

***INTERNATIONAL CYANIDE
MANAGEMENT INSTITUTE***

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

Recertification Summary Audit Report

***AngloGold Ashanti
Savuka Gold Plant
South Africa***

3rd – 6th July 2017

***For the
International Cyanide Management Code***

Name of Operation: AngloGold Ashanti Savuka Gold Plant

Name of Operation Owner: AngloGold Ashanti

Name of Operation Operator: AngloGold Ashanti

Name of Responsible Manager: Mr Stanley Selamolela

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Location detail and description of operation:

AngloGold Ashanti's Savuka Gold Plant is located in the Carletonville area, approximately 90 km South West of Johannesburg in the Gauteng Province, South Africa. It currently receives its feed sources from Savuka Marginal Ore Dumps, Mponeng Marginal Ore dumps (MODs) and Tailings Reclamation. The Plant has a maximum capacity to treat 300 000 tons of ore per month.

The MOD material is received through No 3 belt and then processed through a screening plant for size distribution prior to crushing. The oversized material from the screens is crushed by conventional jaw, standard, short head and omnicone crushers before being conveyed to the milling plant.

The milling section is divided into 3 milling modules, viz. Carbon Leader, VCR (Ventersdorp Contact Reef) West and VCR East. Each module consists of two stage milling, with ball mills being the first stage and tube mills being the secondary stage milling, with the exception of VCR East which utilises pebble mills in the second stage. Cyclones are used for classification. In total the milling circuit consists of 8 ball mills, 32 tube mills and 2 pebble mills.

The mill product is then gravitated to the thickener section, which consists of 21 thickeners. Lime is added to the thickener feed launder as slaked lime. Lime aids in the settlement of the milled ore and maintains a protective level of alkalinity in the leach section. Flocculants are added to assist in the settling of the milled ore. The thickened

underflow slurry is pumped to the leach circuit and the thickener overflow water is used in the milling circuit.

Before leach circuit, the Tailings Reclamation stream is added to the sump pumps together with the thickener underflow before the cyanide addition point.

The leach circuit consists of 2 process streams. Stream 1 consists of 32 pachucas, and Stream 2 consists of 6 pachucas. Sodium Cyanide (NaCN) is added to the circuit for the purposes of gold dissolution. The Pump-cell adsorption circuit consists of 8 mechanical agitated vessels. Granulated carbon is used as the adsorption medium. The carousel feed system is used on the pump-cell plant, with 1 vessel constantly off-line.

The low-grade slurry (residue) is then screened for fine carbon and transferred to the residue tanks, where it is either pumped to the slimes dam or to the backfill plant, which supplies backfill to both Savuka and TauTona Mines. The backfill reject is thickened and pumped to the residue tank for disposal and the thickener overflow is reused at the backfill plant.

The loaded carbon is screened from the pulp and transported to Mponeng Gold Plant by road. Gold recovery from the carbon is completed at Mponeng Gold Plant and the regenerated carbon is transported back to Savuka Gold Plant. The Tailings Storage Facilities (TSFs) vary in age, some being long established. The TSFs are raised using the paddock and day wall system. This is the typical method used by the plants in the area.



Auditor's Finding

This operation is

in full compliance

in substantial compliance

not in compliance

with the International Cyanide Management Code.

This operation has not experienced compliance problems during the previous three year audit cycle.

Audit Company: Eagle Environmental

Audit Team Leader: Arend Hoogervorst

E-mail: arend@eagleenv.co.za

Names and Signatures of Other Auditors:

Name : Dawid M. L Viljoen Signature  Date: 18/12/2017


Dates of Audit: 3rd – 6th July 2017

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 Mine Operations and using standard and accepted practices for health, safety and environmental audits.

Savuka Gold Plant


Facility


Signature of Lead Auditor

Date

21/12/2017

Savuka Gold Plant


Signature of Lead Auditor

17th December 2017

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:

There is an AngloGold Ashanti cyanide supply contract, covering all AngloGold Ashanti Gold Plants, including Savuka Gold Plant, in place with Sasol South Africa, as the sole direct supplier of liquid Sodium Cyanide, delivered by bulk tanker. The contract requires that the producer or supplier of cyanide must be compliant and certificated to the ICMI Code at all times for the duration of the agreement. 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 29 March 2016.

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:

There is a tripartite agreement between Sasol Polymers (cyanide producer), Tanker Services (cyanide transporter) and AngloGold Ashanti (all gold plants including Savuka

Gold Plant) covering the transport and off-loading of dangerous goods in terms of SANS10231:2006 and National Road Traffic Act 93/1996 and regulations. The agreement 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. Tanker Services Specialised Products Division, South Africa, was re-certified on 17 July 2015 as a transporter. Tanker Services provide the transportation of liquid sodium cyanide as part of the Sasol contract with AngloGold Ashanti (AGA).

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. Tanker Services Specialised Products Division, South Africa, was re-certified on 17 July 2015 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 the tanks are equipped with ventilation pipes. The offloading and storage areas for the liquid sodium cyanide are contained, barricaded, closed off with restricted access, bund walls installed and with no public areas close by. There are no surface waters or drainage to surface waters in the cyanide storage area or the Gold Plant as a whole. The only change to the Gold Plant in the last three years was when a change was made to the cyanide spillage delivery line to the sump pump. The line was moved to tie directly into another delivery line. This makes pumping spillage away easier and needs less pumps. Drawings for the change were sighted and signed off by the Production Engineer and the Senior SHE (Safety, Health & Environment) Officer.

The AGA Structural Investigation and Maintenance Management (SIMM) Report for Savuka Gold Plant concluded that there were no specific issues identified in the cyanide offloading and storage area. The Sasol Bulk Storage Facility Technical Inspection Audit Reports for 2017 and 2015 scored 97% and 100% respectively and no non-conformances were identified. The cyanide storage tanks are located within a concrete bunded area, which acts as secondary containment. A spillage pump is located within the bunded area. Flood tests on the Cyanide Storage Bund Area are conducted annually and tests for 2015 and 2016 showed no leaks.

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. The functional specifications for Savuka Plant cyanide alarms and control document states that when the cyanide tank levels that are indicated on the digital displays reach 100%, the actual levels in the tank are 80%, in order to ensure there is always 20% spare capacity in the tanks. For offloading into a single tank, the level of the receiving tank may not exceed 53%, and for offloading into 2 tanks, the level must not exceed 75%. The procedure covering cyanide unloading was reviewed and found to be complete and functional.

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:

Liquid sodium cyanide is delivered in bulk tankers from Sasol Polymers, by Tanker Services, directly to the Plant and offloaded into cyanide storage tanks. No solid cyanide is used on the plant, therefore the only delivery containers are the bulk tankers themselves.



The offloading procedure is detailed, spelling out PPE (Personal Protective Equipment) requirements, use of a buddy in the process, cleaning after offloading, and tasks clearly and appropriately sequenced to prevent spillages and accidental releases during off-loading. Supporting procedures include handling of cyanide spillage, using ferrous sulphate, and the AGA South Africa Region Metallurgy (SARM) Cyanide Code Implementation Guidelines, covering 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 Savuka Gold Plant has the following cyanide related procedures: - 17 Cyanide Administrative Procedures, - 17 Cyanide Emergency Procedures, 12 Cyanide Engineering Procedures, 7 Cyanide Inspection Procedures, 13 Cyanide SHE Procedures, 18 Cyanide Operational Procedures, 18 Scenarios (Emergency) Procedures, and 9 Environmental Procedures.

A mandatory Code of Practice (COP) and operating manual covering TSF operations in the West Wits area (Savuka and Mponeng) is also in place. The freeboard and design storm event (1.3m and 1:50 year 24 storm event) are defined in the COP. The Annual West Wits Operations Tailings Facilities Audit Report by the AGA Corporate Geotechnical Engineer for 2016 concluded that West Wits TSF 's are, "...well managed, evidencing good pool control and diligent operational practice. Deposition rates for both operational complexes are significantly lower than design and as a result the rates of rise are well within acceptable limits..." Pipe patrols are done on the TSF on a 24 hour basis by the contractor, i.e. 6 times per day. Faults are recorded in the contractor log book and reported to the Mine TSF Person on Standby, who will call out the artisans at the Maintenance Department, as appropriate.

The "High Cyanide Levels are Measured in the Residue Slime (WAD-Weak Acid Dissociable)", procedure specifies a WAD cyanide maximum level of 50 PPM for tailings slurry sent to TSF to ensure TSF is operated at less than 50 ppm WAD cyanide. The procedure includes an action level at 40 PPM WAD cyanide. At 45 PPM, dilution water opens to reduce the WAD levels going to TSF. The procedure also refers to Chapter 32 of the South Africa Region Metallurgy (SARM) Cyanide Code



Implementation Guidelines, July 2013, Rev 06 on WAD cyanide control. Chapter 31 - Backfill Product Management, of the South Africa Region Metallurgy (SARM) Cyanide Code Implementation Guidelines, , states the levels of cyanide permissible in the Backfill, i.e. Free Cyanide 26.5 ppm, Sodium Cyanide (total) 50 ppm, WAD Cyanide <50ppm. This is as per the original MINTEK Technical Info: PWL AGA BF 100112 dated 12 January 2010 audited in the original certification.

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. The inspection frequencies for the TSF and plant are deemed sufficient to assure and document that they are functioning within design parameters.

Procedures for contingencies for cyanide management in situations where there is an upset in a facility's water balance, when inspections or monitoring identifies a problem, and when a temporary closure or cessation of operations may be necessary are in place to ensure orderly shutdowns.

The plant has a software-driven, SAP (Proprietary Name) Planned Maintenance System (PMS). The system lists assets, including cyanide equipment, and schedules planned maintenance inspections and keeps history of planned and breakdown maintenance carried out. The system was interrogated electronically and it was confirmed that the system has full historical details of planned and breakdown maintenance of cyanide equipment since the last certification audit. This is supported by a corporate SIMM (Structural Integrity Management Monitoring) system. Operational inspections conducted include: shiftly inspections; cyanide storage facility daily inspections; and legal 15 day Safety Officer inspections using Physical Conditions Rating Standards. These inspections records were sampled for 2015 and 2017. Tank thickness testing is done on a planned annual basis for all high and low strength cyanide tanks and this was checked in the SAP PMS electronic review. Both the plant and the TSF contractor have change management procedures covering health, safety and environment which are 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 mine commenced treating material recovered from an old slimes dam during 2016, in addition to the surface waste rock milled and treated since the previous re-certification. Test work to characterise and optimise the slimes dam feed source includes:- procedural

diagnostic leach reports on Slimes dam reclamation material (further testwork was recommended); further optimisation tests to include leach parameters; and monthly diagnostic leach tests. Electronic file results were sampled and reviewed.

An online TAC 1000, free cyanide analyser is used to measure free cyanide and control the cyanide additions. Cyanide dosing control is done based on the TAC readings sending a signal to a variable speed reagent dosing pump feeding into the leach feed dosing point. Free cyanide is measured in the leach head tank. Manual back-up titrations are done to check the TAC 1000 readings and identify any malfunctions. Currently the mine is not considering other control strategies.

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 GoldSim Probabilistic Water Balance for the TSFs was developed in 2010 and incorporates scenario planning to do water demand and water conservation strategy. Water balance input sheets are updated quarterly and fed into GoldSim. Other updates are done when major changes occur such as the recent influx of additional groundwater due to neighbouring shafts that stopped pumping. Clean dirty separation studies (1:50 year storm event) data is fed into the GoldSim model in terms of dam sizes and overflows. The risk of overtopping the return water dams during power outages is managed by keeping the return water dams at lower than the level parameters as per ISO procedures. The 50 year storm event model run on GoldSim includes every plant and TSF, dam and catchment areas reviewed post 2009. A meteorological assessment was conducted by an independent consultant and 1:50 year storm event was revised from 118mm to 130mm of precipitation in 24 hours. From there the plant specific conditions and requirements were assessed. This model was used until the end of 2014.

Changes since 2014 included the newly commissioned re-mining operation (2016) depositing tailings on the Savuka TSF. The additional water pumped from Savuka and the Blyvoor shafts underground pumps following the closure of the neighbouring DRD Blyvoor mine was added to the water input balance. (The underground water supply changes from the Blyvoor shafts do not fall into the scope of the ICMI audit as they contain no cyanide.) The GoldSim model was replaced at the end of 2014. The changes, as mentioned above, require a significant design change to the GoldSim model and a new probabilistic water balance model for the West Wits region is being subsequently used. The model (sighted April 2017 water balance update) includes evaporation, accurate real time site rainfall data, seepage and interstitial water in the calculations. The model is updated monthly using actual rainfall, slurry feed rates and standard assumptions and actual measurements for interstitial water, seepage, evaporation.



There is a spreadsheet-based Probabilistic Water Balance (PWB) for the in-plant dams and the North Boundary dam outside the plant. The plant dams are linked to the North Boundary dam. The PWB includes the catchment area draining to the pollution control dams (PCD) and uses the 1:50 and 1:100 year, 24 hour storm event. It includes a constant of 0.85 water ingress factor and due to the small surface areas, evaporation is negligible. The water dams are all lined to prevent any water losses due to seepage. The plant shift inspections include checking the dams, and the anti-pollution dam water control procedure requires levels to be kept below 30% to maintain capacity to prevent overtopping. The PWB indicates that the dam system, including the linked North Boundary Dam, is adequate for containing the 1:100 year storm event without overflowing the North Boundary Dam which will overtop to the Nursery Dam. Overtopping risk has been checked by the South Africa Region (SAR) Surface Operations Dam Capacity Risk Assessment (September 2016), which includes the return water dams and the Corporate Environmental Department's Surface Water Management Procedure (2014).

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 is measured by on-line Cynoprobe sampling from the plant tailings tank before being pumped to the Savuka TSF compartments in use. The Cynoprobe takes a sample every 15 minutes and the results are automatically sent to the SCADA system, where the daily averages, minimum and maximums are calculated. The graphs sighted were the daily averages from the SCADA system.

The **WAD Cyanide values for 2014** sighted were below 50 mg/l WAD cyanide except for 7 Exceedances noted with a maximum of 65 mg/l. Investigations were undertaken for all exceedances, which were caused by equipment faults.

The **WAD cyanide values for 2015:** The values sighted were below 50 mg/l WAD cyanide except for 6 exceedances observed with a maximum of 105 mg/l for one day only. Maintenance contract administrative problems resulted in a delay of servicing and calibration of the unit. Interim measures to manage WAD cyanide risks included conducting average manual cyanide concentrations that were obtained in the plant from the 27th February until 1st March 2015, and it is evident from these values that the cyanide concentrations in both leach and residue were well within the required limits. The maintenance contract issues were resolved and the unit operated as designed. High WAD Cyanide concentrations in the residue stream on the 19th and 20th November 2015 were due to the high cyanide dosage in the leach feed. The plant technician fixed the



communication between the TAC 1000 and the cyanide pump which yielded proper control and dosage of cyanide in the leach feed.

The **WAD cyanide values for 2016** indicated no exceedances observed for the year.

The **WAD cyanide values for 2017 showed** below 50 mg/l WAD cyanide with the exception of 5 exceedances with a maximum of 120 mg/l. The exceedances were investigated:- 14th May 2017 - the high cyanide reading was due to the malfunctioning of the TAC 1000, hence unreliable control. The PLC (Programmable Logic Controller) was changed on the 14th June 2017 and the HMI (Human Machine Interface) responded and the WAD cyanide returned to normal. 23rd June 2017: it was found that there was a disturbance to the Cynoprobe as the sealing on the filter probe was not tight. The clamp was tightened and silicone sealant applied and the problem corrected. 27th May 2017 – The exceedance was traced to the TAC unit controlling cyanide dosing system with the pH calibration not being correct. 12th May 2017 – was due to the delay in service contract amendment finalisation between the service provider and AGA, the Cynoprobe-probe was out of calibration which gave erratic readings. The Technician serviced the Cynoprobe on 23rd May 2017 and the problem was corrected.

As the tip point at the TSF is deemed the compliance point and no significant, unexplained, exceedances were observed since the previous re-certification, the operation does not need to implement measures to restrict access by wildlife and livestock to open waters. No wildlife mortalities were recorded or reported since the previous re-certification and thus maintaining WAD cyanide concentrations of below 50mg/l is deemed effective preventing significant wildlife mortalities.

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:

There is no direct discharge from the Gold Plant to surface water. The West Wits tailings facilities have four legal discharge points to surface water. These discharges are not from any of the cyanide facilities (i.e. they are facilities that have less than 0.5 mg/l WAD cyanide and are therefore not defined as cyanide facilities) and do not form part of the scope of the audit.

There have been no instances where the downstream river samples exceeded 0.022 mg/l WAD cyanide were observed since the previous certification. Therefore no remedial action has been required to prevent degradation.

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 is no numerical standard established by the applicable jurisdiction for WAD cyanide or any other species of cyanide in groundwater, therefore there are no compliance points below or down gradient of the gold plant or tailings facilities. Groundwater monitoring is undertaken to establish whether the tailing facilities are having an impact on the surrounding groundwater. Groundwater monitoring is undertaken twice a year. Since the last certification, no samples taken have indicated WAD levels above the limits of detection.

The plant no 1 and 2 return water dams are lined and the pollution control dam is lined so as to assist with seepage management. The plant surface is covered by concrete and tarred roads and the spillage trenches leading to the return water dams are concrete lined. The plant produces backfill for shafts and this is managed using Chapter 31, Backfill Product Management, of the South Africa Region Metallurgy (SARM) Cyanide Code Implementation Guidelines, July 2013, Rev 06, which states that the levels of cyanide permissible in the backfill are :- Free Cyanide 26.5 ppm, Sodium Cyanide (total) 50 ppm, WAD Cyanide <50ppm. This is as per a MINTEK Technical Report: PWL AGA BF 100112 dated 12 January 2010. (MINTEK is South Africa's national mineral research organisation specialising in mineral processing, extractive metallurgy and related areas.) Backfill batch sample reports were reviewed and found to show free cyanide levels of 10ppm.

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 bunds around cyanide tanks and CIP (Carbon in Pulp) tanks, and spillage aprons for the Leach tanks and residue section. Leach Pachuca Tanks are placed on steel legs and plinths, with CIP pump cells residue tanks and backfill on solid concrete bases. Cyanide storage tanks are placed on steel legs and plinths inside a concrete bund. All tanks are located within bunds 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 low strength cyanide areas spill



prevention and secondary containment system consists of channels, routes and tarred roads which lead spills to the anti-pollution dam system. All pipelines inside the plant are subject to the plant SAP PMS system.

There are procedures ("Emptying of Cyanide Spillage Bund Areas" and "Anti-pollution Dam Operating (Water)") which prevent the discharge of any cyanide solution or cyanide-contaminated water that is collected in the secondary containment area to the environment before testing and appropriate treatment. The "Anti-pollution Dam Operating (Water)" procedure manages the three anti-pollution dams. The third must be operated at a minimum level below 30% to almost empty to help contain all the overflow spillage in the plant and prevent overflow of the dam. Once the level of the third dam starts to rise, the plant personnel will pump all material back to the circuit.

The cyanide delivery line is located within a launder. The process solution pipelines are located above the concreted and banded plant area. The launders of the delivery line drain back to the cyanide storage bund area. Cyanide pipelines in the plant are inspected during the shiftly and 15 day SHE officer inspections.

Some 80% of the TSF pipelines for Savuka were replaced with HDPE (High-Density Polyethylene) lined steel pipelines as a spill prevention measure. Thickness testing is done on the remaining steel pipelines and managed via the SAP PMS. Pipe patrols are conducted six times per day to identify any leaks timeously.

As per the engineering design specification, Chapter 42 of South Africa Region Metallurgy (SARM) Cyanide Code Implementation Guidelines, July 2013, all pipelines and tanks for containment of cyanide solutions are made of steel, which is compatible with cyanide and high pH conditions.

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 previous recertification audit. AGA has in place an on-going SIMM (Structural Integrity Management Monitoring) system report, which is a corporate risk monitoring system for plant structures for all mines, which regularly reviews and re-prioritises all structures and recommends repairs and maintenance. This replaces the need to keep original QA/QC records and covers where records are not available.

The Structural Investigation and Maintenance Management (SIMM) Report for Savuka Gold Plant dated July 2015 indicated that there were no specific issues identified in the



cyanide offloading and storage area and it was confirmed that the plant could be operated as designed.

The Annual West Wits Operations Tailings Facilities Audit Report by the AGA Corporate Geotechnical Engineer for 2016 concluded that West Wits TSF 's (including Savuka) are, "...well managed, evidencing good pool control and diligent operational practice. Deposition rates for both operational complexes are significantly lower than design and as a result the rates of rise are well within acceptable limits...". The West Wits Operations Mponeng and Savuka Tailings Storage Facilities - Field investigations and Side slope stability SLR project dated March 2017 was also sighted. The report contains detailed conclusions and on-going recommendations.

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 how samples should be taken, sample preservation techniques, log sheet including sampling conditions notes, chain of custody procedures and cyanide species to be analysed) of surface water and borehole water, and specialised speciation and environmental samples, developed by competent persons including a cyanide specialist chemist, were sighted and checked. Boreholes are placed and sampled upstream and downstream of the plant twice yearly. For precautionary purposes, water samples, additional to Cyanide Code requirements are taken for background and adjoining user monitoring purposes.

Plant boreholes are sampled quarterly, wildlife is monitored daily, and surface water is sampled monthly. The frequency with which the surface water and groundwater is monitored is deemed to be adequate to characterise the medium being monitored and identify any changes in a timely manner.

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 Cyanide Plant Decommissioning procedure stipulates the requirements for decommissioning 12, 6 and 3 months prior to decommissioning of cyanide related infrastructure and equipment. The decommissioning procedure is reviewed every three years.

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 environmental liability estimates accounting, 2016, for Savuka Gold Plant to fully fund third party implementation of the cyanide-related decommissioning measures identified in its site decommissioning plan was sighted. The line items including decontamination of storage and dosing systems (ZAR 317 680), JJM Filtration to fill and decontaminate a Sasol tanker (ZAR 27 069), chemical cleaning of the storage tanks (R16 753) and associated medicals, induction and screening training and travelling (R 84 804). Closure liabilities are updated annually to take account of any changes at the facilities. The AngloGold Environmental Rehabilitation Trust Fund (as required by SA law) includes provision for decontamination of the cyanide equipment at Savuka Gold Plant. The trust fund annual statements 2015 was signed by Accountants Director, A Darmalingam, of Nexia SAB & T, 30 March 2016 and sighted. The financial assurance mechanism is sufficient to cover cyanide-related decommissioning activities.

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 Savuka Gold Plant has the following cyanide related procedures: - 17 Cyanide Administrative Procedures, - 17 Cyanide Emergency Procedures, 12 Cyanide Engineering Procedures, 7 Cyanide Inspection Procedures, 13 Cyanide SHE Procedures, 18 Cyanide Operational Procedures, 18 Scenarios (Emergency) Procedures, and 9 Environmental Procedures.

A mandatory Code of Practice (COP) and operating manual covering TSF operations in the West Wits area (Savuka and Mponeng) is also in place. The freeboard and design storm event (1.3m and 1:50 year 24 storm event) are defined in the COP. The Annual West Wits Operations Tailings Facilities Audit Report by the AGA Corporate Geotechnical Engineer for 2016 concluded that West Wits TSF 's are, "...well managed, evidencing good pool control and diligent operational practice. Deposition rates for both operational complexes are significantly lower than design and as a result the rates of rise are well within acceptable limits..." Pipe patrols are done on the TSF on a 24 hour basis by the contractor, i.e. 6 times per day. Faults are recorded in the contractor log book and reported to the Mine TSF Person on Standby, who will call out the artisans at the Maintenance Department, as appropriate.

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.

The following sampled procedures were checked in detail to ensure minimised worker exposure:- Cyanide Offloading, Equipment and Maintenance of Equipment used with Cyanide, Entry into Hot Spot Area, Cyanide Equipment Detoxification / Decontamination, Backfill Cyanide Control, Cyanide Dosing Line Flushing, Issuing of Gas Monitoring Equipment, and Access to Cyanide Installation and Equipment, Use of in-line air. It was confirmed that they all included the necessary personal protective equipment (PPE) and pre-work inspections, as appropriate. The procedure, Cyanide PPE Requirements, states the PPE requirements for Level 1,2, 3 categories. A number of clearance certificates were also checked and found to be correctly filled in and signed off. Both the plant and the TSF contractor have change management procedures covering health, safety and environment in place and operational. The procedures require review and sign-off by environmental and safety personnel.

Worker inputs for health and safety matters, including procedures is obtained through plant Safety, Health & Environmental (SHE) meetings, Green Area/One Team Meetings (OTMs) and involvement in risk assessments. This was confirmed in reviews of a number of sampled meeting minutes held in 2015 and 2017. Monthly West Wits Tailings SHE meetings are undertaken involving both contractor and AGA TSF staff and the discussion of procedures is included in these meetings. The electronic file index for meetings since 2014 was checked.

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 optimal pH for the operation of the Savuka Gold Plant is currently defined as 10.5. Seven fixed HCN (Hydrogen Cyanide) gas monitoring Polytrons units are located around the plant at key hot spot areas which are clearly indicated by signs. The plant has 13 Pac 7000 HCN gas personal monitors, 4 X-am 5000 HCN personal gas monitors and the TSF team leader has 1 Pc 7000 HCN gas personal monitor. The personal monitors are set with instantaneous (STEL) alarms set at 7.5 ppm and 10 ppm. The TWA is set by the occupational hygienist at 4.7ppm over an 8 hour period, with settings password protected. Plant calibration frequency is 3 monthly and the manufacturers requirement is a minimum of 6 monthly. Calibration certificates for all equipment was sampled and reviewed.

Procedures require appropriate use of Personal Protective Equipment based upon risk. All safety showers have an integrated eye wash. Safety showers were located at appropriate locations including offloading area and close to the dosing point of the leach tanks. It was observed during the site inspection that showers (with eye wash) and dry powder fire extinguishers are located at strategic locations throughout the plant where cyanide is used. The safety showers are inspected daily and safety shower checklists for 2015 and January to July 2017 were sampled. The checklist files contains inspection guidelines. Safety showers are also on the SAP PMS and fitter monthly records were reviewed electronically for 2015 and 2017. Fire extinguishers are checked monthly and serviced annually. The monthly checklist files for fire extinguishers for 2015 and January to July 2017 were reviewed and sampled inspections of units 143 to 146 at the cyanide offloading area were checked.

Slurry pipelines are marked indicating the presence of a toxic substance. Signs were observed in areas where cyanide is used e.g. offloading point for liquid sodium cyanide, storage tanks and dosing points for leach tanks. The signs are placed to warn cyanide is present, that smoking is prohibited, no open flames or eating and drinking are allowed. Confirmed that this is trained and reinforced during annual induction of contractors and plant staff by interviewed staff. All cyanide pipelines are colour coded, and labelled with flow direction. MSDS (Material Safety Data Sheet) documentation and cyanide first aid information was located throughout the plant. An accident and incident reporting and investigation system is in place and an example of a completed incident report and investigation was sighted. There have been no cyanide incidents on site since the last recertification audit.

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:

Savuka Gold Plant has developed specific written emergency response plans or procedures to respond to cyanide exposures included in, "Response to Abnormal and Emergency Conditions Procedure". Similarly, the TSF contractor has a procedure in place entitled, Preparedness for handling and emergency associated with TSF failure at West Wits". The Plant has first aid rooms at the following locations: Cyanide Emergency Room (adjacent to the offloading area); and Plant First Aid Station (close to the entrance). It was observed during the site visit that water, oxygen, antidote kits, telephones and alarm systems are present where employees could potentially be exposed. A fully equipped emergency trailer is parked at the Cyanide Emergency Room. ER24 (ambulance/paramedic service provider) are called when there is an incident to provide paramedic response and transportation to West Wits AGA Hospital. ER 24 - 24 Hr Emergency Response have oxygen, resuscitator and qualified personnel available to assist with any cyanide exposure incident. Each operational ambulance and response vehicle has a Cyanide First Aid Kit. West Wits Hospital has oxygen, antidote kits, and resuscitator available to accept patients exposed to cyanide.

Inspection registers for emergency equipment was checked as follows:- Plant Cyanide Antidote Kit (TriPac) Register is inspected daily. The Register was sampled from January to June 2017 and January to December 2015. Expiry dates of the TriPac are included in the inspections. The Cyanide Safety Equipment Register (in PPE cabin at offloading) was sampled from January to June 2017 and January to December 2015. The First Aid Box Inspection Register was sampled from January to June 2017 and January to December 2015 and the Cyanide Emergency Trailer Inspection Register was sampled from January to June 2017 and January to December 2015.

ER 24 inspects and ensures all equipment in Cyanide First Aid Kits is correct and then uses a cable tie to close it to prevent any tampering. Once used, it is replaced and checked by the Savuka Gold Plant Cyanide Champion and resealed. Verbal Confirmation by the Cyanide Champion of this practice was received during the audit. The TriPac-Cyano and Dicobalt Cyanide Antidotes at West Wits Hospital are kept in the fridge and are within expiry date. Verbal Confirmation by the Cyanide Champion of this practice was received during the audit.

Cyanide Appointees have undertaken the relevant first aid training and make up the First Aid team trained to conduct cyanide related first aid. ER24 are contracted to provide emergency assistance and transport patients to West Wits Hospital, which is operated by AGA. In the event of an emergency at the TSF, the Shift Forman will be immediately informed who will then call ER24 and at the same time inform the Tailings Production Metallurgist who then informs the nearest Plant Production Metallurgist who will send their Emergency Response Team (ERT)(The TSFs do not have their own ERT.). The Shift Foreman/ Tailings Production Metallurgist will also inform the AGA Occupational Health Doctor and Occupational Health Sister. ER 24 (contracted) and West Wits



Hospital (AGA owned) provides emergency response and casualty assistance to the Savuka Gold Plant, Mponeng Gold Plant and West Wits Tailings. ER24 is stationed on site at West Wits Hospital close to Savuka Gold Plant.

Man down drills are used to assure that the medical facility is competent and equipped to handle emergencies. Drill reports were sighted and reviewed. Hospital staff are specifically trained to handle cyanide emergencies and participate in drills. The monthly drill schedules for 2015, 2016 and 2017 were sighted.

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 Savuka Gold Plant Emergency Response Plan (Response to Abnormal and Emergency Conditions Procedure) includes site specific cyanide scenario responses. The Mandatory Code of Practice Mine Residue Deposits West Wits Tailings includes a section on TSF emergencies categorised as Situations A – D, which lists actions to be taken, and various responsibilities. The West Wits TSF section also has a procedure, Preparedness for Handling and Emergencies associated with TSF failure at West Wits, and the TSF contractor has his own Emergency Response and Preparedness Plan. The emergency response plans are linked to specific emergency situations and the appropriate procedures and responses within the site's systems.

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:

The operation involves its workforce in risk assessments, with the following being sighted, "Issue Based Risk Assessment - Procedural Hazop - Emergency Scenarios for



Savuka Gold Plant". The documentation includes a list of people from various sections in the plant that attended the Risk Assessment. There were no updates since re-certification. Plant SHE Meetings also discussed different aspects of emergency response and the Plan. Meetings in 2015 discussed gas monitor calibration, the Cyanide Code and cyanide drills. Meetings in 2017 discussed spillages and hazardous substances management, and the Mandatory Code of Practice on Cyanide Management. Different sections of the Plan are raised at Green Area Meetings \ One Team Meetings (OTM) and this was reflected in the meeting files that were reviewed. Potentially affected communities are not involved in the Plans but are kept informed of relevant section via community meetings and presentations.

The various medical facilities involved in cyanide emergencies are included in the emergency drills to keep them informed and in practice. The AGA Fire Captain liaises with the Municipal Fire Department on a regular basis and at gatherings like the Annual General Meeting of the Local Farmers and Randfontein Association where issues regarding the emergency response planning can be brought up. The West Wits Fire Department is also a member of the Fire Protection Association (FPA) where relevant topics are discussed. The Fire Captain also discusses emergency planning with neighbouring land owners to ensure there is a co-ordinated response. This includes the neighbouring game farm. Chemical HAZMAT, including cyanide truck accidents, are also discussed with the municipal fire department.

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 Plan includes a section requiring training of emergency responders. 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 and through associated procedures.

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 debris. 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 three yearly, following incidents and emergency drills or when new information regarding cyanide becomes available. Reports of drills which were held, including spill drills, were 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 AngloGold Ashanti staff entering the plant gate (Including TSF staff) receive a 2 day Induction. A refresher is undertaken no longer than 18 months after the previous course. This includes cyanide hazard recognition and basic cyanide first aid, which is refreshed every 12 months. The presentation used to undertake the Induction was sighted. Written tests are conducted for the induction and refresher courses with a pass mark of 80%.

Contractors that will spend more than 3 days on the plant or if the contractor will be on the plant for less but will perform high risk work, will receive the same Induction Training as the employees. Contractors that will work less than 3 days on the plant (under direct supervision of a plant employee) will receive plant specific induction.

A training matrix is in place for all employees per plant/area showing the individuals and the various training modules including job specific training. The training matrix colour coding highlights the training employees have received (green); where the training is due to expire within 3 months (yellow); and where the training is out of date (red). The permanent contractors, Cyclone Projects, who work on the West Wits TSF keep their own training matrix.

The Induction is given to all people working for longer than 3 days on the process plant and includes the hospital staff and Cyanide Appointees and Emergency Response Team members. The General induction covers cyanide, PPE, Symbolic signs, Tools and equipment, waste management, emergency response, good housekeeping, SHE management, security and workplace related hazards as part of the modules over two days. Training is done at West Wits by qualified trainers.

The basic cyanide first aid and medical treatment for cyanide exposures training covers cyanide chemistry, interacting with oxygen, toxicity, symptoms, gas generation, how cyanide is transported, SHE issues in event of cyanide poisoning, first aid equipment for cyanide, first aid training, emergency response chain, warning alarm systems, emergency response by control room, buddy system requirements, Cyanide PPE requirements and use, cyanide PPE for hospitals, Gas detection instruments, Cyanide first aid and antidote kit regulation 24.8.2, contents of medical aid kit details, cyanide exposure and symptoms, consequence of cyanide poisoning, generation of HCN, first aid procedure for cyanide poisoning, cyanide patient to be transported to the hospital directly, emergency response in case of incident including taking TriPac and the Chapter 42 Medical Treatment Procedure (South Africa Region Metallurgy (SARM) Cyanide Code Implementation Guidelines, July 2013, Rev 06), in the ambulance transport to the hospital, and the cyanide first aid protocol flow sheet and decision tree.



The Savuka Gold Plant Training Matrix was sighted and confirmed that the 292 employees records are up to date and 100% trained as per matrix requirements. The Matrix has been in place since the previous re-certification audit and is rolled over as training is completed. Hard copy training records are kept.

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:

Workers are trained to perform their normal production tasks, including unloading, mixing, production and maintenance with minimum risk to worker health and safety and in a manner that prevents unplanned cyanide releases. The training matrix was observed that defines what training each worker is to receive, based on their position and the tasks required of that position. The cyanide matrix covering all disciplines including Engineering (Maintenance), and Metallurgy (Plant Operations) was sighted and sampled. All positions and tasks where high cyanide risk exists, must, in addition, receive training as a Cyanide Appointee and be found competent in the training.

At Savuka Gold Plant there are two trainers:- S Sereo, who is a Registered Assessor, and has done courses in best practice in training, presenting with confidence, and train the trainer, WC Diniso is a Registered Assessor, and has done courses in best practice in training, presenting with confidence, and professional train the trainer.

All employees and permanent contractors are trained during the induction training prior to commencement of work related to cyanide. All employees receive Basic Cyanide First Aid Training during induction. Cyanide Off-loaders and Appointees are further trained before working in areas where there is a potential for cyanide release. A Planned Task Observation (PTO) is undertaken the first time they are required to work in an area where there is a risk of cyanide release.

Once trained, Cyanide Appointees and Off-loaders receive identification cards with expiry dates of training so that it can be confirmed that training is up to date before any permit to carry out work in an area where cyanide may be released is issued. The Human Resources routing form covers all the necessary sign offs before an access card is issued. That includes all the necessary sign offs by the training department. Transferred employees are covered by the internal transfer system and they will receive section induction at the new plant.

The Mine conducts Planned Task Observations (PTOs) and conducts refresher training if deviations are identified by the PTO. Deviations on PTO's are recorded in the Risk Management System (RMS) and corrective actions will follow, as appropriate, which includes retraining, coaching or disciplinary measures. A schedule for PTO's is in place at



the Plant. PTO's are done by the Supervisor at a minimum of 4 per month. If a deviation is noted, the person is sent for re-training and again for a PTO by the Training Officer. Examples of completed PTOs from various departments were sampled and reviewed. Records of all training are retained electronically for at least the life of the plant in the EduCos software package. Hard copy records per person per plant and per contractor are also kept for at least the life of the plant. All hardcopy training records are archived at the metallurgy central training where the hardcopies are being scanned using the ScanCo system since 2017. The training records of interviewees to sample record keeping of training and this was found to be accurate and complete.

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 employees and contractors receive Basic Cyanide First Aid training during the induction training. However, only Cyanide Appointees form the Emergency Response Team in the plant. The Emergency response procedure is trained during monthly training drills and full scale emergency drills. Cyanide Appointees have all obtained a certificate in Self Contained Breathing Apparatus and Confined Space Rescue (SCBA) training. Furthermore the Medical Response Team (ER 24, Casualty Department Nurses) receive Intermediate Cyanide First Aid training. Community members are not involved in the Emergency Plan.

Refresher Basic Cyanide First Aid is conducted every 12 months. Intermediate Cyanide First Aid is assessed every 12 months as part of the training for Cyanide Appointee and Off-loaders. Advanced Cyanide First Aid (including SCBA) is refreshed every 2 years. Fire Incident Command is refreshed every 2 years. Cyanide Appointee and Off-loading training is refreshed every year and Cyanide Emergency drills are undertaken monthly. It was confirmed that training and refresher training were up to date in the training matrix. 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 of all training are retained electronically for at least the life of the plant in the EduCos software package. Hard copy records per person per plant and per contractor are also kept for at least the life of the plant. All hardcopy training records are archived at the metallurgy central training where the hardcopies are being scanned using the ScanCo system since 2017. The training records of interviewees to sample record keeping of training and this was found to be accurate and complete.



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. Members of the Community can raise any mine-related concerns (including cyanide) at the Vaal River and West Wits Environmental Forums. Attendance lists of Community members, local businessman, Government Officials, Councillors were sighted. Minutes of meetings were sighted of the West Wits Operations forum meeting held on 9 March 2017 in the municipal boardroom, Carletonville and the Vaal River Operation meeting held on 18 May 2017 at the Peacock Guesthouse, Stilfontein.

A Cyanide Management Poster for Processing Plants is posted at the plant and is made available publically. Examples were placed at the Vaal Reefs Supermarket and Take Aways, the Orkney Library, and the Vaal Reefs Technical High School.

A Walk about at the Taxi Rank and Spa shops at Wedela Township on 22 Aug 2016 involved members of the pipe patrol, cyanide champion, and the Production Metallurgist Tailings, Chris Badashe, to inform community members about the Mines activities and raise cyanide awareness.

At a 15 July 2015 meeting of KOSH (Klerksdorp, Orkney, Stilfontein, Hartebeestfontein) there was mention of the presence of toxic chemicals on the TSF which was of interest to cattle owners. The meeting was held at the offices of the Department of Mineral Resources (DMR), Klerksdorp.

A presentation to Umsizi (running the AGA Livestock Management Plan-LMP) made in May 2017 detailed the LMP which was developed as a result of problems with free ranging livestock (e.g. accidents and drinking of contaminated water and destruction of veld). The initiative is aimed at the owners of livestock which might affect, or be affected by, the mining operations.

The West Wits Fire Captain liaises with the Municipal Fire Department on a regular basis on all fire matters related to the mines (including, where appropriate, cyanide). The Fire Captain also discusses emergency planning with neighbouring land owners to ensure there is a co-ordinated response. Chemical HAZMAT, including cyanide truck accidents, are discussed with the municipal fire department.



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. Members of the Community can raise any mine-related concerns (including cyanide) at the Vaal River and West Wits Environmental Forums. Attendance lists of Community members, local businessman, Government Officials, Councillors were sighted. Minutes of meetings were sighted of West Wits Operations forum meeting held on 9 March 2017 in the municipal boardroom, Carletonville and the Vaal River Operation meeting held on 18 May 2017 at the Peacock Guesthouse, Stilfontein.

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The West Wits Fire Captain liaises with the Municipal Fire Department on a regular basis on all fire matters related to the mines (including, where appropriate, cyanide). The Fire Captain also discusses emergency planning with neighbouring land owners to ensure there is a co-ordinated response. Chemical HAZMAT, including cyanide truck accidents, are discussed with the municipal fire department.

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 Cyanide Management Poster for Processing Plants explaining what cyanide and ICMI are, the possible effects on the environment, and reasons for its use is available publically and displayed in the plant. This poster is available for distribution by the Plant either electronically or in paper form. The majority of the community in the vicinity of the AGA Gold Plants in the West Wits Region are literate. A “Walk About” at the local Taxi rank was conducted in the local languages (Xhosa and Sotho).

Any cyanide gassings must be reported to the Department of Minerals within 14 days, when confirmed to be inhalation of poisonous gas. Fatalities are reported immediately.

The Group-wide, AGA Workforce Management Reporting System (WMRS) is used as an electronic reporting platform for all safety and environmental incidents, inspections and deviations as per the procedure. Accidents are classified as Minor, Moderate, High, Major and Extreme.

No cyanide exposure, hospitalisation or fatalities occurred or were reported in the last three years at the Savuka Plant or TSF and no cyanide release of water or slurry containing cyanide was released.

The following were sighted on the AGA website:

1. AGA Sustainability Report published 2016 - page 42 - reporting on ICMI certification for AngloGold Ashanti - report on incident Cocoruto in Brazil, p 46. Cyanide usage is reported on in the report. (<http://www.aga-reports.com/16/sdr>)
2. AGA Sustainability Report for 2014 - p 25 reporting on cyanide usage. 20 AGA cyanide plants are certified under the ICMI Cyanide Code. (<http://www.aga-reports.com/14/sdr/>)
3. AGA Sustainability Report for 2015 - p 38 mentioning 4 site were recertified, p 39 reporting on 2 Obuasi incidents, 1 Vaal River 2015 incident when slurry pipeline failed at Kopanang resulting in a spillage to the storm water trench. Cyanide Code and cyanide consumption were covered (<http://www.aga-reports.com/15/sdr/home>).

