

# **SUMMARY AUDIT REPORT**

for the July 2008  
International Cyanide Management Code Audit



**Prepared for:**

Compañía Minera Maricunga (CMM)  
Maricunga District, Region III, Chile  
[a Kinross Gold Corporation Operation]

**Submitted to:**

**International Cyanide Management Institute**  
1200 "G" Street NW, Suite 800  
Washington, D.C. 20005

**FINAL**

**17 February 2009**

**GEOENGINEERS** 

**GeoEngineers, Inc.**  
600 Stewart St., Suite 1700  
Seattle, Washington 98101  
[www.geoengineers.com](http://www.geoengineers.com)

## SUMMARY AUDIT REPORT

**Name of Mine:** Maricunga (a.k.a. Refugio) Mine

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

**Name of Mine Operator:** Compañía Minera Maricunga

**Name of Responsible Manager:** Sr. Ricardo Maturana, General Manager

**Address:** Compañía Minera Maricunga  
Las Heras 283, Copiapó  
III Región de Atacama País  
Chile

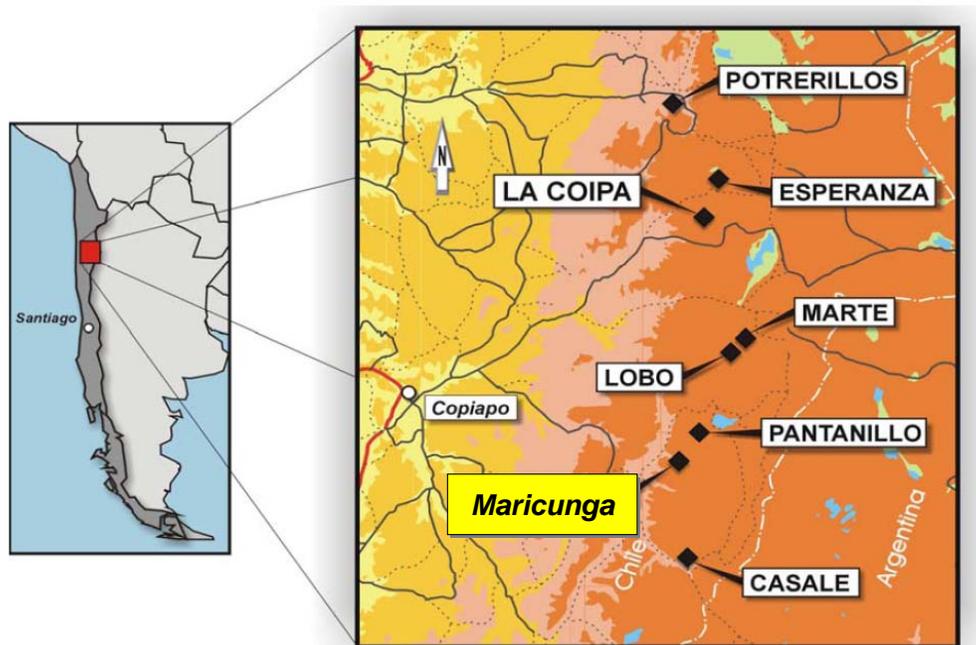
**Telephone:** + 56 52 528000

**Fax:** + 56 52 240199

**E-mail:** ricardo.maturana@maricunga.ci

### Location detail and description of operation:

Compañía Minera Maricunga (CMM) operates the Maricunga heap leach gold mine, located in the Maricunga gold belt, approximately 120 km due east of the city of Copiapó, in Region III of northern Chile.



CMM is a Chilean company, wholly owned by Kinross Gold Corporation since its acquisition of Bema Gold Corporation in 2007. Formerly known as the Refugio mine, CMM's Maricunga operations are located at elevations between 4,200 and 4,500 meters above mean sea level. First gold was produced in 1996. The mine operated until 2001, when it was placed in standby mode due to a downturn in gold prices. The mine was reopened in 2004, and mining is now conducted in three open pits. Total employment at the time of the audit was approximately 300; at any given time, approximately 70 workers are housed at a nearby camp, located at an elevation 1500 m below the major areas of mine operations.

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

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

with the *International Cyanide Management Code*.

**Audit Company:**    **GeoEngineers, Inc.**  
600 Stewart St., Suite 1700  
Seattle, Washington 98101  
USA

**Audit Team Leader:** John Lambert  
e-mail: [jlambert@geoengineers.com](mailto:jlambert@geoengineers.com)

**Names and Signatures of other Auditors**

Mark Montoya      

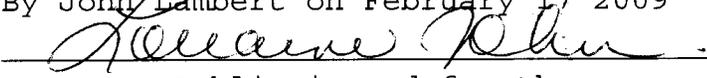
Glenn Mills        

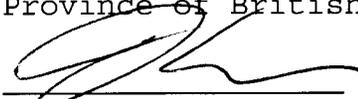
**Date(s) of Audit:** July 28 to August 1, 2008

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 Summary 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.

**LORRAINE E. JOHN**  
Notary Public  
#201 1401 Lonsdale Avenue  
North Vancouver, B.C. V7M 2H9  
Phone: (604) 985-4150

Maricunga Mine  
Name of Mine

Signed before me at North Vancouver B.C.  
By John Lambert on February 17 2009  
  
A Notary Public in and for the  
Province of British Columbia

  
Signature of Lead Auditor

17 February 2009  
Date

## 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:*

Records indicate that CMM contracts exclusively with DuPont Chile S.A. (DuPont) to provide sodium cyanide to the Maricunga site, in solid briquette form. CMM's current contract includes a supplier commitment to achieving and maintaining compliance with the International Cyanide Management Code (ICMC). All cyanide used by CMM is made in DuPont's Memphis, Tennessee, USA production facility. Examination of the ICMC website and evaluation of certification reports provided to CMM by DuPont confirm the current certification status of this facility.

### **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:*

Maricunga Mine  
Name of Mine

  
Signature of Lead Auditor

17 February 2009  
Date

DuPont's transportation contractor is Transportes Veresay Limitada (Veresay); Veresay delivers cyanide to a dedicated storage building adjacent to the CMM Adsorption, Desorption, and Recovery (ADR) Plant building. CMM takes formal ownership of the cyanide at the point the plywood containers are removed from the intermodal containers on the delivery truck. DuPont Chile S.A. and its parent company (E.I. DuPont de Nemours and Company, Wilmington, DE, USA) are clearly responsible for all transport and all in-transit spill response actions, except that CMM personnel are responsible for unloading and storing cyanide pending mixing and use. CMM has also cooperated with Veresay in the development of the Veresay emergency preparedness and response plan, and has agreed to assist Veresay in the response and cleanup of any spills of cyanide briquettes destined for CMM that may occur in the upper portions of the access road to the mine. Such cooperation may, in certain circumstances, include the voluntary acceptance and processing of cyanide residue from a DuPont spill response cleanup activity.

The current contract with DuPont includes a commitment that all DuPont subcontractors will also be compliance with the ICMC, and DuPont has provided documentation describing and attesting to ICMC compliance for the entire supply chain, including railways, ports, and ocean transport. DuPont has identified all transportation subcontractors in correspondence to Kinross/CMM, and has provided due-diligence or ICMC-equivalent non-certification audit reports for each link in the transportation chain. All audit reports have been approved by an ICMI-approved ICMC Lead Auditor.

**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:*

DuPont has assumed contractual responsibility for ensuring that all cyanide transportation links involve ICMC-certified firms, or firms who have undergone due-diligence or ICMC-equivalent non-certification audits by ICMI-approved ICMC auditors. DuPont has provided due-diligence or ICMC-equivalent non-certification audit reports that verified emergency response capabilities for each link in the transportation chain (i.e., railways, ports, and truck transport), as follows:

Maricunga Mine  
Name of Mine

  
Signature of Lead Auditor

17 February 2009  
Date

- Cyanide Code Transportation Verification (ICMC-Equivalent Non-Certification) Audit, Intermodal Cartage Co., May & August, 2007;
- Cyanide Code Transportation Due Diligence Verification Audit, Canadian National Railway, May 2007;
- Cyanide Code Transportation Due Diligence Verification Audit, Union Pacific Railroad, May 2007;
- Cyanide Code Transportation Due Diligence Verification Audit, Mediterranean Shipping Company, May 2007 (this report also includes a due diligence assessment that addresses the Ports of New Orleans and Valparaiso); and
- Cyanide Code Transportation Verification (ICMC-Equivalent Non-Certification) Audit, DuPont Chile and Transportes Verasay Limitada, July 2007.

All non-certification audits were conducted by an auditor or auditors meeting ICMI criteria; due diligence investigations were conducted and/or reviewed by an auditor or auditors meeting ICMI criteria. All audit reports have been approved by an ICMI-approved ICMC Lead Auditor, and all audits have been conducted within the previous 3 years.

**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:*

CMM has completed construction of a new dedicated cyanide storage facility adjacent to the ADR Plant, consisting of a steel-framed and -sheathed building with a bermed concrete floor and a dedicated, floor-level unloading bay that permits level access to the shipping container by a dedicated, fully enclosed forklift. The passageway between the storage building and the mixing area of the ADR Plant is fully paved. The new storage facility design had been prepared by a licensed engineer, and contained critical features

Maricunga Mine  
 Name of Mine

  
 Signature of Lead Auditor

17 February 2009  
 Date

(e.g., weather protection, multiple safety exits, ventilation, bermed concrete flooring, securable doorways, ample room passageways for forklift operation, and appropriate signage) recommended by the cyanide producer.

Cyanide is received exclusively in solid briquette form, as previously noted, and within the dedicated facility, is stored the nylon supersacks, polyethylene moisture barrier, and palletized plywood overpacks that it was shipped in. The cyanide unloading bay is adjacent to the storage facility, which itself is located near the southern perimeter of the heap leach area, well inside the site security boundary. The mine is located in an extremely remote, arid, high-altitude location, many kilometers away from external stakeholder dwellings or grazing areas, and approximately 2 kilometers from the mine camp. There is no rainfall; several snowfalls may occur in winter, but temperature and humidity conditions are such that most of the snow sublimates. Small amounts of melt water have been observed near the ADR Plant in spring, but there is no appreciable ponding or surface water flow.

The cyanide mixing tank in the ADR Plant has a high-level alarm and indicator near the mixing operator's work station. Cyanide mixing and storage tanks are located inside the ADR Plant, in a bermed area sloped towards concrete sumps. Secondary containments for the cyanide storage and mixing tanks are constructed of coated concrete.

**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:*

Cyanide is purchased exclusively in 1- ton nylon supersacks, overpacked in polyethylene bags (moisture barriers) and cardboard-lined plywood pallet boxes. Observation of sack-splitting operations indicates that supersacks are routinely triple- rinsed after splitting operations, using a semi-automatic washing device installed above the splitter. Rinsed sacks and wooden packaging materials are burned in a permitted landfill area; no residual materials are returned to the cyanide supplier.

CMM has prepared a suite of operational procedures and supplemental cyanide management procedures that address the briquette mixing operations; transfer of prepared solution; receiving, handling, and storage of briquettes (containers may not be stacked greater than three high); and spill response and cleanup. Mixing operations are

Maricunga Mine  
Name of Mine

  
Signature of Lead Auditor

17 February 2009  
Date

performed by a two-man team in full Personal Protective Equipment (PPE); during sack-splitting, one team member observes while the other performs the splitting operation.

**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:*

CMM has developed written management and operating plans and procedures for all site cyanide facilities, which include the cyanide storage area discussed in Section 3.1, Heap Leach Facility, ADR Plant, Process Solution Ponds [Pregnant Leach Solution (PLS) Pond and Recirculation (Barren Solution) Pond], an emergency pond, and related piping, tanks, solution conveyance channels and stormwater diversion structures. These plans and procedures address the safe operation of all cyanide management facilities, and are kept in the ADR Plant as well as on the Kinross intranet. They are organized as “General Procedures” and “Specific Procedures.” General Procedures are divided among four primary phases of cyanide management (Cyanide Solution Preparation; Leaching and Solution Ponds; Adsorption – Desorption; and Electro – Obtainment). These phases are illustrated on a general process flowsheet. In addition, CMM has developed suites of task-specific, cyanide-related operational work procedures as well as multiple emergency plans related to the cyanide-related responses. CMM has also developed additional procedures specifically related to each Principle of the ICMC.

A *Plant Regulations* document provides the Safety Policy, SIPI Response, General Emergency Response Plan (ERP), and General Procedures for Plant Process, Material Handling, PPE, and Storage and Handling of Reagents used in the ADR Process, and identifies risks and control measures for individual procedures for each handling task.

A General Procedure establishes the criteria for identifying the parameters and assumptions on which the designs for the cyanide facilities were based. The design of the heap leach pad and solution ponds are documented in a series of design reports from the responsible contractor. These documents further specify the assumptions and parameters

Maricunga Mine  
Name of Mine

  
Signature of Lead Auditor

17 February 2009  
Date

on which the designs for these facilities were based. The regulatory requirements for monitoring water quality are provided in the Environmental Impact Study prepared for the project and the corresponding CMM Environmental Monitoring Program plan. CMM was not able to provide documentation regarding the design of the ADR Plant, but has conducted a detailed engineering study of the ADR Plant and undertaken specific corrective actions and infrastructure improvements as recommended by the study.

Another General Procedure establishes the norms and procedures for operating the leach pads and solution ponds. The procedure is also applicable to installations involving cyanide solutions flow between the pads and the ponds (e.g., channels, pipelines, pumps) that could represent potential sources of discharges or leaks. An additional General Procedure also provides contingency procedures in situations in which an alteration in the water equilibrium or the installations is produced, in cases where differences with regard to the design parameters are observed, and during deviations of the environmental legal compliance or with the operating procedures if necessary during temporary closure. Another General Procedure provides methods for managing the process solutions in the heap leach pad and solution ponds to retain the design storage capacities. The pond system is designed to contain the sum of the maximum operating volumes (including peak fluctuations), draindown from the heap (24 hours), and the 100-yr/24-hour storm event. Minimum and maximum operating levels were set to prevent generation of vortices during pumping and to accommodate the volume of a 100-yr/24-hour storm and 24 hr power outage. The procedure requires operators to ensure pond levels stay within prescribed operating levels, which are identified on an Excel spreadsheet.

CMM maintenance and operations personnel conduct daily visual inspections. Inspection observations are recorded in daily logbooks kept at the ADR Plant. These inspections include tanks, pipes, leach pads, and ponds. The ponds and lined conveyance channels are inspected daily (twice per shift) by two dedicated inspectors. A daily report is generated listing the details of the leaching and processing parameters, which includes cyanide concentrations, pH levels, solution levels and flow rates in the PLS Pond and Recirculation Pond, and any anomalies or pertinent observations. Both solution ponds have level markings on the liner along their side slopes. Additionally, the PLS Pond has a continuous solution level sensor. CMM also performs daily inspections of the pumping system at the solution ponds (twice per shift). The inspections include checks of the flow meter, pressure at the outlet; return valve amperage, general control of the solution and state of the pumps, and parameters to control the solution level in the ponds with pumping to the heap and ADR Plant. Any observed anomalies and recommended remedial actions are reported, with records retained on site.

CMM uses Datastream7i<sup>®</sup> (D7i) software to schedule and track maintenance activities. The D7i system contains a listing of all equipment and accompanying maintenance plans. Maintenance activities are tracked by manual and automatic work orders. The latter program specifies maintenance or work items to be accomplished on a routine schedule.

Maricunga Mine  
Name of Mine

  
Signature of Lead Auditor

17 February 2009  
Date

Maintenance planners receive the work orders, set priorities and assign work to either the Electrical or General Services maintenance department. Work orders for cyanide-related facilities are assigned top priority. The personnel assigned to perform the job receive a hard copy of the work order, which includes a written procedure of how the maintenance work is to be completed. The worker enters the work completed and any observations on a hard copy, which is forwarded to the worker's supervisor for review and D7i system update. A daily schedule with the status of work orders is generated, and daily meetings are conducted to communicate the schedule and to make any necessary adjustments.

Another General Procedure addresses reviewing, communicating and implementing changes in cyanide-related operating practices. This procedure establishes a method to evaluate and implement moderate and significant changes performed in cyanide-related processes, in order to protect people and the environment from the associated risks.

Upper management approves the significant changes, supported in the reports provided by the technical departments. Technical departments verify the environmental compliance of each area, corporate compliance, legal, internal and other requirements. Supervisors are responsible for assuring that changes are executed according to plan, and for providing support to new projects, products or services, as well as modifications. Employees and contractors have the responsibility to identify the changes and to implement the requirements of the procedure. Changes are communicated through daily meetings prior to each shift and via the Kinross intranet.

CMM also has a procedure for administering general operational changes, as well as contingency procedures for management of cyanide in upset conditions. The latter procedure describes measures for protecting life and the property if a potential contingency develops in the management of the cyanide, such as situations in which an alteration in the water equilibrium of the installations is produced, differences with regard to the design are observed, deviations of environmental legal compliance or with the operating procedures occur, and if temporary cessation or closure of operations is required.

The procedure provides guidance for identifying and reporting abnormal conditions during routine activities of the operation. These include contingencies caused by natural conditions (e.g., extreme snowmelt or snowstorm events, earthquakes, or prolonged freezing temperatures), contingencies in operating systems (e.g., damaged systems, power failures, increases in leak rates, abrupt leaks, breaks or obstruction in pipes, unusual instrument readings, or fire) and contingencies caused by cessation of operations or closure. Contingency Plans are kept at the ADR Plant and maintained on the Kinross intranet. This procedure also references the relevant emergency response plans for addressing certain contingencies. The identification of an unexpected leak will be investigated, monitored and evaluated to determine the appropriate control.

Maricunga Mine  
Name of Mine

  
Signature of Lead Auditor

17 February 2009  
Date

The steps adopted for controlling the impact of the fire on cyanide facilities are also procedurally controlled; a general cyanide ERP and other specific emergency control plans address other contingency responses in response to potential cyanide releases.

CMM conducts inspections on a daily/per shift frequency sufficient to ensure that the facilities are functioning within applicable design parameters. A daily report is generated listing the details of the leaching and processing parameters, which includes cyanide concentrations, pH levels, solution levels and flow rates in the PLS Pond and Recirculation Pond, and any anomalies or pertinent observations.

The preventive maintenance program also assures that the cyanide facilities are operating within design parameters. Daily visual inspections of tanks are made for signs of corrosion and leakage. (It should be noted that CMM recently commissioned a contractor to provide a thorough inspection of all the tanks, piping, valves and fittings within the ADR Plant; a report has been submitted presenting findings, recommendations, and an improvement schedule.) CMM also performs daily visual inspections of: secondary containments, including concrete structures, lined channels and ponds; leak detection and collection systems at the leach pads and ponds; pipelines, pumps and valves; the pond systems, lined secondary containment channels and surface water diversions; and the heap leach facility. Work orders are submitted to the maintenance department if an issue is identified requiring corrective action. The work orders document the person requesting the repair, and the nature and date of corrective actions.

A generating station in the Copiapó area supplies 13 Megawatts (MW) of power to the Maricunga site via an overhead transmission line. The power requirement for the entire CMM operation is 12 MW. The operation has lost power only twice since late 2005, both times under extreme weather conditions, and both times for only a short duration (less than half a day). Five onsite emergency backup generators capable of supplying 8 MW are located onsite that are capable of powering all onsite pumps, lights, and camp facilities. The ADR process requires 2.5 MW maximum, which includes the plant facilities and pumping. Additionally, the solution pond storage capacities incorporate 24 hours of draindown volume. The emergency generators are inspected and test-started daily, and are also included in the CMM Preventative Maintenance program for regular oil changes and other maintenance.

Maricunga Mine  
Name of Mine

  
Signature of Lead Auditor

17 February 2009  
Date

**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:*

This Section is not applicable, as Maricunga does not utilize milling technology.

**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:*

CMM has developed a comprehensive water balance model, using Microsoft Excel software, which tracks water flow throughout the engineered water management structures, including the leach pad and pond system. The Metallurgy Department prepares a Water Balance Report on a monthly basis, presenting a comparison between the predicted and actual results for that month. Kinross has established a company-wide policy to manage all site water balances such that the variance between planned and actual results is kept within 30 percent.

The model is designed to analyze the retention capacity requirements for the solution pond system. Multiple scenarios with varying conditions can also be evaluated. The model incorporates the following inflows and outflows: precipitation; leach pad irrigation areas and rates; freshwater makeup; evaporation; ore moisture content; and water retained in the drained pad material. Additionally, the model incorporates the ore production schedule. The process circuit at Maricunga functions as a closed circuit with zero discharge, and solution losses (evaporation and solution retained by the ore) exceed the inflows.

The water balance model also evaluates the effects of potential upset events, such as the loss of the main pump, loss of a primary header, loss of energy, thawing of all accumulated snow, and/or a 100-year, 24-hour storm event (although storm events of any magnitude can be entered into the model). The water balance model also considers the

Maricunga Mine  
Name of Mine

  
Signature of Lead Auditor

17 February 2009  
Date

rate at which solutions are applied to active areas of the heap leach pad, as well as the solution pond system design criteria for containment [e.g., maximum operating volumes, including peak fluctuations; draindown from the heap (24 hours); and 100-yr/24-hour storm event].

The pond system was sized using climatological parameters based on data gathered over 30 years, from 1931 to 1960. CMM continues to collect onsite meteorological data (wind velocity and direction, temperature, relative humidity, solar radiation, barometric pressure and snow accumulation) from an onsite station subject to the most severe wind and temperature conditions at the site. CMM uses data from this meteorological station to update and calibrate its water balance model on a monthly basis.

CMM's water management facilities are designed to minimize the quantity of contact water reporting to the pond system by intercepting any upgradient, non-contact stormwater runoff before it enters the heap leach facility or combines with contact water. Throughout the construction of the facility, temporary stormwater diversions have functioned to collect non-contact water separately. Currently, a diversion channel formed by the access road on the north side of the leach pad diverts non-contact water around the leach pad facility. Additionally, the leach pad has a large perimeter berm to contain and convey precipitation falling within the lined area of the heap to the pond system and to prevent precipitation falling outside the lined area from reporting to the pond system. Therefore, the water balance model only accounts for precipitation falling onto the lined area of the heap leach facility.

Snowmelt is the primary precipitation component of the Maricunga water balance model. Therefore, CMM specifically evaluates the effects of potential freezing and thawing conditions on the accumulation of precipitation within the facility. Over the past two years, CMM has measured snow accumulation via a sensor at the onsite meteorological station. On a monthly basis, the water balance model specifically calculates the excess pond capacity that would be available if all the accumulated snow melted. The solution losses accounted for in the water balance model include heap and pond evaporation and moisture retention in the heap. Additionally, the solution pond capacities incorporate 24 hours of draindown volume.

The procedures noted previously provide the methods for managing the process solutions in the heap leach pad and solution ponds to retain the design storage capacities. CMM performs daily inspections of the pumping system at the solution ponds. Daily inspection reports are used to monitor the status of water management facilities and manage the solutions to prevent overtopping of ponds and impoundments and unplanned discharge of cyanide solutions to the environment. Pond levels data is used to generate a monthly Water Balance Report that compares the planned (predicted) results and the actual (real time) results for that month.

Maricunga Mine  
Name of Mine

  
Signature of Lead Auditor

17 February 2009  
Date

The pond system includes the PLS Pond, Recirculation (Barren Solution) Pond, and an emergency pond. Without considering the additional volume available in the emergency pond, the pond system is designed to contain: maximum operating volumes, including peak fluctuations; draindown from the heap (24 hours); and the 100-yr/24-hour storm event (94 mm). CMM maintains the operating depths of the PLS and recirculation ponds based on the water balance and the operating constraints. The PLS Pond has a continuous solution level sensor.

As mining has progressed, the lined area of the leach pad has expanded; CMM has constructed two emergency ponds (Pond 1 and Pond 2) to provide additional temporary storage capacity, as necessary during extreme storm events or upset conditions. Emergency Pond 1 is no longer required and has been disconnected from the drainage system. The entire pond system (PLS pond, recirculation pond and Emergency Pond 2) is interconnected. As the PLS and Recirculation ponds reach their full capacity, excess solution is conveyed to Emergency Pond 2. Any solution collected in the emergency pond is pumped back to the Recirculation Pond as capacity becomes available. Normally, the emergency pond remains dry, with the exception of limited quantities of snowmelt.

#### **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 PLS and Recirculation ponds are the only facilities at the Maricunga site that contain open cyanide-bearing solutions, and contain concentration of solution greater than 50 milligrams per liter (mg/l) WAD cyanide. Solutions from the heap and ADR Plant are conveyed to the ponds via pipelines within lined secondary containment channels, and drip emitters are buried in the heap to prevent freezing and surface ponding. A six-foot, chain-link fence is installed around the PLS and Recirculation ponds to restrict access by terrestrial wildlife or stray livestock. In the past, CMM has installed netting over the solution ponds to restrict access of birds. However, due to the size of the ponds and the onsite snow accumulation and strong winds, the netting proved problematic as it could not be adequately secured and maintained to withstand the weather conditions. CMM therefore commissioned experts to study the bird species in the area and to recommend alternate mitigation measures. An avian ecologist with specific expertise in Chilean birds identified six species of birds most likely to be attracted to the solution ponds, and a bird management specialist provided recommendations for appropriate deterrent systems.

Maricunga Mine  
Name of Mine

  
Signature of Lead Auditor

17 February 2009  
Date

Based on these recommendations, the system that CMM selected consists of a combination of the following components:

- Wireline Grid System – a system of parallel lines (heavy, high-visibility fishing line) strung over the ponds, spaced at intervals of approximately 3 meters, to interfere with aquatic birds attempting to land on the ponds, creating a psychological barrier for deterring aquatic birds from entering the ponds;
- Acoustic Deterrents – bioacoustics such as recorded distress and alarm calls of species to be dispersed; and
- Pyrotechnics – devices that can be fired from 15mm “starter” pistols, standard 12-gauge shotguns, or modified flare pistols, which produce a variety of loud sounds and explosions, bright flashes of light, and/or trailing smoke.

The wireline grid system is the primary deterrent in the program and is considered a passive technique, as it will deter birds without the constant intervention of mine personnel. The bioacoustics and pyrotechnics are considered active techniques, requiring initiation by mine personnel, and are intended to supplement and enhance the wireline grid system. Additionally, the natural design of the ponds (i.e., steep side slopes and synthetic liner) and the natural environment at Maricunga (absence of vegetation) make for unattractive habitat and significantly limit bird interest and access.

To supplement the above listed deterrent measures, CMM has developed a monitoring program to assess the success and progress of the management program. A procedure has been established that details deterrent program management and monitoring requirements, and operators have completed training. In accordance with this procedure, if a bird is spotted that may not be sufficiently deterred by the gridline system, the bio-acoustic device may be activated by an operator through one of a number of activation buttons located around the plant and ponds. In addition, the Environmental Department truck is equipped with a bio-acoustic device and speakers. Furthermore, operators have the additional option of using the pyrotechnic device, if in a given situation other methods do not appear to have been effective.

CMM fully implemented the system in October 2008 and will continue to adjust protective measures as necessary for all affected species. A detailed bird survey was initiated during the spring migration in (October 2008) to enhance CMM’s understanding of species present and assess whether system refinements are necessary. Additionally, bird observation reports will be reviewed on a monthly basis by the avian ecologist. Preliminary data from the spring migration survey indicated that approximately one bird is sighted each day, typically well above and away from the pond areas.

Maricunga Mine  
Name of Mine

  
Signature of Lead Auditor

17 February 2009  
Date

**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 process circuit at Maricunga functions as a closed circuit with zero direct discharges of cyanide solutions to surface waters. CMM monitors surface water quality to ensure that indirect discharges are not occurring. The surface water monitoring program includes regular downgradient sampling of two natural springs and surface flow at two locations. The applicable regulatory surface water standard for Maricunga is 0.2 mg/l Total Cyanide for discharge to the "Bodies of River Water" classification. The primary surface water usage downgradient of the facility is defined as agricultural. Surface water quality data indicate cyanide concentrations are below the 0.05 mg/l detection limit used in the analysis; no impact to beneficial use has therefore occurred as a result of cyanide operations.

**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:*

CMM has implemented solution management and seepage control systems to protect groundwater below and downgradient of the operation. The Heap Leach Facility (HLF) and pond facilities are constructed with liners to minimize seepage and protect beneficial uses, and the solution ponds employ leak detection systems. Piping related to the heap leach facility is contained within lined channels. The channels provide secondary containment to the piping. The ADR Plant is constructed with a concrete floor and berms or stem walls, which provide adequate spill containment for the tanks located within the plant. Additionally CMM monitors groundwater on a regular basis, which is over 150 meters deep beneath the leach pad.

The HLF has been constructed as a conventional pad with an external PLS Pond and Recirculation (Barren Solution) Pond. The HLF design is documented in a series of reports generated by the responsible design contractor. Phase I of the leach pad consists

Maricunga Mine  
Name of Mine

  
Signature of Lead Auditor

17 February 2009  
Date

of a single, 40-mil polyvinyl chloride (PVC) geosynthetic liner overlying prepared subgrade with a solution collection pipework to maintain solution containment and minimize head on the liner. Ultraviolet light-resistant PVC liner is used around the pad perimeter, where the liner is exposed to sunlight.

The Phase II liner system consists of single, 40-mil Very Flexible Polyethylene (VFPE) and Linear Low Density Polyethylene (LLDPE) synthetic geomembranes. Phase III is constructed with a single, 60-mil smooth VFPE synthetic liner with HDPE for the exposed berms, and an integrated solution collection pipe network system. The Phase III pad is hydraulically isolated from the Phase I and Phase II pads, allowing the operation to re-leach and/or rinse the leached ore on Phases I and II while continuing to load and leach the Phase III pad (and future Phases). It also provides the flexibility to close Phases I and II prior to the end of the mine life. The liner design for Phase IV (currently under construction) consists of 60-mil LLDPE and HDPE geomembrane.

The pad will ultimately contain 5 phases. Each phase consists of multiple cells divided by internal berms. Process solutions are conveyed to in-pad sumps for transfer to the PLS Pond via HDPE pipes within lined channels. Storm flows which cannot be transmitted through the dedicated pipe network exit the pad through two 36" HDPE storm overflow pipes which are directed to a lined pipe trench and subsequently to the storm overflow channel which interconnects with the Recirculation Pond.

The process ponds (i.e., the PLS and Recirculation ponds) are double-lined with leak detection devices installed. The pond liners consist of a primary 60 mil HDPE overlying an HDPE geonet, and a 30-mil Very Low Density Polyethylene (VLDPE) secondary liner. The solution ponds and Emergency Pond No. 2 are interconnected via HDPE pipe culverts. Normally, the emergency pond remains dry, with the exception of water accumulating from snowmelt.

CMM maintenance and operations personnel conduct daily visual inspections of the tanks, pipes, leach pads, ponds, and lined conveyance channels. Any observed anomalies and recommended remedial actions are recorded and reported.

CMM also monitors two groundwater wells downgradient of the mine site. The numerical standard applied for groundwater protection is 0.20 mg/l Total Cyanide. The use of groundwater below or downgradient of the facility is defined as agricultural. Groundwater monitoring data demonstrate that the operation has not exceeded 0.20 mg/l Total Cyanide at the groundwater compliance points; all results reported for Total Cyanide during the reviewed sample were below the detection limit of 0.05 mg/l. It may be concluded that CMM has not caused cyanide concentrations in groundwater to rise above levels protective of the beneficial use.

Maricunga Mine  
Name of Mine

  
Signature of Lead Auditor

17 February 2009  
Date

It should also be noted that CMM is a surface mining operation, does not employ milling processes, and therefore does not use mill tailings as underground backfill.

**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:*

CMM has implemented spill prevention and containment measures for the ADR Plant and associated mixing and storage tanks. All cyanide process tanks and pipelines are constructed with materials compatible with cyanide and high pH solutions. Additionally, an extensive engineering analysis, maintenance, and improvement program has been completed of the ADR Plant and Train C circuit. The program included verification of the tank sizes and the available secondary containment for each, inspection and repair of tank bottoms and piping system components, redesign and replacement of existing tank manholes, and placement of new signage and recertification plaques on all tanks. CMM subsequently implemented the corrective actions identified in the analysis to rectify all identified secondary containment issues, and to ensure that secondary containments are properly sized.

The ADR Plant containment incorporates concrete floors and automated pumps with level controls within the individual concrete containments to pump collected solutions back into the process circuit (solution ponds). The containments are constructed of cast-in-place reinforced concrete. The ADR Plant is provided with adequate spill containment for the tanks located within the plant. The cyanide storage tank is isolated from the rest of the ADR Plant building. The tank is situated within its own concrete containment, which is lined with geomembrane. A separate building contains another series of carbon-in-leach (CIL) columns (Train C circuit) with appropriate spill containment provisions.

Sodium cyanide is received only in solid briquette form, in one-ton nylon supersacks overpacked in polyethylene bags and cardboard-lined plywood pallet boxes. As noted in Section 3.1, cyanide is unloaded and stored in a newly constructed, dedicated steel storage building near the ADR Plant.

CMM has automated pumps within collection sumps in the containment areas to remove cyanide solution and return it to the process circuits. The operating plan provides contingency measures for neutralization and disposal of solution collected in secondary containments. All cyanide process tanks are provided with secondary containment, and

Maricunga Mine  
Name of Mine

  
Signature of Lead Auditor

17 February 2009  
Date

pipelines have been constructed with spill prevention and containment measures. Pipelines not within the leach pad or the ADR Plant containments are constructed within HDPE-lined conveyance channels.

Special protection requirements are not applicable, as the process pipelines at Maricunga have secondary containment within HDPE-lined conveyance channels. Based on field investigations, interviews, and plan reviews, CMM does not have any perennial or ephemeral surface water bodies that require special protection needs for pipelines in addition to the secondary containment measures already taken.

**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:*

CMM implemented quality control and quality assurance (QA/QC) programs during construction of the heap leach pad and process solution ponds. The QA/QC documentation covers the necessary components of the PLS Pond, Recirculation Pond, Phases I through IV of the heap leach pad and the associated solution collection and recovery systems. It provides documentation for the earthworks, geomembrane, solution collection pipes and liner cover material for the pads, including materials sampling and testing (performance tests) and related observations.

Quality Control/Quality Assurance (QA/QC) records were not available for the ADR Plant; and the Train C CIL circuit facility. In 2008, CMM retained a qualified consultant to perform onsite engineering evaluations of the acceptability of the ADR Plant and Train C facilities relative to ICMC requirements. The evaluations followed a defined inspection protocol, including visual inspections, dimensional measurements and material testing. Tests performed included, ultrasound testing, thickness measurements, liquid penetrant testing, atmospheric hydrostatic testing, air-tightness of reinforcement testing, material certifications, and welding procedure specifications and qualifications.

For each of the tanks and related equipment inspected in the ADR Plant, the report identified the equipment, documents observations and equipment characteristics (e.g., tank capacities, material, and dimensions), provided sketches of the dimensions and welds, noted if secondary containment was provided, and described observed nonconformances with photographs. This review also included an evaluation of the five

Maricunga Mine  
Name of Mine

  
Signature of Lead Auditor

17 February 2009  
Date

Train C carbon columns including capacities, materials, construction, condition and integrity; an evaluation of the capacity and integrity of secondary containment for tanks; inspections of piping, connections and equipment; and an assessment of the general condition of the facilities.

CMM then commissioned a qualified contractor to complete the repairs and/or modifications to the ADR and Train C plant systems necessary to correct the observed nonconformances and to certify the integrity of the facility and its ability to operate in compliance with the ICMC and industry practices. On completion of the work, the consultant certified that the ADR Plant and Train C now meet the requirements of Part 3.1, 4.7 and 4.8 of the Cyanide Code and that the continued operation of the facilities within established parameters will protect against cyanide exposures and releases.

A qualified engineering consultant had also reviewed the design of Emergency Pond No. 2; construction QA/QC inspection had been completed and all inspection pickups corrected to the inspector's satisfaction.

#### **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:*

CMM has prepared and implemented written standard procedures for monitoring activities to evaluate the effects of cyanide use on wildlife, surface water and groundwater quality. CMM also provided documentation identifying the person at the University of Atacama responsible for developing the sampling and analytical protocol for water quality; this procedure specifies the sampling and analyses procedures for surface water and groundwater, including sample preservation, transport, contamination and quality control. Maricunga is a zero discharge facility and does not discharge process water. CMM monitors surface water and groundwater quality downgradient to the site to ensure that indirect discharges are not occurring. The General Procedure for cyanide monitoring specifies locations of sampling sites and schedule for sample events. The cyanide species to be analyzed are as noted in CMM's Environmental Impact Study.

The surface water monitoring program includes regular downgradient sampling of two natural springs and surface flow at two locations within a surface stream. The groundwater monitoring program includes regular sampling of two wells downgradient of the mine site; the General Procedure for cyanide monitoring provides the locations of the

Maricunga Mine  
Name of Mine

  
Signature of Lead Auditor

17 February 2009  
Date

monitoring points and monitoring, which is judged to be at frequencies adequate to characterize the surface water and groundwater quality as well as wildlife mortalities.

A Specific Procedure has been developed for monitoring and recording all wildlife mortality occurring on site; causes of death are classified as Type A – death caused by direct exposure to cyanide solutions stored in the ponds, irrigation zones of the heap, open channels, or poisoning with other dangerous chemical substances; or Type B – death caused by vehicles, equipment, natural or indeterminate causes without chemical contamination. Wildlife monitoring is continuous while employees are outside on mine property. Additionally, another Specific Procedure details the monitoring frequency of birds at the process solution ponds. The monitoring frequency varies from daily to twice per month, based on varying seasonal levels of bird activity.

**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 Practice 5.1.

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

Discussions with key personnel and evaluation of cyanide management documentation and records indicate that CMM is presently operating under both “physical” and “chemical” decommissioning. The “physical” plan has been approved, subject to the preparation and submittal of an expanded “chemical” decommissioning plan. Under Chilean regulations, the “chemical” decommissioning plan (which contains the provisions for closure of cyanide facilities) is technically not required to be approved until closure, but CMM had nevertheless submitted the plan for regulatory review early in mine life. The plan presents general or conceptual procedures that will be followed in closure; final procedures will not be prepared until the plan-level document is approved and the closure period is about to start. Current decommissioning goals will require 1) removal and, as necessary, detoxification of the ADR Plant-area buildings and equipment, with all rinseate routed back to the heap leach pads; 2) reduction of leachate volume in the heap mass through evaporation, followed by 3) treatment of pad effluent with hydrogen peroxide in the recirculation pond and redistribution over the entire area of

Maricunga Mine  
Name of Mine

  
Signature of Lead Auditor

17 February 2009  
Date

the leach pads, until pad effluent/seepage meets mandatory discharge standards. It may be noted that CMM's original closure design called for use of a seepage collection system and drain field in the final phases of closure, using the upper areas of the soil column downgradient of the pad for final attenuation of cyanide. Although technically acceptable in other national jurisdictions, and supported by column testing data, Chilean regulators have decided to require recirculation on the pads as a closed system until the effluent is below current Chilean discharge standards. A single updated and combined decommissioning plan that addresses all aspects of closure is therefore slated to be developed that will incorporate this interpretation.

Both the "physical" and "chemical" decommissioning plans that are currently in effect are written in a logical sequence that demonstrates the order in which planned actions will be conducted; the new combined decommissioning plan will reflect this same sort of organizational structure.

Regulations also require decommissioning plans to be updated to accommodate major changes in mine operations, changes in ore processing technology, regulatory changes, or other major actions. The procedural and scheduling or sequencing assumptions contained in the current "physical" and "chemical" decommissioning plans (and that will be continued in the new combined plan to be completed by December 2008) are also reflected in an Asset Obligation Retirement (AOR) plan. Submittal of up-to-date AOR plans is a Kinross corporate requirement, as it documents estimated decommissioning closure costs that form the basis of Kinross's financial reserve calculations. Kinross requires review of the AOR on at least an annual basis, or more often if necessary to accommodate significant changes in mine operations. The AOR is typically updated each December; planning is already in place to update the AOR in December 2008, in parallel with the final review and approval of the new combined decommissioning plan.

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

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

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

See Section 5.1; Kinross has established an AOR based on third-party closure costs and the technical contents of the current "chemical" and "physical" closures plans. The AOR is updated on at least an annual basis, in accordance with Kinross directives, or more often in response to major facility or operational changes.

Maricunga Mine  
Name of Mine

  
Signature of Lead Auditor

17 February 2009  
Date

Chilean regulations do not currently require a financial guarantee to address the cost of decommissioning and closure of cyanide facilities. However, Kinross has established a corporate “Internal Code for Self-Insurance of Decommissioning and Closure Liabilities” specifically to address the self-insurance/self-guarantee and financial strength provisions of the ICMC for Kinross properties in national jurisdictions that do not impose specific financial assurance requirements. This corporate code is based on the requirements of the U.S. Code of Federal Regulations 40 CFR 264. Evaluation of this document indicates that for properties such as CMM, Kinross will require that each property be able to demonstrate the existence of substantial assets to address cyanide facility decommissioning. As noted in the mathematical formulas presented in the code, all such properties are required to have reasonable ratios of assets to liabilities, net working capital significantly greater than the sum of all cyanide-related decommissioning activities (as represented in the periodically updated and independently audited ARO), a high level of tangible net worth, and assets substantially greater than the sum of all cyanide-related decommissioning activities. The Kinross code also requires an annual audit of the financial assurance figure by an independent financial auditor in accordance with the rules established by Section 9100 of the Canadian Institute of Chartered Accountants (CICA) Handbook. Records review indicates that a certified financial auditor from the audit firm KPMG was retained to perform this audit, and a signed report from KPMG was provided that acknowledges that Kinross’s method of calculating financial assurance reserves was an acceptable practice, and Kinross has the financial resources to implement the decommissioning plan using said practice.

**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:*

CMM has developed documented procedures for all operating tasks associated with the storage and handing of cyanide. In addition there are also general operating procedures that may be applicable to cyanide operations. Operating procedures are available that address cyanide delivery and unloading, cyanide mixing, equipment decontamination prior to maintenance, plant operations, and confined space entry. These procedures

Maricunga Mine  
Name of Mine

  
Signature of Lead Auditor

17 February 2009  
Date

describe risks associated with specific work tasks and the precautions and safety equipment required to safely complete the tasks.

In addition, there is an operating procedure for conducting a risk analysis prior to performing a non-routine operation or maintenance tasks. This is a formal, documented process that requires a review of tasks to be completed, evaluation of risk associated with these tasks, and selection of appropriate PPE, identification of operating procedures and review of other precautions to follow to ensure the work task is completed safely.

Each operating procedure identifies the personnel protective equipment required to safely do the job. Procedures also require appropriate pre-work emergency shower and eye wash checks, and note the location of cyanide emergency kits. In addition, an ARO must be completed for all non-routine job tasks. The ARO procedure includes a detailed pre-work check and assessment of PPE and other safety equipment requirements.

The Kinross EHS Management System also requires that EHS needs be identified and evaluated and control measures developed where necessary before a change is implemented. This requirement is implemented at CMM through another General Procedure, which defines three levels of change based on risk and financial thresholds. Proposals of moderate or significant change require review and approval by management in accordance with the procedure. The process includes review and approval by Environment and Loss Control management. The ARO procedure is followed for low-risk changes or where none routine operations or maintenance are performed. This procedure guides a worker through a risk evaluation and mitigation process for the task to be undertaken. The evaluation considers the potential risks, mitigation measures, appropriate PPE, applicable operating procedures, and other factors. Completed AROs are reviewed and approved by the responsible foreman prior to work commencing.

There are a number of opportunities for worker input in development of health and safety procedures, including daily meetings, a suggestion box in which workers can post suggestions, and a formal risk evaluation process that is required to be completed before performing a new work task. The ARO process requires the worker or work team for a proposed task to review the risks associated with task and to develop a plan to minimize risk. The completed ARO is reviewed by the foreman. Workers can refuse a work task or stop work if they consider the task to be unsafe.

CMM is also implementing a new work task monitoring process required by Chilean regulations whereby all workers will be trained as safety monitors. This training program is scheduled to be completed by December 2008. CMM also implemented a program as part of the health and safety management system to encourage workers to make suggestions for improving operations and EHS practices. The suggestion box is emptied monthly and suggestions are reviewed by the H&S superintendent and the EHS

Maricunga Mine  
Name of Mine

  
Signature of Lead Auditor

17 February 2009  
Date

committee; awards are given on a quarterly basis for suggestions that are implemented or proposed to be implemented.

**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:*

CMM has established a General Procedure focused on minimizing worker exposure to cyanide. The procedure discusses the necessity of maintaining high pH to avoid the formation of HCN. The procedure states that pH of high concentration cyanide solutions (e.g., mixing area) should have a minimum pH of 11.5 to 12.0 and that diluted solutions of cyanide (e.g., leach circuit) should have a minimum pH of 10.5 to 11.0. Procedures also state that pH must be checked before and during mixing to ensure that the solution does not drop below pH 11, and for NaOH to be added until solution is pH 12.

There are also four fixed ambient monitors in the ADR Plant located in areas where there is a significant risk of HCN generation. The monitors are set to alarm at 4.7 ppm. The alarm is audible and set at 120 to 140 dB. The alarms are calibrated and certified every two months by the alarm supplier. In addition, the alarm settings are verified weekly by maintenance through the use of a calibration gas, in accordance with another General Procedure.

A HCN alarm in the ADR Plant triggered during the audit, and the audit team was able to witness an actual response action. The plant was evacuated and then checked by personnel with self-contained breathing apparatus to determine the reason for the alarm and confirm when workers could safely re-enter the plant.

Areas that have been identified for possible exposure to cyanide are the cyanide mixing area, CIL columns (A and B) and the neutralization room. These areas are all monitored with fixed hydrogen cyanide gas monitoring units. Plant operators are also equipped with portable HCN monitors and anyone entering the plant must carry a respirator equipped with HCN and dust filters. It should also be noted that CMM has undertaken a robust respirator fit-testing program for all members of the workforce that may encounter cyanide processes. Records review and discussions with safety management staff indicate that new respirators that reflect the results of fit-testing have been ordered and will be permanently assigned to individual workers.

Maricunga Mine  
Name of Mine

  
Signature of Lead Auditor

17 February 2009  
Date

Stationary HCN monitoring equipment undergoes routine maintenance; all fixed monitors are calibrated by the equipment supplier every two months. Calibration of the fixed monitors is also verified internally on a weekly basis using a calibration gas supplied and certified by the equipment supplier. In addition to the fixed HCN monitors, operators also use personal HCN monitors when working in the plant or during cyanide mixing. The emergency response team also has personal gas monitors that include detection of HCN. CMM has just purchased seven new self-calibrating devices; two of these monitors were in use at the time of the audit, and the other five had been received.

Cyanide warning signage was observed outside the ADR Plant, on piping within the plant and in the cyanide mix area. Signs located outside the laboratory and beside the existing cyanide storage area also describe the hazards and response requirements in the event of cyanide exposure. In addition, there are boards located at the entrances to buildings that display the legal occupational exposure limits for parameters present in the workplace. These include regulatory limits to cyanide exposure. Other signage observed included PPE requirements, as well as prohibition of smoking.

Emergency shower and eyewash stations are located in strategic areas of the ADR Plant and pond area. Showers and eye wash stations are checked each shift change (i.e., weekly) for flow, condition and, for the portable eyewash units, percent full. The water supply for the plumbed showers/eyewashes is regulated at a pressure of 30 psi. All fire extinguishers in the cyanide use areas are the dry chemical type; they are inspected weekly and semi-annually by an external contractor.

Cyanide is stored in a recently constructed, dedicated steel building with a bermed concrete floor and covered unloading bay, as noted in Section 3.1. The storage building is placarded with appropriate warning signs. Plywood cyanide crates are stored with their original packing signage and labeling that include UN identification and MSDS information. The mix area and tanks also have cyanide warning signage. Within the plant cyanide piping is identified with cyanide and direction of flow labels. Appropriate signage to identify process solution flow direction and contents was also marked on the piping connecting the ADR Plant to the leach pad and process ponds; precautionary signage was also provided on the signboards near the process ponds, the entrance to the Train C building, and at several entrances to the ADR Plant.

MSDS and procedures for first aid response to cyanide emergencies are posted on the Kinross intranet. Signage at significant cyanide handling areas includes first aid and response direction in response to cyanide releases and exposure. Manuals containing hard copies of MSDSs are also located at strategic locations at the ADR Plant and laboratory. All employees who may come into contact with cyanide are also provided with a booklet detailing hazards associated with cyanide and appropriate first response procedures. All information is provided in Spanish, the first language at the mine.

Maricunga Mine  
Name of Mine

  
Signature of Lead Auditor

17 February 2009  
Date

CMM has an incident reporting and investigation procedure that covers all operations, including cyanide handling. All incidents must be investigated; the level of investigation depends on the severity of the incident. Results of investigations are communicated to workers through daily meetings or other means. The results may also lead to new training or modification of operating procedures.

### **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.

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

Shower and/or eye-wash facilities are located in or near areas where cyanide is handled. Trauma/Oxygen kits are located in seven areas of the site; each area is provided with a cupboard and temperature-controlled (i.e., monitored with a calibrated electronic temperature gauge) refrigerator which contain all the necessary elements to attend a person exposed with cyanide; these include antidotes and amyl nitrite, oxygen with respirator, and procedures for first aid in emergencies with cyanide.

The cupboard is clearly identified with the kit number and a site plan showing the location of other kits. A list of the contents of each kit is presented in a General Procedure. Although each kit contains antidote, specific instructions are provided to ensure that it is only administered by a trained nurse or medical professional. The kits are inspected at least monthly. The antidote and amyl nitrate ampoules are kept in refrigerators that are monitored to ensure that the temperature is maintained within the manufacturers recommended temperature range. The amyl-nitrate supply was noted to be within the manufacturer's expiry date.

All workers are equipped with radios for use in the field and plant. The radios are tuned to a single channel to facilitate emergency communication. In addition, there is a telephone in the ADR Plant control room and other key workers have cell phones as an alternative communication system in the event of an emergency.

CMM has developed plans for responding to cyanide leaks and spills. The plans include a general response plan for cyanide emergencies and specific plans that cover emergency response for specific scenarios, including response for spillage of briquettes; releases during unloading or transport; releases in the event of fire or explosion; leaks from piping

Maricunga Mine  
Name of Mine

  
Signature of Lead Auditor

17 February 2009  
Date

or tanks; release of solution from the leach pads; power supply and pump failure; overflow from ponds; and control of HCN in the ADR Plant.

CMM contracts Mutual de Seguridad (“Mutual”) to provide clinical and emergency response services at the mine site, in accordance with Chilean regulatory requirements. Mutual provides nurses and paramedics at the site; a nurse is posted 24 hr/day at the clinic located near the mine office. The nurse is certified by a doctor to apply antidote to a patient if required. In the event that a patient needs additional attention there is an ambulance stationed at the mine to transport the patient to a hospital in Copiapó. The journey to the hospital in Copiapó takes approximately 4 hrs.

All workers are trained semi-annually in cyanide hazards and emergency response through internal training programs that are provided by trainers trained by DuPont. Mock drills are conducted by the emergency response team on a monthly schedule to train, practice and evaluate responsiveness of the team responding to mine emergencies. Approximately two of these drills annually involve cyanide. Mock drills were conducted in both June and July of 2008. In addition, CMM and Veresay personnel had participated in a DuPont training exercise in May of 2006 that simulated an accident with a cyanide vehicle en route to the mine site. CMM has embarked on a program of additional drills to address each of the potential emergency scenarios identified in CMM’s emergency plans; see Section 7.1. The planned schedule and drill scenarios are revised every other year.

Mock drill records summarize the objectives, planning and execution of the drill, and include detailed observations made including photographs of the exercise; debriefing notes regarding lessons learned; and a corrective action plan that includes recommended actions, responsibilities and schedule for completion.

**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:*

Maricunga Mine  
Name of Mine

  
Signature of Lead Auditor

17 February 2009  
Date

CMM has developed a general emergency response plan and specific emergency response plans to address potential cyanide releases. The plans describe the standard procedures to follow in the event of an unplanned release of cyanide or cyanide related emergency, and address initial response, first aid, spill response for a possible emergency, and spill control and clean-up. These plans address all probable emergencies, including releases from low potential catastrophic events such as earthquakes, cave-ins, volcanic eruptions, high-speed winds, or prolonged snow conditions.

DuPont is responsible for responding to an emergency during transport of cyanide to the mine.. CMM has developed a specific emergency response plan for responding to emergencies related to transportation of cyanide, and has an agreement with DuPont to provide backup technical, emergency response and medical support if requested by DuPont. Both the Veresay emergency response plan and the CMM ERP provide communication coordinates and contacts at CMM if assistance is requested. The Health and Safety Manager's specific approval is required before CMM staff members are permitted to assist with a cyanide shipping emergency.

CMM's general ERP and other spill-scenario-specific ERPs address various response scenarios for cyanide spills. Required actions include evacuation of personnel from the building to a designated muster station, and checking the sign-in log to ensure all personnel are accounted for. The plans identify required PPE and materials/equipment for responding to an emergency; provide the location and contents of emergency kits, first-aid, and detail spill response actions including detection, containment, mitigation, and neutralization of spills; disposal of cyanide impact waste; post-emergency root-cause analysis and corrective action planning.

Emergency situations are classified according to the level of response required. Level 1 incidents can be handled by the response team and require no specialized assistance outside the area of the incident. Level 2 emergencies are beyond the capacity of personnel and management of the immediately affected area and require outside assistance. Level 3 emergencies extend outside the boundaries of the site and require CMM to inform outside agencies. Level 3 emergencies would also initiate the implementation of Kinross's Crisis Management Plan. This plan sets out internal and external communication requirements/responsibilities with regulatory agencies, local communities, the media, and next of kin of injured personnel.

## 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.

Maricunga Mine  
Name of Mine

  
Signature of Lead Auditor

17 February 2009  
Date

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

There are a number of opportunities for worker input when developing emergency response plans. These include daily meetings where a worker can discuss issues in the workplace, a suggestion box where workers can post suggestions, and a formal risk evaluation process that is required to be completed before performing a new work task ARO. The ARO process requires the worker or work team for a proposed task to review the risks associated with task and to develop a plan to minimize risk. The completed ARO is reviewed by the responsible foreman.

CMM has actively engaged representatives of the local (indigenous) Colla communities in explaining the chemical characteristics of cyanide, its use in mining, and the management of emergencies involving cyanide, with emphasis on transportation accidents. The emergency response plans include procedures for communicating with the various Colla communities during an emergency. Mutual (the medical contractor based at the mine) also provides input into emergency response planning. Mutual developed the first-aid procedure for cyanide exposure provided with each emergency response kit.

Because of the remoteness of the site, CMM has developed the capacity to respond to all probable emergencies. In the unlikely event that additional backup is required the Copiapó Fire Department can be called upon for assistance.

Mutual medical personnel are trained and qualified to treat cyanide exposure victims on site. If there is a need to involve the local hospital, Mutual has regular communications with doctors at the local hospital in Copiapó. The hospital staff is therefore well prepared to respond to an emergency request to receive a patient exposed to cyanide. However, the majority of treatment would be undertaken onsite as it is at least a 4 hr ambulance drive between the site and the hospital. DuPont and Mutual are the only stakeholders with direct involvement/responsibility in the ERP, and are notified of any changes.

The Cyanide Code Specialist keeps the Emergency Response contact list up to date. The Chief of the Emergency Response Team maintains coverage of appropriate ERT members for each shift.

**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:*

Maricunga Mine  
Name of Mine

  
Signature of Lead Auditor

17 February 2009  
Date

The General ERP designates the Loss Control Manager or alternatively the Resident Manager as the Emergency Coordinator with the appropriate authority to implement the plan. The ERP identifies response team members and their contact information. The roles and responsibility of each team member is also documented. The General Manager is responsible for ensuring that the site has a trained emergency response team. There are 12 emergency brigade members; six are on site at all times. The ERP defines minimum annual training for brigade team members. The duties and responsibilities of the coordinators and team members for an emergency response are set out in the ERP; 24 hr contact information is kept current by the Brigade Chief. A list of the contents of each emergency response station kit is provided in a General Procedure; emergency equipment is checked monthly by the Emergency Response Brigade. The role of outside responders is limited to clinic nurse and paramedic (Mutual) roles and the cyanide transporter contractor responsibility. These roles are incorporated into the ERP as medical/first aid responders and offsite spill responders during transportation, respectively.

The responsibility for responding to emergencies during transportation of cyanide to the mine is clearly documented in the shipping supply contract between DuPont and CMM. CMM has agreed to provide assistance to respond to emergencies if requested by DuPont and if approved by the Loss Control Manager. CMM is legally required to retain Mutual. Mutual is aware of their role of providing first-aid during an emergency and prepared the procedure for first aid response to cyanide emergencies. These outside entities participate with the mine in mock drills, as previously noted.

#### **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:*

The ERP provides contact information for notifying management and provides the roles and responsibilities for communication to regulatory agencies, outside responders and the public. First contact is through the initial responder alerting security and the emergency brigade on Channel 4 or through telephone number 8200. These implements a set of emergency actions including advising radio silence; broadcasting emergency, location and assistance required; and requesting required equipment. The shift supervisor for the area is responsible for evacuation.

Maricunga Mine  
Name of Mine

  
Signature of Lead Auditor

17 February 2009  
Date

The ERP provides lists of contact information for regulatory agencies, outside responders, and hospitals. This is kept current by the Brigade Chief. The communication chain is detailed in the ERP.

The ERP also requires workers to be briefed on the emergency, either through meetings or e-mail, and includes a procedure for communicating with the community. This is organized between the Emergency Response Team, the Manager of Corporate Affairs and the Environmental Manager. Communication may be through a government agency, personal visits, telephone, or communication in writing. Communication with the media is only undertaken through a designated Official Communicator.

**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:*

Details of remediation measures are provided in the specific emergency response plans. These plans address containment and neutralization of solution, excavation and disposal of contaminated soil and debris. Spilt briquettes are to be cleaned up with shovels and brooms. If the cyanide comes into contact with snow or water but can be kept contained lime is applied to raise the pH to 11. Briquettes and solution are disposed in the cyanide circuit. Contaminated soil is disposed of on the leach pad.

The provision of alternate drinking water is not considered an issue at the mine as the supply well is located 22 km upgradient from the site and is therefore not at risk. The nearest community well is located approximately 12 km away and therefore also not considered to be at risk.

Sodium hypochlorite, hydrogen peroxide, and lime are chemicals referred to in the ERP to neutralize spills. Precautions are provided that limit the use of hypochlorite and peroxide to weak cyanide solutions. The ERP prohibits the use of any chemicals where spills may impact surface water.

The ERP and scenario-specific emergency response plans provide a method for evaluating the completion of remediation of an impacted area through confirmatory sampling and analysis. In general, excavation of impacted soil is continued until there is no visible evidence of impact. Depending on the area of impact, discrete samples are

Maricunga Mine  
Name of Mine

  
Signature of Lead Auditor

17 February 2009  
Date

collected and analyzed for cyanide by specified methods. In the event that surface water was ever impacted by a cyanide release, the sampling procedure requires sampling every 50 m downstream from the spill until the concentration of cyanide was below 0.1 ppm.

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

- The operation is:  in full compliance  
 in substantial compliance  
 not in compliance...with Standard of Practice 7.6.

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

All procedures are reviewed on an annual basis to ensure they are up to date and reflect changes in operations, legislation and procedural improvements. Review of the emergency response plans related to cyanide confirmed that the latest revisions are dated April or May 2008. The plans are considered to be living documents and are modified as required to incorporate an improvement identified during an incident or mock drill.

Mock drills are conducted by the emergency response team on a monthly schedule to train, practice and evaluate responsiveness of the team responding to mine emergencies. Approximately two of these drills annually involve cyanide; drills were last conducted in June and July of 2008. In addition, CMM and Veresay personnel had participated in a DuPont training exercise in May of 2006 that simulated an accident with a cyanide vehicle en route to the mine site. CMM has also embarked on a program of drills to address each of the potential emergency scenarios identified for the site; see Section 7.1. The planned schedule and drill scenarios are revised every other year. Drill records summarize the objectives, planning and execution of the drill; detail observations made including photographs of the exercise; provide debriefing notes regarding lessons learned; and present a corrective action plan that includes recommended actions, responsibilities and schedule for completion.

The incident reporting procedure describes the process used to evaluate incidents and develop and implement corrective action plans to prevent reoccurrence of the incident. Action plans may involve modification of procedures, including response procedures. There is a formal monitoring program in place that requires monthly progress reporting on the implementation and completion of corrective actions.

CMM has had one reportable spill (i.e., > 200 l or 200 kg) that involved backup of process solution from a leak in the process trench behind built-up snow and ice. The leaked solution had spilled out of the trench onto the roadway on the western side of the Phase 1 leach pad. The spill had been properly reported to the regulatory authorities and

Maricunga Mine  
Name of Mine

  
Signature of Lead Auditor

17 February 2009  
Date

subsequent documentation provided that addressed cleanup actions. A root cause analysis was subsequently completed and the incident was primarily attributed to a faulty flange. A number of engineering improvements and procedural changes were implemented to reduce risk of future equipment failure and improve detection and emergency response. These included replacing all similar flanges, installing flow and pressure alarms, training plant operators to recognize “Vital Signs” of pending problem, developing a cyanide spill contingency plan for the leach pad and initiating night shifts to improve monitoring and control.

**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 CMM workers and contractors receive basic cyanide hazard recognition and spill response training when they are first hired or first enter the CMM concession; training status is systematically tracked for all employees and refresher training provided on at least an annual basis. Attendance sheets and presentation slides are retained for all training sessions. Training status is tracked by a Cyanide Code specialist in an Excel spreadsheet on an individual basis, based on input from attendance sheets.

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

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

Maricunga Mine  
Name of Mine

  
Signature of Lead Auditor

17 February 2009  
Date

Training in operational procedure requirements is typically provided by the shift supervisor, bolstered by training in relevant cyanide management procedures by CMM cyanide management specialists. On-the-job supervision continues until the supervisor is satisfied that the worker can safely perform the requested work, at which point the training record is countersigned. The signed training records are maintained at the plant.

Operational procedures and cyanide management procedures collectively form the basis for the training program. The training program follows the regulatory requirement Decreto Supremo D.S 40 Art 21, in which employers are obliged to inform employees of the risks in the workplace, also known as “Derecho a Saber” (DAS) or employee right-to-know. As part of operator-specific training, the program details all hazards (physical, electrical, gravitational and chemical) associated with each area of the plant and activity the worker will encounter when undertaking work assignments. The program identifies the safety and monitoring equipment in-place, warning signage, PPE requirements, and procedures to be followed to minimize risks associated with those hazards. Training requirements associated with the operational procedures applicable to each area/process in the plant that must be completed to the satisfaction of the supervisor before a worker is allowed to work unsupervised in that area or process. Additional training in cyanide management procedures applicable to specific work assignments is also provided to the workforce by the Cyanide Code specialists or other qualified staff. All staff receive cyanide awareness and emergency response training, which is updated at least annually

CMM cyanide management specialists and key supervisors or managers who are typically involved in staff training have also previously received detailed training on the management of cyanide in the workplace via DuPont Chile. Eight key managers/supervisors of the cyanide management team and/or Emergency Response Brigade have completed train-the-trainer courses provided by DuPont, which are scheduled every six months. Internal refresher courses for CMM staff led by individuals who have received the DuPont training are also held twice annually.

CMM’s loss control procedures require that all personnel be instructed in the provisions of the Emergency Response Plan as well as general cyanide awareness; workers with specific cyanide process-related jobs receive additional technical training in the operational and OHS procedures that are associated with their positions. Emergency Response Brigade members receive additional training as first responders and emergency response coordinators, and also serve as an internal training resource for Emergency Response Plan training. In event of an actual emergency, CMM’s Emergency Response Plan assigns primary Emergency Coordinator responsibilities to either the Resident Manager or Loss Control Manager.

All CMM employees are trained in cyanide hazard recognition and appropriate emergency response actions, and refresher training is provided twice annually. Trainees are required to undertake and pass an examination. ADR Plant operators, leach pad

Maricunga Mine  
Name of Mine

  
Signature of Lead Auditor

17 February 2009  
Date

workers, and other affected staff receive operational training related to their individual work assignments, based on the requirements of governing procedures. Operational training is provided when an employee is first hired or first assigned to a new work area involving cyanide, and refresher training provided annually. As previously noted, operational training is supervised, and supervisors must sign off on an employee's ability to safely conduct the required work before they are authorized to work without direct supervision. Worker understanding of basic cyanide hazard recognition and spill response training is evaluated via written examinations. Examination format is robust, requiring substantial explanation of key points as a demonstration of the trainee's knowledge. Training status for all employees is actively monitored by a Cyanide Code specialist; evaluation of a representative sample of training indicates compliance with each of the points of this Section. Course information is retained, along with test results.

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

- 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:*

Cyanide unloading, mixing, production and maintenance personnel are trained in the requirements of operational procedures as well as relevant cyanide management procedures, including emergency response procedures.

As previously noted, during an audit visit to the ADR Plant, a HCN alarm was triggered and it was possible for the audit team to witness an actual emergency response action in process. The ADR Plant building was immediately evacuated in an orderly manner; emergency team members quickly and efficiently donned SCBA equipment and entered the plant to make appropriate process adjustments and to measure HCN levels in affected work areas. When the emergency team was satisfied that the upset condition had stabilized and HCN concentrations were back below the lower exposure limits, they removed SCBA equipment and permitted the site evaluation to continue. The event was documented in the operators' logs for further evaluation.

Cyanide unloading, mixing, production and maintenance personnel, and Emergency Response Brigade members, are trained in the requirements of operational procedures as well as relevant cyanide management procedures, including emergency response procedures. Emergency response procedures have been developed that address emergencies associated with specific areas/operations. These procedures address decontamination and clean-up of cyanide releases and first aid procedures. Mock drills are periodically undertaken to test and improve response skills, as noted in Section 6.3.

Maricunga Mine  
Name of Mine

  
Signature of Lead Auditor

17 February 2009  
Date

The emergency response team had been trained in emergency cyanide first aid, ERP requirements, and (as for all other CMM staff) hazardous recognition and emergency response as part of an external course provided by DuPont every 6 months. Mutual provides medical assistance during emergencies; their staff include nurses and paramedics who have been trained and certified by a doctor to administer injectable antidote if the situation so requires.

Emergency responses are undertaken by CMM personnel with assistance from the on-site medical contractors. Communities, hospitals and government agencies may be notified of an emergency. Off-site transportation incidents involving cyanide would be handled by DuPont, with assistance from CMM if requested.

Refresher “train-the-trainer” training is required twice annually for all Emergency Response Brigade personnel as part of the external training course provided by DuPont; these individuals provide similar training to all staff at least twice annually. Other procedural training is also provided when applicable cyanide management SOPs are updated. All SOPs must be reviewed and updated, as appropriate, at least annually. Training includes mock drills; two were conducted in June and July of 2008, and more scenario-specific drills are planned. A training status matrix is maintained by the Cyanide Code specialist (who is one of the externally trained members of the Emergency Response Brigade).

## ***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:*

CMM’s primary stakeholders are the indigenous Colla people, who hold legal rights to the lands surrounding the mine site. CMM maintains a close relationship with the Colla communities, and CMM cyanide management specialists and the General Manager of Kinross Chile are personally involved in a continuing process of engagement. CMM has assisted the Colla people in a number of ways, including providing resources to purchase water rights, fencing materials, irrigation systems, and assistance in developing

Maricunga Mine  
Name of Mine

  
Signature of Lead Auditor

17 February 2009  
Date

sustainable agriculture. CMM has also provided educational scholarships, employment opportunities at the mine, and other actions consistent with Kinross's corporate responsibility principles that will help sustain the communities after mine closure. Organized, regular, and well-supported meetings are held with the leadership of the Colla organization to address the needs or concerns of their people. These meetings provide an appropriate format for discussing any concerns on the use of cyanide.

With respect to other stakeholders, CMM's practice is to receive and respond to requests for information about any mining practice on a case-by-case basis, in accordance with Kinross corporate guidance. The General Manager of Kinross Chile is the primary respondent to all such inquiries, but specific response actions, including dissemination of information, may be delegated to the CMM General Manager and appropriate environmental staff.

### **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:*

As noted in 9.2(1), CMM conducts regular meetings with the Colla community association that are appropriate opportunities to provide information to address any concerns over the use of cyanide. Discussions with the General Manager of Kinross Chile indicate that even though some Colla community members are currently employed on the leach pads or in other cyanide process-related areas, and as such are subject to the full range of cyanide operations and health and safety training discussed in Section 8. Review of presentation materials and photographs indicate that CMM has provided general information about the management and use of cyanide to representatives of the Colla communities.

General information on the chemical properties of cyanide and the use of cyanide in gold mining has been prepared in a simple trifold brochure and a more detailed booklet, either or both of which may be provided on request, as appropriate for the needs and interests of the person requesting information.

Maricunga Mine  
Name of Mine

  
Signature of Lead Auditor

17 February 2009  
Date

### 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:*

CMM has developed a booklet that describes the environmental and health effects of cyanide, as well as its production, transportation, and its use and management in metal extraction. A simplified trifold brochure on cyanide safety has also been prepared. Both documents may be openly distributed in response to specific requests for information or in stakeholder meetings. Additionally, details on the ICMC and CMM's ICMC certification efforts have been published in a company news magazine that is widely available to CMM employees and families. Review of presentation materials and associated photographs indicate that CMM has provided general information about the management and use of cyanide to representatives of the Colla communities, in a verbal, visually supported format.

No offsite exposure incidents have occurred; however, if such an incident were to occur CMM procedures require that appropriate press releases be prepared by or at the direction of the General Manager to accurately describe the event, cause, number of individuals involved, actions taken, and other pertinent information. One reportable release (i.e., spill > 200 kg/200 l) occurred in April of 2005. Evaluation of the CONAMA website indicates that CONAMA does post information on its website about selected significant spill events. In addition, reportable spill data are collected by CMM and reported to Kinross in monthly key performance indicator (KPI) reports; these data are made available under the Corporate Social Responsibility (CSR) section of the Kinross website, as well as the Environmental Performance section of Kinross's annual CSR report.

Maricunga Mine  
Name of Mine

  
Signature of Lead Auditor

17 February 2009  
Date