INTERNATIONAL CYANIDE MANAGEMENT INSTITUTE

Cyanide Code Compliance Audit Gold Mining Operations

Recertification Summary Audit Report

AngloGold Ashanti Mponeng Gold Plant South Africa

21st – 25th June 2010

Name of Operation:	AngloGold Ashanti Mponeng Gold Plant
Name of Operation Owner:	AngloGold Ashanti
Name of Operation Operator:	AngloGold Ashanti
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Location detail and description of operation:
Mponeng Gold Plant is located in the West Witwatersrand area, about 80km south west of Johannesburg, treating ore from Mponeng mine. The plant comprises of the ore storage and transport section, the milling, thickener, leach and CIP section, the elution circuit, the smelt house and the backfill and residue section.

Ore from the mine is milled in three ROM (Run of Mine) mills operating in closed circuit with hydro cyclones. The cyclone overflow product reports to the thickeners for dewatering prior to leaching. The coarse cyclone underflow material is directed back to the mills for re-grinding.

Lime is added to the thickener feed to achieve a pH of 10.5 reporting to the pre-leach tank. The leach section consists of 10 leach tanks in series. The first tank is used for pre-oxidation while cyanide is added to the second leach tank. Cyanide dosing control is affected by means of an on-line cyanide analyser and cyanide addition is controlled according to the dry tonnage feed to the leach and concentration set point in dosing tank.

The leach slurry reports to the CIP tanks where activated carbon is used to adsorb the dissolved gold. The gold loaded carbon is removed from the CIP

tanks and reports to the elution circuit for de-sorption of the gold back into solution.

The CIP residue slurry reports to the backfill feed tank feeding the backfill section. The excess residue slurry not used for backfill reports to the final residue tank together with the fines removed from the backfill product. The final residue slurry is pumped to the tailings storage facility for disposal. The WAD cyanide in the final residue is continually monitored by means of an on-line CN WAD analyser located in the plant. Ferrous sulphate is used to complex the residual free cyanide in the backfill material before it reports to the shaft backfill storage tanks.

Loaded carbon from the CIP section is washed before reporting to the acid wash columns where it is treated with hydrochloric acid. Following a sodium hydroxide neutralisation step, the gold is stripped from the carbon in the elution columns using a hot caustic cyanide solution. The gold solution from the elution circuit reports to the smelt house where the gold is recovered in the electro winning cells and smelted into bullion bars.

Auditor's Finding

This operation is

X in full compliance

☐ in substantial compliance *(see below)

☐ not in compliance

with the International Cyanide Management Code.

* The Corrective Action Plan to bring an operation in substantial compliance into 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: Eagle Environmental

Audit Team Leader: Arend Hoogervorst

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Names and Signatures of Other Auditors:

Name : Dawid M. L Viljoen Signature _____ Date: 7/12/2010

Dates of Audit: 21st – 25th June 2010

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.

Mponeng Gold Plant		7/12/2010
Facility	Signature of Lead Auditor	Date

Auditor's Findings

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

Standard of Practice1.1: 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:
There is an AngloGold Ashanti cyanide supply contract, covering all AngloGold Ashanti Gold Plants, including Mponeng Gold Plant, in place with SASOL Polymers, as the sole supplier of liquid Sodium Cyanide, delivered by bulk tanker. The contract requires that the producer or supplier of cyanide must be a signatory to the ICMI Code and the producer or supplier must be ICMI certified. SASOL Polymers is a signatory to the Cyanide Code and was re-certified as a fully compliant Production Facility with the ICMI Cyanide Code on 2 March 2010.

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 supply contract between SASOL Polymers and AngloGold Ashanti specifically covers the responsibilities and requirements for transport, safety, security, unloading,

emergency response (spills prevention and clean-up), route planning and risk assessments, community liaison, emergency response resource access and availability, training, and communication. SASOL Infrachem SiLog was re-certified on 13 January 2010 as a fully ICMI Code compliant transporter.

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:
The AngloGold Ashanti supply contract requires that the producer/supplier of cyanide must be a signatory to the ICMI Code and the producer supplier and transporter must be ICMI certified. SASOL Infrachem SiLog was re-certified on 13 January 2010 as a fully ICMI Code compliant transporter, thus meeting all the requirements for appropriate emergency response planning and cyanide management.

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 operation uses only liquid cyanide, delivered by bulk tanker, and no mixing or storage of solid cyanide takes place on site. The offloading and storage facilities were designed and built with materials appropriate for use with cyanide and are located in concrete bunds away from people and surface waters. Cyanide areas are away from incompatible materials and within the access controlled plant security area which is securely fenced. The Cyanide offloading area is located on a concrete surface for containing any spilled solutions. Drainage flows to a spillage sump equipped with a

pump, which delivers into the main bund area. Level and capacity of tanks are determined before offloading and verified against a cyanide tank chart. The offloading air valve is interlocked with the level indicator to prevent the starting of offloading at tank levels from 50% up. A high level alarm sounds at the SCADA ("Supervisory Control and Data Acquisition" – electronic operating panel in Control Room) at 80% tank level (Maximum tank level is set at 80% of physical capacity of tank) The procedure covering cyanide unloading was reviewed and found to be effective.

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:
Only liquid cyanide is used and is delivered via bulk tanker to storage tanks and no mixing or storage of solid cyanide takes place on site. The offloading procedure is detailed, spelling out PPE requirements, use of a buddy in the process, and clearly sequenced to prevent spillages and accidental releases during off-loading.

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 93 site specific cyanide procedures in place, plus 13 environmental procedures, supported by 9 TSF contractor operating and management procedures. A mandatory Code of Practice (COP) and operating manual covering TSF operations in the West Wits area is also in place. The freeboard and design storm event (1.3m and 1:50

year 24 storm event) is defined in the COP. The annual slimes dam deposition report for 2009 included a stability analyses note for the record which concluded that the West Wits TSFs are stable and possess good factors of safety against major slope issues. Routine daily, weekly, monthly and quarterly inspection reports, legal inspections, and checklists for proactive and reactive management on the plant and TSF were sampled to check the effectiveness of systems. Piezometer levels and freeboard are surveyed monthly and quarterly surveillance meetings are used to report and evaluate freeboard, phreatic levels and drains. Surface water diversions are inspected monthly and all return water dams are inspected daily. There is a probabilistic water balance in place, and no scenario has been identified where the need has been highlighted to shut down plant to prevent overtopping. Plant antipollution dams accommodate run-off from the plant catchment area in case of power outage and capacity exceeds the 1 in 50 year rainstorm event, thus no emergency power is required, according to scenarios modelled in the probabilistic water balance.
A CMMIS (Computerised Maintenance Management Information System) planned maintenance system and procedure, supported by a SIMM (Structural Integrity Management Monitoring) system is in place and functioning. The nature and date of corrective actions are documented using the IRMS (Integrated Risk Management System) system which also monitors and records progress and close out of corrective actions. Operational inspections conducted include: shiftly inspections; cyanide storage facility daily inspections; legal two weekly inspections; PCR (Physical Condition Rating) inspections; and Shift foreman's daily inspections. Tank thickness testing is done on a planned basis for all high and low strength cyanide tanks. Both the plant and the TSF contractor have change management procedures covering health, safety and environment in place and operational.

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:
The plant only treats ore originating from one source with low variability in the cyanide consumption and requirements. Test work done to determine optimal cyanide levels concluding that 110 ppm as sodium cyanide is the optimal cyanide set point. TAC and WAD on-line analysers are used to optimise and control addition in the leach. External laboratory diagnostic tests from 2008 to 2010 indicated no significant changes that would lead to changing leach operating parameters, including cyanide addition rates. A

formalised ongoing optimisation program including bottle roll leach tests, using the BPF (Business Process Framework) program as a driver for improvement, is in place.
The control strategy is to use on line instrumentation measuring throughput and on line instrumentation measuring cyanide levels in leach. These are integrated using set points to control reagent strength cyanide addition rates.
The plant is using a TAC 1000 for on-line automatic control, backed up by external laboratory diagnostic leach tests. Cynoprobe is used for on line WAD and free cyanide analyses on the tails which will be integrated with the Leach Star control system.

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:
A TSF probabilistic water balance for the combined Mponeng and Savuka TSFs and a Mponeng plant water balance is in place. The plant probabilistic Water Balance sighted including rainfall, water in ore, and water returned from TSF. Seepage assumptions were made as the plant area is small and evaporation is insignificant. The impact of rainfall including the catchment draining to the emergency dam was also modelled. Information is included in the water balances on rainfall, 1:50, 1:100 year, 24 hour storm events, evaporation, and solution deposition. Rainfall data is collected daily on the TSFs and the plant and combined with local rainfall measurements and data from the SA Weather Bureau. No run on occurs as all the TSFs are equipped with storm water cut off trenches to divert run off water away from the dams. The return water dams are on higher level than ground level. The plant has no run on as a clean / dirty water separation system is in place and storm water cut-off trenches are located around the plant. Rainfall scenarios in the water balance were used to determine return dam operating levels and emergency strategies to prevent overtopping. The power outage scenario specifically modelled and the water removal ability of the system evaluated for the 1:50 year storm. Power outages were modelled at different dam levels and duration of power outages. Phreatic level measured and stability analyses conducted every two years, with recommendations made on freeboard and pool management.

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 WAD cyanide levels at TSF tip points from Dec 2007 (North Dams) Oct 2007 (South) to date are all below 50 ppm WAD cyanide. Return water dam results sighted from 2007 to date show all values were less than 0.2 ppm WAD cyanide. The plant is equipped with an on line Cyanoprobe WAD analyser and the plant discharge is controlled at less than 50 ppm WAD cyanide. Thus, the TSFs and all return water dams are containing less than 50 ppm WAD cyanide and do not therefore require any special measures to restrict access by wildlife. Wild life mortality inspections are conducted daily and no cyanide-related mortalities have been reported for the whole Mponeng/Savuka TSF complex or at the Mponeng plant during the period since certification.

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 direct or indirect discharges to surface water from cyanide facilities under normal conditions exist. Discharges exist during abnormal rainfall and shaft shutdown conditions when special sampling and monitoring is done. The discharge from the return water dam to the Elandsfontein Spruit (stream) via the aquatic dam during the abnormal conditions, contains less than 0.5 ppm WAD cyanide. No established mixing zone has been identified by regulatory authorities but Aquatic dam and Elandsfontein Spruit values downstream of the return water dam discharge are less than 0.022ppm WAD cyanide, where the highest values recorded were 0.012 ppm WAD cyanide. Boreholes are drilled up and down stream of the TSFs and return water dams are sampled quarterly. Graphs from 2008 to date indicate the highest value was 0.0025 mg/l WAD cyanide. Boreholes around plant monitor groundwater with all results from February 2008 to January 2010 below 0.015 and 0.0025 mg/l WAD cyanide.

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
There are no specific identified jurisdictional beneficial uses of groundwater. The National Water Act limit is 0.5ppm cyanide, not specifying the species of cyanide. All TSFs are equipped with under drains and cut-off trenches. A successful phytoremediation project (Woodland project conducted to prevent seepage from contaminating ground water.) is in place at the Savuka and Mponeng TSFs. Clean/dirty water separation systems are in place, and cut-off trenches are dug around the TSF impoundments, The TSFs are designed with under drains and trenches to collect seepage and prevent contamination.
The plant process area surface is covered with concrete, tarmac and storm water drains and the areas not covered fall outside the risk of cyanide solution flows from the process. Cut off trenches are in place around plant to ensure clean / dirty water separation. Two 1,900m^3, lined anti-pollution ponds are used to contain storm water and any plant run-off water. Boreholes downstream and upstream of the plant are sampled and monitored for cyanide contents quarterly.
A MINTEK report on the risk aspects of backfill material cyanide content for the site recommends that maximum free cyanide to be 26.5 ppm as free CN, or 50 ppm as sodium cyanide. The plant procedure specifies backfill maximum permissible total cyanide at 20 ppm and free cyanide of less than 2.5 ppm. Backfill sample analyses sighted indicate values varying between 1 to 2 ppm free cyanide. The report concluded that the cyanide in the backfill does not pose any risk to groundwater at the recommended levels. Only traces of CN were detected in fissure water samples taken during the investigations.

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 plant is designed with bund walls around cyanide tanks, leach tanks, CIL tanks, and the elution section and residue section, which return any spillages back to the process. All reagent strength cyanide pipelines are equipped with secondary containment systems draining back to the reagent strength bund area. All in-plant process pipelines are either positioned over bund areas or concrete/asphalt covered surfaces. All pipelines inside and outside the plant are subject to the plant CMMIS (planned maintenance) system.
All pipelines feeding the TSF ring main systems were replaced within the last 3 years. Sensitive areas were identified where pipelines were placed inside trenches or paddocks. The ring main pipelines are placed inside the TSF paddocks. The area where the pipeline crosses the Elandsfontein Spruit (stream) is rubber lined and paddocked to prevent any leaks from entering the surface water. Cyanide tanks and pipelines are manufactured from

materials compatible with cyanide and high pH conditions, as per the AngloGold Ashanti Cyanide Guidelines document.

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 new cyanide facilities or major modifications or additions to the existing facilities were constructed or implemented since the first certification audit. The SIMM (Structural Integrity Management Monitoring) system is used to do maintenance planning of major capital equipment on the plant. The latest SIMM Report, signed by a professional engineer, concluded, "The Mponeng plant structures are generally in a fairly good condition, although there are quite a lot of isolated defects. In addition, there are four areas of primary concern." The areas of concern, which are being addressed, do not present a risk to cyanide release or exposure as they fall outside the cyanide equipment definition. The overall conclusions of the reports are that the plant should be fit to continue to operate as designed. The latest Annual TSF audit report by a competent person concluded that there are no signs of instability and there exist adequate factors of safety against all failure, and freeboard is above target at all the TSFs.

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:
Procedures for environmental monitoring (including sample preservation and chain of custody procedures) of surface water and borehole water, developed by competent persons, were sighted and checked. Boreholes are placed and sampled upstream and downstream of the plant, The Elandsfontein Spruit (stream) is sampled up and downstream of the mine. Plant boreholes are sampled quarterly, wildlife is monitored daily, surface water is sampled monthly and plant boreholes are sampled quarterly.

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:
A formal decommissioning procedure is in place. The procedure includes a formalised schedule for decommissioning. The decommissioning plan is reviewed annually.

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 "AngloGold Ashanti annual review and update of 2009 environmental rehabilitation and closure estimate" used the WAFU (West Acid Float Uranium) plant rehabilitation costs by an outside contractor and the cyanide producer as a basis for the cyanide decommissioning estimates. The cost update for Mponeng of November 2009 was sighted and the estimate is reviewed annually. The AngloGold Environmental Rehabilitation Trust Fund (as required by SA Law) includes provision for decontamination of the cyanide equipment at Mponeng Gold Plant. Estimates include line items which are: - decontamination of storage and dosing system, flame cut old sodium cyanide tanks, chemical cleaning of storages, decontamination of SASOL tanker, and associated medicals, induction, screening training and travel. A signed audit report for the trust fund by accountants Ernst and Young, dated 7 April 2010 was sighted.

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:
The site has 93 site specific cyanide procedures in place, plus 13 environmental procedures, supported by 9 TSF contractor operating and management procedures. A mandatory Code of Practice (COP) and operating manual covering TSF operations in the West Wits area is also in place. Routine daily, weekly, monthly and quarterly inspection reports, legal inspections, and checklists for proactive and reactive management on the plant and TSF were sampled to check the effectiveness of systems. Both the plant and the TSF contractor have change management procedures covering health, safety and environment in place and operational.
A corporate procedure for risk assessment, including continuous risk assessment (Mini risk assessment) is in place for pre-work risk evaluations and inspections. Every procedure is developed from a risk assessment where worker input includes the Health and Safety Representatives from the workforce, artisans and management. The TSF contractor has done risk assessments for each procedure which has involved management, supervisors and workers. Procedures are also discussed at plant Safety and Health meetings. Green area meetings are used as a primary worker input and feedback on procedures and cyanide drills.

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 plant pH control is set at 10.5 with interlock to Cyanide pumps at pH 10.0, and alarms at pH 10.2, (an audible and voice alarm at the Pachuca and a flashing alarm at SCADA in the control room). A hotspot survey of 18 Dec 2009 showed the highest HCN values detected with 1.1 ppm hydrogen cyanide gas at the decant discharge. The

calibration certificates for fixed Polytrons units in the residue sump (4 in total), smelt house (1), and personal Mini-warn monitors (2), and personal PAC 7000 monitors (12) used were sighted, covering three years. Plant calibration frequency is 3 monthly and the manufacturers requirement is a minimum of 6 monthly. On-going inspections and checks are also used to monitor and check facilities and emergency response equipment functioning and checklists covering three years since certification were sampled. Safety equipment such as safety showers, low pressure eye wash stations, and fire extinguishers are numerous and adequately signposted.
Slurry pipelines are marked as poisonous water. Eating and drinking is only allowed in dedicated areas and this is indicated on signs and trained and reinforced during annual induction of contractors and plant staff. The required signs are placed at the cyanide storage, cyanide/caustic make up and cyanide dosing point, leach, CIP and residue areas. All cyanide pipelines are colour coded, and labelled with flow direction. MSDS documentation and cyanide first aid information was located throughout the plant. Formal employee interviews were used to check awareness and sensitivity to health and safety measures and the response from employees and contractors alike, was found to be appropriate and acceptable. Accident and incident reporting and investigation procedures, based upon the site safety reporting requirements, were found to be in place and effective.

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:
Cyanide emergency equipment is available in the emergency cabin at the leach, adjoining the offloading area, and in the emergency trailer, control room, smelt house. Emergency equipment antidote kits at emergency locations, first aid equipment, medical oxygen, BA sets, and safety showers. All emergency communication is by radio and telephone. Inspection lists for the antidotes, oxygen BA sets, safety showers, Oxygen cylinders, and first aid boxes were inspected and confirmed for the whole plant and sampled for the three years since certification. The Emergency Response Team consists of cyanide Appointees in place on dayshift with afternoon and nightshift staff trained to handle cyanide emergencies. The Western Deep Levels hospital (AngloGold Health Services hospital on mine property) is the captive Company hospital to treat cyanide cases with ambulance contractor, ER 24, available on site for patient transport and paramedical services. Cyanide equipment is regularly checked and tested and mock drills are held regularly on site.
Man down drills are used to assure that the medical facility is competent and equipped to handle emergencies. Hospital staff are specifically trained to handle cyanide emergencies.

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:
The Mponeng Gold Plant Emergency Response Plan includes cyanide scenarios as per a HAZOP study of emergency scenarios assessment for the Mponeng gold plant. The emergency response plan is linked to specific emergency situations and the appropriate procedures and responses within the site's systems. The Emergency Response Plan includes escalations of emergency levels from leve1 1 to level 2 or level 3 defined in plan and includes managing such issues as plant and community evacuation and community impacts. These preparations are regularly reviewed in the light of changes, mock drill learning points and employee feedback.

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:
HAZOP and risk assessments involve the work force and the update of risk assessment on emergency scenarios include Safety representatives and Union representatives. Green Area meetings and Safety and Health meetings are used to highlight and discuss cyanide issues, including the Cyanide Emergency Response Plan. Emergency drills are used to involve the workforce in the response planning process and drill reports sighted indicated evaluation and feedback. The community is not directly involved in the Plan but is informed on its contents during dialogue sessions. Drills are used to involve hospital, ambulance and paramedic staff in planning and review processes.

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 Emergency Response Plan details clear duties, roles and responsibilities for the various emergency scenarios. The emergency equipment inventory was checked and site inspections confirmed availability and readiness. 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.

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

X in full compliance with

The operation is in substantial compliance with **Standard of Practice 7.4**

 not in compliance with

Basis for this Finding/Deficiencies Identified:
The Emergency Preparedness Plan includes 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.

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 Emergency Response Plan cross-references to detailed and specialised procedures which cover clean-up and remediation relating to releases, pipeline failures and spills, as appropriate to the site-specific identified scenarios. Use of neutralization processes and materials is clearly covered, as is disposal of contaminated materials and the use of treatment chemicals such as ferrous sulphate in surface water is prohibited.

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 Plan is required to be reviewed annually, following incidents and emergency drills or when new information regarding cyanide becomes available. The report of a drill which included a cyanide spill and cyanide related injury was sighted. Evidence was sighted of learning points emerging from the various cyanide man-down drills.

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 staff entering the plant gate receives 2 days induction refresher valid for 18 months, basic cyanide first aid valid for 12 months. Written tests are conducted with an 80% pass mark. All contractors working on the plant for longer than 2 days will receive the same induction as above, including any work involving the reagent strength cyanide facilities. All contractors or visitors working less than 2 days (working under direct supervision of a plant employee) will receive plant specific induction which includes cyanide overview. A Training matrix is in place for staff and permanent contractors. Induction refresher training is done 18 monthly, cyanide related training 12 monthly, and all long term contractors induction refresher is done annually. A training matrix with a flagging system

is used to ensure all staff is covered. Selected employees were checked in interviews on their understanding of cyanide hazards, first aid and emergency response and this was further verified through checking of their training records. Training records are kept permanently.

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:
A formal training matrix covers all process and engineering staff and National Unit Standards are used as a basis for the training. Competency is tested by on the job competency assessments. No refresher training is done on National Unit Standards, but task assessments are done to ensure continued competency. Retraining is done in the case of deviations or substandard activity. On the job training is done using unit standards followed by assessment. Regular Task Assessments are done to measure continued competency. Records are kept permanently, and at least throughout an individual's employment. An electronic back up system is also in place.

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:
The Cyanide Emergency Response Team is in place on dayshift and only cyanide appointees form part of the cyanide teams. Only cyanide appointees may work with high strength cyanide and they are trained in the procedures to be followed in the event of a cyanide release and for decontamination and first aid, and "off loading of liquid Cyanide from a road tanker into a bulk storage facility", and "handling liquid cyanide safely in a metallurgical plant". The training matrix specifies training as per the Emergency Preparedness Plan (EPP). The shift foremen are trained in cyanide emergencies on afternoon and night shift and take responsibility as incident commander. Shift teams takes part in after hour drills as part of emergency training. The EPP is trained through the emergency drills, and no classroom training on the use of the actual plan and

documentation is currently taking place. All Cyanide Appointees receive advanced training, including BA set training. The Western Deep Levels Hospital and ER24 staff receives cyanide first aid intermediate training and are assessed for competency. They are also involved in drills for training purposes. The plant training officer is present at all drills and evaluates training effectiveness and reports to the AngloGold Ashanti central training unit where any changes to training procedures are made and implemented. Records are kept permanently, and at least throughout an individual's employment.

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. Farmers along Elandsfontein Spruit attended meetings in July 2008, 16 Feb 2009 and an annual meeting on 14 Jan 2010 (which included a discussion on cyanide). An emergency response workshop in 2007 included the Klerksdorp Fire and Rescue Department, Klerksdorp Traffic Department, Potchefstroom Fire Service, SASOL Emergency Service, Provincial Dept, Merafong Fire and Rescue Department, Potchefstroom Traffic Dept, the Randfontein Public Safety Dept, and the Randfontein and Weston Area Emergency Medical Services. A NUFCOR emergency response workshop was held in March 2010. Cyanide Management Brochures were issued to local workers, hostel and township dwellers which included cyanide information, emergency information, exposure, and uses of cyanide. Additional leaflets containing TSF warnings, electricity, vehicle safety, and TSF water safety were distributed on Arbor Day 2009. A Wedela township community presentation given jointly by AngloGold Ashanti and Harmony was also sighted.

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. Farmers along Elandsfontein Spruit attended meetings in July 2008, 16 Feb 2009 and an annual meeting on 14 Jan 2010 (which included a discussion on cyanide). An emergency response workshop in 2007 included the Klerksdorp Fire and Rescue Department, Klerksdorp Traffic Department, Potchefstroom Fire Service, SASOL Emergency Service, Provincial Dept, Merafong Fire and Rescue Department, Potchefstroom Traffic Dept, the Randfontein Public Safety Dept, and the Randfontein and Weston Area Emergency Medical Services. A NUFCOR emergency response workshop was held in March 2010. Cyanide Management Brochures were issued to local workers, hostel and township dwellers which included cyanide information, emergency information, exposure, and uses of cyanide. Additional leaflets containing TSF warnings, electricity, vehicle safety, and TSF water safety were distributed on Arbor Day 2009. A Wedela township community presentation given jointly by AngloGold Ashanti and Harmony was also sighted.

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:
Cyanide Management Brochures issued to local workers, hostel and township regarding cyanide information, emergency information, exposure, uses of cyanide. Verbal presentations were also given to Wedela township. Leaflets containing TSF drowning warnings, electricity warnings, and vehicle safety were also distributed.
Any cyanide exposure is reported to the national Department of Mineral Resources and the Department of Water Affairs and exposure reports are available on the AngloGold Ashanti public web site. Cyanide incidents are reported in the AngloGold Ashanti Country Report South Africa West Wits Operations (http://www.anglogold.co.za/NR/rdonlyres/8E6B8C1D-05C4-43E0-B63E-8CD8ACD12391/0/vaal.pdf). An incident was reported on leak on CIL cyanide delivery line 9 Feb 2007 in AngloGold Ashanti Country Report 2007 report. No cyanide exposures, hospitalisation or fatalities occurred or were reported during the period since certification.