SUMMARY AUDIT REPORT

for the June 2009
International Cyanide Management Code Audit

Prepared for:

Chukotka Mining and Geological Company
(Kinross Gold Corporation – Kupol Project)

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

FINAL
16 December 2009

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GeoEngineers

SUMMARY AUDIT REPORT

Name of Mine: Kupol Project

Name of Mine Owner: Kinross Gold Corporation

Name of Mine Operator: Chukotka Mining and Geological Company

Name of Responsible Manager(s):
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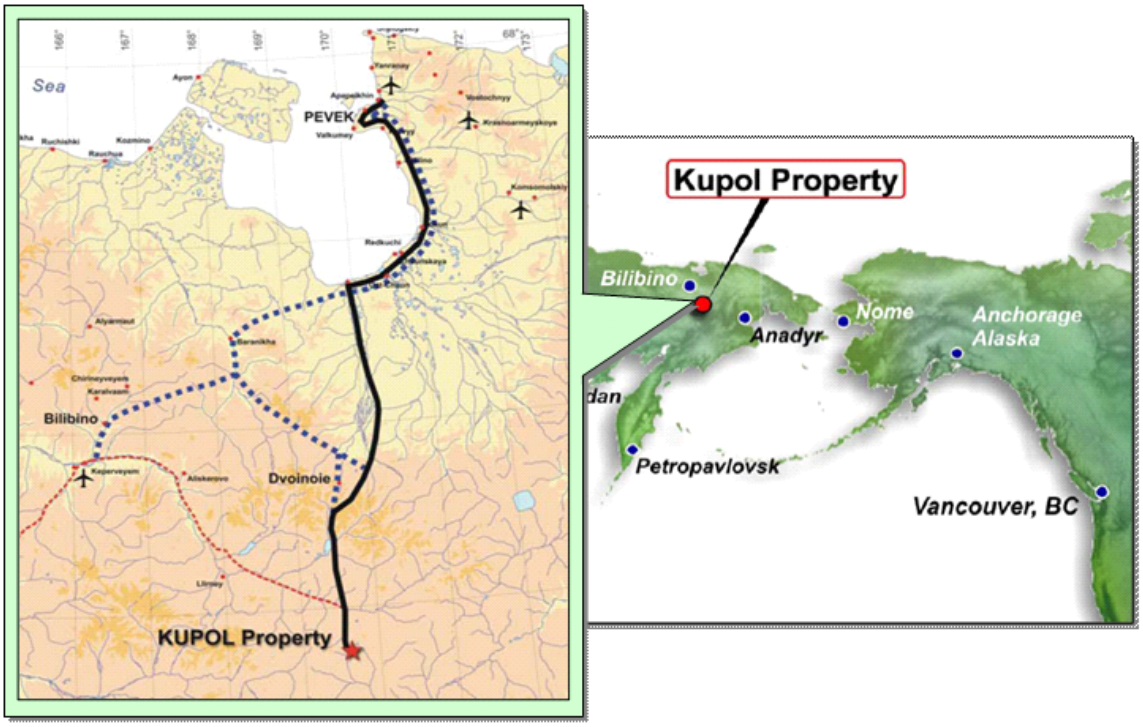
Location detail and description of operation:

The Kupol Project is located in a remote north-central area of the Chukotka Autonomous Okrug (AO), in the Russian Federation. The mine was acquired by Kinross Gold Corporation (Kinross) in 2008 as a result of its purchase of Bema Gold Corporation. Kinross holds a 75% interest in the project, with the government of Chukotka AO owning the remaining 25%. The Kupol deposit is a high-grade gold and silver vein system, and is being mined by both open pit and underground methods. Production began in 2008; surface mining is projected to be completed by 2011, with underground mining continuing until at least 2018. Kupol is currently one of the most important precious metal mines in the Russian Federation, producing roughly 400,000 gold equivalent ounces annually.

Chukotka AO is a very sparsely populated region. The Kupol site is over 100 km from the nearest major town. Climatic conditions are harsh, with long cold winters and very

brief summers. Access to the mine is primarily by air transport. The mine has its own airstrip and heliport, and connections are maintained to Anadyr, Magadan, and, as necessary, Bilibino and a smaller regional airport at Keperveem. Fuel, equipment, cyanide, and other bulk supplies are delivered by mid-winter truck convoys on an annually constructed ice road connecting the mine to the port of Pevek, 410 km to the north. Kupol has a modern, self-contained, 600+ man permanent camp, with independent power generation, water supply and wastewater treatment systems, and supporting infrastructure designed to meet Russian and international standards. The mill is comprised of a conventional gold/silver cyanide leach plant, a counter-current decantation (CCD) circuit, a Merrill-Crowe zinc precipitation circuit, and a hypochlorite-based cyanide detoxification circuit, discharging to an impermeable rockfill tailings impoundment. Cyanide is delivered over the ice road in briquette form in sealed steel intermodal containers.

CPMG maintains a secure facility 21 km south of the port of Pevek for storage of bulk supplies pending ice road delivery. Administrative and governmental liaison offices are maintained in Anadyr and Magadan (roughly 425 km and 1350 km from Kupol by air, respectively), as well as a logistics/public relations presence in Bilibino (250 km) and Pevek. The location of the mine is shown in the following figure.



SUMMARY AUDIT REPORT
Auditors' Finding

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

with the *International Cyanide Management Code.*

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

Audit Team Leader: John Lambert
e-mail: jlambert@geoengineers.com

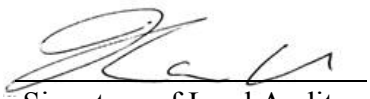
Names and Signatures of other Auditors

Mark Montoya 

Glenn Mills 

Date(s) of Audit: June 16 to June 23, 2009

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

Kupol Project		December 16, 2009
Name of Mine	Signature of Lead Auditor	Date

Kupol Project		December 16, 2009
Name of Mine	Signature of Lead Auditor	Date

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:

Initial supplies of sodium cyanide reagent for the startup of the Kupol mine were purchased from E.I. DuPont de Nemours and Company (DuPont) by CMGC shortly after the purchase of Bema Gold. The cyanide was shipped from DuPont's Memphis, Tennessee production plant via the port of Everett, Washington and by ocean transport to the port of Pevek. The cyanide shipment was held in a secure storage area south of Pevek and held pending completion of an ice road to the mine site. Initial deliveries to the mine were made in April 2008, when ice road thickness and strength was optimal, and reserves of cyanide from this initial shipment are still being drawn upon to support mine operations. Review of the International Cyanide Management Institute (ICMI) website confirms that DuPont's Memphis, Tennessee manufacturing was certified as an ICMC-certified producer on June 7, 2006. Review of shipping records indicates that all cyanide now stored at the mine site was delivered by DuPont into CMGC's custody [i.e., free-on-board (FOB) CMGC's tenant area at the Port of Everett, Washington] in 2007 and 2008. These delivery dates are well within DuPont's initial ICMC certification period. Review of DuPont's current producer status information on the ICMC website indicates their original certification expired on June 7, 2009, prior to the date of this audit. However, in a letter also dated June 7, 2009, DuPont advised Kinross management that DuPont had completed their re-audit to the ICMC, and that their audit reports will be submitted for ICMI review. This demonstrates that DuPont has properly fulfilled their administrative commitment, as an ICMC signatory, to conduct an ICMC audit within three years of the date of their initial certification. The responsible ICMI Lead Auditor also provided evidence that the DuPont ICMC audit reports were submitted to ICMI within the required 90-day window.

Given that DuPont was certified to the ICMC when all of the mine's cyanide was produced, that all cyanide was delivered under packaging conditions acceptable for multimodal transport, and considering that CMGC has adjusted its procurement

practices and created a master agreement that includes all necessary language and a suitable contracting mechanism that will ensure compliance with this Standard of Practice throughout the mine's operational life, it is the auditors' judgment that CMGC is currently fully compliant with respect to this Section of the ICMC.

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

Standards of Practice

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

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

Discuss the basis for the Finding/Deficiencies Identified:

The Kupol mine is located in an extremely remote and difficult-to-access location, and the cyanide transportation chain is complex. In addition, under Russian law CMGC is obliged to assume full legal ownership of cyanide at the port of embarkation to Russia (i.e., at the Port of Everett, Washington, USA). Written agreements have been developed to address each link in the transportation chain, and are described as follows:

- CMGC has created a master agreement with DuPont to deliver cyanide FOB CMGC's tenant area at the Port of Everett, in nylon supersacks, polyethylene-lined plywood pallet crates and sealed steel intermodal containers, with all cyanide labeling provided in English and Russian. Annual lot procurements of bulk cyanide are made via annexes/purchase orders pursuant to the requirements of the master agreement. In execution of this agreement, DuPont subcontracts the services of Intermodal Cartage Company (truck transport from DuPont's Memphis production facility to the railhead), Union Pacific Railroad (Memphis railhead to the Seattle, Washington railyard), and Bridge Terminal Transport (BTT; Seattle railyard to the Port of Everett). DuPont is responsible for demonstrating ICMC code compliance for each contracted leg via ICMC audits, due-diligence audits, or third-party, ICMC-equivalent non-certification audits.

- CMGC has signed a tenant agreement with the Port of Everett, in which CMGC agrees to comply with all applicable hazardous material shipping regulations, and the Port of Everett provides a secure storage area and shiploading services. Cyanide containers remain sealed while being stored at the Port of Everett. Emergency response responsibilities for any accident or spill of CMGC-owned cyanide are

assumed by the Port of Everett. Kinross has conducted a due-diligence audit of the Port of Everett on behalf of CMGC, and has submitted their report to an ICMI-approved Lead Auditor for review and approval. Documentation from the Lead Auditor was provided that indicates that the report was approved.

- CMGC has chartered Far East Shipping Company (FESCO) to deliver intermodal containers of cyanide and other supplies to the Port of Pevek, Chukotka AO, using certified ice-hardened container transport vessels. Cyanide containers remain sealed during the ocean voyage. It is FESCO's practice to attempt to place all cyanide containers below deck to minimize the potential for loss en route. Care is also taken to ensure that containers with potentially incompatible materials are placed in separate holds. The FESCO vessel carries only CMGC cargo, and stops at no other ports of call between Everett and Pevek. Kinross has also conducted a due-diligence audit of FESCO, and has submitted a report to an ICMI-approved Lead Auditor for review and approval. Documentation from the Lead Auditor was provided that indicates that the report was approved.

- CMGC has contracted with the Port of Pevek to provide docking and unloading services for the FESCO vessels. CMGC's Transportation Group is obliged under this contract and applicable Russian law to coordinate with the Port of Pevek to unload the vessel and remove all hazardous materials from within the port's security boundary within 24 hours. Containers of cyanide are unloaded by crane, picked up with a reach stacker and loaded onto CMGC-owned and contracted trucks for transport to a secure storage facility 21 km south of the port. CMGC, under its own emergency preparedness and response plan, is responsible for response and cleanup of any cyanide spill or emergency that might be incurred in an offloading accident. The Port, however, is responsible for the appropriate regulatory response under applicable maritime law if the vessel were damaged in a manner that also damaged cyanide containers while still in Pevek harbor. CMGC spill response personnel accompany each convoy of cyanide containers and are responsible for responding to any accident involving cyanide while it is being unloaded from the ship. Under Russian law, all drivers and vehicles for hazardous materials transport must be certified, and strict rules are in place governing vehicle condition as well as driver behavior and the allowable number of daily driving hours.

- Cyanide is moved from the 21 km storage facility via an annually constructed ice road, and is unloaded by CMGC personnel at a secure storage facility approximately 6 kilometers north of the mine. Container seals remain intact pending transfer of the containers to the cyanide mixing area at the mill.

With regards to control of subcontractors, CMCG's written agreement with the Port of Everett is in the form of a tenant agreement, in which CMCG agrees to rent marshalling space at the Port's facilities, and purchases the Port's services for wharfage and handling. The nature of the agreement is such that CMCG cannot invoke specific

cyanide handling requirements that the Port commits to pass down to its stevedoring company without requiring a level of legal negotiations that would be unusual for this type of arrangement. Kinross therefore elected to conduct a due-diligence audit of the Port's container handling and emergency response practices to verify consistency with ICMC requirements. The Port requires all subcontractors to work under the Port's established practices and procedures for container handling and emergency response. The Port is subject to a high level of monitoring by regulatory authorities (in particular the local Fire Department, US Customs, and the US Coast Guard), and it is the Kinross due-diligence auditor's judgment that Port operations meet or exceed applicable ICMC requirements. The due-diligence report was submitted for independent confirmation by an ICMC Lead Auditor. Documentation from the responsible Lead Auditor was provided that indicates that the report was approved.

The written agreement between CMGC and FESCO is in the form of a chartering document that applies to a specific group of FESCO-owned vessels, and commits FESCO to provide one of these vessels for ocean transport services. No "sub-chartering" is permitted.

The agreement between CMGC and the Port of Pevek is limited to wharfage and handling services, which were examined as part of the third-party ICMC-equivalent audit of the CMGC Transportation Group. The Port of Pevek unloads containers to the wharf, from which they are picked up by a reach stacker and placed directly onto CMGC Transportation Group tractor-trailer rigs until a queue of 24 vehicles is ready to depart for the Km 21 storage area. Any handling accidents while under hook will be responded to by the CMGC Transportation Group pursuant to the requirements of their emergency response plan.

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:

All transporter links are certified under the ICMC or have undergone due diligence or third-party audits to ICMC requirements. DuPont has provided Kinross and CMGC copies of audit reports for each firm, as follows:

- DuPont Sodium Cyanide Operations (Memphis, TN plant) March 2006 ICMC certification audit;

- Union Pacific Railroad (shipment from Memphis rail transfer yard to Seattle, Washington railyard); May 2007 due diligence audit; and

- Bridge Terminal Transport (BTT); truck transporter, Seattle railyard to Port of Everett; August 2009 ICMC certification audit (receipt of report by Kinross and CMGC verified by audit team).

Kinross conducted due diligence audits of the Port of Everett and FESCO on behalf of CMGC, and has contracted with a qualified ICMI Lead Auditor to provide independent review services for both reports. The audits were conducted in June, 2009, and the responsible Lead Auditor provided evidence that these reports have been reviewed and approved.

Kinross also contracted a third-party, ICMC-equivalent verification audit of CMGC Transportation Group responsibilities, including offloading of cyanide containers in the Port of Pevek, temporary storage at the Km 21 secure storage area, and ice road convoys to the secure storage area at the Kupol site. All auditors leading or participating in the ICMC audits, or Lead Auditors conducting third-party ICMC-equivalent verification audits, or Lead Auditors reviewing Kinross's due diligence reports were listed on the approved auditor list posted on the ICMI website, as of the date of this report. The responsible Lead Auditor provided evidence that this report has been approved.

Evaluation of logistics/material receiving records at the mine site demonstrates substantial care in monitoring the transportation and storage of cyanide containers throughout entire transportation process. Records are prepared and maintained as follows:

- FESCO delivers a detailed bill of lading to the CMGC transportation personnel responsible for conveying cyanide containers from the Port of Pevek to the secure storage area at Km 21, south of Pevek town. The bill of lading lists all containers by number, cross referenced to cargo descriptions in English and Russian and the associated multimodal dangerous good declaration number.

- Cyanide transport over the ice road is typically scheduled at a point in the winter season in which ice thickness is at its greatest. In accordance with Russian law, Km 21 warehouse staff notifies the regional militia and request permission to convey cyanide to the mine; militia units are then assigned to accompany the cyanide convoys. In preparation for shipment, manifests are generated by Km 21 warehouse staff that document each container shipped. All containers are identified by number and contents, as well as the model, make, and license number of the assigned tractor-trailer. Manifests are stamped, signed, and dated by Km 21 warehousing staff prior to departure. The manifests are inspected and stamped at a checkpoint near the midpoint of the ice road as well as a final checkpoint at the end of the ice road a few kilometers south of the mine. The

stamped manifest is delivered to the personnel receiving the containers at the mine's secure storage area.

Strict governmental regulations apply to the qualifications and behavior of the truck drivers licensed to transport hazardous materials; the potential for alcohol use is closely monitored, along with the mechanical condition and specifications of the truck and trailer vehicle. Drivers are changed midway in the journey in accordance with regulations that limit the number of hours a driver can operate a vehicle in a given day. A waybill for each driver/vehicle combination is attached to the associated manifest, and is stamped to indicate completion of medical exams prior to departure, amount of fuel in the vehicle, vehicle condition, and other safety-related information. The waybill is inspected and stamped again at the final checkpoint as previously noted.

CMGC logistics specialists maintain an inventory tracking system that contains entries for all containers received by the mine in a specific convoy, cross-referenced to the number of the requisition from the mine that initiated the initial procurement from DuPont. This document is maintained as backup in the event that original records are misplaced or damaged. Transfer of a cyanide container from secure storage to the mixing area at the mill was observed as noted in Section 3.1. The identification number of this shipping container was successfully traced back through the custody records (i.e., from the mine storage area, to the specific ice road shipment, to the Km 21 storage area, to the FESCO vessel delivering the cyanide, to the original receipt of cyanide from DuPont at the Port of Everett in 2007).

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:

The current version of the Project Design section of Kinross's EHS Management System documentation requires that all project components involving cyanide be engineered to meet the applicable requirements of the ICMC. In addition, the Kupol Project as a whole and all major areas of the mill, including the cyanide unloading, mixing, and storage areas, are legally considered to be part of an intrinsically hazardous

industrial facility under Russian law, and as such are subject to a significant level of governmental oversight by the "Rostekhnadzor" (RTN) agency. RTN requires the preparation and retention of construction certification packages for all aspects of the constructed facility, including facility elements that involve cyanide. Each certification package consists of a "Passport" document that describes the system or component being certified, along with governing specifications and technical requirements. The "Passport" is signed by the Mill Manager and the manager and chief engineer from the responsible engineering/construction company. Individual "acts" or certifications are included in the package for a wide range of construction elements, including prefabricated steel vessels; structural steel (components and assembled structures); nondestructive testing of welds; foundation earthworks; concrete formers, reinforcing bars or cages, and insulation layers; steel coatings/paint; poured concrete floors and bunds; installation of piping systems; installation of pumps and electrical control systems; and other facility elements. Taken in aggregate, the "Passport" process documents that all constructed elements have been verified and meet the intent of the approved engineering design. A sample of complete "Passport" documentation was reviewed for the cyanide mixing and storage tanks as well as the secure storage area. In the auditors' judgment, the documents provide clear evidence that the facilities had been designed and constructed in accordance with prevailing regulations and standards.

Only solid briquette form cyanide is used at Kupol, and substantial efforts have been made to minimize or eliminate the potential for release to surface water or human exposure. The secure cyanide storage area is located approximately 6 km north of the mill. Apart from the man camp (0.5 km from the mill), the nearest permanent settlement or town is approximately 100km distant. During summer months, there are no surface waters within several hundred meters of the storage area. As the mine is in a sub-arctic permafrost climate, the temperature is well below freezing 8 to 8.8 months a year.

The secure storage area is a rectangular gravel pad underlain by a layer of impermeable high-density polyethylene (HDPE) fabric. Sealed intermodal containers of cyanide arriving by ice road convoy are placed on the pad by a reach stacker. No other materials are permitted within the confines of the storage area. In accordance with Russian regulations, the storage area and all storage and transfer operations are physically observed and guarded, and a guardhouse is permanently located adjacent to the main gate of the storage area. The perimeter of the pad is secured with a multiple-strand steel and barbed wire fence and two locked and sealed gates. Permanent light standards have been installed so that the area remains fully lighted year round. The storage compound is ringed with earthen berms and an HDPE-lined trench reporting to a sump constructed from a steel water tank. In summer months, the sump is periodically inspected for water accumulation and tested for cyanide (the mine laboratory performs its own total and WAD cyanide analyses) and pumped dry if no cyanide is detected. No cyanide has been detected in the sump to date.

The mine consumes approximately one intermodal container of cyanide (i.e., 20 1-tonne crates) per week. Shipment between the secure storage area and the mine is carefully controlled. The reach stacker operator and truck driver both must be certified for hazardous materials transport and must pass a medical examination on the day of the transfer. The road to the mill is closed to other traffic, and a radio message is transmitted on all channels that alerts the workforce that cyanide transport is occurring. A pilot vehicle travels ahead of the truck, followed by armed guards. In winter, it is understood that the road is sanded and all vehicles are chained for safety. After the container is delivered to the mill, a second radio message is transmitted and the roadway opened for other traffic.

The container is currently unloaded in a reagent receiving area in the mill building, immediately adjacent to fully contained cyanide mixing and storage room. Unloading operations are witness by armed guards. The plywood crates are temporarily staged on the warehouse floor, between racks of non-reactive chemicals (e.g., lime, flocculant). The empty container is swept, inspected for any residual cyanide granules, and released to warehousing for other service. Once it has been removed, doors to the cyanide mixing and storage room are opened and the crates stacked no more than 2 high in the loading bay area of the mixing and storage room. The cyanide mixing and storage tanks are located within a dedicated concrete impoundment in a fully enclosed room in the reagent section of the mill building. The impoundment contains a sump with a dedicated pump; all washdown water is returned to the mix tank.

High level alarms are installed on both the mixing and storage tanks that can be monitored from the control room. In addition, the mixing operator and observer must get clearance from the control room prior to initiating the mixing and transfer operation.

The secure storage area is designed to store intermodal containers of cyanide in the open air. Within the mixing and storage room, fumes from the storage tank are collected and routed through a scrubber system before being exhausted to the atmosphere, and the room has a large rollup door that can be raised in an emergency. A general room air exhaust fan is installed near the ceiling. Cyanide in the secure storage area is stored in the same intermodal containers that it was originally packaged in at the DuPont production facility. The mixing and storage tanks are located in the interior of a dedicated room within the mill building. The cyanide mixing room is also kept locked, and access is restricted to only certified operators and other personnel with a legitimate need for access.

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:

In the initial mix event witnessed by the auditors, empty cyanide supersacks and polyethylene moisture barriers were manually rinsed by the operators after they have been emptied in the mixing tank hoppers. One operator had primary responsibilities for sack positioning and cutting on the hopper deck, with the other operator observing from a safe distance from the floor of the containment. Rinsing was performed within the bunded area of the containment, with rinse water reporting to the sump. The sump is fitted with a dedicated pump; collected rinseate is routed back to the mix tank. During the course of the audit, CMGC installed a rinsing tank with a rotating spray head designed to spray down the interior of the empty supersack while still suspended from an overhead crane, which allowed for a more thorough rinsing without requiring extensive handling by an operator. The new tank was positioned inside the bund; rinsewater reported directly to the sump.

No containers are returned to the vendor. Prior to each mixing event, the plywood crates are disassembled; after mixing, the collapsed crates, rinsed bags, and other packaging residues are transported to a controlled burn area within the tailings impoundment, doused with fuel oil, and burned. CMGC owns the intermodal shipping containers, which are swept and inspected after unloading and released to warehousing for other use. Any evidence of spill material revealed in this inspection will prompt an appropriate spill response action from the mill's emergency response plan.

CMGC maintains a comprehensive "Training Manual for Mill Maintenance Employees and Reagent Mixing Operator" which addresses operation of all equipment for the mixing solid or liquid cyanide, the use of appropriate PPE by the operators, and for one operator to act as an observer located in a safe area (i.e., the floor of the containment). In addition, Orders of Instruction were generated to provide emphasis over and above standard forklift/crane operator training programs; crates of briquettes may not be stacked more than 2 high. Another Order of Instruction was provided during the audit to address use of the new bag rinsing system and to clarify requirements for washing down the hoppers after a mixing event. All affected operators were trained in the requirements of the new Orders of Instruction.

***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:

The active cyanide facilities at the Kupol operation include:

- Secure solid cyanide storage yard;
- Reagent cyanide mixing/storage circuit (mix and storage tanks);
- Leach circuit (5 leach tanks);
- Counter Current Decantation (CCD) circuit (5 thickener tanks);
- Merrill-Crowe circuit (clarifiers and Merrill-Crowe tower);
- Pregnant solution tank;
- Barren solution tank;
- Cyanide Destruction circuit;
- Tailings head tank;
- Reclaim water tank;
- Tailings Storage Facility (TSF);
- Tailings delivery, distribution, and reclaim water pipelines;
- Surface water diversions at the TSF; and
- Associated pumps, piping and secondary containments.

Cyanide is delivered to the secure solid cyanide storage yard in 20-ton, steel intermodal shipping containers. Each shipping container contains 20, one-ton plywood boxes of cyanide briquettes. The packaging within each wooden box consists of a polypropylene bag containing the cyanide briquettes, wrapped in plastic and cardboard. CMGC transports the intermodal shipping containers from the storage yard to the mill on an as-needed basis, one at a time. At the mill, CMGC removes the boxes from the shipping container for storage within a fully enclosed mixing/storage room located inside the mill building.

The Kupol mill is designed to process approximately 3,000 tonnes of ore per day. Run-of-mine ore is crushed in a jaw crusher and conveyed to a crushed ore storage bin. The crushed ore is ground in a semi-autogenous grinding (SAG) mill followed by a ball mill.

Gravity separation of free gold and silver is performed with a Knelson concentrator in the grinding circuit. The ground ore reports to a surge tank. Surge tank discharge is thickened and the thickener underflow is pumped to a pre-aeration tank to passivate sulfide minerals. WAD cyanide concentration of the water used in the grind, gravity separation, and pre-aeration circuits is consistently maintained below 0.50 mg/l; therefore, these circuits are not classified as cyanide facilities.

Pre-aerated slurry flows by gravity to the cyanide leach circuit, consisting of five leach tanks, to dissolve gold and silver from the ore particles. Cyanide solution from the cyanide storage tank is introduced into the process at the No. 1, No. 2 and No. 3 leach tanks. Leach slurry is pumped to a series of five counter-current decantation (CCD) thickeners that wash and recover the dissolved gold and silver from the leach residue particles. Overflow from the No. 1 CCD thickener is fed by gravity through a pipeline to the pregnant solution tank. The pregnant solution produced in the CCD circuit is directed from the pregnant solution tank to the Merrill-Crowe circuit where the solution is first clarified in pressure filters (clarifiers) and then de-aerated with vacuum in the Merrill-Crowe tower. Gold and silver is then precipitated from solution using zinc dust and the precipitate is collected in recessed chamber filter presses located in the refinery. The barren solution produced from the filter presses is returned to the barren solution storage tank located at the CCD circuit for reuse in the process.

The washed residue slurry from the CCD thickener circuit is sent to the cyanide destruction circuit where calcium hypochlorite is added to destroy cyanide and thiocyanate. The treated product is then pumped to the tailings head tank for transport via gravity flow through a high-density polyethylene (HDPE) pipeline system to the TSF. There are two tailings delivery pipelines, one operating and one standby. Fixed and variable chokes, housed within a heated shipping container structure (Choke Station), control the slurry flow and pressure drop in the tailings pipeline because of the elevation difference between the mill and TSF. The tailings slurry is discharged at the dam face through spigots or optionally through a single bypass pipeline at the south end of the dam.

The TSF is designed as a zero discharge facility with a rockfill embankment. An impervious geomembrane liner is installed on the upstream face of the embankment and under a portion of its upstream shell. The initial phase (starter dam) of the TSF, completed in April 2008, was constructed to provide three years of tailings storage. A pump barge recycles decant water from the TSF back to the reclaim water tank at the mill via two HDPE pipelines, which run alongside the two tailings delivery pipelines.

CMGC has developed written management and operating plans and procedures for the safe operation and management of all cyanide management facilities. Plans, procedures and regulatory requirements form the basis of the facility design and operation. The design criteria for the mill are documented in a spreadsheet and include data for plant site characteristics, production parameters, ore characteristics, crushing and grinding,

leaching, CCD thickeners, solution clarification, Merrill-Crowe circuit, refining, cyanide destruction, tailings and reclaim systems and reagents. The spreadsheet also provides a solution balance flowsheet, flow and pump calculations, reagent mixing calculations, and mill building code specifications.

The Tailings Management Facility Design Report prepared by the design engineering contractor identifies the assumptions, design parameters and regulatory requirements on which the environmental protection measures for the TSF were based. Canadian Dam Association Guidelines were used to establish the design freeboard for the TSF. More specifically, the following criteria were adopted for the design and operation of the tailings facility:

- The dam should have sufficient freeboard at all times to store the projected tailings volume and waste rock, plus four meters depth of water (at least two meters of free water and up to two meters of ice in winter);
- A minimum of 1.5 meters freeboard should be provided above the resulting tailings and water level, comprising 1.0 meter for storage of a Probable Maximum Flood (PMF) Event, plus 0.5 meter for waves above that level;
- The tailings starter dam (completed in April 2008) is sized to provide storage for the first three years of tailings production, acid generating waste rock and remaining potential acid generating waste rock plus the design water storage and freeboard requirements; and
- The impoundment dam is designed so that there will be no seepage through the dam and foundations (it is assumed that there will be no seepage via deep groundwater flow, as the tailings basin will be rendered essentially impervious by permafrost, and will remain frozen).

CMGC established the tailings slurry discharge concentrations at 5 mg/l Total cyanide and 10 mg/l thiocyanate and is required to meet these concentrations based on an operating contract with the government. The Russian Federal Service for Ecology, or Rostekhnadzor (RTN), enforces compliance with these concentrations. As the TSF is designed as a zero discharge facility, CMGC does not discharge decant water from the facility to surface water. The Environmental Impact Study (EIS) prepared for the Kupol Project, sets the regulatory requirements for the maximum allowable concentration of cyanide in surface and ground water.

CMGC has implemented inspection programs for all of cyanide facilities at Kupol. All process circuits are inspected twice daily. These inspections cover the cyanide mixing/storage, leach, CCD, Merrill-Crowe and cyanide destruction circuits. CMGC also conducts routine, documented inspections of the solid cyanide storage yard and tailings systems.

CMGC has also implemented a Preventative Maintenance (PM) program for critical equipment. The annual PM schedule provides a listing of the equipment along with the planned time for maintenance. The PM system is managed manually with a Microsoft Excel™ spreadsheet; however CMGC plans to begin using fully automated software in the second half of 2009.

The "Project Design" element of Kinross's corporate Environmental Health and Safety (EHS) Management System requires that all components involving cyanide be designed and constructed in compliance with ICMC requirements. The same section also requires that location-specific project aspects be evaluated in terms of hazard identification and mitigation, potential industrial hygiene and environmental exposures, and other critical factors. The "Management of Change" element of the EHS Management System specifically requires that the environmental, health and safety aspects of a major facility change be identified, evaluated, and control measures developed where necessary before a change is implemented. Interviews with the Mill Manager and other CMGC personnel indicate that CMGC fulfills these requirements in the execution of Authorizations for Expenditure (AFEs) for major facility changes. Additionally, because mining operations are considered intrinsically hazardous industrial operations under Russian law, major facility changes are subject to rigorous oversight on the part of RTN, and do not receive funding without a thorough, multidisciplinary evaluation of associated environmental and occupational health and safety issues by Kinross and CMGC management, and the mitigation of associated risks via the optimization of design, operational planning, and associated training programs. The evaluated project will have a direct impact on the management of cyanide, and the same protocols would be applied to any other cyanide-related project.

Operator manuals provide emergency shutdown procedures for the process areas including the leach circuit, CCD thickeners, cyanide destruction circuit, pregnant and barren solution tanks, Merrill-Crowe tower, vacuum pump, and circuit piping. These procedures apply in cases of leaks in tanks or vessels, mechanical or electrical problems, and major leaks in piping. The manuals also provide operational steps to take in the event of partial and catastrophic power failures.

CMGC's current contingency procedure for upset in water balance and water management during temporary closure or cessation of operations is date-dependent. The basis of the plan is to procure and transfer a water treatment plant to the site and operate it as necessary to treat the volume of water required to ensure containment in the TSF. In the event that temporary closure or cessation of operations occurs before August 31, 2009, CMGC would complete the TSF dam to an intermediate elevation of 540.5 meters. This dam height would provide approximately 23 months of capacity and sufficient time to bring in and commission a treatment plant. At all times after August 31, 2009 there will be more than 23 months available to bring in a treatment plant.

All process circuits are subject to documented inspections by operations staff twice

daily. The daily visual inspections conducted each shift at the process circuits cover valves, pumps and piping. Routine inspections are documented using inspection forms, checklists, and/or logbooks that identify the inspector, any observed deficiencies, and nature of corrective actions. Additionally, the inspection checklists for the process areas direct the inspector to immediately inform Mill management of any damage, leakage or spills found so that remedial action can be taken. CMGC also conducts routine documented inspections of the secure solid cyanide storage yard. The TSF and related systems are inspected on a daily basis by the Tailings Superintendent. Water levels in the impoundment, surface water diversions and pump-back sump are monitored on a daily basis. Visual inspections of the dam, barge, tailings slurry delivery and reclaim water pipelines, and pump stations are conducted every 10 days. The TSF design engineer conducts annual inspections of the facility, and RTN performs inspections at least every 6 months to ensure the facility is prepared for the thaw and freeze seasons, as part of Kupol's annual Flood Control Plan.

The CMGC environmental department also conducts a weekly inspection of the TSF and secure solid cyanide storage yard. This weekly inspection includes observation of wildlife mortalities at the TSF, where open cyanide solutions are stored. This inspection frequency for wildlife mortality is deemed adequate based on the low cyanide concentrations maintained in the tailings pond water and the fact that the packaged cyanide boxes are kept in locked, steel shipping containers within a fenced area. CMGC has no recorded wildlife mortalities to date. Aside from the tailings slurry delivery and reclaim water pipelines, the remaining cyanide facilities are enclosed within the mill complex buildings.

An outside contractor performs annual thickness testing on the leach and CCD tanks (large tanks). CMGC provided results of nondestructive (ultrasonic) thickness testing on the mixing tank, storage tank, and five leach tanks. No significantly low readings were recorded during the evaluation of the seven tanks that received inspection. CMGC also performs routine thickness testing of the smaller cyanide process tanks (i.e., mixing, storage, pregnant, barren, tailings head, cyanide destruction and reclaim water tanks) using its own handheld instrument. Testing is scheduled two times each year for the cyanide mixing, storage and destruction tanks, with the next testing episode scheduled for November 2009. Annual testing is conducted on the pregnant, barren, tailings head and reclaim water tanks.

Daily visual inspections conducted each shift also examine the physical integrity and available capacity of the secondary concrete containments provided for the process circuits. The secure solid cyanide storage yard is lined with geomembrane which drains to a steel sump (tank) located adjacent to the yard. CMGC environmental personnel visually inspect the exposed portion of the liner system and the collection sump weekly.

The Kupol operation does not utilize heap leach technology, and there are no ponds or containments requiring leak detection and collection systems. There is a pump-back

sump downgradient of the tailings impoundment that is designed to collect surface runoff from the downstream face of the embankment and surrounding area. The tailings impoundment dam is designed so that there will be no seepage through the dam and foundations and it is assumed that there will be no seepage via deep groundwater flow, as the tailings basin is rendered essentially impervious by permafrost. Nonetheless, the water level in the sump is monitored on a daily basis and the water quality is monitored and tested prior to discharge.

The Kupol operation generates its own power using seven diesel generator sets, operated in rotation; typically, two are on standby or out of service at any one time for PM. The generators on standby can be used as backup should one of the in-service generators fail. A separate emergency powerhouse, located at the camp facility, contains three additional diesel generators. These emergency generators are only used during a complete failure of the main powerhouse supply, and are capable of powering the camp facilities, mill offices and critical mill equipment, which also includes the tailings systems. Several additional containerized mobile generators are also available onsite for use in an emergency. Generators are started once per week, and PM is performed on all generators based on hours of operation.

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:

CMGC processes ore mined from open pit and an underground operations. The first cyanide mix took place in May 2008 and mill operations and cyanidation began in June 2008. Metallurgical testwork for the Kupol Project process development focused on process optimization and evaluation of ore metallurgical variability. Testing was conducted to evaluate whole ore leach and flotation/leach process options; optimize recovery, reagent consumption, and process economics; and to assess ore variability and finalize recovery estimates. Results of the study set the initial sodium cyanide addition rate used in the process.
The culmination of the metallurgical studies was the selection of a whole ore leach flowsheet, with gravity separation, for treatment of Kupol ores. The selection was based on the results of extensive testwork to evaluate both whole ore leach and flotation/leach options, and economic and technical considerations. Key studies conducted during the testing included the lab-scale optimization of the leach circuit parameters, the evaluation of cyanide destruction options and the assessment of cyanide recovery. The cyanide concentration for the economic optimum leach conditions was found to be silver grade dependent with higher grade supporting higher cyanide leach concentrations. The

economic optimum leach conditions were used to evaluate the metallurgical response of more than 50 ore variability samples comprised of single and multiple hole composites from the core drilling program.

CMGC maintains a leach profile, whereby the cyanide concentrations in the leach tanks are routinely monitored to regulate the optimum cyanide addition rate. The objective is to minimize the cyanide concentration while meeting internal and external budgeted recovery levels for silver and gold. Because cyanide can be delivered to the Kupol operation only one time each year, optimization of cyanide usage is critical to the economics of the operation, and CMGC adjusts cyanide concentrations continuously. Cyanide concentrations are measured continuously and automatically at the No. 1 and No. 2 leach tanks, and Mill Operators perform manual titrations at all the leach tanks as a check every two hours. The concentration of free cyanide is determined by titrating a representative sample and calculating the amount of free cyanide present. An initial target of 600 mg/l Free cyanide has been established as the initial set point. Data reviewed for 2009 showed cyanide concentrations in the leach tanks averaging approximately 500 mg/l, to date. Free cyanide concentrations are also measured in the CCD thickeners. CMGC generates an Assay Report for Daily Metallurgical Summary each day. This report provides a summary of gold and silver grades at various points in the process, as well as cyanide concentrations at the end of the process.

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:

CMGC has developed a comprehensive, probabilistic water balance model, which tracks water flow throughout the engineered water management facilities, including the mill complex and TSF. The TSF is the primary water management component at the Kupol operation. CMGC began using the water balance model in May 2007.

The model, designed and maintained by the design engineering contractor, incorporates collected site-wide data centering on the inputs and outputs of the TSF and calculates the elevation and volume of the water and tailings in the TSF on a monthly basis. The TSF is designed as is a zero-discharge facility using the underlying permafrost and an impermeable lined (upslope and base) rockfill dam as barriers to prevent underdrain water seepage. The model considers the following factors:

- Mill processing rate;
- Beginning average water level and volume in the TSF;

- Beginning average tailings level and volume in the TSF;
- TSF pond surface area;
- Inflows; and
- Outflows.

CMGC compiles and forwards site data to the design engineering contractor on a monthly basis (recently changed from a biweekly schedule). The data is input into the model by replacing predicted values with the actual values for that month. The data collected and compiled each month include:

- Area of active tailings disposal;
- Water surface elevation of the TSF (including ice thickness);
- Condition of surface water diversions;
- Ore processed by the mill (tonnes);
- Makeup water (freshwater) volume from the water supply reservoir and well system for process and camp use;
- Water volume pumped from the downgradient pump-back sump to the TSF;
- Water volume pumped from the Acid Rock Drainage (ARD) sump;
- Observations of the downstream embankment toe;
- Meteorological comments;
- Reclaim water volume pumped from the TSF to mill;
- Spigot locations;
- Thermistor readings; and
- Three-year water balance projection.

CMGC's design engineering contractor updates the model each month, advises CMGC of any concerns or discrepancies, and uses the results to schedule new lifts to the TSF embankment. The water balance model can be used to evaluate conditions for variable storm events including 1-in-100 and 1-in-200 wet and dry years. As the TSF is a zero-discharge facility, the impoundment is designed to provide adequate capacity to store average annual net water inflows, a 200-year return period wet year, and a probable maximum flood (PMF) event with adequate freeboard during the mine life.

When the water balance model was developed, insufficient climatic data were available at the Kupol site to allow correlation with regional meteorological stations (climatic recordkeeping at the Kupol site began in 2003). Therefore, a surrogate meteorological station (at a similar elevation and approximately 77 kilometers from the site) was used to calibrate the water balance model. Average annual precipitation is estimated at 240 millimeters, approximately 50 percent occurring as snow, based on records dating from 1948. Evaporation data obtained from another meteorological station located more than 80 kilometers south of the site were used to calculate lake evaporation for the TSF. CMGC has recently begun using the existing onsite meteorological database to recalibrate its model periodically and updates the model with actual weekly onsite data,

which includes meteorological data.

The stormwater diversion system consists of structures along the west and north upgradient sides of the TSF that serve to intercept and convey stormwater around the facility. The surface water diversions are designed to convey the peak discharge from the 1 in 200-year, 24-hour storm event while providing 0.3 meters of freeboard as well as a 0.3 meters allowance for ice accumulation. The water balance model conservatively assumes that the diversion structures will fail during a PMF and all diversion flow would be to the TSF. The water balance model also incorporates predicted freezing and thawing conditions on the accumulation of precipitation based on surrogate climatic data and snow pack information. The data are used to predict monthly runoff distribution including freshet conditions in the spring (June/July) and freeze up during the winter months. CMGC indicated the monthly distribution of annual runoff used in the model will be updated as actual flow data becomes available. Additionally, the impoundment is operated with a minimum four-meter depth of water, which includes two meters of ice in the winter. Furthermore, thawback inflows to the open pit and underground operations are considered by the model.

The primary seepage barrier for the TSF impoundment is the deep cold permafrost present in the area. The base and upslope of the rockfill dam is lined with a bituminous liner, which provides an effective barrier from seepage through or beneath the dam. Any seepage from the tailings dam, along with surface water from the tailings dam face and the slopes immediately below the tailings dam, is collected within a rock-lined sump (pump-back sump). Water collected in this sump is pumped back to the impoundment or discharged to surface water if the water quality meets regulatory requirements. Water quality data for samples collected from the sump indicate that water accumulating in the sump is surface water runoff from the dam face or the west diversion ditch and not associated with seepage from the impoundment.

The water balance model does not consider the effects of potential power outages or pump and other equipment failures. In the event of a power failure, the milling circuit ceases and water inputs to the mill stop. Discharge to the TSF would therefore be limited to drainage of the tailings slurry delivery and reclaim water pipelines line from the mill back to the impoundment. CMGC has estimated the volume of the tailings slurry delivery pipeline that would drain back to the impoundment to be 33 cubic meters. The design engineering contractor indicated that a power outage could be simulated by turning off the reclaim water loss component in the model. By doing this, the model calculates a three- to four-month period required to generate a volume equivalent to the PMF.

The Tailings Supervisor conducts documented inspections of the water levels in the tailings impoundment, surface water diversions and pump-back sump on a daily basis. CMGC compiles and forwards site data to the design engineer on a monthly basis, including the current water surface elevation of the TSF (including ice thickness) and

the condition of the surface water diversions. CMGC surveys the TSF pond elevation twice monthly and compiles the data in the Tailings Impoundment Monitoring Report, which describes the available freeboard. The report is provided to CMGC management and the TSF design engineering contractor. The site data are used to update the water balance model each month and to maintain dynamic three-year water balance projection.

As previously noted, the TSF impoundment is operated to maintain sufficient freeboard at all times to store the projected tailings volume and waste rock, plus four meters of water (at least two meters of free water and up to two meters of ice in the winter). The purpose of the two-meter minimum free water depth is to maintain sufficient depth beneath the pump barge to minimize the potential for tailings entrainment in the pumped reclaim water. A minimum of 1.5 meters of freeboard is provided above the resulting tailings and water level, comprising 1.0 meters for storage of a PMF event, plus 0.5 meters for waves above that level. This freeboard allowance is based on the Canadian Dam Association design criteria. CMGC operating procedure calls for calculating a new freeboard elevation (i.e., the dam overflow elevation minus the vertical distance required to accommodate the PMF volume and 0.5 meters of wave action) at the completion of each new dam lift.

When the water balance model was developed, insufficient climatic data were available at the Kupol site to allow correlation with regional meteorological stations. Therefore, surrogate climate stations were used to calibrate the model as previously noted. During the onsite verification audit, CMGC agreed to begin using the existing onsite meteorological database to periodically recalibrate its model, as necessary.

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 TSF is the only facility at the Kupol operation in which open cyanide-bearing solutions are stored. The operation does not have other active solution ponds, open solution channels, or sumps. Prior to delivering tailings to the TSF, CMGC treats the tailings slurry with calcium hypochlorite to destroy cyanide and thiocyanate to less than 5 mg/l Total cyanide and 10 mg/l thiocyanate. These concentrations are established in an operating contract with the government.

The functional operation of the cyanide destruction circuit and post-destruction cyanide concentrations are continuously monitored via the DCS in the mill control room.

Additionally, CMGC manually acquires samples at the discharge of the cyanide destruction circuit (tailings head tank) every four hours, which are analyzed for WAD and Total cyanide concentrations. Measured levels are recorded in the daily report, "Assay Report for Daily Metallurgical Summary." Any failure of the cyanide destruction circuit would be treated as an emergency, and the mill operator would immediately initiate mill shutdown procedures prior to taking immediate action to rectify the situation.

It should also be noted that based on the large size of the TSF supernatant pond and the low WAD cyanide concentrations maintained in the pond dilution would be substantial if a simultaneous temporary failure of both the destruction circuit and the tailings slurry cyanide concentration monitoring program were to somehow occur.

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 Kupol process circuit is designed and operated as a closed circuit with zero discharge to surface water or groundwater. The primary seepage barrier for the impoundment is the deep permafrost present in the area. The base and upslope of the rockfill dam is lined with a bituminous liner, which provides an effective barrier from seepage through or beneath the dam. Any seepage from the tailings dam, along with surface water from the tailings dam face and the slopes immediately below the tailings dam, is collected within a rock-lined pump-back sump. Water collected in this sump is pumped back to the impoundment or discharged to surface water if the water quality meets regulatory requirements. Water quality data for samples collected from the sump indicate that water accumulating in the sump is surface water runoff from the dam face or the west diversion ditch and is not associated with seepage from the impoundment.

CMGC provided water quality data at the pump-back sump that demonstrated Total cyanide levels were typically less than the detection limit (<0.05 mg/l). The designated beneficial use of surface water downgradient of the TSF is "Fishery Basin." The maximum allowable concentration of Total cyanide for this water classification is 0.05 mg/l. No indirect discharges have caused cyanide concentrations in surface waters to rise above levels protective of the numerical regulatory standard for protection of the beneficial use of aquatic wildlife. CMGC provided water quality data for May 2009 measured at three downgradient surface water monitoring points as well as the pump-back sump. The Total cyanide levels at all four locations were below the detection limit and the regulatory maximum allowable concentration.

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:

The Kupol TSF is designed, constructed and operated to prevent seepage through the dam and foundations. The dam is a rockfill embankment with an impervious bituminous geomembrane liner placed on the upstream face (and under the upstream portion of the foundation) to minimize seepage loss through the dam and foundations. The bituminous liner is protected by a bedding layer and an HDPE over-liner to prevent ice adhesion, and is wrapped approximately 50 meters beneath the upstream portion of the starter dam foundation. This liner material is chemically compatible with the tailings slurry. It is assumed that there will be no seepage via deep groundwater flow, as the tailings basin is rendered essentially impervious by permafrost. Tailings are distributed to the impoundment by spigots along the dam face and by concentrated single point discharges at the dam abutments to provide additional seepage protection at the upstream toe and abutments of the dam. Surface water diversions are constructed above the TSF and serve to protect the pond from surplus water accumulation during wetter than normal years. Regular monitoring of the tailings pond water depth and volume is conducted to ensure that the operating criteria are being met.

The Kupol process circuit is designed and operated as a closed circuit with zero discharge to surface water or groundwater. Any seepage from the tailings dam, along with surface water from the tailings dam face and the slopes immediately below the tailings dam, is collected within a rock-lined pump-back sump. Water collected in this sump is pumped back to the impoundment or discharged to surface water if the water quality meets regulatory requirements. The remainder of the process facilities, with the exception of the tailings slurry delivery and water reclaim pipelines, are located within concrete secondary containment inside the mill complex buildings. The tailings slurry delivery and water reclaim pipelines are constructed of HDPE material and are located above ground to facilitate regular inspections. Daily water quality data at the current downgradient groundwater monitoring point that demonstrated Total cyanide levels for this period to be less than the detection limit (<0.002 mg/l). The designated beneficial use of groundwater downgradient of the TSF is classified as "Potable." The maximum allowable concentration of Total cyanide for this water classification is 0.035 mg/l, in accordance with the applicable Russian Federal standard [*Hygienic Norm 2.1.5.1315-03, Maximum allowable concentration (MAC) for chemical compounds in water of household and domestic water use*].

The Kupol operation does not currently use mill tailings as underground backfill. Seepage has not caused cyanide concentrations in groundwater to rise above levels protective of beneficial use.

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:

All cyanide mixing, storage and process tanks at the Kupol operation are located inside the mill complex buildings within concrete secondary containment. The concrete containments are hydraulically linked to provide a combined capacity greater than 110 percent of the largest tank volume located within each containment area. The foundations for all tanks containing cyanide solution and slurry, with the exception of the CCD thickener tanks, are concrete pads. The CCD thickener tank foundations are solid mass concrete piers bolted into bedrock. The process circuits (i.e., mixing/storage, leach, CCD, Merrill-Crowe and cyanide destruction) are physically separated into four areas, each area having dedicated concrete containment and dedicated collection sumps for returning any spillage to the process tanks. The reclaim water tank is located within the concrete containment provided for the ball and SAG mills (i.e., the grinding bay). The mixing and storage tanks are located within a secured room in the mill building, which has a reinforced concrete floor and stem walls. The mixing/storage room is divided in half by a one-meter tall, reinforced concrete containment wall along its center axis, which forms the common containment for the mixing and storage tanks.

The leach tanks, CCD thickener tanks and the pregnant and barren solution tanks are located in the "tank building", which also has a reinforced concrete floor and stem walls. The tank building is contiguous to the mill building, separated by a common stem wall and elevated access corridor. The containment has two concrete floor sumps with dedicated pumps to return any spillage to the process tanks. This containment is hydraulically linked to the adjoining concrete containment areas provided for the cyanide destruction circuit (also located in the tank building) and the grinding circuit (i.e., the grinding bay located in the mill building). The grinding bay and the containment for the cyanide destruction circuit tanks have their own floor sumps equipped with dedicated pumps.

The process components of the Merrill-Crowe circuit located outside of the refinery include the solution clarifiers and the Merrill-Crowe tower. These vessels are located in an area of the mill building, which has a reinforced concrete floor and stem walls. The containment area has a concrete floor sump with a dedicated pump to return any spillage

to the CCD thickener tanks.

The cyanide destruction circuit, which also includes the tailings head tank, is located in the tank building within a curbed concrete containment area with a floor sump equipped with a dedicated pump to return any spillage to the tanks. The reclaim water tank is located in an area of the mill building, which has a reinforced concrete floor and stem walls, and shares the concrete floor sumps provided for the milling equipment. This containment area is hydraulically linked to adjacent containment areas, including the central mill area (where the Merrill-Crowe circuit is located) and the refinery area. These areas have concrete floor sumps, with dedicated pumps to return any spillage to the process circuit.

As previously discussed, the concrete containment areas in the tank building and mill building are interlinked to provide adequate secondary containment for the process tanks. Therefore, the grinding bay sumps would collect cyanide process solution/slurry from leakage occurring from the reclaim water tank and from spillage resulting from the complete failure of a leach tank. CMGC has demonstrated that the WAD cyanide concentration of the water used in the grinding, gravity separation, and pre-aeration circuits is consistently maintained below 0.50 mg/l and prefers to exclude these circuits from the Kupol active cyanide facilities. Therefore, because the reclaim water tank is located in the grinding bay and spillage from the tank would flow directly into the grinding bay sumps, CMGC has implemented a procedure to manage spillage from the tank collected in the grinding bay floor sumps so that it is not introduced into the grinding circuit. According to written correspondence provided by CMGC, the dedicated pumps at the grinding bay sumps are activated by the control room operator per radio command from the grinding operator. Thus, the grinding operator can determine the source of water flowing into the sumps prior to pumping. Additionally, operations personnel continuously monitor the process tanks and their containments for structural integrity and any evidence of leakage and/or spillage.

In the event that the largest process tank (i.e., No. 1 leach tank) failed, 100 percent of its volume would be contained within the tank building, and the sumps within those containment areas would collect spillage for return to the cyanide process circuits. Therefore, the grinding bay area would function, in a catastrophic event, to provide a surplus secondary containment volume equal to 12 percent of the largest tank.

The solid cyanide storage yard is lined with geomembrane which drains to a steel sump (tank) located adjacent to the yard. CMGC environmental personnel inspect this sump weekly and security personnel working at the cyanide storage yard inspect the sump during their periodic rounds within and between shifts. Accumulated surface runoff collected in the tank is sampled for cyanide by the environmental department. If the water level rises to within one meter from the top of the tank, it is discharged following sampling. If the water quality is acceptable, the water is pumped out and discharged to the environment at a point not less than 15 meters downgradient of the tank. Otherwise,

if cyanide is detected, an investigation of the source is immediately triggered and the accumulated runoff is pumped out and disposed of in the tailings impoundment.

CMGC has constructed all cyanide process pipelines with spill prevention and containment measures to collect leaks and prevent releases. All pipelines in the process circuits are located above ground and within concrete containment inside the mill complex buildings. Cyanide pipelines located outside the mill complex buildings are not in close proximity to surface waters.

The tailings slurry delivery and reclaim water pipelines between the mill complex and the TSF are located above ground. Leaving and entering the mill complex, the pipelines are situated on top of the ground alongside a road. The pipelines are then contained within an earthen channel for a short segment crossing a storage area to a point where the pipeline corridor meets with the road to the TSF. At this point, the pipelines lie on top of the ground alongside the road or on the road itself. At all roadway crossings, the pipelines pass through corrugated metal or plastic culverts laid beneath the road surface.

Leaving and entering the mill complex, where the tailings slurry delivery and reclaim water pipelines are situated on top of the ground, spillage would be contained within a flat, shallow bermed area along the pipeline corridor and within the adjacent earthen storage/laydown areas. Further towards the TSF, where the topography begins to steepen, spillage would be contained within an approximate one-meter deep, earthen channel and within a shallow bermed corridor. Where the pipeline corridor meets with the road to the TSF, spillage from the pipelines either would be contained on the road by the road berm or at certain unbermed locations, could flow off the road onto the adjacent undisturbed area.

CMGC has constructed deflection berms and earthen catchment basins alongside the road to the TSF to direct and capture spillage from potential bursts in the tailings delivery and reclaim water lines. Other measures implemented to prevent adverse impacts to surface water and groundwater include operating the slurry lines with full flow to prevent excess wear on the pipe walls. Furthermore, CMGC has implemented a specific procedure for responding to bursts in the tailings pipelines.

CMGC uses steel and HDPE pipelines for conveyance of cyanide solutions and slurries. Cyanide mixing, storage and process tanks are steel. These materials are compatible with cyanide and high pH solutions.

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:

CMGC implemented Quality Assurance and Quality Control (QA/QC) programs during construction of new cyanide facilities. Apart from the new hypochlorite mixing area now under construction, no modifications have occurred subsequent to the original construction. Russian regulations consider all mines to be intrinsically hazardous industrial facilities, and as such are under RTN oversight for ensuring that these facilities are constructed according to appropriate design standards and technical specifications. The Kupol cyanide facilities are classified as hazardous industrial facilities and subject to this requirement. Therefore, prior to commissioning these facilities, RTN required documentation certifying that all components of construction were completed according to appropriate design standards and technical specifications.

CMGC has retained all QA/QC documentation and as-built certifications for the construction of the cyanide facilities at the Kupol operation. The QA/QC documentation for each facility component includes a "Passport" and "Acts." The Passport document provides a description of the facility component (e.g., the cyanide storage tank) and references the appropriate technical specifications. An Act is the certification for each work component associated with the facility covered by the Passport. These items are inspected by a certified company, which issues the Certificate of Conformance required by RTN. Certified inspections were performed on all prefabricated facilities. The tailings head tank and Merrill-Crowe tower were prefabricated. CMGC presented certified inspection reports for these facilities covering tank bottoms, walls, coating and leak control testing results.

During the onsite verification audit, CMGC presented the above-described QA/QC documentation for all the cyanide facilities constructed on site, with the exception of the TSF. A separate, comprehensive QA/QC program was conducted by the design engineer for the construction of the TSF. The design engineer's construction report includes a description of the starter dam design and design modifications implemented during construction, inspection reports, field and laboratory test results, description of QA/QC procedures and results, photographs documenting construction progress and final conditions, as-built drawings and confirmation that the starter dam construction was carried out in accordance with the design intent. The suitability of earthworks materials and construction, liner installation, and instrumentation were also addressed.

Original QA/QC documentation for the cyanide facilities was prepared by appropriately qualified personnel. A qualified engineering company performed the QA/QC during construction and prepared the final construction report certifying that the TSF was constructed in accordance with the design intent. The original QA/QC documentation

for the remaining cyanide facilities was certified by a qualified civil engineer and by certified companies that performed inspections required for conformance.

Additionally, CMGC provided QA/QC documentation for modifications made subsequent to the onsite verification audit to increase the secondary containment capacities provided for the No. 1 leach tank and the reclaim water tank, which included an Act for each component of the work and materials. The QA/QC documentation was prepared and signed by qualified personnel and included a signed statement certifying that the works were executed according to the drawings.

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:

CMGC has prepared and implemented written standard procedures for monitoring activities to evaluate the effects of cyanide use on wildlife, surface water quality and groundwater quality. The operation uses a governmental standard protocol (GOST R 51592-2000 Water, General Requirements to Sampling) for monitoring surface water and groundwater. CMGC has developed a detailed monitoring schedule for all water quality monitoring locations, which includes monitoring frequency and parameters. Wildlife monitoring is integrated into daily inspections the TSF and the site-wide weekly inspections performed by environmental personnel.

GOST R 51592-2000 provides the analytical methods and procedures used by CMGC for monitoring surface water and groundwater quality. The protocol was developed by Rosstandart, which stands for (Federal Agency on Technical Regulating and Metrology), a qualified entity. Rosstandart is included in the system of federal executive bodies of the Russian Federation and is under jurisdiction of Ministry of Industry and Energy of the Russian Federation. CMGC has developed a detailed map and monitoring schedule for all water quality monitoring locations, which provides the sample locations, sampling frequencies, laboratory parameters to be measured (including cyanide species), sampling methods and the laboratory to be used (i.e., the onsite Kupol laboratory or a qualified contractor laboratory in Magadan).

The current protocol includes the requirements for the sampling equipment and the reporting of sample results; and procedures for sample preparation, storage, transportation, and receipt by the laboratory (including preservation techniques and chain of custody procedures). The protocol references ISO 5667-1-82, ISO 5667-2-91 and ISO 5667-3-94 standards (i.e., Water quality - Sampling - Part 1: Guidance on the

design of sampling programs and sampling techniques, Water quality - Sampling - Part 2: Guidance on sampling techniques, and Water quality - Sampling - Part 3: Guidance on the preservation and handling of water samples).

CMGC provided the procedure for securing the insulated coolers used to transport water samples to vendor laboratories. Shipping manifests, which also serve as the chain of custody forms, were also provided for review. The laboratory returns the signed original manifest to CMGC with the results of the analyses. CMGC maintains electronic copies of its water quality sample logs. These logs document the sample location, number, packaging (e.g., plastic or glass bottles and sizes), and parameters to be analyzed. These logs are sent to the laboratory with the samples. The laboratory provides a sampling protocol certificate with the analytical results. CMGC sampling logs document various field conditions, including weather and the characteristics of the sampling location, as well as field parameters.

The Kupol operation is a zero discharge facility and does not discharge process water. CMGC monitors surface water and groundwater quality downgradient of the site to ensure that indirect discharges are not occurring. Sampling locations include 21 surface water monitoring points and 2 groundwater monitoring points. Each groundwater monitoring location consists of three wells, which allows CMGC to detect the direction of groundwater flow. Cyanide was not included as a monitoring parameter until May 2009, when the TSF had been in operation for a period of one year. Data indicate that Total cyanide levels at all four locations were below the detection limit and the regulatory maximum allowable concentration.
Wildlife observances, although not formally documented, are part of the daily inspections performed at the TSF. CMGC environmental personnel also conduct a weekly inspection of the TSF and solid cyanide storage yard, which includes observation of wildlife mortalities at the TSF, where open cyanide solutions are stored. This inspection frequency for wildlife mortality is deemed adequate based on the low cyanide concentrations maintained in the tailings pond water and the fact that the packaged cyanide boxes are kept in locked, steel shipping containers within a fenced area. Aside from the tailings slurry delivery and reclaim water pipelines, the remaining cyanide facilities are enclosed within the mill complex buildings. CMGC has no recorded wildlife mortalities to date.

The Kupol operation is subject to three regulatory reporting programs. The Department of Water Resources – Amursk Water Basin Management Administration for Chukotka AO requires water quality parameters for the two potable water sources on a quarterly basis as a requirement of the "Water Use Contract" that CMGC has with the government. However, analysis for cyanide is not required by this contract. The Senator of Authorities requires weekly analyses of the drinking water used at the camp and offices. Due to transportation constraints, the samples are normally shipped on a monthly basis. Water quality data compiled pursuant to the EIS is kept by CMGC and data provided to the authorities upon request.

***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:

CMGC has recently updated its "Reclamation and Closure Plan for the Kupol Project" (December 2008). The plan is based on earlier versions that were developed to support the feasibility study and permitting process (2005), and was updated, in part, to support negotiations with international lending institutions. The December 2008 version incorporates changes derived from an initial 6 months of actual operating data and the geochemical monitoring of waste rock characteristics. The primary stated purpose of the plan is to develop and maintain a current best estimate, updated with operational data, of actual mine decommissioning and closure costs that consider the currently projected life of mine. The sustainability element of Kinross's corporate EHS Management System requires that the "Reclamation and Closure Plan for the Kupol Project" be kept current in order maintain a current best estimate of ultimate decommissioning and closure costs over the currently projected life of mine.

The "Reclamation and Closure Plan for the Kupol Project" addresses the other required elements of a decommissioning plan as required by this Section of the ICMC, including:

- Drawdown of reagent stores in the final year of operation, and neutralization of residuals or back-haul of unused reagent for sale or transfer to third parties;
- Chemical neutralization, rinsing, and demolition of cyanidation process equipment , tanks, and pipelines in the mill, with residuals routed to the tailings management facility;
- Removal and disposal of the tailings pipelines and pump station;
- Managing the volume of supernatant pond to a minimal level, and installation of water treatment systems to ensure treatment of metallic contaminants in surface water at or below regulated discharge levels; and

- Monitoring of the tailings pond surface to assess the annual rate of freezing and consolidation of the tailings mass (which must be frozen before the installation of a final closure cover).

The "Reclamation and Closure Plan for the Kupol Project" also specifically discusses Russian regulatory requirements for decommissioning and closure. Based on the interpretations provided in the plan and confirmatory discussions with Kinross and CMGC management, although no specific regulatory requirements exist that separately require the mine to develop draft decommissioning and closure plans that are periodically updated over the life of the mine, Russian regulations do strictly define a rigorous planning process that applies at the point of closure. At closure, these requirements include:

- Appointment of a commission to oversee the decommissioning and closure process;
- Compilation and presentation of economic calculations that support the decision to close the mine;
- Development of the closure plan scope of work to ensure a comprehensive approach to decommissioning and closure;
- Commissioning of an appropriately licensed engineering firm to prepare the decommissioning and closure plan per the approved scope of work;
- Presentation of the final decommissioning and closure plan for expert technical review with respect to environmental, industrial safety, and mine safety considerations;
- Implement the approved decommissioning and closure plan under the direction of personnel certified for the supervision of hazardous industrial facilities;
- Document the work performed and the effectiveness of the decommissioning and closure process in an "Act of Transfer/Acceptance" acceptable to the oversight commission; and
- Submittal of specific documentation as necessary to remove the closure mine from the Russian government's register of hazardous industrial facilities.

In summary, the existing plan was developed in consideration of international best practices, does present a comprehensive approach to closure, has been updated at least once since the initiation of mining in 2008, is required to be kept current in order to support the accuracy of the annual Asset Retirement Obligation (ARO) review required

by Kinross corporate, and should provide an effective basis for developing the detailed scope of work and final planning documents required by Russian regulations at the point of closure.

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

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

Describe the basis for this Finding/Deficiencies Identified:

CMGC has established an ARO Estimate for the Kupol mine based on current (January 26, 2005) Kinross corporate guidance that requires the use of third-party closure costs as the basis for estimation. The ARO Estimate is required to be updated on at least an annual basis over the life of the mine, or more often in response to "material changes" (i.e., major facility or operational changes or cost changes) that could affect any decommissioning costs, including those related to the use of cyanide.

Although closure planning and approval requirements are rigorous at the point of closure, Russian regulations do not currently require a financial guarantee to address the cost of decommissioning and closure of cyanide facilities. Kinross has established its own financial assurance mechanism to address the needs of mines in host nation jurisdictions (such as Russia) that do not require such assurances. This corporate standard is designed specifically to address the self-insurance/self-guarantee and financial strength provisions of the ICMC for Kinross properties in host nations that do not impose specific financial assurance requirements. Kinross's standard specifically defines the mathematical assumptions to be used to calculate the amount of the required financial reserve. The standard is based on the requirements of the U.S. Code of Federal Regulations, and requires each mine in this situation to be able to demonstrate the sufficiency of financial assets for cyanide facility decommissioning. Such mines 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 a periodically updated and independently audited ARO Estimate), a high level of tangible net worth, and assets substantially greater than the sum of all cyanide-related decommissioning activities. The costs for cyanide facilities requiring consideration under the code were based on the current ARO Estimate spreadsheet, and adjusted for the guidance provided in the ICMC (which specifically excludes physical stabilization, revegetation, long-term seepage management, and environmental monitoring). The Kinross corporate standard also requires an annual audit of the financial assurance figure so obtained, by an independent financial auditor in accordance with Section 9100 of the Canadian Institute of Chartered Accountants (CICA) Handbook. A certified financial auditor from an international audit firm was retained to

perform the audit. A signed report was provided that affirms that the method used for calculating financial assurance reserves was acceptable, and that Kinross's available financial resources are more than adequate to implement the decommissioning plan.

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:

CMGC has developed four comprehensive operating manuals for the areas of the process plant in which cyanide is used. Each manual includes operating procedures common to each area, as well as area specific procedures. Procedures common to each area include general safety, emergency evacuation, accident reporting, use of fire extinguishers; work permits, confined space entry, use of emergency showers and eye washes, spill response, as well as other none cyanide specific operating procedures. The area specific procedures describe equipment operating tasks and controls. The Leach Operator Manual includes detailed operating procedures for plant operations, including the leach and CCD circuits, flocculent mixing and feeding, cyanide destruction and tailings disposal. This manual also includes procedures on equipment decontamination. The Reagent Operating Manual provides procedures for cyanide mixing. In addition to these manuals there are also a series of work "Instructions" that provide detailed PPE, pre-work checks and safety requirements when performing specific tasks.

RTN requires a work permit approval process to be followed before an employee is permitted to work in a hazardous area. CMGC requires a work permit to be completed for work in a confined space, in a toxic environment, or on contaminated equipment. The use of appropriate personal protective equipment (PPE) is a workplace requirement for all employees and contractors. In addition to the requirement to wear hardhat, steel toes boots and safety glasses everywhere in the workplace except for a few designated areas such as administrative offices and the camp, there is also a requirement for workers to wear additional personal protection where there is a risk of exposure to cyanide. Signs are posted in those areas of the plant where additional PPE is required to be worn. Also, there are a series of task related "Instructions" that detail specific safety

and PPE requirements when undertaking specific tasks.

Pre-work checks are included in operating procedures for operating tasks. Pre-work safety checks and specific PPE requirements are included in the Instructions. If work is to be carried out on units which contain or convey hazardous materials or there is a potential for toxic gases or ventilation issues a work permit is required. Work permit requirements include assessment of the job hazard assessment, PPE requirements, instruction to workers and worker sign-off, and approval by the mill manager before work can commence. Applicable "Instructions" for the proposed work task are attached to the work permit. For routine work assignments workers also complete a "5-Point" Checklist which includes pre-work inspection and safety checks before work begins.

The "Project Design" element of Kinross's corporate EHS Management System requires that all components involving cyanide be designed and constructed in compliance with ICMC requirements. The same section also requires that location-specific project aspects be evaluated in terms of hazard identification and mitigation, potential industrial hygiene exposures, and other critical factors. The "Management of Change" element of the EHS Management System requires that the environmental, health and safety aspects of a major facility change be identified, evaluated, and control measures developed where necessary before a change is implemented. CMGC fulfills these requirements in the execution of AFEs for major facility changes. Because mining operations are considered to be intrinsically hazardous industrial operations under Russian law, all such changes require advance review and approval by the mine safety agency, RTN. In addition, the Kinross AFE process requires significant technical and operational justification for any capital expenditure >$5000 in value, with greater level of detail and additional levels of management approval required as project value and complexity increase.

The adequacy of the requirements for preoperational testing is included as part of an environmental review, along with other environmental issues that have an occupational health and safety component. All such projects are subject to rigorous oversight on the part of RTN, and do not receive funding without a thorough, multidisciplinary evaluation of the associated occupational heal and safety issues by Kinross and CMGC management, and the mitigation of occupational health and safety risks via the optimization of design, operational planning, and associated training programs.

Minor changes in the site's existing processes and operating practices costing <$5,000, proposed changes are documented by the manager of the affected area, discussed with the affected operational managers as well as the Environmental and HSE Managers, and prepared as an "Order of Regulation" or directive, signed by the Deputy General Manager and endorsed by affected managers and operators after completion of training discussions.

Workers are strongly encouraged to submit recommendations for improved safety measures, through formal weekly safety meetings, submitting written recommendations via their supervisor to the Mill Chief Engineer, and through the 5 Point Safety program.

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

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

Describe the basis for the Finding/Deficiencies Identified:

To prevent the generation of HCN gas, sodium cyanide solutions are maintained above pH 12.0 and slurry above pH 10.0. Lime is added to the leach circuit as part of the process to passivate sulfide minerals and optimize the extraction of gold and silver. . Additional lime is also added at the pre-aeration tank as required to ensure that the pH of the slurry entering the leach circuit is maintained above pH 11. Further pH adjustment can be made by adding lime to leach tanks 1 and 2 as needed. The pH level is measured throughout the process for HCN control. The mixing procedure also requires that the barren solution entering the mix tank is maintained above pH 12 and the control room will not allow a mix to begin if this pH is not met. The importance of maintaining pH in the cyanide circuit is emphasized in the cyanide awareness training provided to all mill workers as well as in the operating manuals.

CMGC has good process controls in place to prevent the generation of elevated HCN in the workplace. During inspection of the mill, ambient HCN concentrations varied between 0.0 and 0.6 ppm; the highest reading was in the mix room. CMGC has an ongoing sampling program that uses a portable HCN meter to monitor HCN concentrations at 17 locations in the mill on a 10 day schedule. The Mill Manager and Deputy General Director/Vice President indicated that based on the results of the monitoring program there is not a potential for exposure to hydrogen cyanide or cyanide dust in concentrations greater than 4.7 parts per million continuously over an 8-hour period. Review of records for HCN monitoring conducted in March, May and June 2009, confirmed that HCN concentrations were generally low and varied between 0.0 ppm and 1.9 ppm, with the highest readings recorded in the leach and CCD areas. CMGC has nevertheless installed fixed HCN monitors in the cyanide mixing, leaching, Merrill Crowe process, CCD, and Cyanide destruction areas. The monitors installed were originally Russian manufactured Cypro -7C units that alarmed (visual/audible) at 10 ppm HCN and met Russian regulatory requirements. The mill recently gained approval with the Russian authorities to replace these units with Draeger Polytron 7000 systems that are able to alarm at 4.7 ppm and 10 ppm. A total of five Draeger Polytron 7000 units have been ordered. Two of these units had been received and installed at the time of the site audit. One is located in the cyanide mix area and the other in the leach

area. Both units have been set to alarm at 4.7 ppm and 10 ppm. At the time of preparing this report the mill was awaiting delivery of the remaining three units to replace the Cypro-7C units presently in operation in the Merrill Crowe, CCD and Cyanide destruct areas. Once installed, all fixed units will alarm at 4.7 ppm and 10 ppm.

All employees that work with cyanide are provided with two full face gas respirators fitted with dust/HCN canisters for their personal use. Employees have been trained in their proper fitting and use. The employee keeps one of the respirators in his/her immediate work area and the other in a storage locker next to the control room as a backup if needed. Employees are required to wear the respirators to undertake certain maintenance and operational tasks. These requirements are documented in the "Instructions."
CMGC recently purchased a self-contained breathing apparatus unit for the control room. The control room operators have been trained to use the equipment in the event of an emergency.

Cyanide warning signage are prominently posted on the cyanide mix and storage tanks, the leach and CCD tanks and the two cyanide destruction tanks. Warning signs are also posted on doors to the mill, and at strategic locations along the tailings and reclaim pipeline routes and at the tailings impoundment facility. Pipelines within the mill and chuck/booster station building for the tailings/reclaim pipelines are also labeled to identify their contents. In addition, the high concentration cyanide lines in the mix room and between the mix room and the leach tanks are color coded for easy identification. Labeling and flow direction arrows have been placed at strategic locations to identify contents and flow direction in process lines. No cyanide warning signage was observed on the entrance gates or fencing surrounding the dedicated cyanide storage compound; however; the compound is manned and regulated by security guards and equipped with barbed wire fencing, floodlights and security cameras. In addition, each steel intermodal container stored in the compound is identified with a full shipping label and identification in both English and Russian.

"No smoking" signage is prominently posted throughout the mill and signs prohibiting drinking/eating or taking food into the process area are posted at some entrances to the mill near the lunch canteen. Operating manuals also include instructions prohibiting smoking, chewing gum or tobacco, or eating in any area where contamination by cyanide is possible.

Shower /eye-wash units are located in areas where there is a potential for exposure to cyanide. These include units in the cyanide mix room, above the leach tanks, in the containment for the leach and CCD circuit, in the Merrill-Crowe circuit and the cyanide destruct circuit. The units are painted yellow for easy recognition. Pressure gauges are installed on each shower/eyewash unit showing the water pressure is regulated at between 25 and 40 psi.

Showers and eye wash stations are checked and tested daily during each shift. The cyanide mix procedure also requires that the shower/eye-wash station operation is checked prior to conducting a mixing operation. In addition to the scheduled shift inspections, there is a planned site inspection program where supervisors, safety officers and mill managers conduct separate scheduled inspections which include spot checks of safety equipment including emergency shower access and operation.

Dry chemical fire extinguishers are provided in the cyanide use areas. Each department is responsible conducting monthly inspections of extinguishers located within their work area. The Fire Brigade Commander is also required to conduct monthly inspections of fire safety equipment. Fire extinguishers are tagged to indicate completion of an inspection and were observed to be up to date. Some untagged units were identified during the audit but these were charged, in good condition, and tags have been ordered. Units requiring maintenance are returned to the manufacture for maintenance or replacement.

Cyanide warning signage is prominently displayed on entrances to the mill and cyanide mix room, as well as on the mix, storage, leach, CCD, and cyanide destruct tanks. Lines that convey high- concentration cyanide (i.e., in the mix room and between the mix room and the leach circuit) have been color coded for easy recognition. Labeling and flow direction arrows have been placed at strategic locations to identify contents and flow direction in process lines. Cyanide warning signs are also located along the tailings slurry and water reclaim lines and access ways to the TSF.
No cyanide warning signage was observed on the entrance gates or fencing surrounding the dedicated cyanide storage compound. However this is not considered significant as the compound is manned by security guards and equipped with barbed wire fencing, floodlights and security cameras. Entrance to the compound is strictly regulated by the guards. In addition, each steel intermodal container stored in the compound is identified with a full shipping label and identification in both English and Russian.

All employees are made aware of the potential hazards associated with the handling and mixing of chemicals and are trained in the use and location of MSDS. Copies of MSDS for the main reagents used in the cyanide process are included as appendices to the mill operating manuals. An MSDS for sodium cyanide is also posted in the mix room. In addition, written instruction on first aid response to cyanide exposure is posted at each of the first aid stations in the plant. This information is supplemented by information on properties of cyanide, requirements on personal hygiene and PPE when working with cyanide, and first aid response to cyanide exposure presented in the "Instructions." In addition, there is prominent signage about the mill on required PPE use, no food to be taken into the process areas, and warnings for hazardous chemicals present, with specific reference to cyanide. The MSDS and first aid instructions are all in the written in Russian, the first language of all the operators.
CMGC also has a procedure in place to investigate and evaluate worker health and safety incidents. This procedure follows the requirements of Russian regulation. In

Russia, all incidents involving cyanide are considered safety incidents and are reportable through the regulatory driven safety incident reporting process. In addition, CMGC follows Kinross corporate reporting requirements whereby all occupational injuries and illnesses, property damages, environmental damages, production delays, near miss events or any other events that may affect operational efficiency are reported internally.

As required by Russian regulation, all reported accidents/incidents must be investigated immediately by an assigned committee. No cyanide releases have occurred at the plant since operations began in 2008, so the implementation of the incident investigation program was reviewed through examining a number of non-cyanide related incidents. One investigation report (dated 5 June 2009) related to a minor injury of an employee caused by poor mobile crane operation; another (dated 16 April 2009) related to the dropping and damage of a loaded cyanide shipping container. Investigation records completed for these incidents include a description of the incident, qualification and medical examination of the worker involved in the incident; investigation of the cause of the incident; and recommendations of improvements in work practices, equipment or procedure to prevent a similar incident from happening again.

In Russia safety incidents are classified into light injury, serious injury, group injury or fatality depending on severity. If an operation is shut down for more than 24 hours, the incident is classified as an accident. The level of investigation and reporting to the Russian authorities is extensive for anything but the smallest incidents.

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/eyewash stations and antidote kits are strategically located in the mill. The water supply to each shower/eyewash unit is regulated at a pressure between 25 and 40 PSI. Antidote kits are available in first aid cabinets located next to the entrance to the metallurgical laboratory; leach tank No.3; CCD thickener No.1; cyanide mix room; refinery; reagent storage/cyanide unloading area; by the control room, and in the refrigerator in the control room. The paramedics also keep a supply with their emergency response kit at the medical centre in the camp. The amyl nitrite is manufactured in the Ukraine and was being stored in and replaced as directed by the manufacturer. A medical oxygen unit with resuscitator is kept with the paramedic emergency response kit. There are also three medical oxygen units with resuscitators kept at the mine rescue emergency centre located at the mill.

Management personnel and shift foreman are issued radios. There are also telephones located in the mill and many workers also carry cell phones. The control room also has a fixed amplified radio to monitor radio traffic. In addition, there is an alarm system in the mix room and reagent area that can be activated in the event of an emergency. Workers are trained to notify their supervisor or the control room of an emergency via radio or phone. CMGC has recently ordered a public address system that will be installed in the mill to provide additional communication options.

Antidote kits are available in first aid boxes located strategically about the mill and with the emergency response kit retained by the paramedics. Each kit contains one ampoule of pentyl (amyl) nitrite. Additional ampoules are stored in a refrigerator located in the control room. The amyl nitrite is manufactured in the Ukraine and was being stored (i.e., at ambient temperature, which in Russia is defined as between 5 and 32 degrees centigrade) and replaced every 6 months as directed by the manufacturer. The manufactured date of the amyl nitrite supply was current.

The first aid cabinets and the refrigerator in the control room are sealed with a tag, signed by the mill superintendent. Unless there is a necessity, employees are not permitted to break the seal and open a cabinet except in the presence of a member of the management team. The cyanide exposure first aid stations are visually inspected each shift to ensure the seal is not broken. An inventory of the first aid cabinet contents including a check on the expiry date of medicines is undertaken monthly.

CMGC has developed three emergency response plans that cover areas of the operation where cyanide is handled; these include:

- Emergency Response Plan (ERP) Kupol Processing Plant;
- ERP Kupol Mine Tailings Impoundment Facility; and
- ERP - Reagent Storage Area and Road Reagent Storage – Mill.

Each ERP details specific response procedures for separate potential emergency scenarios, including cyanide spills and worker exposure or poisoning at the mill, reagent storage facility and on road to the reagent storage. All employees that work with cyanide are trained to recognize symptoms to cyanide exposure and in emergency notification and first aid. Symptoms of cyanide exposure and first aid response are documented in the ERPs and in the safety "Instructions" associated with cyanide related tasks. Rescue procedures and first aid for worker cyanide exposure are also posted at first aid stations located in the mill, mix area and reagent storage/cyanide unloading area. The Radiological, Biological and Chemical Defense emergency response team are specifically trained to respond to cyanide release emergencies. The ERT and the on-site nurses (paramedics) are available 24 hrs a day to respond to cyanide exposures.

All employees that work with cyanide are required to complete 30 hrs of safety training which includes emergency response. The training also includes a practical in medical first aid which is provided by the nurses. This training includes recognition of cyanide exposure symptoms, first response and the application of amyl nitrite. Refresher training is conducted every six months.

There is a medical center located at the camp which is manned 24 hr/day with a nurse and doctor, or two nurses, depending on the mine rotation. The facility is set up to handle everything from stabilization of severe trauma to everyday illnesses. An ambulance is available 24hrs/day at emergency centre located at the mill to transport an injured worker to the clinic. The nurses are also trained paramedics and are required by regulation undertake recertification every 5 yrs. This includes refresher training and exam. In the event of an emergency, transportation is provided at the camp to immediately mobilize a nurse the scene as needed. The response time to the mill has been tested to be about 5 minutes.

Workers in need of further treatment or observation can be evacuated to the regional hospital in Anadyr or its affiliate in Bilibino. Bilibino is approximately 1.0 hr flight time and Anadyr is approximately 1.5 hr flight time from the mine site by AN-38 turboprop plane. CMGC have an AN-38 fixed wing and a MI-8 rotary winged aircraft parked at Kupol in the event that a medical evacuation (medivac) is required. This combination allows for at least one of the aircraft to be at site at any given time. Both aircraft have been used to transport patients in the past, but the An-38 is preferred when making medivacs to Anadyr. The MI-8 flight to Anadyr is approximately 2.2 hours. The closest international facility is located in Anchorage. Medical evacuation to Anchorage takes approximately 12 hours (depending on weather). Life flight airplanes can land in Bilibino or Anadyr. CMGC can transport to these sites either by fixed wing plane (through Bilibino) or helicopter.

CMGC has a signed agreement with Chukotka Okrug regional hospital in Anadyr that includes provisions whereby the regional hospital will coordinate medivac actions with CGMC, provide information and consultation support, and organize timely and quality medical treatment and care to a patient exposed to cyanide. The agreement allows flexibility for admission of patients to either the regional hospital in Anadyr, or its affiliates in Bilibino, or Pevek to the north. These hospitals are suitably equipped and have the qualified staff and expertise to treat cyanide exposed patients. This flexibility is needed given the scope of the mine operations, and the potential variability of weather in the event a medivac is required. In addition, the nurses have good relationships with the regional hospital and its affiliates and are in regular contact.

Emergency response drills are scheduled monthly. Since April 2009 three drills have involved cyanide; including a drill that simulated a solid cyanide spill on the winter road near the mill, a drill that simulated a sodium cyanide spill on the road between the

hazardous materials storage compound and the mill; and a drill that simulated a man down in the mill with symptoms of cyanide poisoning. Improvements were undertaken as the result of lessons learned on each of these drills.

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:

As previously noted, the Russian government requires that CMGC have discrete emergency response plans for separate areas of the operation. These plans must be submitted and approved by the government every year. The following plans address emergency response at cyanide facilities:

- ERP - Kupol Processing Plant
- ERP - Kupol Mine Tailings Impoundment Facility
- ERP - Reagent Storage Area and Road Reagent Storage–Mill

Each ERP is structured to meet the requirements of Russian regulations, and describe the actions to be taken in the event of an emergency. The plans include initial observer reporting procedures; evacuation procedures and responsibilities; contact list and notification scheme of emergency response personnel, mine and corporate management, and government agency officials; cyanide first aid procedures; and specific response procedures for various emergency scenarios. The specific response procedures provide actions and responsibilities to address evacuation, response, mitigation, and clean-up. Following the emergency there are regulatory requirements to investigate incident cause and implement measures to prevent a future occurrence.

The Processing Plant ERP includes specific response procedures for 18 separate potential emergency scenarios, including seven that relate to incidents that could involve cyanide. The Reagent Storage Area and Road Reagent Storage ERP includes specific response procedures for an additional four potential cyanide emergency scenarios;

response procedures address both winter and summer conditions and potential HCN generation. The tailings impoundment ERP addresses six additional scenarios that include dam failure, pipeline or tailings facility leakage, and pump barge failure.

The Emergency Response Team (ERT) is responsible for responding to emergencies at the Kupol. The Radiological, Chemical, and Biological Defense ERT are trained in hazardous materials emergency response, including response to cyanide emergencies. Emergency response equipment is stored in containers located at each end of the road in the compound and mill. A large reach stacker located at the compound, road maintenance equipment, and crew transport vehicles are readily available to transport responders, and provide lifting and earth moving equipment as required. The ERP provides response and clean up procedures in the event of impacts to soil, surface water, and snow contamination. It also addresses responses in the event that HCN is generated.

New employee and visitor induction materials and each of the process operating manuals also include notification and evacuation procedures for employees to follow in the event of an emergency or reagent release.

7.2 Involve site personnel and stakeholders in the planning process.

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

Describe the basis for the Finding/Deficiencies Identified:

The main stakeholder at the operation is the Russian government. Emergency plans are required by the government and must be reviewed and approved by the government on an annual basis. Typically the Kupol operation reviews and revises the plans at the end of the year and then submits them to the responsible Russian agency. The agency reviews, comments, and approves the plan after any further necessary revisions. This process typically takes a couple of months.

Because cyanide is classified as a Group 2 poisonous substance in Russia, cyanide storage, transport and handling is strictly regulated by the government, and government involvement in emergency planning is required. The ERPs developed for the site must be submitted to the Head of Administration of Technical and Environmental Supervision of RTN, Chukota, annually for approval.

As the Kupol mine is in a remote location, there are no affected communities in proximity to operation in the event of an emergency. In the event of an emergency CMGC is required to notify government agencies in Bilibino, but the mine has to be self-sufficient with regard to emergency response. The ERPs were developed with input from senior specialists and managers at the mine, as well as paramedics and the

voluntary fire brigade who provided input into the types of equipment and medical supplies required to effectively respond to an emergency.

A helicopter and an AN-38 turboprop plane are maintained on site in the event that an evacuation of an injured person is required. Arrangements have also been made with the government medivac service in Bilibino if evacuation assistance is required. CMGC has an agreement with Chukotka Okrug regional hospital in Anadyr, that medical facilities and care will be available for cyanide exposure patients, and that the regional hospital will coordinate a medivac with CMGC.

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

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

Describe the basis for the Finding/Deficiencies Identified:

The Tailings Impoundment ERP designates the Tailings Superintendent as the emergency response coordinator (ERC). In his absence, the Process Superintendent is the appointed ERC. The Process Plant ERP designates the Mill Chief Engineer as the ERC and the Mill Process Engineer as the alternate. The ERP for the process plant provides a list of names of emergency response team members with designated response responsibilities in the event of an emergency at the mill. It also provides lists of ERT members that make up the teams for the voluntary fire brigade; and the Radiological, Chemical and Biological Defense ERT. The ERP for the tailings impoundment facility also provides a list of key personnel with designated response responsibilities. A list of emergency response personnel is updated when there is a crew rotation. The active list is posted in security/dispatch and the plant control room.

Training and certification of emergency responders is regulated by the Russian Government. Workers are required to complete annual refresher training which includes review of the emergency response plan, and cyanide first aid. ERT members are required to complete basic emergency response refresher training every 3 years. In addition, mock drills are conducted monthly. Each of the ERPs provides tables with the names of the designated coordinators or their rotational cross-shifts. The ERPs also include a table that provides 24-hour contact information of key officials and agencies (off-site phone and addresses) that must be contacted in the event of an emergency

The ERPs detail the specific duties and responsibilities of coordinators, key personnel (officials involved in emergency response) and ERT members. The responsibilities of key personnel and the activities of the ERTs are also detailed in the response procedures set out in the ERPs for each of the emergency scenarios discussed in Section 7.1.

Emergency response equipment is kept in containers located at the reagent storage compound, outside of the cyanide mix building, and at the tailing impoundment. Fire and mine response equipment is located at the fire hall. Paramedics keep emergency medical supplies at the clinic, including medical oxygen and cyanide antidotes. Emergency response equipment is listed in the ERPs. Lists are also posted in the emergency response containers.

The emergency response equipment inspections are conducted on a set schedule. An inventory check of equipment is required after an emergency. In addition, the first aid cabinets in the mill are sealed with a tag that is breaks if the cabinet is opened. The integrity of the cabinet seal is checked daily by the mill superintendent and an inventory taken if the seal has been broken.

Except for requesting support from government air medivac and/or Bilibino hospital if medical evacuation or assistance is needed, the mine does not use outside responders. CMGC also has an agreement with Chukotka Okrug regional hospital in Anadyr that ensures medical facilities and care will be available for any cyanide exposure patients. In addition, CMGC nurses maintain good relationships with the regional hospital and its affiliates, and are in regular contact.

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:

Each ERP includes lists of managers and regulatory agency officials that must be contacted in the event of an emergency. Initial response is notification by the observer to his superintendent and/or security dispatch. Security sets in motion the emergency response teams and contacts the managers listed in the plan. The Mine Manager contacts the General Director of CMGC who is responsible for contacting the regulatory agencies. Contact information is also provided for Bilibino hospital and emergencies services if required.

As previously noted, CMGC operates in a remote location, and the closest community is over 100 km distant. In the event of an emergency CMGC is required to notify government agencies in Bilibino. Government agencies would in turn be responsible for notifying and assisting communities if any response measures were necessary. The ERPs provide a list of government agencies and contact numbers.

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

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

Describe the basis for the Finding/Deficiencies Identified:

The ERP for the Reagent Storage Area and Road Reagent Storage-Mill provides a step by step procedure for responding to a cyanide spill; a list of response equipment and supplies retained at the reagent storage area and mill; availability of earth moving and lifting equipment; and responsibilities of emergency response personnel. The procedure addresses containment, recovery of cyanide and neutralization of contaminated soil, water and snow. Recovered cyanide briquettes would be transported in closed containers to the mill to be added to the process. Contaminated soil, snow and other wastes would be transported in closed containers or tanks to the mill to be added to the process or to the tailings facility for disposal. Lime in an aqueous solution is the only chemical used by CMGC as a neutralization agent during spill response. The spill response procedure requires that care is taken to prevent sodium cyanide and the neutralization agent from impacting surface water. The environmental manager is responsible for collecting samples from the spill area after remediation for analysis to confirm that the clean-up is complete. An enhanced schedule would be required for monitoring established control points on surface water bodies proximate to the mine for evidence of cyanide. The enhanced sampling and analysis schedule continues for 12 days after the emergency response is over. If cyanide were to be detected, the monitoring program would be expanded to incorporate new upstream and downstream sampling points. If an emergency response has impacted surface water, CMGC is required to implement an aquatic life impact assessment. CMGC has a procedure that details sample collection and analysis methods, and provides guidance on the use of independent outside laboratories for control.

In the event a cyanide spill were to impact the quality of surface drinking water in the surrounding area, an immediate search (10 km radius) will be conducted to identify, notify and relocate all human inhabitants from the affected area. A provision to provide an alternative potable water supply to inhabitants that may be located in the area is included in the Reagent Storage Area and Road Reagent Storage–Mill ERP.

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:

The government requires that the ERPs be reviewed annually and submitted for approval at the end of each year. Government review generally takes several months. After government comments are received, the plans are finalized, and then translated into English for expatriate employee use. Revisions to the plans are permissible during the year. Revisions are tracked through the Order of Regulation process and training on the revised plan provided and recorded in a log book. Revisions are included as addenda to the affected ERP. The adequacies of the plans are tested during mock drills and are reviewed after an emergency to evaluate if improvements can be made.
Separate committees are appointed by the Mill Chief Engineer to review each plan. The committees take into consideration the results of mock drills for the elapsing year, work experience, and process and facility changes when reviewing and revising the plans.

After any emergency, a committee, while investigating, will evaluate the efficiency of emergency response actions and provide recommendations on making changes to the existing plan(s). The Mill Chief Engineer is responsible for ensuring that revisions are made in a timely manner and that specialists and workers are made aware of any changes to the plan.

Emergency response drills are scheduled on a monthly basis. Since April 2009 there have been three mock drills that have involved cyanide (see Section 6.3). ERPs require investigation of the cause of any incident and implementation of measures to prevent a future occurrence. There is also a requirement in the ERP to evaluate the emergency response to identify where improvements can be made. To date there have been no real emergencies, so such a review has not been undertaken. However, critiques are made after each mock drill. These critiques have resulted in revisions being made to the ERP.

***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 new workers are required to undertake site orientation and induction safety training which includes emergency response procedures, fire response and evaluation, use and proper fitting of PPE, and hazard training. Where cyanide is stored and handled, workers are also required to complete cyanide safety training. This includes 30 hrs of theoretical training and 8 hrs of practical training on the transportation, storage and handling of sodium cyanide. Topics include general information on mine operations, physical properties and behavior of cyanide, hazard effects, use, safe handling; ventilation, storage, shipping and receiving; mill operations utilizing cyanide, fire safety, emergency response and environmental safety. The practical training includes pre-work inspections, maintenance of reagent equipment and medical first aid. Refresher training in undertaken every six months and workers are required to take an exam annually.

Workers, whose job function does not involve cyanide but who may work in an area where cyanide could be present are provided with hazard recognition training by supervisors before being permitted to work in the area. This training includes recognition of cyanide warning signs, hazards of cyanide, and precautions to take when working near cyanide. Russian regulations also require that employees receive an occupational safety briefing every six months as well as annual job-specific exams. For employees that encounter cyanide in the workplace this refresher training includes cyanide hazard recognition, mill processes, and first aid. Annually, each worker is examined by a committee comprising three members that have been approved by RTN, the Russian regulatory authority to certify workers.

In addition, safety training is also provided in weekly worker safety meetings.

Training records are maintained for each employee (an RTN requirement) that detail the training programs that workers have completed, including cyanide training. Each training program record includes a description of the course (breakdown of each class by subject and hours taught), names of attendees, signatures of instructors for each class, and certificate of completion for each employee. Records are also kept of worker attendance at weekly safety meetings and presentations.

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:

The Russian government is very involved in regulating training for workers within the mill. Guidance for training requirements is set by government, and job training programs must be approved by RKN. CMGC has been licensed by the government to

perform training in-house. If not licensed, a government trainer must be used. Training must be current and records maintained for the site to retain its license. Training is therefore provided to all plant operators who work on the cyanide circuit, as well as all other operations at the mill. For example, a minimum training of 144 hours is required for certification to work in the leach circuit, 138 hours to work in the cyanide mix plant, 172 hours to work in the chlorination plant. Workers have to become certified before being permitted to work unsupervised. Certification is by qualified, certified trainers. Before the plant began operating, academic professors were engaged to deliver three weeks' training to each rotation. The operators' manuals are used as a basis of training.

The training program documentation describes how many hours in class and how many on floor hours are required, and includes descriptions of the training curriculum. After a new employee receives classroom training, he is trained by an experienced employee on the floor for about 10 days. The Process Superintendent is responsible for job training (task training) and process training within the Mill. Trainers are usually selected from the superintendent level and must be approved by the examination committee before becoming a trainer. Approval is based on qualification and experience.
At the end of training activity, each worker must pass an examination by an examination committee made up of senior department managers that have been certified by the RTN Board based in Moscow. Test reports are signed and retained. Without RTN approved training, a worker cannot work in a new area. As a result workers tend to work at specific tasks within specific areas (i.e., there are generally no rotations through the different mill areas. If an employee needs to be retrained, they must obtain a new certificate.

For annual refresher testing, a "Qualification Commission Board" is established within the operation, made up of qualified examiners. If an employee is off-duty more than 2 months, the worker must receive refresher safety briefing, by law. Operational training is tracked by the mill on a spread sheet matrix summary that lists each employee and the task training received.

The effectiveness of training for ERT members is also evaluated through the emergency response mock drills previously described. Where performance improvement needs are identified, CMGC has provided additional training.

Training records are maintained for each employee as a requirement of RTN that detail the training programs that workers have completed. Each training program record includes a description of the course (breakdown of each class by subject and hours taught), names of attendees, signatures of instructors for each class, and certificate of completion for each employee and a breakdown of the marks obtaining on each course topic.

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:

All new workers are required to undertake site orientation and induction safety training which includes emergency response procedures, fire response and evaluation, use of PPE first aid and hazard training. Workers also are required to complete operator training specific to the operating area in which they work. This training is based on the procedures set out in the operator manual for a particular area. This training program includes procedures for emergency response, emergency evacuation, emergency shutdown and spill response. Detailed procedures are provided in each Operator Manual. Employees are required to complete refresher training every 6 months. Any procedural change is documented in an Order of Regulation which requires management to ensure that workers are notified and understand the change. A description of the procedural change and training records are retained and signed by each employee confirming that he/she has received the training and understands the revised procedures.

Cyanide unloading, mixing, production and maintenance workers are trained in emergency response procedures as part of their induction and operating task training. This training includes notification, evacuation, and first aid procedures. First aid training includes recognition of symptoms of cyanide poisoning; calling security dispatch for medical; removing clothing; and administering amyl-nitrite. Several of the mill workers are members of the Biological, Radioactive and Chemical Defense ERT. Mock drills are also undertaken on a monthly schedule to test and improve emergency response skills for specific emergency scenarios. These drills are designed to test the response of workers in recognizing and correctly responding to an emergency situation (notification, evacuation and first aid) and the response performance of the ERT. security dispatch, medics and emergency coordinators.

The fire and chemical emergency response teams have been trained and certified in basic fire fighting, emergency response and first aid through the Civil Defense, Chukotka Region. They have also completed self-contained breathing apparatus training through the Ministry of Emergencies Main Directorate in Irkutsk Region. Certification is valid for 3 years, after which team members will be required to complete refresher training. In addition, CMGC conducts its own emergency response training program that includes a minimum 20 hrs training in safety when conducting a rescue; HCN first aid; PPE for cyanide emergency response; emergency response tools and inventory; emergency response procedures for sodium cyanide in the mill; chemical

spills at the storage area and during transportation; fire response during chemical transport, in the chemical storage area and in the mill.

Due to the remoteness of the mine the ERT is self-sufficient and has the equipment and personnel needed to address most emergencies at the site. Equipment includes three fire-engines, ambulance; a medical clinic manned 24 hrs by two paramedics, or paramedic and doctor, depending on rotation; and trained fire and chemical emergency response teams. In addition, there is a mine rescue team that is available to provide support if needed. In the event of a medical emergency that requires medical care not available at the mine; CMGC has an agreement with the regional hospital in Anadyr that the regional has the ability (facilities and staff) to provide assistance in the event of a cyanide emergency and would cooperate with CMGC to provide medical treatment and care. CMGC have an AN-38 fixed wing and a MI-8 rotary winged aircraft parked at Kupol in the event that a medivac is required. This combination allows for at least one of the aircraft to be at site at any given time. Bilibino is approximately 1.0 hr flight time and Anadyr is approximately 1.5 hr flight time from the mine site by AN-38 turboprop plane. In the unlikely event that an incident occurred that would potentially impact a nearby community or nomadic herders that may be in the vicinity of the mine, CMGC is required to notify the State Board of Civil Defense and Emergencies in Bilibino.

Emergency response refresher training is completed as an integral part of annual operations task and cyanide management training. ERTs are also required to complete annual refresher training in the emergency response plan. In addition, refresher training is supplemented by periodic mock drills that include emergency scenarios that involve cyanide. As previously noted, emergency response drills are scheduled on a monthly basis, and since April 2009 there have been three mock drills that have involved cyanide. Records for all training are maintained in accordance with RTN requirements. The effectiveness of emergency response training is demonstrated through exams and task observation during mock drill exercises.

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

Standards of Practice

9.1 Provide stakeholders the opportunity to communicate issues of concern.

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

Describe the basis for the Finding/Deficiencies Identified:

Kupol is over 100 km from the nearest permanent community. However, CMGC's practice is to hold periodic public consultation meetings in different community

locations in Chukotka AO several times throughout the year. This type of forum was originally developed in response to the regulatory requirements for the environmental and social impact assessment process conducted in the permitting phase of the project. These meetings have been voluntarily continued at management's direction, as they support Kinross's underlying commitments to corporate responsibility, its core values for corporate citizenship, and the requirements of this section of the ICMC. As an example, review of the most recent company newsletter and a series of meeting minutes indicate that CMGC management held community meetings in the towns of Bilibino, Pevek, Lamutskoye, and Ugolniye Kopi in May, 2009. Attendees included local residents as well as regulatory authorities, town officials, representatives of an indigenous peoples' association, members of other social organizations, and the media. Dialogue with meeting attendees was encouraged and documented; none of the minutes reviewed indicated any questions or concerns over the use of cyanide. It is understood that mining has been one of the major occupations in Chukotka and the Russian Far East for many years, and discussions with CMGC and Kinross management indicate a generally low level of concern over the use of cyanide on the part of the general public, as well as a high level of trust in the rigorous level of regulatory controls that are applied by the government to the management of hazardous materials.

CMGC also maintains administrative and governmental liaison offices in Anadyr and Magadan, as well as logistics/public relations offices in Bilibino and Pevek. Personnel in these offices are able to field questions on the use of cyanide and refer them to management for review and further action. General information on cyanide and its use in gold mining has been prepared as a simple brochure which may be printed and provided on request.

In keeping with Kinross corporate policy, CMGC practice is to receive and respond to requests for information or potential complaints about cyanide or any other mining practice on a case-by-case basis. CMGC's Deputy General Manager in Magadan has primary responsibility for evaluation and follow-up, and confirmed that no requests for information about the use of cyanide at the Kupol project have occurred to date.

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 previously noted, CMGC voluntarily conducts periodic public meetings to provide information on the progress of the Kupol project. For example, CMGC management

recently held a series of public community meetings in the towns of Bilibino, Pevek, Lamutskoye, and Ugolniye Kopi. Review of meeting notes and presentation materials indicate that attendees included local residents as well as regulatory authorities, town officials, representatives of an indigenous peoples' association, members of other social organizations, and the media. Information was provided on the commissioning of the Kupol mine and a range of environmental and other topics, including CMGC's cyanide management practices and the company's intention to certify the facility to the ICMC in 2009.

In addition, CMGC maintains a well-designed, user-friendly website that provides general information about the site, including documentation from the permitting phase of the project, and permits stakeholders to register to receive updated information. CMGC also administrative and governmental liaison offices in Anadyr and Magadan, as well as logistics/public relations offices in Bilibino and Pevek. Correspondence with CMGC management indicates that personnel in these offices have been advised to provide copies of the general brochure if any questions on the use of cyanide are received, and to refer such contacts to the Deputy General Director in Magadan for follow-up, as appropriate.

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:

CMGC has developed a brochure, in Russian and English translation, that describes the environmental and health effects of cyanide, as well as its use in mining and CMGC's management practices for its transportation and use in doré production. It is understood from discussions with CMGC and Kinross management that this brochure may be openly distributed in response to specific requests for information that may be received by CMGC's community information offices or in periodic stakeholder meetings as previously described. Depending on the nature of the inquiry, additional information may be provided at the discretion of CMGC's Deputy General Director. Additionally, details on the ICMC and CMGC's ICMC certification efforts have been made part of the introductory training program for the Kupol workforce, and it may be assumed, is a subject for family discussion. In addition, formal presentations are prepared to support periodic public meetings. Such meetings were originally conducted as part of the environmental and social impact assessment process, but have been voluntarily continued at management's direction. Review of the most recent company newsletter indicates that CMGC management held a series of public community meetings in the towns of Bilibino, Pevek, Lamutskoye, and Ugolniye Kopi in May, 2009. Review of

meeting notes indicate that attendees included local residents as well as regulatory authorities, town officials, representatives of an indigenous peoples' association, members of other social organizations, and the media. Correspondence with CMGC management and review of presentation materials indicates that information was provided on the commissioning of the Kupol mine and a range of environmental and other topics, including the management of cyanide. It should be noted that Russian literacy rates are among the highest in the world. However, review of presentation materials used in public meetings and other information indicates that CMGC has also provided general information about the management and use of cyanide to representatives of indigenous ethnic groups, in a verbal, visually supported format. It is also understood from discussions with CMGC management that due to the small size of the population of Chukotka AO (< 60,000 people) and their dispersion over a wide area (>720,000 km^2), television is a commonly used communication tool. Public meetings are often televised and have television and newspaper reporters in attendance.

No cyanide releases exposure incidents have occurred; however, if such an incident were to occur, discussions with CMGC management and review of CMGC's emergency response plan indicate that any such releases are to be immediately reported to CMGC's General Director and Deputy General Director in Magadan, who take the lead in informing the appropriate governmental agencies in Bilibino. These agencies include:

- Head Administrator for Bilibino District;
- Head of Bilibino Complex Mine Technical Department of SBTES of RTN in Chukotka AO;
- Bilibino Regional Clinic;
- Bilibino State Board of Civil Defense and Emergencies;
- Bilibino State Board of Federal Security Service
- Bilibino Prosecutor's Office; and
- Head of Bilibino Regional Department of Internal Affairs.

CMGC management advises that governmental agencies regularly use television and the press to advise the public about any such events, and, given that CMGC is perhaps Chukotka AO's most significant employer, it may be assumed that the regulators would disclose information in this fashion if any such release were ever to occur. Primary liaison responsibilities in the resolution of such an event would be assumed by CMGC's Deputy General Director in Magadan, with Kupol management providing support as required. All reportable releases and all discharges off the concession boundary, reportable under regulatory conditions or not, are also reported to Kinross's corporate Vice President, EHS, based in Reno, Nevada, USA. Reportable spill data are also required to be collected by CMGC and reported to Kinross in monthly key performance indicator (KPI) reports; these data are ultimately made publicly 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.