

***INTERNATIONAL CYANIDE  
MANAGEMENT INSTITUTE***

***Cyanide Code Compliance Audit  
Gold Mining Operations***

***Certification Summary Audit Report***

***AngloGold Ashanti  
Geita Gold Mine  
Tanzania***

***25<sup>th</sup> – 30<sup>th</sup> January 2016***



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Name of Operation: Geita Gold Mining Ltd.

Name of Operation Owner: AngloGold Ashanti

Name of Operation Operator: AngloGold Ashanti

Name of Responsible Manager: Mr. Andre Coetzee

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

#### **Location Details**

The Geita Gold Mining operation is situated in the Lake Victoria Gold fields of North Western Tanzania, only about 85 kilometres from Mwanza City and 20 kilometres south east of the nearest point of Lake Victoria. The company has its head office in Geita, only 5 kilometres west of the Geita town, and also a supporting office in Dar es Salaam, Tanzania.

#### **Process Description**

The Geita process plant was designed and constructed by Lycopodium, a process engineering company based in Perth, Western Australia. The plant, which was commissioned in June 2000, had a conventional gold ore processing flow sheet with a design throughput capacity of 4 million tonnes per annum. In December 2002 a secondary crushing plant, two additional leach tanks and the cyclone classification circuit were upgraded, resulting in the throughput capacity of the plant being raised to 6 million tonnes per annum for a predominantly soft blend (and around 5 million tonnes per annum for a harder blend). In 2011, a tertiary crushing plant was constructed to improve mill feed stability.



The process plant includes:

- Primary, secondary and tertiary crushing plants
- Semi-autogenous grinding (SAG) mill and ball mill
- SAG mill scats recycle line - (Scats/pebble crusher was decommissioned)
- G-max Cyclones
- High rate thickener
- Pre-oxidation in the first 2 tanks followed by a ten stage carbon-in-leach (CIL) process
- Gold recovery circuit (Elution, Electrowinning and Smelting)
- Gravity concentration section within the milling and classification circuit, where the gravity gold is recovered using Knelson concentrators and an intensive cyanidation process.

The primary crusher is capable of treating 1200 tons per hour. The material from the primary crusher is further crushed through secondary and tertiary crushers to reduce the material to a size that can be handled by the SAG mill. The crushed material is stockpiled on the fine ore stockpile and control-fed into the SAG mill.

The SAG and the Ball mills grind the material into finer particles (P80 of 106 microns) where gold particles are liberated. The milled product is pumped into a cluster of classifying cyclones to separate the fine products from the coarse products. Coarse product is recycled back to the ball mill for regrinding while a portion of it is fed into the gravity concentrators where free gold is recovered.

The fine product slurry is thickened in a thickener to reduce the amount of process water in the slurry before pumping into a train of CIL tanks. All process water is recovered and recycled through the mills. Carbon is added to adsorb gold in the CIL tanks in a counter current flow. Loaded carbon is recovered from the first CIL tank into elution column where hot caustic solution is used to strip gold from the loaded carbon.

The gold in solution is passed through electrowinning cells for the gold to be deposited on stainless steel cathodes. The gold sludge is then cleaned, mixed with fluxing agents and then smelted into gold bars.

The tailings from the process plant are deposited into a fully contained tailings dam. This dam is located 3 kilometres north of the plant site. The main embankment runs around three sides of the facility. Tailings are deposited from the embankment using conventional spigot type discharges. This generates and maintains a pond of clear water within the dam where a decant tower has been constructed. The decant water is pumped back to the process water pond. The dam walls are constructed from mine waste.

An Asset Management Frame Work Policy has been introduced to ensure that the overall asset life cycle is optimised. Engineering and maintenance therefore has been set-up in such a way that development of maintenance strategies, equipment reliability and condition monitoring is split from the day to day execution of activities. This provides an opportunity to review and refine the strategy on a continuous basis through defect elimination and the optimisation of the schedule.

Using historical maintenance data as well as the performance numbers of each individual piece of equipment, the appropriate maintenance strategy is developed which includes a complete work package, making ample use of photographs, detailing the following:



1. Hazards associated with the activities
2. Safety procedures and measures that need to be followed or taken to reduce the impact possibility of the associated hazards.
3. The condition limitations for doing the required work.
4. The tolerances that will be acceptable for signing off the completed work.
5. Sequence of the steps that need to be taken with diagrams or photos.
6. Material and equipment required to do the work.
7. Handover requirements.
8. Final over inspection and signoff by supervisor

This ensures that any person with basic knowledge will be able to complete the task safely and ensure that the outcome will be consistent.

### **Process description**

The ore processing plant is a fairly standard reduction plant using Carbon-in-Leach and Knelson concentrator technology. Designed and commissioned by Lycopodium of Australia, the plant's original design capacity was 4 million tonnes per annum, but has since been upgraded to a maximum capacity of 6 million tonnes per annum of soft ore and 5.0 million tonnes per annum of hard ore. The primary crusher and both mills and the feeders were manufactured by Nordberg, with overall engineering, procurement, and construction management (EPCM - engineering, procurement, and construction management) by Lycopodium. The entire plant is a single flow process.

### **Crushing Circuit:**

The majority of the ore from the pit is dumped onto the run-of-mine (ROM) stockpile, and then fed into the gyratory crusher by a front end loader. The plant design is such that all ore passes through this crusher. The crusher feed rate is higher than the plant design rate which is currently targeted at around 640 tonnes per hour, and there is a buffer stockpile with a total capacity of around 100,000 tonnes. Reasonable stock of critical crusher spares is always maintained to ensure minimum delays in the crushing operation.

The ore is crushed in a three stage crushing circuit and the crushed product is deposited on the fine ore stockpile. A conveyor belt transfers the ore from the fine ore stockpile directly into the SAG Mill feed.

### **Milling Circuit:**

The SAG mill is 9.14m in diameter, and 5.5m long. The underflow from the primary cyclones passes into the, 6.71m in diameter and 9.6m in length, Ball Mill. This mill operates in closed circuit with the cyclones. Two 48 inch Knelson Concentrators are used for gravity gold recovery.

The concentrate from the gravity circuit (Knelson concentrators) enters a closed circuit Acacia Reactor from where the solution is pumped to the gold room where it is passed through a dedicated electro winning cell.

The overflow material from the cyclones passes through linear screens, before entering the 25m diameter high rate de-watering thickener. The overflow from the thickener flows into a settling dam, which has provision to overflow into the emergency pond, in case the settling pond is full.



**Carbon In Leach (CIL) Circuit:**

The underflow from the thickener first enters a series of two pre oxidation tanks in CIL circuit, and then it flows into the first leach (CIL) tank where the first stage Sodium Cyanide is added. Second stage addition is done into Tank #6 to maintain a more consistent free cyanide profile in solution at lower terminal values. Cyanide addition is controlled automatically using a TAC 1000 control unit. There are ten 2240m<sup>3</sup> leach tanks in total. All ten CIL tanks have activated carbon which is moved counter currently to the slurry flow. The vessels are all mechanically agitated, and have air agitation as a backup. The air also acts as a backup for the oxygen system. The overflow from the final leach tank passes through safety screen to recover any escaped carbon, and then into a 40m<sup>3</sup> tailings tank from where it is pumped to the tailings dam.

WAD cyanide to the Tailings Storage Facility (TSF) is controlled with automatic addition of dilution water using a TAC1000 cyanide controller to the tailings tank. During periods of low dilution water or spikes in free cyanide, an automatic peroxide addition system has been added to the control system.

**Elution and Gold Room:**

The loaded carbon is transferred into an acid wash column. Dilute hydrochloric acid solution is added in a batch process before the carbon is transferred into the elution column. Here it is stripped of the gold using a hot dilute caustic solution. Strip water is pumped from the strip solution tank, and heated in a heat exchanger in counter flow with the eluate outflow, as well as by two 2.25MW diesel-fired heaters in series.

The eluate solution passes through the eluate filters and is stored in a stainless steel eluate storage tank. The eluate is then transferred into the gold room where it is pumped through the electro-winning cells. The cathodes are removed from solution and washed, together with the underflow (sludge) from the electro-winning tanks.

The sludge is de-watered in a filter press, and the filter cake fed into one of four calcine ovens. From the ovens, the gold is then finally smelted in a diesel fired furnace and poured into bullion bars. The induction furnace slag is crushed and fed back into the SAG mill feed. Gold is sent to Rand Refinery in South Africa, usually via Dar-es-Salaam. The barren carbon is regenerated in the diesel fired rotary kiln.





***Auditor's Finding***

**This operation is**

**X in full compliance**

in substantial compliance

not in compliance

with the International Cyanide Management Code.

Audit Company: Eagle Environmental

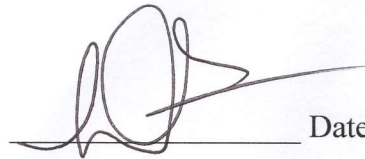
Audit Team Leader: Arend Hoogervorst

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Names and Signatures of Other Auditors:

Name : Dawid M. L Viljoen

Signature



Date: 6 JUNE 2016

Dates of Audit: 25<sup>th</sup> – 30<sup>th</sup> January 2016

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.

Geita Gold Mine

Facility

Signature of Lead Auditor

8 JUNE 2016  
Date



Geita Gold Mine

Signature of Lead Auditor

6<sup>th</sup> June 2016

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*Auditor's Findings*

**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.*

**X in full compliance with**

**The operation is**       in substantial compliance with **Standard of Practice 1.1**  
  
 not in compliance with

*Basis for this Finding/Deficiencies Identified:*

AGR Australia (Pty) Ltd (AGR) supplies cyanide to Geita Gold Mine (GGM) from their production facility in Australia to the port of Dar Es Salaam (INCO terms CFR Dar Es Salaam). AGR was re-certified as a Cyanide Producer and the full compliance published on the ICMI website dated 13 March 2014. The contract requires that all parties (inclusive of the contractors and sub-contractors) must be appropriately certified with the International Cyanide Code.

**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.*

**X in full compliance with**

**The operation is**       in substantial compliance with **Standard of Practice 2.1**  
  
 not in compliance with

*Basis for this Finding/Deficiencies Identified:*

The AGR contract covers transport of cyanide from point of manufacture (Kwinana, Australia) to the port of Dar es Salaam, Tanzania and includes Cyanide Code compliant transport responsibilities from Kwinana to Port of Dar Es Salaam. A further clearing and

inland transport services contract with Freight Forwarders Tanzania (FFT) includes clearing and inland transport services from the port of Dar es Salaam to the Mine at Geita and includes the requirement for the Transporter to be certified with the International Cyanide Code. The AGR contract includes risk and responsibility for the product, and requires an annual transport handling and disaster response risk assessment to be supplied to the Mine. It also details contractor responsibilities for safety, security, loss containment, training of relevant personnel, and emergency response activities.

*Standard of Practice 2.2: Require that cyanide transporters implement appropriate emergency response plans and capabilities and employ adequate measures for cyanide management.*

**X in full compliance with**

**The operation is**                     in substantial compliance with **Standard of Practice 2.2**  
  
 not in compliance with

*Basis for this Finding/Deficiencies Identified:*

All identified transporters in the Supply Chain from Kwinana, Australia, to Geita Mine, Tanzania, are ICMI-certified under the AGR supply chains and, furthermore, FFT is an ICMI-certified transporter. The requirement for appropriate emergency response plans and capabilities and adequate measures for cyanide management form a part of the certification requirements for transporters and consignors.

**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.*

**X in full compliance with**

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

*Basis for this Finding/Deficiencies Identified:*

The cyanide mixing and storage facility was designed according to applicable jurisdictional rules and other sound and accepted engineering practices, as audited in the original ICMI first certification audit and the tanks, pumps and valves were not changed since the original design and drawing specifications.





The storage of both liquid and solid cyanide is located away from people and surface water. Cyanide containers are stored inside a roofed store on a concrete surface with open sides.

Any mixing area tank leakage drains to the cyanide bund. Any leakage in the dry cyanide storage floor area drains to the reagent storage area sump from where it will be pumped to the tailings hopper in cases of rain water or in case of fire which is fought using water. Water or spillage in the spillage sump is tested before deciding where to pump the spillage. The seatainer de-stuffing area is concreted and drains into the cyanide bund to prevent any spillage from escaping into the storm water system. Prior to de-stuffing cyanide containers are stored on a concrete area with water run-off channelled directly to the cyanide spillage sump.

The make-up tank is equipped with a high and low level switch, closing the water feed valves to the mixing tank to prevent overflowing. The storage tank is equipped with a level indicator. Interlocks with the mixing tank transfer pump are in place and high level alarms will show in the control room to warn of a risk of overflowing. Reagent strength cyanide tanks are placed in the open with the storage tank equipped with a ventilation pipe. The cyanide mixing tank is open at the top where the bag breaker is in place, acting as a ventilation mechanism.

The solid cyanide store and the reagent strength cyanide tanks and make-up area are situated inside the plant security fence with an entrance controlled via two security entry control systems. The solid cyanide store is fenced with locked gates and entry control. The cyanide mixing and storage area is fenced with entry control. Solid and liquid cyanide is stored separately from incompatible materials.

*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.*

**X in full compliance with**

**The operation is**                       in substantial compliance with **Standard of Practice 3.2**  
  
 not in compliance with

*Basis for this Finding/Deficiencies Identified:*

All cyanide packaging is disposed of using a procedure for disposing empty cyanide boxes and bags which includes a triple rinsing requirement. The offloading and mixing procedures includes reference to the involvement of a “buddy” to independently observe the processes.

The procedure for mixing sodium cyanide covers operation of valves and couplings and sequencing thereof and checking and clean-up of any leaks of spills. The procedure for de-stuffing sodium cyanide containers includes maximum stacking height of 3 boxes and clean up requirements.



**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.*

**X in full compliance with**

**The operation is**  in substantial compliance with **Standard of Practice 4.1**

not in compliance with

*Basis for this Finding/Deficiencies Identified:*

The site has 91 cyanide specific operational procedures in place. Engineering maintenance is done using a work package for each piece of equipment which includes task steps, equipment requirements, resources, pre-work inspections, PPE (Personal Protective Equipment) and safety notes, and photos. Non-routine tasks are done developing a task specific work package. These work packages are viewed as engineering procedures for all maintenance tasks. The TSF (Tailings Storage Facility) management and operating plans in place include the AngloGold Ashanti (AGA) Regional TSF Operating Manual dated July 2015. Annual reviews and reports are also used for review of TSF operating parameters. These include an annual review by the AngloGold Ashanti Geotechnical Engineer and an annual TSF audit done by an independent Geotechnical Engineer. The latest report from the AngloGold Ashanti Geotechnical Engineer concluded that the Geita TSF shows no signs of instability, pool control is effective, the reduction in pool size is commendable and no high risk items were identified.

The TSF Operating Manual indicates total freeboard as the vertical height between the lowest point on the crest of the perimeter embankment of the TSF and the normal operating pond level at 1.5m. Current freeboard is 7m. The design storm provision up to the wall is a 1:100 year storm event and the beach is to contain the 72 hour continuous rainfall event. The manual also refers to the WAD cyanide levels, "...The objective is to ensure that the WAD - CN concentration in the tailings slurry is below 50ppm before pumping to the TSF..."

All tanks, bunds, pond, impoundments, pipelines, valves and pumps in the plant and on the TSF are listed on the Mainpac Planned Maintenance System (PMS) and are inspected on a regular basis. All tanks are equipped with leak detection holes and are inspected as per the Mainpac inspection schedules. The PMS system includes daily inspections covering the cyanide mixing and storage section as well as cyanide equipment inspections on a weekly, monthly, six monthly and annual basis. Daily pipe patrol inspections on the TSF pipeline are conducted using a formal checklist. All key pumps are inspected based on running hours, a job card is generated at specific hours for component replacements. A member of the condition monitoring team is present when

the pumps are opened to enable tracking of component running time and subsequent replacement. A quarterly TSF surveillance inspection is carried out which is followed by an Inspection Action Plan. Minuted monthly TSF management meetings are also held. The PMS inspections' results are analysed routinely by the Reliability Department and strategies and inspection frequencies are modified as necessary through the defect elimination system.

The Engineering and Reliability Department implements the Asset Management Framework which includes the Asset Integrity Management System (AIMS) which further includes the Process Plant Condition Monitoring of structures. The AIMS system covers all cyanide equipment containing more than 5 mg/l WAD cyanide. Civil structures and mechanical structures are included in the SIMS (Structural Integrity Management System) audit which is done every 5 years and completed by DRA (Oct 2015 report issued Jan 2016). These reports are reviewed by the AGA Corporate Engineering Manager: Civil and Structural and a Professional Structural Engineer. Inspections are scheduled including thickness tests as well as non-destructive testing and vibration monitoring. Condition monitoring uses design thickness for equipment as a base line and then calculates the minimum safe thickness. Follow up on inspections, repairs and close out is in place in the Mainpac system. The frequency of inspections is deemed adequate to assure and document that equipment is functioning within design parameters. The maintenance strategy is based on planned shutdowns of the plant or appropriate sections to optimise maintenance time and production down time.

A backup generator is in place to run critical sections of the CIL Plant in case of failure of the mine power generation station. The generator is on the PMS system and serviced by the contractor, Geita Power. The plant is also designed to pump slurries and bund capacity is provided to accommodate any flowdown of solutions and slurries. The solution ponds are operated at levels to accommodate power trips.

A change management procedure was noted to be in place and requiring sign off by health, safety and environmental officials.

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

**X in full compliance with**

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

*Basis for this Finding/Deficiencies Identified:*

Ore characterisation on the 3 different ore types currently being processed has been completed, along with test work on pH, grind and cyanide levels. Diagnostic leach tests have been done monthly. The predicted ore mix is used to determine cyanide set points



which are set on written instruction from the Metallurgist. A two stage cyanide control strategy was investigated and found to be feasible. After investigation, an additional TAC 1000 analyser was placed at the end of the CIL system to further improve cyanide and WAD management.

The current control used includes the online measurement of free cyanide using a TAC 1000 analyser. Cyanide addition is controlled, based on the TAC 1000 free cyanide concentration in CIL1, via variable speed drives on the cyanide feed peristaltic pumps. The feed system to the leach is equipped with a mass flow meter and this unit is used as a ratio control system in addition to the TAC 1000 free cyanide analyser. Back up for the TAC 1000 unit includes 6 monthly planned maintenance by the supplier and trained staff on the process plant.

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

**X in full compliance with**

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

*Basis for this Finding/Deficiencies Identified:*

The mine is in the process of implementing the OPSIM probabilistic water balance (PWB). Currently the mine is still using the Knight Piésold, mine wide, water balance model, including the plant and TSF as "black boxes". A separate spreadsheet based PWB was sighted using rainfall data to determine the maximum rainfall. The 1:100 year, 24 hr storm event was tested and the emergency pond was determined to be able to accommodate the storm event with a 1.5m freeboard before the event. Current total freeboard following the lift of the wall is 7m. Daily TSF inspections are conducted, including recording of pool levels and dam freeboard. Pool levels and freeboard are surveyed monthly. The model did not indicate any need for stopping the plant in case of high rainfall events to restore the water balance.

Precipitation is measured by the Environmental Department and rainfall data from 2000 to present is recorded in the model and maximum storm events can be simulated. The plant uses the local weather station data which includes evaporation and rainfall. Daily TSF inspections are conducted, including recording of pool levels and dam freeboard.

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

**X in full compliance with**

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

*Basis for this Finding/Deficiencies Identified:*

The compliance point is the daily grab sample from the spigots at the TSF. All WAD cyanide values in the spigot discharge (with four investigated exceedances) to the TSF and the open water in the TSF pool are below 50 mg/l WAD CN and thus no additional measures are required to restrict access of wildlife and livestock. Four exceedances occurred which were investigated and traced to a major plant shutdown, unsteady control at the TAC 1000 analyser due to an instrumentation fault, and decant pump repairs. The maximum value was 68mg/l WAD cyanide, with the other three values less than 55 mg/l WAD cyanide. Values from June 2015 to January 2016 were sighted with the average being 33.1 mg/l WAD cyanide. The WAD cyanide values from the decant tower were sighted from June 2015 to January 2016 and these were all below 6 mg/l. All ponds in the plant are fed from the TSF return water system which is sampled for WAD cyanide and contains less than 6 mg/l WAD cyanide.

It was confirmed through inspection reports and interview with the Environmental Department that there have been no bird mortalities recorded in the last 12 months prior to the physical audit.

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

**X in full compliance with**

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

*Basis for this Finding/Deficiencies Identified:*

No surface water is discharged from the process plant and TSF and thus no jurisdictional mixing zone exists. Surface water samples are taken around the mine site. The Mtakuja river is sampled up and down stream and all values from 2014 to date are below limits of detection of 0.001 mg/l WAD cyanide. Boreholes are sampled up and down stream of the Mine and all values are below limits of detection. The sampling indicates that there is no indirect discharge to surface water. Eight additional monitoring boreholes have recently been drilled directly downstream of the TSF and data are being collected and monitored.

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

**X in full compliance with**

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



*Basis for this Finding/Deficiencies Identified*

Boreholes are placed at strategic points below the TSF to monitor the effect of cyanide on groundwater. The TSF is equipped with under drains in the walls draining to a concrete collection pond and pumped back to the dam. The plant equipment is placed on a concrete surface with spillages contained in bunds. An emergency spillage pond is located to collect spillages from the drainage systems of the plant. Boreholes are located up and down stream of the plant. The WAD cyanide data from 2014 to date for all downstream boreholes are lower than levels of detection of 0.001 mg/l. No legal standards are in place currently. The drinking water standard is 0.2 mg/l cyanide. No backfill is used and there have been no seepages that have increased cyanide concentrations.

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

**X in full compliance with**

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

*Basis for this Finding/Deficiencies Identified:*

The CIL, pre-oxidation, elution and residue tanks are situated inside a concrete bund area. The bund area is connected to a concrete-lined trench flowing into the emergency pond. The emergency pond is a lined pond, equipped with a pumping system returning the contents to the plant. The cyanide mixing and storage area tanks will drain into a cyanide spillage bund. The acacia leach plant ILR (Intensive Leach Reactor) is situated inside a primary bund, which is again inside a secondary bund, drain holes in the secondary bund lead to the trench feeding the emergency pond. The Leach and CIP tank bases are placed on ring beams equipped with leak detection holes in the ring beams. There is a procedure in place for tank base leak detection. The reagent strength cyanide tanks are confirmed to be placed on solid concrete foundations. All secondary containments for cyanide unloading, storage, mixing and process tanks are sized to hold a volume greater than that of the largest tank within the containment and any piping draining back to the tank, and with additional capacity for the design storm event.

The plant is designed with all tanks draining into bund areas equipped with sumps and sump pumps. These sump pumps return spillage back to the process. Level indication, indicating on the SCADA system in the control room, is installed on solution ponds.

The TSF HDPE line is placed inside earth trenches and equipped with emergency spillage containment paddocks and the pipeline is inspected daily with the inspections being recorded. The pipeline is part of the Mainpac PMS and thickness tests are carried out 6 monthly. The pipelines on the plant all run across concrete surfaces draining to bund areas which are equipped with sumps and pumps. The reagent strength lines also run across concrete surfaces.





The current TSF pipeline system crossing the stream below the Nyamonge dam is placed inside a launder with paddocks on each end. A pressure measurement system is in place that would identify significant leaks leading to pressure loss through a pressure transmitting system reporting to the control room SCADA system where an alarm will be set off in case of pressure losses. The system was redesigned to manage risk of tailings pipe leaks to the stream at the crossing. This will include an additional pipeline, a new stream crossing system and spillage paddocks to contain any leaks in the area.

Pipes are mostly constructed of HDPE and tanks are constructed of carbon steel and valves are stainless steel ball valves. The design criteria is based upon the AGA Continental Cyanide Guidelines. High strength cyanide solution lines are made of stainless steel.

*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.*

**X in full compliance with**

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

*Basis for this Finding/Deficiencies Identified:*

No Quality Assurance/Quality Control documentation is available as the plant is 15 years old. The Engineering and Reliability Department implement an Asset Management Framework which includes the Asset Integrity Management System (AIMS) which also covers the Process Plant Condition Monitoring of structures. The AIMS system covers all cyanide equipment containing more than 0.5 mg/l WAD cyanide. Civil structures and mechanical structures are included in the SIMMS (Structural Integrity Management Monitoring System) Audit which is done every 5 years. The SIMMS audit findings/shortcomings are managed under the Asset Integrity Programme on Site under the direction of the Engineering Manager – Engineering and Reliability. Inspections are scheduled including thickness tests as well as non-destructive testing and vibration monitoring. Conditions monitoring uses design thickness for equipment as a base line and then calculates the minimum safe thickness. Examples of current AIMS and SIMMS documentation were reviewed. The identified problem areas and recommendations state that the work be scheduled and completed over the next 3 years, as a part of planned maintenance programs, with a follow up inspection to confirm completion. The main issues were corroded beams, and no other significant faults were identified that may impact on the plant cyanide equipment integrity. An date scheduled action log to repair the various problems identified was reviewed.



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

**X in full compliance with**

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

*Basis for this Finding/Deficiencies Identified:*

An environmental sampling program (including both surface and groundwater sampling) is in place, as is a procedure for environmental monitoring (including sample preservation, cyanide species sampled, and chain of custody procedures and the sample sheet which includes a Code compliant record of sampling conditions) of surface water and borehole water. This was developed by a graduate Environmental Engineer and reviewed by appropriately qualified consultants. Borehole samples are taken upstream and downstream of the TSF wall and the Nyamonge and Mtakuja streams are sampled up and down stream of the TSF. The sampling map for surface and groundwater locations was sighted. Wildlife is monitored daily, groundwater and surface water is done monthly. Sample frequencies are deemed adequate by auditors to characterise the medium monitored.

**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.*

**X in full compliance with**

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

*Basis for this Finding/Deficiencies Identified:*

The Geita Mine Closure Plan dated 2013 includes Appendix C : Process Plant Decommissioning Plan. The Appendix is a detailed procedure for plant closure and demolition, including decontamination activities of the process plant cyanide facilities and the TSF. Detailed Task Development and Scheduling section in the Plan requires the drafting of a Gantt chart of the activities described in the Plan. The Closure Plan review is required every three years.



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

**X in full compliance with**

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

*Basis for this Finding/Deficiencies Identified:*

The Closure Plan, Section 2.3.2 Metallurgical Areas: states, "...Cyanide is toxic to many living organisms at very low concentrations, particularly fish and aquatic invertebrates. Although it reacts readily and degrades or forms complexes and salts of varying stabilities, it is imperative that the decommissioning plan for the GGM processing plant and tailings disposal facilities makes detailed provision for preventing any adverse environmental and health impact..." It therefore deemed that closure estimates include provision for cyanide related decommissioning. Table 26 includes the estimates for closure costs for mine facilities and an accompanying schedule.

Securities (bonds or bank guarantees) are legislative requirements that are aimed at protecting communities from closure liabilities usually caused by defaulting companies. The Tanzanian Mining Act Regulations, 2010, requires companies to post rehabilitation bonds in prescribed terms. Discussions between GGM and the Tanzanian Government regarding posting of a rehabilitation bond are yet to be finalised.

The Tanzanian Government has not yet formally approved the financial assurance mechanism for this question and therefore a site-based Statement of Financial Strength is being used in the interim as the financial assurance mechanism to self-insure and self-guarantee cyanide-related decommissioning activities. The Tanzanian Government has not yet approved the financial assurance mechanism in this question and therefore a site-based Statement of Financial Strength is being used. Sighted site-based statement of financial strength signed by the Senior Manager: Management Accounting, AngloGold Ashanti, indicating that AGA Geita mine has sufficient financial strength, based upon 2015 financial information from unapproved management accounts, to fulfil this obligation as demonstrated by an accepted financial evaluation methodology, as indicated in the ICMI guidelines.

**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.*

**X in full compliance with**

**The operation is**             in substantial compliance with **Standard of Practice 6.1**

not in compliance with

*Basis for this Finding/Deficiencies Identified:*

Cyanide procedures covering process and engineering were reviewed and 91 cyanide SOP's are in place. All procedures include the required PPE and appropriate pre-work inspections. Procedures further reviewed and confirmed included, procedure for destuffing (of containers), procedure for working on cyanide pumps and pipelines, cyanide mixing procedure, buddy procedure, procedure for abnormal conditions within the process plant area, and confined space and hot work entry procedures. Engineering maintenance is done using a work package for each piece of equipment which includes task steps, equipment requirements, resources, pre-work inspections, PPE and safety notes, and photos. Non-routine tasks are done developing a task specific work package. These work packages are viewed as engineering procedures for all maintenance tasks.

The TSF (Tailings Storage Facility) management and operating plans in place include the AngloGold Ashanti (AGA) Regional TSF Operating Manual dated July 2015. Annual reviews and reports are also used for review of TSF operating parameters. These include an annual review by the AngloGold Ashanti Geotechnical Engineer and an annual TSF audit done by an independent Geotechnical Engineer. The latest report from the AngloGold Ashanti Geotechnical Engineer concluded that the Geita TSF shows no signs of instability, pool control is effective, the reduction in pool size is commendable and no high risk items were identified.

The TSF Operating Manual indicates total freeboard as the vertical height between the lowest point on the crest of the perimeter embankment of the TSF and the normal operating pond level at 1.5m. Current freeboard is 7m. The design storm provision up to the wall is a 1:100 year storm event and the beach is to contain the 72 hour continuous rainfall event. A review of the monthly meetings and quarterly surveillance inspection action plans indicated that there were no significant risks or problems identified.

A change management procedure was noted to be in place and requiring sign off by health, safety and environmental officials.

Daily section toolbox meetings are held at the start of each shift which included general and cyanide safety topics and issues from the floor. SHE (Safety, Health and Environment) procedures are authorised via the standards committee which includes senior supervisors and union representatives and the HSE&T (Health, Safety, Environment and Training) Manager.

There is a weekly Managing Director safety meeting at which all attend and this is followed by a management walkabout. An action plan is issued following the walkabout and meeting. A daily management report includes punch items on safety and worker input issues which can be included in the report. Monthly SHE representatives meetings are held which include worker issues, as appropriate. Daily production meetings (documented in diaries, not minuted) include safety and health issues raised by the workforce which are noted and escalated, as appropriate. The minutes of a process plant OHSE (Occupational Health, Safety and Environment) management review meeting dated 18 Dec 2015 which included discussions on procedures was sighted.



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*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.*

**X in full compliance with**

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

*Basis for this Finding/Deficiencies Identified:*

The pH set points are determined by the ore types and mix that is fed to the plant. Set points (currently 10.5) are changed by the operator on instructions from the Process Manager or Superintendent. Test work is conducted to determine ore pH requirements. Test work to determine pH is ongoing. The final pH is controlled via a pH meter linked to the lime dust feeder ratio setting. Primary control is via a ratio control system to control dry lime feed to the mill feed. On-line pH measurement is done in leach tanks using a pH meter and a TAC 1000 analyser displaying on the SCADA, with interlocks in place, as per AGA Cyanide Guidelines. Manual pH control at the Acacia ILR reactor is at 13.

There are 14 personal hydrogen cyanide gas monitors (6 PAC 7000, 2 Multiwarn, 6 Xam 5000, 1 Xam 7000) in use. There are also 7 fixed Polytron hydrogen cyanide gas monitors in place which are linked to the SCADA system where only alarm conditions are shown. The fixed monitors are located in the reagents mixing area (1), the tailings hopper (1), the Leach and CIL area (2), the Milling floor (1), the Acacia ILR reactor (1), and the Gold Room (1). Daily and monthly hot spot surveys are conducted using the Xam 7000, or Multiwarn II personal HCN gas monitors. Fixed gas monitors are installed at the identified hotspots above. The carbon recovery screen is a potential hot spot and appropriate warning signs are in place. All cyanide monitoring equipment is managed by the Safety Department and calibrations and maintenance are carried out six monthly by Dräger, the manufacturer.

The use of safety showers at strategic locations was confirmed during the site inspection. All safety showers were tested and checked for adequate pressure as verified in inspection records. Shower inspections are scheduled on the Mainpac PMS system. Fire extinguishers inspections are done by Fire Department monthly and recorded on a list. extinguisher records are in the form of a punched hole on the extinguisher tag which was confirmed during site inspections. External contractors carry out pressure testing of the fire extinguishers every 5 years.

MSDSs in English (site working language) are available at the process control room, warehouse, gold room and reagent handling office. Chapter 39 of the AGA Cyanide Guidelines (The Chemical Emergency Response Team section) is available in all the cyanide first aid boxes and emergency room. Warning signs at the dry cyanide store and mixing area include no eating / drinking, no open flames, no smoking and PPE requirements. Training covers signage, the presence of cyanide and PPE requirements in the different sections of the process plant. It was verified during the site inspection that



cyanide and TSF pipelines are labelled with flow direction indicated on reagent strength pipelines and the storage, mixing and process tanks are marked “cyanide solution”. All incidents are investigated as per the Non conformity corrective action and preventative action procedure. No human cyanide exposure incidents were recorded.

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

**X in full compliance with**

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

*Basis for this Finding/Deficiencies Identified:*

Radios are used for primary emergency communication and panic alarms are placed strategically in the plant. Cell phones are also used by management for communication of emergencies. In the Process Plant, oxygen, SCBA kits, antidote kits and water is available at cyanide first aid stations. The Emergency Response team (ERT) use Radios and cell phones for communication. The ambulance is equipped with medical oxygen, cyanide antidote, and resuscitators.

Emergency cabins are inspected by the process plant safety staff weekly and records were reviewed. The ERT emergency equipment is also inspected weekly. The ambulance checklist including PPE, respirators, and oxygen cylinders was sighted and ERT emergency equipment checklists reviewed. It was confirmed that the cyanide antidote in the clinic is current and stored in fridges, with the temperature being checked twice daily. The antidotes are replaced centrally by AGA according to a replacement schedule and manufacturers recommendations.

There is a site-wide mine-wide Crisis and Emergency Management Plan and an Emergency Response Plan for cyanide emergencies in place. The cyanide emergency response includes the reporting of the cyanide incident to the control room using a panic alarm, phone or cell phone. The control room will inform the ERT using radio Channel 4 and then inform a supervisor by radio to check and report. First responders, who are trained in cyanide emergencies will be despatched and will use the contents of the cyanide emergency cabinets. The mine-wide Emergency Response Team (including a paramedic) is on standby 24 hours and responds to the plant control room. An on-site medical facility will receive the patient from the ERT for cyanide first aid and medical treatment. The facility is capable of keeping patients overnight and has isolation and decontamination facilities. Staff not trained in cyanide emergencies will go to the evacuation assembly points. Emergency responders and first responders are trained both in cyanide releases as well as cyanide first aid.

The clinic protocol is the formal method of medical treatment of cyanide poisoning and referral of patients to the nearby Geita Hospital. The Protocol indicates that the preference is to stabilise cyanide patients on site in the mine clinic and bring required specialists to the patient who would be located at the mine clinic. If referral to the Geita



Hospital is needed in the case of prolonged intensive care, the patient will be transferred to the hospital accompanied by a GGM doctor. Through the medical contract between GGM and Geita hospital, arrangements will be made so that any specialist required will be brought to Geita hospital. The GGM Chief Medical Officer will at all times coordinate the medical management taking place at Geita hospital for a cyanide poisoning patient. Emergency cyanide drills are conducted every 6 months as per the emergency response / evacuation drill plan covering spillage and man down scenarios. Two drill reports were reviewed, a spill drill involving acid moving towards empty cyanide packaging and a gassing next to the cyanide spillage pump. Both reports included strengths and weaknesses of response and action plans to implement corrective actions.

**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.*

**X in full compliance with**

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

*Basis for this Finding/Deficiencies Identified:*

There is a site-wide mine wide Crisis and Emergency Management Plan and an Emergency Response Plan for cyanide emergencies in place. The plant specific cyanide plan will default to the mine wide emergency plan on mine wide issues such as mine evacuation and media communication and any community related issues. The Plan includes specific procedural responses to a range of site specific cyanide failure scenarios. The Plan also 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.

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

**X in full compliance with**

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



*Basis for this Finding/Deficiencies Identified:*

Risk assessments of the plan were conducted involving the workforce. The ERT were briefed on the Plan revisions. The plant provides the opportunity for input and information to the community on the Plan through dialogue discussions with the community. No local or external agencies are involved in the Plan and the Geita hospital, on-site clinic and emergency response team are involved through mock drills and other communications. Outside responders' or communities do not have roles in the ERP.

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

**X in full compliance with**

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

*Basis for this Finding/Deficiencies Identified:*

The ERP identifies (in section 3 Management roles and responsibilities) the on scene commander (Process Manager, alternate Plant Engineer). By virtue of their operational functions, they have the authority to commit resources, as necessary. The outside responders' or communities do not play roles in the ERP. The Plan identifies emergency response teams and first responders who are trained to respond to plant emergencies. There is a procedure for daily inspection of cyanide storage, dosing and first aid facilities, emergency cabins which are inspected by the Process plant safety staff. Weekly inspection records were sampled and reviewed. The on-site ambulance contains emergency equipment including cyanide equipment and is inspected daily by the Paramedic. Inspection records were sampled and reviewed. The ERT emergency response equipment includes cyanide emergency equipment and the equipment in their fire tender is inspected daily. The Breathing Apparatus (BA) register and record sheets and the Clinic checklists were sampled and reviewed.

No outside responders are used during emergency situations. The Plan includes contact references (telephone, cell phone, etc) of internal and external resources for the various scenarios, particularly with detail where external resources and skills might be needed. Periodic drills involving internal and external stakeholders ensure that roles and responsibilities are understood and clearly implemented. Communities do not take part in the emergency responses, but are given information on cyanide.

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

**X in full compliance with**



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

*Basis for this Finding/Deficiencies Identified:*

The site-wide mine wide Crisis and Emergency Management Plan and the Cyanide Emergency Response Plan include details for appropriate emergency notification and reporting (internal and external) and the call-out procedure and contact information lists which are updated regularly. Internal and external communication (including the Media) is dealt with in the Plan. All communities are identified by the Community Relations Department. Currently no communities will be affected or required to be contacted or notified.

*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.*

**X in full compliance with**

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

*Basis for this Finding/Deficiencies Identified:*

The site-wide mine wide Crisis and Emergency Management Plan and the Cyanide Emergency Response Plan cover clean-up, remediation and a neutralisation methodology linked to operational and environmental procedures. The use of neutralization processes and materials is clearly covered, as is disposal of contaminated materials. There is no scenario whereby drinking water would need to be supplied. Treatment chemicals use is prohibited in cyanide procedures. Emergency sampling is covered in procedures.

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

**X in full compliance with**

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

*Basis for this Finding/Deficiencies Identified:*

The ERP is a controlled document which is required to be reviewed annually or after an actual cyanide emergency, or a mock drill which identified deficiencies in the plan, under the section entitled Plan Maintenance. Drills incorporate identification of problems, action and follow up on completion.



**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.*

**X in full compliance with**

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

*Basis for this Finding/Deficiencies Identified:*

All Geita visitors, employees and contractors that will be on site for less than 14 days receive Basic cyanide awareness training and HSE induction and are tested. All process employees, TSF staff and contractors, ERT, Clinic, security, engineering, SGS lab staff, that will be on the plant for more than 14 days receive the detailed Cyanide First Aid presentation and undertake a written test. The two sets of training material were reviewed and found to meet Cyanide Code requirements.

Refresher training is conducted six monthly. Refresher training was checked during interviews and review of the interviewee training records. Records are retained for 40 years. Hard copy records are reportedly available since the commencement of the operation in 2000.

*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.*

**X in full compliance with**

**The operation is**  in substantial compliance with **Standard of Practice 8.2**  
 not in compliance with

*Basis for this Finding/Deficiencies Identified:*

The electronic training matrix including operational and engineering training was reviewed. The training is based on the unit standards for each job. The training matrix specifies which elements are required for which jobs. The matrices contains a cyanide matrix, a process operational training matrix and hazard identification training matrix. The modules cover the full spectrum of tasks for the plant. All plant employees receive 1 day cyanide 1st aid training. On the job training takes place, followed by interviews, determining the candidates competence. Area induction and area specific task training is conducted for employees transferred to a new section. The Training staff trains the



Standard Operating Procedures theory and on-the-plant and on-the-job training is done by the Supervisors.

Task observations are conducted by the Supervisors and are used to identify any additional or refresher training that may be required by an employee. The Planned Task Observations (PTOs) monthly requirements are set out for Supervisors (4 per month) and Managers and Superintendents (2 per month). PTOs are scheduled in Mainpac PMS. Training records are kept in a spreadsheet matrix as well as personal files, and are kept for 20 years.

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

**X in full compliance with**

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

*Basis for this Finding/Deficiencies Identified:*

All staff are trained in cyanide first aid which includes cyanide emergency, cyanide first aid, spill response and are therefore all first responders. The Mine Emergency Response Team reacts to the emergency following notification by the control room and will be despatched to the plant. The ERT is trained according to a training matrix. Cyanide first aid training is included under the heading of HAZMAT training. The site ambulance is accompanied by a Paramedic, trained in cyanide first aid and medical treatment.

Cyanide emergency drills are held including the Plant first responders, the ERT, the ambulance, and the clinic. The ERT are trained in the emergency response plan and the use of response equipment. This was confirmed in the training matrix and training needs matrix, as was refresher training.

Two drill reports were reviewed, a spill drill involving acid moving towards empty cyanide packaging and a gassing next to the cyanide spillage pump. Both reports included strengths and weaknesses of response and action plans to implement corrective actions. The training officer was present at both drills. No Community members are directly involved in the emergency response plan. Training records are kept in a spreadsheet matrix as well as personal files, and are kept for 20 years.

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

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

**X in full compliance with**

**The operation is**       in substantial compliance with **Standard of Practice 9.1**

not in compliance with

*Basis for this Finding/Deficiencies Identified:*

Dialogue meetings are two-way dialogue sessions involving both dissemination of information and the answering of questions on cyanide.

Community Department Officers visit the surrounding villages to communicate on mine affairs monthly. All villages and communities are identified and include:- Saragulwa, Nyamwilolelwa, Nungwe, Lwenge, Kifufu, Isamilo, Kasota, Nyansalwa, Nyawilimilwa, Nungwe, Bugalama, Ntinachi, and Nyawilimilwa. Geita town consists of the wards of Nyankumbu, Kalangalala, Mtakuja, Mgusu, and Nyamwilolelwa and the mine communicates with them quarterly on Ward level (includes approximately 5 Villages per ward). There are Quarterly District level (Community Partnership Committee and Community Relation Committee) meetings. The dates of these are normally confirmed by the Mine Managing Director and the District Commissioner. The cyanide transport issue was discussed with the Villages and awareness training was done in the communities along the transport route from Ilogi to the Mine (57km). Meeting documents (11 meetings) from May to June 2015, including attendance lists, were sighted. Attendance averages between 100 and 150 people per meeting. People were given a chance to ask questions after the meetings and questions included dust and general cyanide topics. The main communication is with community representatives, but if required an open meeting with the communities can be arranged. Specific cyanide tours are planned for 2016. Specific meetings are also held with interested and affected parties on important topics, as they arise.

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

**X in full compliance with**

**The operation is**

in substantial compliance with **Standard of Practice 9.2**

not in compliance with

*Basis for this Finding/Deficiencies Identified:*

Dialogue meetings are two-way dialogue sessions involving both dissemination of information and the answering of questions on cyanide.

Community Department Officers visit the surrounding villages to communicate on mine affairs monthly. All villages and communities are identified and include:- Saragulwa, Nyamwilolelwa, Nungwe, Lwenge, Kifufu, Isamilo, Kasota, Nyansalwa, Nyawilimilwa, Nungwe, Bugalama, Ntinachi, and Nyawilimilwa. Geita town consists of the wards of Nyankumbu, Kalangalala, Mtakuja, Mgusu, and Nyamwilolelwa and the mine communicates with them quarterly on Ward level (includes approximately 5 Villages per ward). There are Quarterly District level (Community Partnership Committee and Community Relation Committee) meetings. The dates of these are



normally confirmed by Mine Managing Director and District Commissioner. The cyanide transport issue was discussed with the Villages and awareness training was done in the communities along the transport route from Ilogi to the Mine (57km). Meeting documents (11 meetings) from May to June 2015, including attendance lists, were sighted. Attendance averages between 100 and 150 people per meeting. People were given a chance to ask questions after the meetings and questions included dust and general cyanide topics. The main communication is with community representatives, but if required an open meeting with the communities can be arranged. Specific cyanide tours are planned for 2016. Specific meetings are also held with interested and affected parties on important topics, as they arise.

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

**X in full compliance with**

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

*Basis for this Finding/Deficiencies Identified:*

A printed copy of the Swahili presentation and a brochure is made available to the attendees. The brochure and PowerPoint presentation were sighted and reviewed. High levels of literacy (80%) amongst stakeholders and most communication is in Swahili. Information is given to committees in the form of presentations in Swahili, to cover any potential illiterate members. Visitors are invited to the mine where they physically see the process and mine operations.

All lost time injuries and fatalities must be reported to the Mines Officer who in turn reports to the Mining Commissioner. The mining authorities do not make this information public. The Mine distributes safety flashes on the notice boards throughout the mine and these are discussed at toolbox talks and HSE reps meetings. The MD's quarterly feedback meeting to the workforce would include any injuries and major incidents, including cyanide. A Group wide Workforce Management Reporting System (WMRS) is used as an electronic reporting platform for all safety and environmental incidents, inspections and deviations. The Incident classification (AGA management standard) is Minor, Moderate and High and Major or Extreme. Classification of incidents is according to an integrated table included in the WMRS software. The 2014 Annual Report on-line includes a section on cyanide as well as cyanide-related incidents that have occurred in the group. (<http://www.aga-reports.com/14/os/performance/resources-infrastructure/land-management#significant-incidents>)

Geita has not had any cyanide incidents (health, safety or environmental) in the last 12 months that required reporting on a public level. Any incidents would be reported on the website.

