



***INTERNATIONAL CYANIDE
MANAGEMENT INSTITUTE***

Gold Mining Operations

Summary Audit Report Form/

September 07, 2008

(1st draft in 01/04/2008)

MINERAÇÃO SERRA GRANDE S.A.

Anglogold Ashanti Group / Kinross Group

Crixás / GO / Brazil.

***For The
International Cyanide Management Code***

www.cyanidecode.org

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July 2005

The International Cyanide Management Code (hereinafter "the Code"), this document, and other documents or information sources referenced at www.cyanidecode.org are believed to be reliable and were prepared in good faith from information reasonably available to the drafters. However, no guarantee is made as to the accuracy or completeness of any of these other documents or information sources. No guarantee is made in connection with the application of the Code, the additional documents available or the referenced materials to prevent hazards, accidents, incidents, or injury to employees and/or members of the public at any specific site where gold is extracted from ore by the cyanidation process. Compliance with this Code is not intended to and does not replace, contravene or otherwise alter the requirements of any specific national, state or local governmental statutes, laws, regulations, ordinances, or other requirements regarding the matters included herein. Compliance with this Code is entirely voluntary and is neither intended nor does it create, establish, or recognize any legally enforceable obligations or rights on the part of its signatories, supporters or any other parties.

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SUMMARY AUDIT REPORT FOR GOLD MINING OPERATIONS

Instructions

1. The basis for the finding and/or statement of deficiencies for each Standard of Practice should be summarized in this Summary Audit Report. This should be done in a few sentences or a paragraph.
2. The name of the mine operation, lead auditor signature and date of the audit must be inserted on the bottom of each page of this Summary Audit Report. The lead auditor's signature at the bottom of the attestation on page 3 must be certified by notarization or equivalent.
3. An operation that is in substantial compliance must submit a Corrective Action Plan with the Summary Audit Report.
4. The Summary Audit Report and Corrective Action Plan, if appropriate, with all required signatures must be submitted in hard copy to:

International Cyanide Management Institute (ICMI)
1200 G Street, NW, Suite 800
Washington, DC 20005, USA

5. The submittal must be accompanied with 1) a letter from the owner or authorized representative which grants the ICMI permission to post the Summary Audit Report on the Code Website, and 2) a completed Auditor Credentials Form. The letter and lead auditor's signature on the Auditor Credentials Form must be certified by notarization or equivalent.
6. Action will not be taken on certification based on the Summary Audit Report until the application form for a Code signatory and the required fees are received by ICMI from the applicable gold mining company.
7. The description of the operations should include sufficient information to describe the scope and complexity of the gold mining operation and gold recovery process.

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SUMMARY AUDIT REPORT

Name of Mine: Mineração Serra Grande S.A.
Name of Mine Owner: AngloGold Ashanti and Kinross
Name of Mine Operator: AngloGold Ashanti
Name of Responsible Manager: Camilo Lelis
Address: Rodovia GO 336, Km 97, Crixás city.
State/Province: Goiás, GO. Country: Brazil.
Management representative: Mr. Rogério Leal
Telephone: (55+62) 3365-7122 Fax: (55+62) 3365-7140
E-Mail: RMLeal@anglogoldashanti.com.br

Location detail and description of operation:

Mineração Serra Grande is located in the city of Crixás, 320 Km from Goiania. The metallurgical treatment plant receives ore from two underground mines and one open pit mine, for the processing and production of gold in bullion. Mineração Serra Grande is a joint venture between Anglo Gold Ashanti and Kinross.

The production process is divided basically into crushing and milling of the ore, thickening, leaching in tanks with sodium cyanide, filtration and clarification of gold solution and precipitation with zinc (Merrill Crowe process).

The solid reject from this process is pumped in form of pulp to the tailing dam. Part of the circulating load of grinding feeds a gravity concentration circuit, so the final production of gold is derived from two circuits in parallel: Merrill Crowe and gravimetric. Mineração Serra Grande has an effluent treatment station.

The water kept into the tank of the dam has concentration of residual cyanide and arsenic from the ore improvement process. In each case is necessary the chemical treatment to reintroduce its chemical ideal conditions.

There is no cyanide treatment plant, this treatment consists of the addition of hydrogen peroxide to the ETE (1^o Stage). The ETE (Estação de Tratamento de Efluentes / "Effluent Treatment Station") is the local where this water receives the suitable treatment to be framed according Environmental Agencies rules.

The water treatment process is divided in 3 stages:

- 1^o Stage - Cyanide and Arsenic Oxidation;
- 2^o Stage - Arsenic complexation and precipitation;
- 3^o Stage - Clarification

To the cyanide oxidation is used hydrogen peroxide at 50 % P/V, which is a high oxidant reagent. In this stage must have enough hydrogen peroxide in order to oxidize the cyanide and arsenic III, which occurs according chemical reaction as follows:



In order to manage that these oxidation reactions happen it is necessary some procedures as follows:

- Moderate shacking of the water;
- Time in contact of the reagent + water in a minimum of two hours,
- pH : 5 to 9;
- Surrounding temperature.

The arsenic complication to a better fixed composition is managed through a reaction of ferrous soleplate heptads-hydrated and forming a ferric arseniate. The necessary time to occur this reaction is less than two hours since kept the following precipitation conditions:

- Surrounding temperature;
- pH: 5 to 9;
- Molar relation: Fe/As : minimum 4:1.

The ferric arseniate precipitation happens according the following reaction:



The water clarification process is realized using polimers of high molecular weight by means the solid particles make a weight mass which through gravity force become a sediment clarifying the water.

This sedimentation is realized in a "clarification funnel" and after the sedimented material is transferred to the reject dam. The clarified water is utilized in the "Back Fill" plant or discarded to the environment under rules of Environment Agencies.

The Effluent Treatment Station has installed treatment capacity to 100 m³/h of water with concentration until 15 ppm of cyanide and 10 ppm of arsenic.

Auditor's Findings

This operation is

- in full compliance
- X** in substantial compliance *(see below)
- not in compliance

With the International Cyanide Management Code.

* The Corrective Action Plan to bring an operation from substantial compliance to full compliance must be enclosed with this Summary Audit Report. The plan must be fully implemented within one year of the date of this audit.

Audit Company: NCA NOSA Certification Authority Ltda.

Audit Team Leader: Eberson Cassio de Andrade: (Acting as Lead-Auditor on training – under care of Celso S. Pessoa) - eberson.cassio@nosa.com.br

Names and Signatures of Other Auditors:

Julio Monteiro - jmaq@ig.com.br

Celso Sandt Pessoa – Lead Auditor, Technical and Operational Supervision - celsosandt@ncabrasil.com.br / celsopessoa@nosa.com.br

Date(s) of Audit: 25 to 27 September, 2007 (on site), 13 and 14 November (on site), 03 to 07 December 2007 (on site) and 12 to 14 December, 2007 (off site).

I attest that I meet the criteria for knowledge, experience and conflict of interest for Code Verification Audit Team Leader, established by the International Cyanide Management Institute and that all members of the audit team meet the applicable criteria established by the International Cyanide Management Institute for Code Verification Auditors.

I attest that this Summary Audit Report accurately describes the findings of the verification audit. I further attest that the verification audit was conducted in a professional manner in accordance with the International Cyanide Management Code Verification Protocol for Gold Mine Operations and using standard and accepted practices for health, safety and environmental audits.

OFÍCIO DE NOTAS E REGISTRO DE CONTRATOS MARÍTIMOS
Rua do Acre, 28 - Centro - RJ - Tel.: (21) 2253-3459 - Tabelião Alois Melchades de Souza

Reconheço por SEMELHANÇA a firma de:
[2AND0975]-CELSO SANDT PESSOA.....

Rio de Janeiro, 23/01/2009

Serventia	: 3,68
30% TJ+ Fundos	: 1,09
Total	: 4,77

CLAUDIA RODRIGUES MORAIS ANDRADE

OFÍCIO DE NOTAS E REGISTRO DE CONTRATOS MARÍTIMOS

REC. CORRREGEDORIA GERAL DA JUSTIÇA - RJ
SELO DE FISCALIZAÇÃO
RECONHECIMENTO DA FIRMA POR SEMELHANÇA
1.00 JNZ
SBF67122

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 **X** in full compliance with
in substantial compliance with Standard of Practice 1.1
not in compliance with

Summarize the basis for this Finding/Deficiencies Identified:

The company buys the cyanide from Cyplus GmbH Germany (ICMI certified) according to the contract # AGABM/081/07(Cyanide purchase and sale contract). AGAM's policy is to buy cyanide from suppliers that are certified according to ICMI requirements for cyanide producers. AGAM buys, in a corporate way, the cyanide for all its operations in Brazil (Santa Bárbara plant, Serra Grande plant and Nova Lima plant), from Cyplus GmbH (Rodenbacher Chausse, 4. 63457, Hanau-Wolfgang, Germany). It was evidenced the contract AGABM/081/07 (dated 29/08/2007), between the two companies, addressing all issues related to cyanide supply.

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

Standard 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 **X** in full compliance with
in substantial compliance with Standard of Practice 2.1
not in compliance with

Summarize the basis for this Finding/Deficiencies Identified:

It was found evidences that all responsibilities related to safety, security, release prevention, training and emergency response are addressed at Cyanide purchase and sale contract AGABM/081/07 signed between the company and Cyplus GmbH Germany. It is specified and used an UN approved packaging in a wooden box with a pallet base, containing 1000kgf (net) of solid cyanide, in a HDPE inner liner, hermetically sealed and packaged in a woven PP big-bag with lifting loops, stowed in a 20 cubic feet seaworthy closed, general purpose ocean container, with 20 metric tons (net), all in accordance with UN and IMDG regulations. All labeling is accordance with UN regulations, German and Brazilian legal requirements. Text also available in English. All storage requirements are clearly addressed at the purchase contract between Cyplus and AGAM. Responsibilities related to route planning are clearly specified at the contract. Evidences are available that there is a contract between Cyplus and Localfrio S.A, responsible for storage and security while at Santos Port. It was evidenced that all responsibilities related to the transport to the operation, unloading at the operation, safety and maintenance of all means of transport, task and safety training for transporters and handlers throughout transport, security throughout transport, emergency response throughout transport are addressed at the contract between Cyplus and AGAM.

Standard of Practice 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 with
 in substantial compliance with Standard of Practice 2.2
 not in compliance with

Summarize the basis for this Finding/Deficiencies Identified:

The contract between AGAM and Cyplus requires that all transporters used shall be certified according to ICMI requirements for transporters or be audited by an independent third part of its transportation activities. The transportation documentation, from Cyplus to AGAM facilities (invoice, purchase order, inspections certificates, quality control certificates) are kept by AGAM.

The transporters used by Cyplus and AGAM have Code-equivalent, non-certification audits and due diligences conducted by Code-approved auditors and have programs and procedures implemented consistent with the ICMI Audit Protocol for Transport of Cyanide. Transportation was found in substantial compliance with this standard of practice because the auditor considered that the route map of the transporter Niquini needs to be better documented. It was clear to the auditor that the transporter Niquini has made a good faith effort to comply with Code requirements, that the deficiency can be corrected within one year and that there is no immediate or substantial risk to health, safety or environment, as the route map does exist and only needs a more formal presentation.

AGAM will submit an Action Plan to ICMI in order to demonstrate its commitment on certifying that the transporter Niquini will implement its Action Plan addressing entirely all Standards of Practice of Cyanide Transportation Verification Protocol.

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

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

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

Summarize the basis for this Finding/Deficiencies Identified: (Due to the sensitivity of security issues regarding storage of cyanide, no descriptions of substantial or non-compliance with this aspect of the Standard of Practice should be provided).

Serra Grande facility has an integrated area for receiving and storing cyanide. Mixing cyanide area is separated from the receiving area. Both were built according to Brazilian engineering council guidelines and also Brazilian technical specifications for quality, environment, health and safety (NR-18 (country legal regulation to SHE in the construction industry), NR-4 (country legal regulation to Safety Engineering and Occupational Medicine), NR-10 (country legal regulation to safety in installations and electricity services), NR-22 (country legal regulation to Occupational Safety and Health in Mining), NR-23 (country legal regulation to Fire Protection), NR-26 (country legal regulation to Safety Signaling), NR-24 (country

legal regulation to sanitary and comfort conditions in the work place), NR-33 (country legal regulation to work in confined spaces), NR-5 (country legal regulation to Internal Commission to Accident Prevention - CIPA), NR-2 (country legal regulation to communicates of installation changes). The a.m areas are away from people and surface waters. There is a control method to go into these areas, and only authorized people are allowed to go inside it. These areas are provided with a first aid facility, well and full equipped, which shall be used in the event of any incident involved during cyanide handling. The field audit evidenced that (showers also available). It was evidenced through interviews that operations personnel were well familiarized with operational procedures. The areas are fenced and locked. Cyanide storage area is under roof. Cyanide solution tanks are inside a contained space. Liquid cyanide is not used by Serra Grande operation. The cyanide solution tanks are provided with level indicator and also high (and low) level alarm system. All cyanide solution handling and tank maneuvers are done by the operators at the control room, using computer systems to do so. Operators in the control room were interviewed and the SDCD (*Digital System of Dedicated Control*) was verified. Intake water valves are locked. The contention areas are equipped with pumps, in a closed circuit. All area for storage and preparing of cyanide is made of concrete, as evidenced in the field audit. Concrete floor and walls, and HDPE carpets were used to build secondary containments. Selastic was used for joints. The capacity of secondary barriers is adequate to support any leakage from the tanks (110%). The system is a closed circuit. Cyanide is stored, in its original packaging, in a well ventilated area, under roof, as evidenced in the field audit. The mentioned area is covered and the big-bags lay down on pallets. The access to this area is controlled and it is fenced, signed and locked, as evidenced in the field audit. The mentioned area is only used to store cyanide and sodium hydroxide, as evidenced during the field audit.

Standard of Practice 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 **X** in full compliance with
in substantial compliance with Standard of Practice 3.2
not in compliance with

Summarize the basis for this Finding/Deficiencies Identified:

Inspections and preventive maintenance systems are in place. Wooden boxes are dismantled and stored at a specific warehouse for dangerous solid waste, which access is restricted. The final disposition is the thermal destruction provided by OXYGAS, which qualified by the local EPA, to supply this kind of service. All cyanide plastic bags and big-bags are neutralized three times and after that thermally destroyed. The rinse water is discharged in the cyanidation process loop. There are operational procedures to prepare the cyanide solution with solid cyanide. Valves are protected. A JSA is done before the mixing operation starts. Procedures are in place to clean containers that are returned to the vendor, to prevent rupturing of cyanide containers, to limit the stacking height of cyanide boxes and to clean up spills from mixing and were evidenced in the field. The mixing operation is done by two operators, where the second one stays in a remote area. Materials used to mitigate any spills are available at the mixing area. Simulation tests are done in order to train the operators. Both operators are equipped with all required PPEs (Tyvec overall, gloves, boots, oxygen tanks, masks, radio, HCN detectors) for this operation. In the event of any potential incident, there is a well equipped first aid area.

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

Standard of Practice 4.1: *Implement management and operating systems designed to protect human health and the environment utilizing contingency planning and inspection and preventive maintenance procedures.*

The operation is **X** in full compliance with
in substantial compliance with Standard of Practice 4.1
not in compliance with

Summarize the basis for this Finding/Deficiencies Identified:

The company has a SHE management system based on the NOSA model, which is certified according ISO 14001 and OHSAS 18001 by NQA-USA. Risk analysis was the input to establish the critical activities management procedures. All process operators are trained (on the job training). All operation procedures were developed considering and referencing design, technical and legal requirements. Dynamic risk analysis is used by Serra Grande to evaluate the potential risks related to cyanide in its operations. Operational procedures were developed and operators and supervisors trained and approved for their functions. Inspections, job safety analysis, planned job observations and preventive maintenance are SHE systemic tools at Serra Grande mine. Dynamic risk analysis is used by Serra Grande to evaluate the effect of the changes in their process that can cause cyanide exposition or spills. A change management procedure was established and implemented (PD-GGO-048). Serra Grande established and implemented two contingency plans, RT-GGO-024 (dam burst) and RT-GGO-028 (cyanide related emergencies). 90% of the water is recirculated. Shut down procedures are also in place. There is a emergency plan that addresses situations where will be necessary to interrupt the metallurgical plant activities as emergency control measures, emergencial control measures to situations where the dam monitoring indicates that it achieved the alert level and emergencial measures related to storm situations for several days. Inspections are a management tool (systemic) used by Serra Grande. The documented procedure PD-GGO-005 addresses all the system related to inspection of installations. An inspection plan for 2007, encompassing the process plant (including mixing area), dam, metallurgy and laboratory, was evidenced in place and being implemented accordingly. Planned inspections are performed each three months (most of the cases). There is an inspection plan in place covering the process plant (installations and equipments) and tailing dam, as previously mentioned. Inspections records were established addressing the inspection date, the inspector name, non conformances and required corrective actions and dispositions. Serra Grande did establish and implement a preventive maintenance plan specific to cyanide related equipments and systems (ellipse system). All required maintenance activities are documented at standard maintenance jobs. Serra Grande did establish an emergency power system, composed by two diesel generators (450 KVA, each). Preventive maintenance and testing records (weekly basis) were evidenced. There are no critical functions which need to be running in case of energy interruption.

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

The operation is **X** in full compliance with
in substantial compliance with Standard of Practice 4.2
not in compliance with
not subject to

Summarize the basis for this Finding/Deficiencies Identified:

Serra Grande has a cyanide consumption policy. Each hour, the free cyanide is monitored. Evaluation tests such as intensive cyanidation of Knelson concentrate and rolling bottle were used by the plant in order to establish adequate consumption. Solubilization curves were found in place.

Standard of Practice 4.3: *Implement a comprehensive water management program to protect against unintentional releases.*

The operation is **X** in full compliance with
in substantial compliance with Standard of Practice 4.3
not in compliance with

Summarize the basis for this Finding/Deficiencies Identified:

It was verified that exists a comprehensive, probabilistic water balance that shows all volumes of the entry (intake) and exit of the dam. It was verified that CMEC (Consortium mining engineers consultants) developed a study about Dam Break considering the project criteria and events of storm duration and storm return. It was verified that exists a consistent data about the precipitation and evaporation conditions. It was verified that exists a structure called "Corta Rio" (river break). This is a drainage channel around the dam to receive the rain precipitation and take the extra water out of the dam. Effects of potential freezing and thawing conditions on the accumulation of precipitation within the facility and the up-gradient watershed are not applicable to Serra Grande climate. It was verified that exists a procedure that considers solution losses in addition to evaporation, such as the capacity of decant, drainage and recycling systems, allowable seepage to the subsurface, and allowable discharges to surface water. It was verified that there is a PAE (Emergency Action Plan) RT-GGO-024 rev4 that considers the effects of potential power outages or pump and other equipment failures on the drain down from a leach pad or the emergency removal of water from a facility. It was verified adequate effluent treatment system (PP-DPME-010 rev0) that considers where solution is discharged to surface waters, the capacity and on-line availability of necessary treatment, destruction or regeneration systems. It was verified that Serra Grande identified that they have no other aspects which can affect the water balance. It was verified that "Manual de Operações da Barragem de Rejeitos – Crixás, GO" (Operations Manual of the tailing dam), describing monthly inspections and a schedule to collect gas and liquid effluents information, "Planejamento para Coleta de Amostras do Monitoramento Ambiental: efluentes líquido e gasoso" incorporate inspection and monitoring activities to implement the water balance and prevent overtopping of ponds and impoundments and unplanned discharge of cyanide solutions to the environment. It was verified in the "Manual de Operações da Barragem de Rejeitos – Crixás – GO" (Operations Manual of Tailing Dam), page 30 and confirmed in a operational report stated by an internal team composed by professionals from AGAM that adequate freeboard for ponds and impoundments is working. It was verified a pluvial precipitation measure named "Índice Pluviométrico Mensal" (Monthly Precipitation Index).

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

The operation is **X** in full compliance with
in substantial compliance with Standard of Practice 4.4
not in compliance with

Summarize the basis for this Finding/Deficiencies Identified:

The tailing dam is surrounded by fences. Serra Grande does not discharge waste water with cyanide WAD > 50mg/l as a method to protect birds, other wildlife and livestock from the adverse effects of cyanide process solutions. Waste water is controlled by Serra Grande lab, and any cyanide discharge is previously authorized by the laboratory. Serra Grande laboratory did establish and implemented a monitoring and controlling system related to the waste water discharge in the dam. The system doesn't allow any discharge with cyanide WAD > 50 mg/l. No death of wildlife was evidenced in the last years, proving the effectivity of controlling cyanide WAD in open waters. Serra Grande does not use heap leaching (it is tank leaching) so that any significant ponding on the heap surface and limit overspray of solution off the heap liner is avoided.

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

The operation is **X** in full compliance with
in substantial compliance with Standard of Practice 4.5
not in compliance with

Summarize the basis for this Finding/Deficiencies Identified:

The waste water is treated, controlled, stored and monitored before discharged to the surface water. Total and free cyanide are also controlled (downstream samples). Recorded values for these two parameters are in accordance with local EPA and ICMI, comprising WAD, total and free cyanide, as evidenced in records. The Serra Grande laboratory (ISO 9001 certified by NQA-USA) did establish a standard procedure (PP-DPME-019(0), which was developed considering standard method 4500 and NBR 12642 (Brazilian standard) to determine free cyanide, which was tested and approved by the lab responsible. There is a monitoring and controlling system (drains, isolation and pumps), that prevents any indirect discharge to surface waters. The concentration of free cyanide is 0.022 mg/l or lower downstream of any established mixing zone, as found in records.

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

The operation is **X** in full compliance with
in substantial compliance with Standard of Practice 4.6
not in compliance with

Summarize the basis for this Finding/Deficiencies Identified:

It was verified that exists containment around the tanks with cyanide solution. All channels in the plant site are in a close circuit with the capturing area. The pipeline is made of double tubes and has its pression monitored. The dam construction project indicates the earth preparation to increase its impermeability. There is a weekly ground water monitoring. It

was verified that there is a measure related to total Cyanide, all records <0.01mg/l, in the ground water monitoring. A SHE risk evaluation has been made to the “Atividade de Enchimento com Back fill / Filling Up Activity with Back Fill” and it was identified and evaluated the health and environment risks related to underground waters contamination. MSG measures the HCN in the underground mine work areas. There is no heap leach operations.

Standard of Practice 4.7: *Provide spill prevention or containment measures for process tanks and pipelines.*

The operation is **X** in full compliance with
in substantial compliance with Standard of Practice 4.7
not in compliance with

Summarize the basis for this Finding/Deficiencies Identified:

It was verified in the field the containment in the cyanide preparation area and tank leach area. It was verified that the secondary containments for cyanide unloading, storage, mixing and process tanks was sized to hold a volume greater than that of the largest tank within the containment. It was also verified that there are secondary containment projects. It was verified a pump system to drain back to the tank any discharge in a secondary containment area. Evidence was available that all tanks have secondary containment. Mineração Serra Grande has made the risk evaluation in areas where cyanide pipelines present a risk to surface water been evaluated for special protection needs and also implemented protection measures like to ensure that: all pipelines are placed in protected areas and it was verified the use of “flange cover” in all cyanide solution pipelines, also they are made of double tubes which goes to the tailing dam is based on small platforms which work like recipients to contain and protect against eventual spillage in all the pipeline extension. Evidence was available that all cyanide process solution pipelines have protection to collect leaks and prevent releases to the environment. It was verified the use of “flange cover” in all cyanide solution pipelines. Evidence was available that all pipelines are placed in protected areas and it was verified the using of “flange cover” in all cyanide solution pipelines. It was verified the using of compatible materials with cyanide and high pH conditions. Tanks and pipes are made of carbon steel. Materials were specified in accordance with the chemical resistance guide for piping and tanking.

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

The operation is **X** in full compliance with
in substantial compliance with Standard of Practice 4.8
not in compliance with

Summarize the basis for this Finding/Deficiencies Identified:

The metalurgicall plant of Mineração Serra Grande started operating in October/1989 so it was not possible to verify the QA/QC evidences from that time. In order to assure the QA/QC evidences posteriorly were made some studies, for example: “Technique Structures Award about Contention Recipients and Cyanide Tanks” considering the cyanide storage, lixiviation, clarification and precipitation & filtering, prepared by WG Engineering Ltd. It was verified the use of materials compatible with cyanide and high pH conditions and the SPT (standard

penetration test). The “Mineração Serra Grande” has contracted a Civil and Surveyor Engineer to verify the building constructions if they were constructed according planned. It was verified that the cyanide facility construction documentation (as built) was reviewed and approved by a qualified engineering company (Projeto Crixás – Final Report, by CCO). Quality Control and assurance records were maintained by the plant. CCO final report (data record book) was reviewed.

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

The operation is **X** in full compliance with
in substantial compliance with Standard of Practice 4.9
not in compliance with

Summarize the basis for this Finding/Deficiencies Identified:

A monitoring plan, according to local EPA and ICMI requirements was found established and implemented. The plan addresses the system for sampling collection, testing and preservation (environmental waste water control). The documented system was evidenced to be implemented. Sampling conditions and procedures are documented in writing, as verified in records. The plant has an environmental permission (public license) which was issued by the local EPA. All documentation was reviewed and approved by Serra Grande environmental laboratory head, Mr. Theobaldo de Souza/ Chemical technician. Monitoring plan addresses the monitoring points, for surface, underground and drained waters. There is a daily inspection system in place for the operational area. No mortalities evidenced in the last years, as previously mentioned. The monitoring frequencies (daily, weekly and monthly) are in accordance with the Brazilian environmental laws, and prescribed by the local EPA.

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

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

The operation is **X** in full compliance with
in substantial compliance with Standard of Practice 5.1
not in compliance with

Summarize the basis for this Finding/Deficiencies Identified:

Serra Grande did establish a decommissioning plan, last up-dated 06/07/07. A closure plan (last up-dated July/2007) was also established by the unit. Closure is targeted to 2016. The above mentioned closure plan encompasses the implementation schedule. At least quarterly the plan is reviewed and revised, if necessary.

Standard of Practice 5.2: *Establish an assurance mechanism capable of fully funding cyanide related decommissioning activities.*

The operation is **X** in full compliance with
in substantial compliance with Standard of Practice 5.2
not in compliance with

Summarize the basis for this Finding/Deficiencies Identified:

The company has identified the required resources to implement the final decommissioning plan, according to the "reclamation cost report" from 13/Nov/2006 (annually updated). The required funds were evidenced to be available according to a third part audit (Ernst & Young, with register CRC (Regional Accounting Council) 2SP015.199/O-6-F-MG and report dated 26/01/2007, by Mr. B. Alfredo Baddini Blanc – register CRC 1SP126.402/O-S-MG.) that was conducted in accordance with the auditing standards applicable in Brazil which is ruled by the Federal Accounting Council - CFC; the audit methodology used is ruled by the resolution CFC 820/97 which approved the use of the Brazilian Accounting Standard NBC - T11. (Ernerst & Young has decided to use a brazilian methodology due to it to be aligned with "BRGAAP – Brazilian General Accounting and Audit Procedures, through Resolution #963 issued by the Brazilian Association of State Boards of Accounting" and to be absolutely in line with USGAAP). This audit did encompass all AGAM operations in Brazil (Morro Velho, Serra Grande and Córrego do Sítio plants). This forecast is annually up-dated and the last actualization was done in July/2007.

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

Standard of Practice 6.1: *Identify potential cyanide exposure scenarios and take measures as necessary to eliminate, reduce or control them.*

The operation is **X** in full compliance with
 in substantial compliance with Standard of Practice 6.1
 not in compliance with

Summarize the basis for this Finding/Deficiencies Identified:

It was evidenced that Serra Grande had developed procedures describing how cyanide-related tasks should be conducted to minimize worker exposure. It was evidenced that the procedures consider the inspections and the PPEs. The operation implements procedures to review proposed process and operational changes and modifications for their potential impacts on worker health and safety, and incorporate the necessary worker protection measures, as evidenced at the document PD-GGO-057 rev5. It was evidenced that there is a meeting involving the employees about the procedures, to make revisions and changes.

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

The operation is **X** in full compliance with
 in substantial compliance with Standard of Practice 6.2
 not in compliance with

Summarize the basis for this Finding/Deficiencies Identified:

The appropriate pH for limiting the evolution of hydrogen cyanide gas during mixing and production activities was determined and is defined in documents. There is procedure that defines the use of HCN detectors and it was evidenced in the field the use of fixed and portable devices. Evidence was found that the critical areas where workers may be exposed to unacceptable levels of cyanide were identified in the Risk Maps and were considered inside the risk assessment of these areas. It was evidenced that the HCN monitoring equipments are

maintained, tested and calibrated. It was evidenced in the field that warning signs has been placed where cyanide is used advising workers that cyanide is present, and that smoking, open flames and eating and drinking are not allowed, and if necessary, suitable personal protective equipment must be worn. It was evidenced at the field that there are showers, low-pressure eye wash stations and dry powder or non-acidic sodium bi-carbonate fire extinguishers located at the strategic places. It was evidenced at the field that there are unloading, storage, mixing and process tanks and piping containing cyanide identified to alert workers of their contents. During the audit at the field it was evidenced the MSDS and also confirmed that exists a "Manual de Primeiros Socorros / First Aid Manual", both in Portuguese. There is a procedure in place and implemented to investigate and evaluate cyanide exposure incidents. No incidents related to cyanide happened in the last years. Others incidents were evaluated in accordance with the mentioned procedure.

Standard of Practice 6.3: *Develop and implement emergency response plans and procedures to respond to worker exposure to cyanide.*

The operation is **X** in full compliance with
in substantial compliance with Standard of Practice 6.3
not in compliance with

Summarize the basis for this Finding/Deficiencies Identified:

Was evidence that the operation has these aspects at Clinic, cyanide preparation area, warehouse, laboratory, tank leaching area, filtering/precipitation and Regional Crixás Hospital. Exists a monthly inspection in the first aid equipment and exists material such as cyanide antidotes stored and tested. There is an emergency response plan: RT-GGO-028 rev2 "Plano de ação emergencial – cianeto de sódio". Was evidenced a clinic on site, where maintain 24hrs assistance (doctor working from noon to 5 pm and 2 nurses). Was evidenced an emergency plan and there is an ambulance on site. Was evidenced training to the professionals who work in the Hospital Regional de Crixás and the SAMU (System of care doctor of urgency). Was evidenced the mock emergency schedule and records of simulation tests.

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

Standard of Practice 7.1: *Prepare detailed emergency response plans for potential cyanide releases.*

The operation is **X** in full compliance with
in substantial compliance with Standard of Practice 7.1
not in compliance with

Summarize the basis for this Finding/Deficiencies Identified:

It was verified that there is a Emergency Plan to address potential accidental releases. The Emergency Plan the Plan considers the potential cyanide failure scenarios appropriate for its site-specific environmental and operating circumstances. Planning for response to transportation-related emergencies has considered transportation route(s), physical and chemical form of the cyanide, method of transport, the condition of the road or railway, and the design of the transport vehicle, as evidenced in the procedure RT-GGO-028 rev 3. It was evidenced that the Plan describes specific response actions (as appropriate for the anticipated

emergency situations) such as clearing site personnel and potentially affected communities from the area of exposure, use of cyanide antidotes and first aid measures for cyanide exposure, control of releases at their source, and containment, assessment, mitigation and future prevention of releases, according to the document PP-GGO-004 rev6, item 3.2.

Standard of Practice 7.2: *Involve site personnel and stakeholders in the planning process.*

The operation is **X** in full compliance with
in substantial compliance with Standard of Practice 7.2
not in compliance with

Summarize the basis for this Finding/Deficiencies Identified:

Serra Grande plant involved their employees in the cyanide emergency response planning process. A risk analysis was carried out by the plant in order to establish a risk profile for each process inside and outside the site. The emergency response plan, which is an output of the risk analysis, was prepared by the plant personnel and also involved the external stakeholders, such as the county hospitals representatives, fire brigade, state police and civil defense agency, which represent the interests of the community. Serra Grande/ AGAM communication system addresses the requirements related to emergencies involving cyanide. Community representatives are invited to assist specific meetings with Serra Grande/ AGAM representatives in order to discuss several issues, including emergencies. A newspaper is also distributed to the community. It was evidenced that the operation has involved local response agencies such as outside responders and medical facilities in the cyanide emergency planning and response process, as verified in the document RT-GGO-004 rev2, which includes the schedule of communication. It was evidenced that the operation engages in consultation or communication with stakeholders to keep the Emergency Response Plan current.

Standard of Practice 7.3: *Designate appropriate personnel and commit necessary equipment and resources for emergency response.*

The operation is **X** in full compliance with
in substantial compliance with Standard of Practice 7.3
not in compliance with

Summarize the basis for this Finding/Deficiencies Identified:

It was evidenced in documents that the cyanide-related elements of the Emergency Response Plan:

- Designate primary and alternate emergency response coordinators who have explicit authority to commit the resources necessary to implement the Plan
- Identify Emergency Response Teams;
- Require appropriate training for emergency responders;
- Include call-out procedures and 24-hour contact information for the coordinators and response team members;
- Specify the duties and responsibilities of the coordinators and team members;
- List emergency response equipment, including personal protection gear, available along transportation routes and/or on-site;
- Include procedures to inspect emergency response equipment to ensure its availability;

- Describe the role of outside responders, medical facilities and communities in the emergency response procedures.

It was evidenced that outside entities included in the Emergency Response Plan are aware of their involvement as a meeting with like Civil defense, firefighters brigade, hospitals was held, where their role in emergency situations was clarified. They also participated in simulation exercises.

Standard of Practice 7.4: *Develop procedures for internal and external emergency notification and reporting.*

The operation is **X** in full compliance with
in substantial compliance with Standard of Practice 7.4
not in compliance with

Summarize the basis for this Finding/Deficiencies Identified:

The documents RT-GGO-028 (cyanide related emergencies) and annex, plus annexes II and III of the RT-GGO-024 (dam break emergency plan) evidence that the Plan includes procedures and contact information for notifying management, regulatory agencies, outside response providers and medical facilities of the cyanide emergency and for notifying potentially affected communities of the cyanide related incident and any necessary response measures, and for communication with the media.

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

The operation is **X** in full compliance with
in substantial compliance with Standard of Practice 7.5
not in compliance with

Summarize the basis for this Finding/Deficiencies Identified:

It was evidenced that the the Plan describes specific, remediation measures as appropriate for the likely cyanide release scenarios, according to the document PP-GGO-024. It was evidenced that the Plan prohibits the use of chemicals such as sodium hypochlorite, ferrous sulfate and hydrogen peroxide to treat cyanide that has been released into surface water, according to the document RT-GGO-028. It was evidenced that the plan address the potential need for environmental monitoring to identify the extent and effects of a cyanide release, and include sampling methodologies, parameters and, where practical, possible sampling locations, according to the document RT-GGO-028.

Standard of Practice 7.6: *Periodically evaluate response procedures and capabilities and revise them as needed.*

The operation is **X** in full compliance with
in substantial compliance with Standard of Practice 7.6
not in compliance with

Summarize the basis for this Finding/Deficiencies Identified:

A schedule of simulations to review and evaluate the cyanide related elements of its Emergency Response Plan and make adequacies on a regular basis was available. Mock

cyanide emergency drills are conducted periodically as part of the Emergency Response Plan evaluation process, as verified at the revisions of RT-GGO-028 and RT-GGO-024, resulted from simulation tests. The mock drill reports address conclusions and recommendations. Provisions are in place to evaluate and revise the Emergency Response Plan after any cyanide related emergency requiring its implementation and such reviews have been conducted, as verified at the document RT-GGO-028 item 18.

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

Standard of Practice 8.1: *Train workers to understand the hazards associated with cyanide use.*

The operation is **X** in full compliance with
in substantial compliance with Standard of Practice 8.1
not in compliance with

Summarize the basis for this Finding/Deficiencies Identified:

AGAM (Human Resources Corporate Dept.) has two approaches/ policies for this subject. The first one is related to new employees where they receive introductory training related to cyanide (operation and handling), including cyanide hazard recognition. For veteran employees, AGAM provides annual refresh training sessions, encompassing cyanide related risks, operation with cyanide, cyanide handling, first aids related to cyanide exposure. Cyplus/ Degussa also provides, annually, cyanide related training sessions, according to the contract between the companies. The refresh training sessions were conducted by a safety technician and a doctor (labor physician). Training records are kept by Serra Grande according to its NOSA/ SHE records management procedure, while the employee is an active worker.

Standard of Practice 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 **X** in full compliance with
in substantial compliance with Standard of Practice 8.2
not in compliance with

Summarize the basis for this Finding/Deficiencies Identified:

According to clause 8.1, Serra Grande provides introductory and on the job training to all employees that can have the potential to be exposed to cyanide. These training sessions are annually refreshed. Training materials were established in conjunction by Serra Grande and Cyplus, where the main aspect is the cyanide. All training sessions are provided by qualified personnel to do so (Serra Grande supervisors, Health representatives (doctors and nurses), Safety representatives (safety engineer and technician) and Cyplus instructors. Planned job observations are performed systematically by Serra Grande to verify the training effectiveness. All records have the name of the trainee, the instructor name, the date, the subject covered and the instructor perception about the trainee performance and understanding.

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

The operation is **X** in full compliance with
in substantial compliance with Standard of Practice 8.3
not in compliance with

Summarize the basis for this Finding/Deficiencies Identified:

Maintenance workers receive the same trainings (introductory, on the job and refreshing) as operation workers. Decontamination procedures and first aids are included in the trainings programs. Simulation tests are performed systematically by Serra Grande involving their workers. Simulation tests are performed systematically by AGAM emergency brigade. Additionally to the simulations there are more trainings to the coordinators and members of Emergency Brigade. Last training sessions were conducted on 18/05/2007. External stakeholders are involved in the emergency training sessions, such as the state fire brigade and public/ private hospitals. Last refresh training involving the emergency brigade and external stakeholders was conducted during the 1st half of this year. Simulation tests are performed in order to verify the effectiveness of the emergency response Procedures and also to verify the skills of the involved people.

9. DIALOGUE: Engage in public consultation and disclosure.

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

The operation is **X** in full compliance with
in substantial compliance with Standard of Practice 9.1
not in compliance with

Summarize the basis for this Finding/Deficiencies Identified:

The company did establish adequate communication channels with the stakeholders, such as toll free phone lines, social programs (“good neighborhood”), simulation tests and the “open doors” program. AGAM (corporate) established a communication system with the stakeholders through a toll free number (0800-7271500), through the program “good neighborhood”, newspaper, specific planned meetings with civil and military authorities, and specific planned meetings (quarterly) with the neighbors.

Standard of Practice 9.2: *Initiate dialogue describing cyanide management procedures and responsively address identified concerns.*

The operation is **X** in full compliance with
in substantial compliance with Standard of Practice 9.2
not in compliance with

Summarize the basis for this Finding/Deficiencies Identified:

Cyanide related procedures are available for the stakeholders (see 9.1). The company has an Environmental Education Center, which is used by the community and also two specific newspapers that are forwarded monthly and annually (respectively) for the stakeholders. AGAM established a program entitled “open doors” were planned visits are performed for the local stakeholders such as schools, universities and the population. Besides, AGAM has a

newspaper "Realce" for the internal stakeholders and the Environmental Education Center, which is opened for the public. Annually, AGAM publishes its SHE performance on an Social / Environmental report, which is distributed around to 6500 people.

Standard of Practice 9.3: Make appropriate operational and environmental information regarding cyanide available to stakeholders.

The operation is **X** in full compliance with
in substantial compliance with Standard of Practice 9.3
not in compliance with

Summarize the basis for this Finding/Deficiencies Identified:

Descriptions of how activities are conducted and how cyanide is managed is available to communities and other stakeholders through "Alto Teor / High Text" internal newspaper, monthly distributed to employees and community during the visits according programs "Empresa aberta / Opened Company" and "Boa Vizinhança / Good Neighbourhood". The company established a specific procedure to handle incidents related to cyanide (PD-A-POP-072(2)). The company informs the stakeholders about the results of environmental monitoring testing (water and air) There are no records related to cyanide accidents or incidents, but in the event of such situations, AGAM did establish and document a "crisis management procedure (PD-A-VPOP-072(2) which addresses all the below mentioned issues. Each six months, AGAM releases an Environmental Performance Report with the parameters related to air and water quality to the population: a)Cyanide exposure resulting in hospitalization or fatality; b)Cyanide releases off the mine site requiring response or remediation; c)Cyanide releases on or off the mine site resulting in significant adverse effects to health or the environment; d)Cyanide releases on or off the mine site requiring reporting under applicable regulations; e)Releases that are or that cause applicable limits for cyanide to be exceeded.