an emergency is the responsibility of the Community Relations Department. SOP CGML/CPR/02, "Cyanide Spillage Notification in the Communities" provides contact procedures and interaction with affected communities..

**7.5 Incorporate into response plans monitoring elements and remediation measures that account for the additional hazards of using cyanide treatment chemicals.**

The operation is:  in full compliance  
 in substantial compliance  
 not in compliance...with Standard of Practice 7.5.

*Describe the basis for the Finding/Deficiencies Identified:*

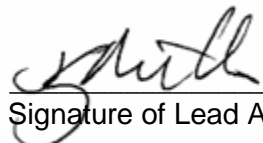
The ERP-P includes references procedures CM/PP/RG-CN-005 through -008, which address handling solid and liquid cyanide spills inside and outside of bunds, as well as instructions on spill recovery; disposal of cyanide contaminated solids and liquids; and, for spills outside of containments, a prohibition on the use of neutralization chemicals because of their potential toxicity to aquatic life. CGML also developed SOP CH-ENV-SOP-17, "Cyanide Spill Monitoring and Cleanup", which provides instruction on soil/water sampling methods and frequency to monitor the effectiveness of remediation and remediation criteria. This SOP makes reference to the *CGML Environmental Laboratory Quality Manual* and the *Environmental Monitoring Plan*, which provides detail on the handling, transportation, treatment and storage of samples and reference the analytical methods used to monitor cleanup and confirm completion of remediation.

The provision of an alternate drinking water supply in the event of impact to community water sources is considered in the ERP-P and SOP CGML/CPR/02, "Cyanide Spill Notification in the Communities:."

**7.6 Periodically evaluate response procedures and capabilities and revise them as needed.**

The operation is:  in full compliance  
 in substantial compliance

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not in compliance...with Standard of Practice 7.6.

***Describe the basis for the Finding/Deficiencies Identified:***

The ERP-P stipulates that the Plan is reviewed and updated as appropriate after any emergency incident or emergency response exercise and that the Plan will be revised after every exercise and at least every 12 months. As discussed in 6.3, CGML has also developed and implemented Procedure CM/PP/002, "Process Area Emergency Response Drills and Drill Evaluation". The procedure describes drill planning, scheduling, design, evaluation, and reporting, as well as preparation and execution of corrective action plans. It also requires that at least one major drill must be conducted that includes a cyanide spill and cyanide exposure and treatment. Major drills are defined as those that involve both the Emergency Response Team and the workforce at the Process Plant.

CGML conducted a major drill on 16 October 2012. This drill simulated a man down event at the Cyanide Mix Plant. A number of areas of response improvement were identified and a corrective action plan implemented. The corrective action plan designated responsibilities and target dates for completion of the various actions. Review of the *Emergency Response Major Drill/Incident Evaluation Report* for the drill indicated that all corrective actions had been completed by 31 January 2013.

**8. TRAINING Train workers and emergency response personnel to manage cyanide in a safe and environmentally protective manner.**

***Standards of Practice***

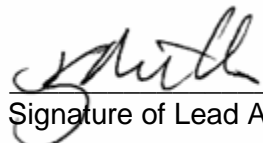
**8.1 Train workers to understand the hazards associated with cyanide use.**

The operation is:                      in full compliance  
  ■ in substantial compliance  
  not in compliance...with Standard of Practice 8.1.

***Describe the basis for the Finding/Deficiencies Identified:***

All contractors, visitors and new employees are required to complete site specific induction training before entering the site. New employees undertake a more extensive induction that includes a site tour. The induction training introduces cyanide and provides information on PPE, exposure limits and emergency response procedures.

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In 2012 the Senior Plant Safety Officer developed and initiated a formal cyanide awareness training and refresher training program. To date approximately 46 workers have completed the training. The initial refresher course attendees were selected based on being members of the newly formed ERT, operators that conduct high risk operations such a cyanide mixing, and community relations staff that present cyanide awareness training to local communities.

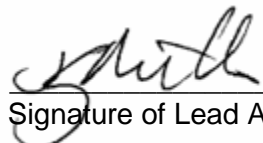
In addition to refresher training CGML has also initiated a monthly safety topic or theme as part of the “Slam the Risks Program” in which a topic is selected for presentation at toolbox meetings and write-ups that are posted on bulletin boards. Cyanide may be a theme topic. For example, the theme in March 2011 was Cyanide Management at CGML and in June 2012, Cyanide Myths and Misconceptions. Records for cyanide awareness training are retained. The records are in the form of attendance signoff sheets and course presentation materials. The attendance records include the date and training topic, the name and signature of the trainer, and the name and signature of each of the attendees. Attendance sheets for the Orica training, the “Slam the Risks Program” training and the cyanide refresher training were available for review.

To test completeness of the cyanide awareness training program a record search was carried out for two operators identified during the site inspection. However, CGML was unable to locate the cyanide awareness training records for these two employees, although discussion with the Senior Plant Safety Officer indicated that the training had been satisfactorily completed. To achieve full compliance under this Standard of Practice, CGML must therefore compile a summary list of all those workers that have completed cyanide awareness training, the dates the training was completed, and the name of the trainer that conducted the training. Please see Appendix A, CAR **CGML-ICMC-CAR-05**. As initial interviews with operators revealed they were familiar with cyanide hazards and safety requirements, HCN warning systems, and their duties in the event of an emergency, the auditors consider this deficiency to be related to documentation and recordkeeping issues, and does not constitute an immediate or substantial risk to workforce health and safety or to the environment during implementation of the required corrective action. It also should be noted that as of the submittal date of this updated DAFR, discussions with Kinross management indicate that the site has employed a staff member specifically assigned to managing operational training records.

**8.2 Train appropriate personnel to operate the facility according to systems and procedures that protect human health, the community and the environment.**

The operation is:                    in full compliance  
   ■ in substantial compliance

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not in compliance...with Standard of Practice 8.2.

**Describe the basis for the Finding/Deficiencies Identified:**

All workers involved in the management of cyanide are trained to perform their assigned tasks in a safe and environmentally sound manner. New employees are instructed by supervisors and the plant safety officers, and work with experienced operators for several months until they are deemed competent in their tasks before being permitted to work alone. Task training is based on following written SOPs that have been developed for each work task. These procedures describe each of the steps to perform the task, the hazards and precautions associated with performing the task, and the minimum PPE requirements. These SOPs are maintained on the CGML's computer intranet and are accessible to all workers through their supervisors.

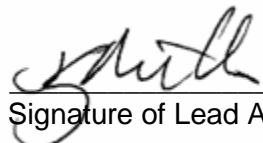
Training is undertaken by qualified and experienced trainers. Cyanide awareness training was conducted by a trainer from Orica in 2011 and in 2012 this and the cyanide refresher training was developed and is being conducted by the Senior Plant Safety Officer. Training in the application of medical oxygen was conducted by the Medical Superintendent who is a medical doctor. Task training is undertaken by plant supervisors experienced with the plant operations and process, with support from the Senior Plant Safety Officer with regard to health and safety associated with performance of operations tasks.

Training attendance sheets provide the record of completed site induction, cyanide awareness and first aid Oxy Viva training. Records include the training topic, name of trainer, date and the name and signature of each attendee.

Currently the process plant does not maintain records of task training, although task observation records are maintained. Please see Appendix A, CAR **CGML-ICMC-CAR-05**; in order to achieve full compliance under this Standard of Practice, CGML will need to develop a documented system to record and track task training required to safely undertake assigned work tasks against standard operating procedures for those tasks. Records should include the names of the employee and the trainer, the date of training, the topics covered, and if the employee demonstrated an understanding of the training materials. It is the auditors' judgment that the observed condition relates to record maintenance issues, and therefore did not constitute an immediate or substantial risk to workforce health and safety or to the environment.

**8.3 Train appropriate workers and personnel to respond to worker exposures and environmental releases of cyanide.**

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The operation is:                    in full compliance  
  ■ in substantial compliance  
  not in compliance...with Standard of Practice 8.3.

***Describe the basis for the Finding/Deficiencies Identified:***

All employees that work with cyanide have completed cyanide awareness training. This training includes emergency response procedures in the event of a cyanide release. Workers are trained to call Security Control in the event of an emergency and provide specific information to aid response; recognize emergency sirens and know location of evacuation muster points; and recognize cyanide poisoning symptoms and basic first aid including decontamination and administering medical oxygen. The clinic is located approximately 5 minutes away from the plant in the event of an emergency requiring assistance of a doctor or nurse.

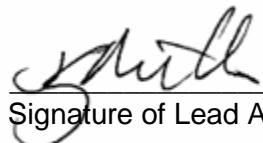
At the time of the field component of the audit the recently formed ERT at the process plant had completed First Aid training, Cyanide training, and Hazardous Chemical Response training and was scheduled to undertake Self Contained Breathing Apparatus training by ERT trainers from the Chirano Mine site; please see Appendix A, CAR **CGML-ICMC-CAR 03.**

In early 2012 Kinross Gold Corporation implemented and rolled out across the corporation the Kinross Crisis Management System. This is an online system is seeded with local, regional and corporate contact and response information and during an emergency gathers and records event/issue communication live through a system known as LUIS. The System defines responsibilities, guidelines, and assigns resources for the successful management of potential crises. The system will be utilized during all emergency situations. Training in the Crisis Management System was provided to CGML emergency response managers and coordinators in July 2012.

CGML maintain their own emergency response capability and therefore do not have designated roles and responsibilities for outside entities in the ERP. In the event of a cyanide exposure, the CGML medical clinic has made formal arrangements with a regional Hospital, for provision of additional patient treatment, care or observation.

CGML has an extensive community outreach program which includes training in cyanide awareness and first response in the event of a cyanide incident such as a transportation spill occurring near a community. In 2011, CGML conducted a cyanide awareness campaign in several nearby communities. This was followed by a more focused campaign to engage medical staff at established community clinics. Another infmraitonal meeting was conducted at the Bibiani-Ahwiaso-Bekwai District Assembly. Meeting records and supporting photographs indicate significant attendance and

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interest, as well as the distribution of posters and handout materials on the cyanide awareness and emergency response.

Cyanide awareness training records are retained in the form of attendance signoff sheets and course presentation materials. The attendance records include the date and training topic, the name and signature of the trainer, and the name and signature of each of the attendees. The newly formed ERT completed cyanide awareness training in 2012. Worker understanding of training materials is through work task observation and reinforcement during morning toolbox meetings and “Slam the Risks Program” training. ERT members and coordinators competence will also be tested during scheduled mock drill exercises.

**9. DIALOGUE Engage in public consultation and disclosure.**

***Standards of Practice***

**9.1 Provide stakeholders the opportunity to communicate issues of concern.**

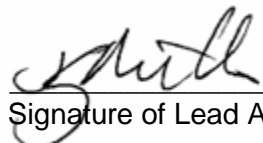
The operation is:                   ■ in full compliance  
  in substantial compliance  
  not in compliance...with Standard of Practice 9.1.

***Describe the basis for the Finding/Deficiencies Identified:***

CGML has established a robust community relations program that provides multiple organized opportunities for local residents and officials to community issues related to all aspects of the mining operation, including the use of cyanide. CGML operations are located in a challenging social setting; they are located in a populated rural area of Western Ghana, with several small villages located near the mine, mill, and tailings facilities. Two villages (Akoti and Etwebo) are located within the mining lease, and one (Paboase) just outside the southern lease boundary. CGML also has a prospecting license that encompasses a number of small villages and towns to the north, south, and southwest of the current mine license area. There are multiple access roads to the mine site. Except for dedicated haul roads, roadways between CGML facilities may have public vehicle and foot traffic, and there are numerous footpaths across mine lease areas that also connect villages, grazing areas, and farming plots.

CGML has established a permanent, well-staffed Community Relations group charged with ongoing communications and public outreach functions. Local communities in the area of CGML’s operations are administered by a paramount tribal chief, and three other

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paramount chiefs are responsible for other nearby communities. CGML maintains an “open door” policy regarding stakeholder concerns, and actively evaluates and responds to request or information or specific complaints; records are maintained of all significant contacts and subsequent actions. CGML representatives regularly attend the quarterly council meetings held by each paramount chief. CGML has also established a “Community Consultative Committee” that meets regularly to discuss mining-related issues; stakeholder participants include local tribal chiefs or subchiefs, representatives from the paramount chiefs, the police, the Bureau of National Investigation, and elected representatives from the district assembly. In addition, CGML has established development committees for the three communities in and immediately adjacent to the CGML’s leasehold.

Public concerns are reportedly related mostly to the air and noise impacts from blasting operations, and there have been some concerns expressed over the air quality at the mill due to the erroneous assumption that CGML operates an ore roaster (which has apparently been an issue at other mines). CGML has nevertheless taken a proactive approach to disseminating information about the use of cyanide; see 9.2 below.

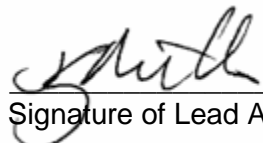
**9.2 Initiate dialogue describing cyanide management procedures and responsively address identified concerns.**

The operation is:                   ■ in full compliance  
  in substantial compliance  
  not in compliance...with Standard of Practice 9.2.

***Describe the basis for the Finding/Deficiencies Identified:***

CGML has an extensive community outreach program which includes training in cyanide awareness and first response in the event of a cyanide incident such as a transportation spill occurring near a community. In 2011, CGML conducted an extensive catchment communities cyanide awareness campaign in the communities of Atoki, Kwakrom, Sorano, Chirano, Ntrentreso, Lawerkrom, New Obayeko, and Paboase. This was followed by a more focused campaign to engage medical staff at established community clinics in Chirano, Subri, Sefwi Bekwai, and Sefwi Wiawso. Another informational meeting was conducted at the Bibiani-Ahwiaso-Bekwai District Assembly. Meeting records and supporting photographs indicate significant attendance and interest, as well as the distribution of posters and handout materials on the cyanide awareness and emergency response. Since most CGML employees are residents of local communities, it may also be inferred that general information on management of cyanide received in employee training programs makes its way in to the communities via discussions with family and friends. Also, in addition to its regular hiring practices, CGML has created a

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program in which local villagers are hired for a year, in an effort to create a larger labor pool, and to extend the economic benefits of CGML operations more widely into the local communities; the training that participants in this program receive on cyanide management will also be introduced to their home communities.

**9.3 Make appropriate operational and environmental information regarding cyanide available to stakeholders.**

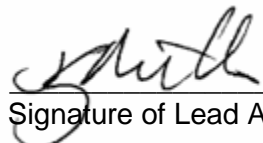
The operation is:           ■ in full compliance  
                                      in substantial compliance  
                                      not in compliance...with Standard of Practice 9.3.

***Describe the basis for the Finding/Deficiencies Identified:***

CGML has established a community relations program that provides multiple organized opportunities for local residents and officials to learn about the use of cyanide and to communicate issues or questions related to its use. Substantial written and visual information on cyanide awareness (e.g., PowerPoint presentations, written handouts, and posters) has been regularly shared with local and regional stakeholders, including villages immediately adjacent to mine operations, as well as potentially affected communities on multiple alternate access routes to the mine. Illiteracy is reportedly not a significant issue, but verbal presentations in community outreach campaigns are conducted in the common local dialect.

No health and safety exposures to cyanide have occurred that have resulted in hospitalizations or any fatalities. However, in the event such exposures were to occur, the CGML community relations program would require organized discussions of such incidents and any associated corrective actions via public meetings and/or focused, issue-specific meetings with local officials, traditional chiefs or elders, and other residents. Communications methods in these meetings would be expected to be similar to those used for general cyanide awareness discussions, i.e., PowerPoint presentations, written handouts, and posters. Affected communities would include the communities immediately adjacent to the mine site, as well as well selected regionally proximate communities located on or near alternative site access routes, within a radius of 3-4 km. Follow-on discussions of any such events would also be held with community officials via regularly scheduled meetings and *ad hoc* meetings of the Community Consultative Committee, as described in 9.1(1) above.

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Date



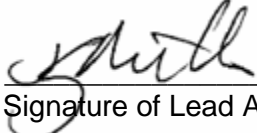
CGML did experience an accidental breach of a tailings pipeline in 2011; although the release was immediately contained within the mine's lease boundary, due to the presence of village residents within the lease boundary, potentially affected communities were immediately informed. Drinking water was supplied by truck until water quality sampling could be performed and results reviewed to ensure that there was no impact to local water supplies. If other releases were to occur in future, the community relations program would require organized discussion of such incidents and any associated corrective actions with the local residents and community officials via regularly scheduled meetings and *ad hoc* meetings of the Community Consultative Committee, as previously described.

The 2011 release did not present a significant adverse effect to health or the environment, but was immediately reported to the affected community, governmental officials, as well as to ICMI (via Kinross Corporate). If any releases posing significant adverse effect to health or the environment (or reporting pursuant to regulatory conditions or that caused permit limits to be exceeded) were to occur in future, CGML's community relations program would require immediate organized discussion of such incidents and any associated corrective actions with the local residents and community officials via regularly scheduled meetings and *ad hoc* meetings of the Community Consultative Committee.

Discussions with site personnel and Kinross corporate staff also confirm that CGML is participates in the annual "AKOBEN" environmental performance audit and rating program conducted by the Ghana Environmental Protection Agency (EPA). Review of the AKOBEN audit form indicates that any cyanide spills or exposure incidents would be captured in the audit process and would therefore be reflected in the site's AKOBEN score. Scores for all mines participating in the AKOBEN program are routinely published on the Ghana EPA website.

In addition, all cyanide exposure or releases would also be immediately reported to Kinross's Corporate Vice President, EHS pursuant to the requirements of the site's Emergency Response Plan and Kinross Corporates policy. Release or exposure data would also be required to be collected by CGML and reported to Kinross in monthly Key Performance Indicator reports. The data so reported are ultimately made publicly available under the Corporate Social Responsibility (CSR) section of the Kinross corporate website, as well as Environmental Responsibility and/or Health and Safety sections of Kinross's biannual CSR report.

Chirano  
Name of Mine

  
Signature of Lead Auditor

May 11, 2013  
Date