August 2017

ICMI GOLD MINE RECERTIFICATION AUDIT - SUMMARY AUDIT REPORT

Harmony Target Gold Plant

Submitted to:
International Cyanide Management Institute,
1400 I Street, NW, Suite 550
Washington, DC 20005,
USA

Harmony Target Gold Plant
South Africa

REPORT

Distribution:

1 Copy – Harmony Gold Mining (Pty) Ltd
1 Copy - ICMI

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1.0 SUMMARY AUDIT REPORT FOR GOLD MINING OPERATIONS

Name of Cyanide User Facility:	Harmony Target Plant
Name of Cyanide User Facility Owner:	Harmony Gold Mining Company Ltd
Name of Cyanide User Facility Operator:	Harmony Gold Mining Company Ltd
Name of Responsible Manager:	Cyril Radebe, Plant Manager
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2.0 LOCATION DETAIL AND DESCRIPTION OF OPERATION

Target Mine is one of the mines, acquired by Harmony Gold Mining from Avgold in 2004. The mine is located 10 km north of Welkom, on the Witwatersrand basin in South Africa. Target Gold Plant was designed and commissioned in November 2001 to treat ore from Target 1 Shaft. The plant was designed to treat 105 000 tonnes per month with a potential to expand to 160 000 tonnes for future demand. Currently, the plant treats ore from Target 1 shaft, and waste dump with the majority being from Target 1 shaft. The plant was modified by installing a run of mine mill (ROM) to replace the two stage milling circuit, due to steel ball costs.

Ore is treated by run of mine milling, with part of the mill product directed to the gravity concentrator to recover the gravity recoverable gold which is then leached through the Intense Leach Reactor situated in the Smelt-house. This is followed by electrowinning and gold smelting using induction furnaces.

The other mill product is directed to the thickener for densification, followed by leaching through 6 of the 7 mechanical agitated leach tanks. The leached ore gravitates to the Carbon In Pulp (CIP) circuit, where activated carbon is added from the last tank. The pulp moves downstream while the carbon moves upstream. Loaded carbon is then removed from the first adsorption tank and pumped to the elution circuit. Carbon is then acid washed with hydrochloric acid and eluted with a solution of sodium hydroxide and sodium cyanide. Gold is recovered from the elution solution using electrowinning cells. The electrowinning sludge is dried and smelted in the induction furnace and then dispatched to Rand Refinery for refining. The eluted carbon is pumped to the regeneration kiln and then to the CIP circuit. The tailings from the CIP circuit are screened to remove fine carbon and then pumped to the tailings dam.

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SUMMARY AUDIT REPORT

Auditors Findings

	☒ **in full compliance with**	
Harmony Target Gold Plant is:	☐ in substantial compliance with	**The International Cyanide Management Code**
	☐ not in compliance with	

Audit Company:	ESC Afrika
Audit Team Leader:	Ed Perry, Lead Auditor
Email:	escafrika@gmail.com

Harmony Target Gold Plant has not experienced any significant cyanide incidents or compliance problems during the previous three year audit cycle.

Name of Other Auditors

Marie Schlechter, ICMI pre-certified Mine Technical Specialist

Dates of Audit

The Re-certification Audit was undertaken between 27 March 2017 and 30 March 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 Gold Mine Operations and using standard and accepted practices for health, safety and environmental audits.

Harmony Gold Plant		9 August 2017
Name of Facility	Signature of Lead Auditor	Date

PRINCIPLE 1 – PRODUCTION

Encourage Responsible Cyanide Manufacturing by Purchasing from Manufacturers that 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.**

☒ **in full compliance with**

The operation is ☐ in substantial compliance with **Standard of Practice 1.1**

☐ not in compliance with

Summarise the basis for this Finding/Deficiencies Identified:

The operation is in full compliance with Standard of Practice 1.1 to 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.

Agreement entered into between Avgold Limited (former owners of Target Plant and name under which the mining rights are still held) and Sasol Polymers a Division of Sasol Chemical Industries Ltd for the supply of liquid sodium cyanide. Section 3.1 states that the seller, being Sasol, undertakes to maintain their International Cyanide Management Code compliance during the period of this contract.

The contract was signed by Sasol on 28 March 2014, signed by Avgold on 31 March 2014. Sasol Polymers is certified to be fully compliant with the ICMI Cyanide Code. Sasol Polymers re-certification is dated 29 March 2016 with the prior recertification being dated 7 May 2013.

Cyanide is purchased directly from the manufacturer namely Sasol Polymers, South Africa

PRINCIPLE 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.**

☒ **in full compliance with**

The operation is

☐ in substantial compliance with **Standard of Practice 2.1**

☐ not in compliance with

Summarise the basis for this Finding/Deficiencies Identified:

The operation is in full compliance with Standard of Practice 2.1 to establish clear lines of responsibility for safety, security release prevention, training and emergency response in written agreements with producers, distributors and transporters.

There is a written agreement, between the operation, the cyanide producer (Sasol), and transporter (Tanker Services).

Memorandum of Agreement for the Off-loading of Liquid Sodium Cyanide between Tanker Services Food and Chemicals Division and Harmony Gold Mining Company Limited.

Dated: 28 March 2017 (signed by Tanker Services and Harmony).

This agreement designates responsibilities for the following:

a) Packaging as required by the United Nations for international shipments and by the political jurisdiction(s) the shipment will pass through.
b) Labelling in languages necessary to identify the material in the political jurisdiction(s) the shipment will pass through, and as required by these jurisdiction(s) and by the United Nations (for international shipments).
c) Storage prior to shipment.
d) Evaluation and selection of routes, including community involvement.
e) Storage and security at ports of entry.
f) Interim loading, storage and unloading during shipment.
g) Transport to the operation.
h) Unloading at the operation.
i) Safety and maintenance of the means of transportation (e.g. aircraft, vessels, trains, etc.) throughout transport.
j) Task and safety training for transporters and handlers throughout transport.
k) Security throughout transport.
l) Emergency response throughout transport.

The agreement between Tanker Services and Harmony does not provide for any of the services to be subcontracted.

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

The operation is

☒ **in full compliance with**

☐ in substantial compliance with **Standard of Practice 2.2**

☐ not in compliance with

The operation is in full compliance with Standard of Practice 2.2 to require that cyanide transporters implement appropriate emergency response plans and capabilities and employ adequate measures for cyanide management.

The operation's contract with the cyanide transporter requires that the transporter be certified under the Code. Section 6.3 of the contract between Tanker Services and Harmony states that as Harmony Gold is a signatory to the ICMI it is compulsory for Harmony Gold to make use of an ICMI accredited transporter. Tanker Services Specialised Products Division - recertified 17 July 2015 with the prior certification dated 13 December 2011.

Chain of Custody Records state that Tanker Services delivers liquid sodium cyanide from the Sasol manufacturing facility in Sasolburg, South Africa directly to Harmony Target Plant, Welkom, South Africa.

PRINCIPLE 3 – HANDLING AND STORAGE

Protect Workers and the Environment during 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.**

☒ **in full compliance with**

The operation is

☐ in substantial compliance with **Standard of Practice 3.1**

☐ not in compliance with

Summarise the basis for this Finding/Deficiencies Identified:

The operation is in full compliance with Standard of Practice 3.1 to 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.

Sodium Cyanide Bulk Storage Facility Technical Inspection Reports are conducted annually by Sasol Base Chemicals Supply Chain (Cyanide Manufacturer).

The Cyanide unloading and storage areas are located inside the Target Gold Plant, which has security and access control. The Cyanide unloading and storage areas are locked.

Unloading and storage areas are located away from people and surface water. The cyanide storage tanks are located separately from incompatible materials such as acids, strong oxidizers and explosives. Both cyanide storage tanks are fitted with ventilation pipes

The liquid cyanide is unloaded on a concreted bunded surface. The bund is constructed to contain any spilled cyanide. Any spilled cyanide can flow back into the storage bund for the cyanide tanks. Liquid in the bund is pumped to the leach circuit. The storage tanks are constructed on a concrete plinth and sealed to prevent seepage to the subsurface.

There are high level alarms in the Control Room at 90% and 95%.

Standard of Practice 3.2: **Operate unloading storage and mixing facilities using inspections, preventative maintenance and contingency plans to prevent or contain releases and control and respond to worker exposures.**

☒ **in full compliance with**

The operation is

☐ in substantial compliance with **Standard of Practice 3.2**

☐ not in compliance with

Summarise the basis for this Finding/Deficiencies Identified:

The operation is in full compliance with Standard of Practice 3.2 to operate unloading storage and mixing facilities using inspections, preventative maintenance and contingency plans to prevent or contain releases and control and respond to worker exposures.

Liquid cyanide is delivered in bulk tankers and no containers are used. Any residue from the outside of the tanker is washed off after off-loading and washed into the cyanide storage tank bund.

The operation has developed and implemented plans or procedures to prevent exposures and releases during cyanide unloading and mixing activities including the following:

Procedure TGP 38 – Liquid Cyanide Off-loading Procedure, rev 02, dated April 2016;

Procedure TGP 38 – Liquid Cyanide Off-loading Procedure, rev 02, dated April 2016; and

Procedure TGP 3 – the “Buddy” System, rev 02, May 2016.

PRINCIPLE 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 including contingency planning and inspection and preventative maintenance procedures.**

☒ **in full compliance with**

The operation is

☐ in substantial compliance with **Standard of Practice 4.1**

☐ not in compliance with

Summarise the basis for this Finding/Deficiencies Identified:

The operation is in full compliance with Standard of Practice 4.1 to implement management and operating systems designed to protect human health and the environment including contingency planning and inspection and preventative maintenance procedures.

The site does not have heap leach facilities or processing ponds. The Plant's procedures include the following: 64 Cyanide Related Procedures have been developed for Target Plant, including Standard Task Procedures and Engineering Tasks and Procedures. The Procedures are applicable to the management, operation, maintenance of the cyanide and associated facilities located inside the Target Plant as well as the Backfill Plant.

Intersol, the contracted operator for the tailings facility, has 13 Procedures for the operation of the TSFs and Operational Manual - Man-004-OPS, date of approval 20 November 2016.

The operation has plans or procedures that identify the assumptions and parameters on which the facility design was based and any applicable regulatory requirements (e.g., freeboard required for safe pond and impoundment operation; the cyanide concentrations in tailings on which the facility's wildlife protection measures were based) as necessary to prevent or control cyanide releases and exposures consistent with applicable requirements

Procedure TGP28 - High Cyanide Levels in Residue Slime, rev 02, May 2016. The procedure states that the WAD cyanide levels in the Residue tanks should not exceed 50ppm. An alarm will sound when the levels reach 40 ppm as measured by the WAD 1000 on-line analyser.

Procedure TGP13 - Cyanide Delivery and Storage Planning, rev 02, May 2016. The procedure states that the levels of the cyanide storage tanks are taken on Mondays between 6:00 and 7:00 to plan for the next cyanide delivery. If the levels of the storage tanks exceed 55%, deliveries cannot be accepted.

Procedure TGP30 - In the event of low pH, rev 02, May 2016. The procedure states that the pH in the slurry must be maintained at 10.4 to prevent the formation of HCN gas.

Procedure TGP 67 - In the event of High WAD Cyanide, rev 02, May 2016. The procedure states that the WAD cyanide in the slime / solutions, residue slime or any solution outside the plant (RWD or boreholes) should be lower than 50 ppm.

Harmony Free State Tailings Dams Quarterly Report, November 2016, rev 0, conducted by Jones & Wagener. The report states that the legally required freeboard of 1.78m on Dam 1 and 1.8m on Dam 2 is required.

Procedure TGP70 - Backfill Operation, rev 02, May 2016. The procedure states that free cyanide in the backfill must be below 10 ppm before the batch is sent underground.

The operation has plans or procedures that describe the standard practices necessary for the safe and environmentally sound operation of the facility including the specific measures needed for compliance with the Code, such as inspections and preventative maintenance activities.

The operation has a procedure to identify when changes in a site's processes or operating practices may increase the potential for the release of cyanide and to incorporate the necessary release prevention measures. Procedure TGP5 - Management of Change, rev 01, April 2015. Managerial instruction to identify and control changes associated with the operational activities at Target Plant. Management of Changes Documentation. The management of change documentation include a statement of change required, routing document to obtain necessary signatures and approvals, issue based risk assessment, mini-risk assessment.

The operation has cyanide management contingency procedures for situations where there is an upset in a facility's water balance, when inspections and monitoring identify a deviation from design or standard operating procedures, and/or when a temporary closure or cessation of the operation may be necessary including the following:

The TSF has an Emergency Preparedness Plan ref. 1 dated 01 Dec 2016 - Intasol, which includes procedures for TSF Failure, Surface Fires, Natural Perils, Major Injuries, Snakes and Spiders, Chemical Spills, Surface Flooding, Worker Unrest, Explosions, and Robbery/Assault;

Procedure TGP58 - Starting and Stopping a Cyanide Pump, rev 02, May 2016;

Procedure TGP28 - High Cyanide Levels in Residue Slime, rev 2, May 2016;

Procedure TGP64 - When high storage alarm is sounded, rev 2, May 2016;

Procedure TGP30 - In the event of low pH, rev 2, May 2016; and

Start-up of Process Plant, rev 0, 01 March 2013.

The operation inspects cyanide facilities on an established frequency sufficient to assure and document that they are functioning within design parameters.

The TSF is inspected on a daily, monthly, quarterly and annual basis. The Cyanide Area is inspected on a daily basis. In addition, there are monthly Safety Inspections for the Plant.

Thickness testing is undertaken by Ultrasonic Services and Consultancy CC. The results for 2010, 2013 and 2015 were observed for Cyanide Storage Tanks, Backfill Tanks, Leach Tanks, and Adsorption Tanks.

Inspections are documented, including the date of the inspection, the name of the inspector, and any observed deficiencies. Corrective actions are documented either directly or in the form of a work request number. The work request details the nature and date of the corrective action. Records are retained.

Preventative maintenance programs are implemented and activities documented to ensure that equipment and devices function as necessary for safe cyanide management.

The planned maintenance system is computerised and changed from the Maximo software to DMS software in June 2016. The information on Maximo was migrated to the DMS system. The computerised system was observed by the auditors. This system includes scheduled maintenance for operational equipment. Job cards are automatically issued for the inspections, which are then planned in Monday meetings for the coming week.

The plant is designed to contain releases during power failure. Bund areas, sump pumps are in place to contain and return spillage to the process. Minimal gravity flow occurs in the plant, with most of the slurry being pumped, minimising run off and spillage during power failures. Any reagent strength cyanide inside the pipeline at the time of a power failure runs back to the storage tanks. The TSF is not affected by power outages as large volumes to take up any surge available in the evaporation ponds.

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

☒ **in full compliance with**

The operation is

☐ in substantial compliance with **Standard of Practice 4.2**

☐ not in compliance with

Summarise the basis for this Finding/Deficiencies Identified:

The operation is in full compliance with Standard of Practice 4.2; introducing management and operating systems to minimise cyanide use, thereby limiting concentrations of cyanide in mill tailings.

The operation conducts a program to determine appropriate cyanide addition rates in the mill and evaluate and adjust addition rates as necessary when ore types or processing practices change cyanide requirements.

The Plant treats reef and waste rock dumps combined. Meetings with the shaft ensure the Plant gets informed when receiving high grade reef.

Bottle roll tests are conducted monthly on a composite gathered from daily samples taken of feed. This provides an insight on how much gold can be recovered.

The ore remains fairly standard. Reasons for low recovery are investigated rather than more cyanide being added. The investigation includes any preg robbing material in the waste rock material, grind size in the mills, oxygen addition, etc.

Target Gold Plant currently uses the TAC 1000 on-line analyser for automated dosing in Leach Tank 2 and manual dosing is conducted in Leach Tank 4 when required. Frequent titrations are undertaken to prevent spiking of WAD cyanide. The Plant is currently investigating the inclusion of another Free Cyanide analyser and dosing point on the current TAC 1000 on-line analyser.

Leach Feed densities are controlled to be above 1.5 to avoid overdosing of cyanide due to over dilution. pH is controlled at the Thickener before feeding the Leach to prevent the formation of HCN gas and thereby losing cyanide.

Oxygen is added in No. 1 Leach tank before cyanide is added in No. 2 Leach Tank. Cyanide set point is 270 ppm free cyanide.

A WAD 1000 cyanide analyser on the tailings is used for WAD control and manual feedback parameter setting.

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

☒ **in full compliance with**

The operation is ☐ in substantial compliance with **Standard of Practice 4.3**

☐ not in compliance with

Summarise the basis for this Finding/Deficiencies Identified:

The operation is in full compliance with Standard of Practice 4.3 to implement a comprehensive water management programme to protect against unintentional releases.

Target Gold Plant has been using an Excel spreadsheet based water balance. The water balance includes all plant, backfill and TSF areas.

Water balance is updated monthly with actual figures measured on the inputs such as ore received, water used, tailings sent to TSF etc., except for the evaporation which has been established for the area.

The spreadsheet has the capability to update the available freeboard on the TSFs, RWDs, Evaporation Dams, Million Gallon Dam, etc. in order to predict an overtopping in the event of an 1:50 year and 1:100 year storm event.

The water balance considers the rate at which solutions are applied to the Tailings dams. The tailings sent to from the plant to the TSF is recorded on a monthly basis. The water balance also considers the amount of the backfill sent underground on a monthly basis.

Rainfall data is measured at the TSFs on a daily basis by Intasol and supplied to the plant for inclusion in the water balance. Rainfall is recorded on a monthly basis and updated on the water balance. The water balance indicates that 99mm in 24 hrs constitutes a 1:50 year rainfall event and 126mm in 24 hrs a 1:100year event.

The Water Balance includes evaporation data for each month as calculated for the area and supplied to the mine by the Environmental Department. The TSF is of the paddock type and no run on from up gradient occurs to the TSF itself. The new return water dam walls are raised to prevent run on. The water balance considers solution losses due to seepage from the TSFs and RWDs.

There is no discharge to surface water.

It was confirmed that the TSFs and RWDs are operated with sufficient freeboard to accommodate a storm event. The water balance models the various rainfall events and the total return water and evaporation pond capacity including the operating levels is sufficient to prevent overtopping in case of power failures during the rainfall events.

It was confirmed that the water balance takes into account the interstitial water present in the dam. The interstitial water is calculated from the amount of tailings sent to the TSF, the rainfall and assuming that 30% of the water stays behind in the dam.

The TSF is inspected on a daily, monthly, quarterly and annual basis. Daily inspections (inc. pool level, rainfall, wildlife mortalities, condition of valves, lines, slopes, toe penstock, penstock, pool, tranches and underdrain).

Monthly reports detail freeboard, tonnages deposited and phreatic levels. Quarterly by Jones and Wagner (inc. piezometric levels, Freeboard, deposition rates). Annual by Jones and Wagner (inc. Stability Assessment, Freeboard Analysis, Life Assessment and Deposition Planning, and Management System).

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Name of Facility

Signature of Lead Auditor

9 August 2017
Date

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

☒ **in full compliance with**

The operation is ☐ in substantial compliance with **Standard of Practice 4.4**

☐ not in compliance with

Summarise the basis for this Finding/Deficiencies Identified:

The operation is in full compliance with Standard of Practice 4.4 to implement measures to protect birds, other wildlife and livestock from adverse effects of cyanide process solutions

The operation has implemented measures to restrict access by wildlife and livestock to all open waters where WAD cyanide exceeds 50 mg/L WAD cyanide.

There was one occasion in 2014 and one occasion in 2015 where WAD cyanide exceeded 50 mg/l WAD cyanide at the deposition point for the TSF. There have been no exceedances in the return water dams. Therefore, no special measures are required to restrict access by wildlife and livestock.

The operation can demonstrate that the cyanide concentration in open water does not exceed 50 mg/L WAD cyanide.

Maintaining a WAD cyanide concentration of 50 mg/l or less in open water is effective in preventing significant wildlife mortality as no wildlife mortalities have been recorded since the last recertification audit.

The TSF is inspected on a daily, basis. which includes records of 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.**

☒ **in full compliance with**

The operation is ☐ in substantial compliance with **Standard of Practice 4.5**

☐ not in compliance with

The operation is in full compliance with Standard of Practice 4.5 to implement a comprehensive water management programme to protect against unintentional releases.

There are no direct or indirect discharges to surface water. The nearest surface water is 3 km from the Plant and TSF.

Indirect discharges from the operation have not caused cyanide concentrations in surface water to rise above levels protective of a designated beneficial use for aquatic life.

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

☒ **in full compliance with**

The operation is ☐ in substantial compliance with **Standard of Practice 4.6**

☐ not in compliance with

Summarise the basis for this Finding/Deficiencies Identified:

The operation is in full compliance with Standard of Practice 4.6 to implement measures designed to manage seepage from cyanide facilities to protect the beneficial uses of groundwater.

The operation implements specific water management or other measures to manage seepage to protect the beneficial uses(s) of groundwater beneath and/or immediately down-gradient of the operation.

The TSF is equipped with under drains, paddocks and cut off trenches with seepage pumped back to the TSF return water system for re-use in the process.

The Line Dam is HDPE lined, the Old Return Water Dam and New Return Water Dams are clay lined.

Four groundwater monitoring boreholes are sampled on a weekly basis.

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 plants or tailings facilities. Only isolated exceedances of greater than the 0.25 ppm detection limit were observed in the BH monitoring data.

The operation still uses mill tailings as underground backfill, the potential impacts to worker health and beneficial uses of groundwater have been evaluated and measures have been implemented as necessary to address them. Backfill current standards limits the free cyanide in the final product sent underground to 10ppm free CN.

Procedure TGP70 - Backfill Operation, rev 01, May 2016. Each backfill batch is titrated and ferro sulphate is added until the batch reaches 10 ppm free CN level.

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

☒ **in full compliance with**

The operation is ☐ in substantial compliance with **Standard of Practice 4.7**

☐ not in compliance with

Summarise the basis for this Finding/Deficiencies Identified:

The operation is in full compliance with Standard of Practice 4.7 to provide spill prevention or containment measures for process tanks and pipelines.

Spill prevention or containment measures are provided for all cyanide unloading, storage, mixing and process solution tanks.

The cyanide unloading facility is located on a concreted area with any spillage running down to the cyanide storage area bund that is equipped with a sump. The cyanide storage tanks, leach tanks, CIL tanks, residue tanks and backfill tanks are all located within concrete bunded areas.

The Leach and Adsorption tanks are located on concrete reinforced ring beams. These tanks have been rubber lined. Leak detection inspection holes has been drilled in the ring beams. Inspections are conducted on a monthly basis, to identify any potential leakage from the base of the tank.

Cyanide storage tanks are built on concrete plinths.

Secondary containments for cyanide unloading, storage, mixing and process tanks are sized to hold a volume greater than that of the largest tank within the containment and any piping draining back to the tank, and with additional capacity for the design storm event.

Procedures are in place and are being implemented to prevent discharge to the environment or any cyanide solution of cyanide-contaminated water that is collected in the secondary containment area. The plant is designed with bunds and sump pumps returning all spillage to the cyanide process tanks.

No cyanide process tanks are without secondary containment.

Spill prevention or containment measures are provided for all cyanide process solution pipelines to collect leaks and prevent releases to the environment.

Reagent strength cyanide pipelines are installed over concreted areas. The pipelines have been fitted with a leak diversion system.

The reside pipeline running to the TSF is within a secondary containment bund (earth berm). Daily inspection of the tailings pipeline is undertaken by security personnel. No pipelines cross streams or present a risk to surface water.

Cyanide tanks and pipelines are constructed of materials compatible with cyanide and high pH conditions. The cyanide tanks and pipelines have been constructed from mild steel.

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

☒ **in full compliance with**

The operation is

☐ in substantial compliance with **Standard of Practice 4.8**

☐ not in compliance with

Summarise the basis for this Finding/Deficiencies Identified:

The operation is in full compliance with Standard of Practice 4.8 to implement quality control/quality assurance procedures to confirm that cyanide facilities are constructed according to accepted engineering standards and specifications

The previous re-certification audit found the following:

“No QA/QC records were available but evidence that design standards and quality control was done and BS 2654 was used. The original construction company used AS/NZS ISO 9001 for quality control and the quality control manual used was sighted. The geotechnical report of the plant construction site was sighted. Although there were no QA/QC records on site, correspondence with the Australian Project Engineer indicated that the QA/QC documentation is stored at the offsite storage facility of Fluor Australia.”

There have been no changes to the Plant since the previous recertification audit.

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Name of Facility

Signature of Lead Auditor

9 August 2017
Date

Annual structural inspections are undertaken by LMV (Pty) Ltd Consulting Partners.

Structural Safety Audit Investigation, Report K2846, Sept 2014 and Jan 2017. The inspections included; the leach tanks, the adsorption section, elution section and cyanide storage. No emergency repairs were identified in either report (i.e. repairs that must be undertaken in the following 12 months). These reports were signed off by T. Jordaan Pr Eng 920279 and J Dykman Pr Eng 2040475 respectively.

LMV also undertook a structural inspection of the backfill area, the technical memo dated 27 Nov 2015 was observed. This stated the area was in good condition. This was signed off by T. Jordaan Pr Eng 920279.

Annual TSF reports by Jones and Wagner include Stability Assessment, Freeboard Analysis, Life Assessment and Deposition Planning, and Management System.

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

☒ **in full compliance with**

The operation is

☐ in substantial compliance with **Standard of Practice 4.9**

☐ not in compliance with

Summarise the basis for this Finding/Deficiencies Identified:

The operation is in full compliance with Standard of Practice 4.9 to implement monitoring programs to evaluate the effects of cyanide use on wildlife, surface and groundwater quality.

The operation has developed written standard procedures for monitoring activities. WADSP001 - Harmony Plants Cyanide WAD Sampling and Analysis, rev 1, 28 August 2013.

Sampling and analytical protocols have been developed by appropriately qualified personnel. The Sampling procedure was compiled by the Harmony Analytical Lab personnel.

The procedures specify how and where samples should be taken, sample preservation techniques, chain of custody procedures, shipping instructions, and cyanide species to be analysed.

The person taking the samples records conditions that could affect the analysis.

There is no direct discharge to surface water.

The sampling map indicates the boreholes and surface water being sampled.

The operation inspects for and records wildlife mortalities related to contact with and ingestion of cyanide solutions. This is done on the daily inspection records for the TSF and the daily inspection records for the Plant.

Monitoring is conducted at frequencies adequate to characterise the medium being monitored and to identify changes in a timely manner.

Weekly sampling is conducted at the four groundwater boreholes, the Voelpan, RWDs, solution trench, as well as sampling points associated with the TSF and Plant operations.

PRINCIPLE 5 – DECOMMISSIONING

Manage Cyanide Process Solutions and Waste Streams to Protect Human Health and the Environment

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

The operation is

☒ **in full compliance with**

☐ in substantial compliance with **Emergency Response Practice 5.1**

☐ not in compliance with

Summarise the basis for this Finding/Deficiencies Identified:

The operation is in full compliance with Standard of Practice 5.1 to plan and implement procedures for effective decommissioning of cyanide facilities to protect human health, wildlife and livestock.

Harmony Group Environmental Liability Assessment, Closure Cost Report FS30/5/1/2/14MR, dated May 2016, compiled by Digby Wells Environmental, states the cost of decommissioning cyanide facilities at the closure of operations.

The Target Gold Plant Decommissioning Plan for Cyanide Facilities, rev 04, 17 August 2013 includes the following: Section 7. Sequence of Decommissioning Activities stipulates the activities in a specific order that will take place prior or during the decommissioning of any cyanide facility. Annexure A of the document stipulates in detail actions/activities that will be required in a specific order, to take place prior and during decommissioning.

The Closure Cost Assessment for Harmony Gold Miming is reviewed and updated annually.

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

The operation is

☒ **in full compliance with**

☐ in substantial compliance with **Standard of Practice 5.2**

☐ not in compliance with

Summarise the basis for this Finding/Deficiencies Identified:

The operation is in full compliance with Standard of Practice 5.2 to establish an assurance mechanism capable of fully funding cyanide related decommissioning activities.

Harmony Group Environmental Liability Assessment, Closure Cost Report FS30/5/1/2/14MR, dated May 2016, compiled by Digby Wells Environmental states the cost of decommissioning cyanide facilities at the closure of operations.

The Closure Cost Assessment for Harmony Gold Miming is reviewed and updated annually.

The operation has established a financial mechanism approved by the applicable jurisdiction to cover the estimated costs for cyanide-related decommissioning activities as identified in its decommissioning and closure strategy.

PRINCIPLE 6 – WORKER SAFETY

Protect Workers' Health and Safety from Exposure to Cyanide

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

☒ **in full compliance with**

The operation is

☐ in substantial compliance with **Standard of Practice 6.1**

☐ not in compliance with

Summarise the basis for this Finding/Deficiencies Identified:

The operation is in full compliance with Standard of Practice 6.1 to identify potential cyanide exposure scenarios and take measure as necessary to eliminate, reduce and control them.

The operation has developed procedures describing how cyanide-related tasks such as unloading, mixing plant, operations, entry into confined spaces, and equipment decontamination prior to maintenance should be conducted to minimise worker exposure.

The procedures require, where necessary, the use of personal protective equipment and address pre-work inspections.

The operation implements procedures to review proposed process and operational changes and modifications for their potential impacts on worker health and safety, and incorporates the necessary worker protection measures.

Procedure TGP5 - Management of Change, rev 01, April 2015. Managerial instruction to identify and control changes associated with the operational activities at Target Plant.

The operation solicits and actively considers worker input in developing and evaluating health and safety procedures.

The monthly Health and Safety Meetings are held and used to obtain input into procedures and discuss any changes to existing procedures.

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.**

☒ **in full compliance with**

The operation is

☐ in substantial compliance with **Standard of Practice 6.2**

☐ not in compliance with

The operation is in full compliance with Standard of Practice 6.2 to operate and monitor cyanide facilities to protect worker health and safety and periodically evaluate the effectiveness of health and safety measures.

The operation has determined the appropriate pH for limiting the evolution of HCN gas during mixing and production activities.

Procedure TGP30 - In the event of low pH, rev 02, May 2016 stipulates that lime must be added to slurry to control the pH at a minimum of 10.4 to prevent the formation of HCN gas.

Where the potential exists for significant cyanide exposure, the operation uses personal monitoring devices to confirm that controls are adequate to limit worker exposure to HCN gas and sodium, calcium or potassium cyanide dust to 10 ppm on an instantaneous basis and 4.7 ppm continuously over an 8-hour period, as cyanide.

The auditors observed that 6 fixed HCN gas monitors have been installed: two at Cyanide storage, 1 at Residue, 1 Leach, 1 at Smelt-house, 1 at Backfill Plant. 4 Portable PAC 7000 HCN monitors are used in the plant.

The alarm levels for both the fixed and portable monitors were confirmed during the site visit to be 4.7 ppm and 10 ppm, A1 and A2 respectively. If the alarm sounds the area will be vacated and subsequently tested before being declared safe for re-entry.

The operation has identified areas and activities where workers may be exposed to cyanide in excess of 10 ppm on an instantaneous basis and 4.7 ppm continuously over an 8-hour period, and require use of personal protective equipment in these areas or when performing these activities.

It was observed during the site assessment that a portable HCN monitor must be worn at the top of the Leach Tanks and when entering the Cyanide Storage area. Certain tasks require the wearing of a Pac 7000 such as a boiler maker working on a cyanide line, etc.

Hydrogen cyanide monitoring equipment is maintained, tested and calibrated as directed by the manufacturer, and records are retained for at least one year.

Showers, low pressure eye wash stations and dry powder or non-acidic sodium bicarbonate fire extinguishers are located at strategic locations throughout the operation and are maintained, inspected and tested on a regular basis.

Unloading, storage, mixing and process tanks and piping containing cyanide are identified to alert workers of their contents, and the direction of cyanide flow in pipes is identified.

It was observed during the site assessment that the Cyanide MSDS and First Aid procedure is displayed in English at the Cyanide Storage area and First Aid Room. English is the official language of the Plant. All personnel interviewed during the site visit spoke English.

Procedures are in place and being implemented to investigate and evaluate cyanide exposure incidents to determine if the operation's programs and procedures to protect worker health and safety, and to respond to cyanide exposures, are adequate or in need of revising.

No cyanide exposure incidents have been recorded in the last 3 years.

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

☒ **in full compliance with**

The operation is

☐ in substantial compliance with **Standard of Practice 6.3**

☐ not in compliance with

Summarise the basis for this Finding/Deficiencies Identified:

The operation is in full compliance with Standard of Practice 6.3 to develop and implement emergency response plans and procedures to respond to worker exposure to cyanide.

Harmony Target Gold Plant
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Signature of Lead Auditor

9 August 2017
Date

The operation has water, oxygen, a resuscitator, antidote kits and a radio, telephone, alarm system or other means of communications or emergency notification readily available for use at cyanide unloading, storage and mixing locations and elsewhere in the plant. Man-down alarms are located at the Cyanide Storage area, top of Leach, and bottom of Leach/adsorption/residue.

The operation inspects its first aid equipment regularly to ensure that it is available when needed, and materials such as cyanide antidotes are stored as directed by their manufacturer and replaced to ensure that they will be effective when needed.

Monthly inspections are undertaken for the Cyanide Emergency Trailer, PPE Cabinets, First Aid Bags, cyanide antidote, oxygen portable packs, and safety showers.

All antidote kits were stored in fridges and are still within the expiry date. Reminders are placed on the outlook system that reminds the Backfill section, and Plant that the antidote kits needs to be replaced within the next month. Antidote kits are ordered via the St Helena Hospital.

The operation has developed specific written emergency response plans and procedures to respond to cyanide exposures.

The operation has its own on-site capability to provide first aid or medical assistance to workers exposed to cyanide. Plant Emergency Response Team are available on the day and night shift. All plant personnel and permanent contractors have been trained in Cyanide First Aid. A doctor is available 24 hrs at the Harmony Medical Hub. First aid equipment is available at various areas inside the plant.

The operation has developed procedures to transport workers exposed to cyanide to locally available qualified medical facilities. Procedure TGP2 - Ambulance Entry in the event of an Emergency, rev 2, May 2016.

The operation has made formalised agreements with local hospitals, clinics, etc., so that these providers are aware of the potential to treat patients for cyanide exposure. Agreement between Harmony Gold Mining Company Limited and St Helena Private Hospital (Pty) Ltd, signed December 2014. The operation is confident that the medical facility has adequate, qualified staff, equipment and expertise to respond

Emergency drills are undertaken twice a year. This includes details of any actions that need to be undertaken as a result of the drill and minutes of follow up meetings. The drill on the 18 January 2017 and 19 September 2016 included the paramedics and the hospital. The drills covered both worker exposure and environmental releases.

A desk based emergency drill was undertaken on 1 March 2017 for the TSF.

PRINCIPLE 7 – EMERGENCY RESPONSE

Protect Communities and the Environment through the Development of Emergency Response Strategies and Capabilities

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

The operation is

☒ **in full compliance with**

☐ in substantial compliance with **Standard of Practice 7.1**

☐ not in compliance with

Summarise the basis for this Finding/Deficiencies Identified:

The operation is in full compliance with Standard of Practice 7.1 to prepare detailed emergency response plans for potential cyanide releases.

The operation has developed an Emergency Response Plan to address potential releases of cyanide that may occur on site or may otherwise require response including the following: Procedure TGP69 - Target Metallurgical Plant: Cyanide Emergency Preparedness Procedure, rev 9, 23 December 2016; and Intasol Tailings: ITS-EPP - Emergency Preparedness Plan, rev 01, 1 December 2016.

The Plans consider the potential cyanide failure scenarios appropriate for its site-specific environmental and operating circumstances, including the following, as applicable.

- Catastrophic release of hydrogen cyanide from storage or process facilities;
- Transportation accidents;
- Releases during unloading and mixing;
- Releases during fires and explosions;
- Pipe, valve and tank ruptures;
- Overtopping of ponds and impoundments;
- Power outages and pump failures;
- Uncontrolled seepage (this is undertaken through routine inspection of the TSF and communication with structural engineering consultants for recommended actions);
- Failure of cyanide treatment, destruction or recovery systems (not applicable as no cyanide treatment undertaken); and
- Failure of tailings impoundments, heap leach facilities and other cyanide facilities.

Tanker Services are responsible for transportation related emergencies and are a fully ICMI certified transportation company.

The Plan describe specific response actions (as appropriate for the anticipated emergency situations) such as clearing site personnel and potentially affected communities from the area of exposure, use of cyanide antidotes and first aid measures for cyanide exposure, control of releases at their source, and containment, assessment, mitigation and future prevention of releases.

In the event of an emergency incident an investigation is undertaken to ensure the prevention of future releases.

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

☒ **in full compliance with**

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

Summarise the basis for this Finding/Deficiencies Identified:

The operation is in full compliance with Standard of Practice 7.2 to involving site personnel and stakeholders in the planning process.

Local township Nyakallong (opposite the Plant), local police, local traffic police, ambulance services, teachers, councillors and fire station were given a presentation on cyanide including the Emergency Response Plan using English, Xhosa and Sotho on 18 February 2017. There was an opportunity at the end of the presentation for questions. The presentation was given at the Mine Club Hall due to its proximity to the community.

A meeting was held with the South African Police Service (SAPS) to discuss the Target Plant ERP and their responsibility in terms of the ERP.

Management, Business Unit Leaders are involved in the updating of the ERP. The updated ERP is discussed at the Monthly or Weekly Health and Safety meetings.

The Netcare Ambulance service and St. Helena Hospital is involved in the Emergency Drill training. Employees from both these services received training on the handling of cyanide exposures.

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

☒ **in full compliance with**

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

Summarise the basis for this Finding/Deficiencies Identified:

The cyanide related elements of the Emergency Response Plan designate appropriate personnel and commit necessary equipment and resources including the following:

Procedure TGP69 - Target Metallurgical Plant: Cyanide Emergency Preparedness Procedure, Rev09, 23 December 2016.

Section 5. stipulates the Plant Operations Control Centre (Plant Control Room) responsibilities to respond to emergencies. They must contact the relevant person as per the emergency telephone lists.

Section 8 stipulates the roles and responsibilities during an emergency including outside responders and medical facilities.

The Plant Manager has the explicit authority to commit the resources of the Plant.

Communities are told through stakeholder meetings not to approach any cyanide transportation tanker that has been involved in an accident.

Appendix D, p24 of the ERP identifies the Target Plant Cyanide Emergency Response Team in a diagram. Emergency Response Teams are displayed on notice boards throughout the plant.

Section 3.2 of the ERP stipulate that the Plant Emergency Team will be trained in accordance with the Cyanide Training Matrix Procedure TGP18.

Procedure TGP18 - Cyanide Training Matrix Target Plant, rev 02, May 2016. The training matrix stipulates the required training for the Emergency Personnel Staff.

The Emergency Contact Flow Chart included on p11 of the ERP stipulates the call out procedure for each type of emergency identified in the ERP.

Appendix B, page 22 lists the Cyanide First Aid Equipment Inventory List for the Plant. It stipulates each required piece of emergency response equipment and where on the plant it is found. The content of a general First Aid Kit is also specified.

Tanker services are responsible for their own emergency response equipment along the transportation route as per the contract.

Monthly Safety Inspections of first aid equipment are undertaken.

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

☒ **in full compliance with**

The operation is

☐ in substantial compliance with **Standard of Practice 7.4**

☐ not in compliance with

Summarise the basis for this Finding/Deficiencies Identified:

The operation is in full compliance with Standard of Practice 7.4 to develop procedures for internal and external emergency notification and reporting.

The Plan includes procedures and contact information for notifying management, regulatory agencies, outside response providers and medical facilities of the cyanide emergency including the following:

Section 5, p4 of the ERP stipulates that the Plant Operational Control Centre will contact the relevant persons as per the Emergency Contact Flowchart, p11, and the emergency telephone list displayed on the notice boards in the plant and control rooms. The flowchart and emergency telephone lists includes the on-site and off-site responders that must be notified

The Plan includes procedures and contact information for notifying potentially affected communities of the cyanide-related incident and any necessary response measures and for communications with the media.

Section 6. of the ERP stipulates that any potentially affected farmers and communities will be notified by the Plant Senior Person with assistance from the SAPS, as indicated on the Emergency Contact Flowchart. The

Plant Manager has the contact details for the two farmers in close proximity of the Plant and TSF and would contact them directly in the event of an emergency, if necessary.

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

The operation is

☒ **in full compliance with**

☐ in substantial compliance with **Standard of Practice 7.5**

☐ not in compliance with

Summarise the basis for this Finding/Deficiencies Identified:

The operation is in full compliance with Standard of Practice 7.5 to incorporate in response plans and remediation measures monitoring elements that account for the additional hazards of using cyanide treatment chemicals.

The Plan describes specific remediation measures as appropriate for the likely cyanide release scenarios. This includes the following:

Section 7. Decontamination and Rehabilitation, of the ERP stipulates that contaminated soil must be picked up and decontaminated.

The response sequence described for Cyanide solution and slime spills, p14, stipulates the requirements to contain, recover and neutralise cyanide spillages. It also provides the requirements to dispose of the spilled material, contaminated soil or unrecoverable cyanide (mixed with ferrous sulphate) is disposed of at the residue.

EPR 001 - Procedure for Environmental Monitoring of Surface Water - Shallow Aquifer, rev 3, 17 April 2015, section 11 Emergency Response, stipulates that alternative drinking water will be supplied to affected communities in the event of a spill into surface water.

Integrated Emergency Response Manual rev 0, dated 1 June 2011, Section 7. Decontamination and Rehabilitation, p5, stipulates that no chemical e.g. sodium hypochlorite, ferrous sulphate, hydrogen peroxide is to be used to neutralize cyanide spillage in surface water.

EPR No. 1 - Procedure for Environmental Monitoring of Surface Water - Shallow Aquifer, rev 3, 17 April 2015. Procedure stipulates that surface water samples are taken on a monthly basis and that additional samples are conducted as the need arise (emergencies). Section 11. Emergency Response stipulates that sampling points will be identified up and down stream of where the spillage occurred and sampling will be done in accordance with the sampling methodologies, parameters specified in the procedure.

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

The operation is

☒ **in full compliance with**

☐ in substantial compliance with **Standard of Practice 7.6**

☐ not in compliance with

Summarise the basis for this Finding/Deficiencies Identified:

The operation is in full compliance with Standard of Practice 7.6 to periodically evaluate response procedures and capabilities and revise them as needed.

The ERP is reviewed every two years or when changes at the operations requires the plan to be updated.

Section 3.7 of the ERP stipulate that the ERP will be updated and reviewed following a cyanide incident or accident that has occurred.

There have been no cyanide emergencies since the last recertification audit.

Mock emergency drills are conducted periodically to test response procedures for various cyanide exposure scenarios, and lessons learnt from the drills are incorporated into response planning.

PRINCIPLE 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.**

☒ **in full compliance with**

The operation is ☐ in substantial compliance with **Standard of Practice 8.1**

☐ not in compliance with

Summarise the basis for this Finding/Deficiencies Identified:

The operation is in full compliance with Standard of Practice 8.1 to train workers to understand the hazards associated with cyanide use.

All employees, contractors and visitors are required to attend the induction program during which a comprehensive video is shown detailing the dangers associated with cyanide as well as the first aid measures in the event of an exposure.

Target New Training Plant Matrix is an excel based spreadsheet detailing all employees and permanent contractors' names, dates of training, required training modules, etc. including Annual Refresher, Cyanide, Radiation, S/Harness, First Aid, etc.

Refresher Cyanide Induction Training is conducted annually after employees return from annual leave.

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.**

☒ **in full compliance with**

The operation is ☐ in substantial compliance with **Standard of Practice 8.2**

☐ not in compliance with

The operation is in full compliance with Standard of Practice 8.2 to train appropriate personnel to operate the facility according to systems and procedures that protect human health, the community and the environment.

The operation trains workers to perform their normal production tasks, including unloading, mixing, production and maintenance, with minimum risk to worker health and safety in a manner that prevents unplanned cyanide releases.

Procedure TGP18 - Cyanide Training Matrix Target Plant, rev 02, May 2016. The matrix indicates all procedures, already written in a format to conduct planned task observations (PTO), that require training and assessment as well as the staff required to undergo the assessment, e.g. management staff, security, process, maintenance, emergency personnel, slimes dam staff, etc.

The training elements necessary for each job involving cyanide management are identified in training materials. Each of the plant procedures include a risk profile and have been written in a PTO format so that the elements necessary for each job have been identified and stipulated and can be assessed during training and observation.

An appropriately qualified person provides task training related to cyanide management activities. Mr. Israel Khuduga is currently appointed as the Training Assessor for Target Gold Plant.

All employees must receive the Cyanide and First Aid Induction training prior to being allowed in the plant. Refresher training on cyanide management provided to ensure that employees continue to perform their jobs in a safe and environmentally protective manner. The plant works with a card clock system that will not allow a person to go into the plant prior to receiving the initial induction training as well as ex-leave training.

All employees receive initial on the job training on the Standard Task Procedures with PTOs subsequently being undertaken.

The training matrix is excel based and the due dates for next training has been conditionally formatted to indicate when next training is due. This will ensure that training scheduled in advance and not become overdue.

Training records are retained for 40 years documenting the training they receive. The records include the names of the employee and the trainer, the date of training, the topics covered, and if the employee demonstrated and understanding of the training materials.

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

☒ **in full compliance with**

The operation is

☐ in substantial compliance with **Standard of Practice 8.3**

☐ not in compliance with

Summarise the basis for this Finding/Deficiencies Identified:

The operation is in full compliance with Standard of Practice 8.3 to train appropriate workers and personnel to respond to worker exposures and environmental releases of cyanide.

All cyanide unloading, mixing, production and maintenance personnel are trained in the procedures to be followed if cyanide is to be released.

Procedure TGP18 - Cyanide Training Matrix Target Plant, rev 02, May 2016. The matrix indicates all procedures, already written in a format to conduct task observations, that requires training and assessment as well at the staff required to undergo the assessment, e.g. management staff, security, process, maintenance, emergency personnel, slimes dam staff.

All employees, contractors and visitors are required to attend the induction program during which a comprehensive video is shown detailing the dangers associated with cyanide as well as the first aid measures in the event of an exposure.

Site cyanide response personnel, including unloading, mixing, production and maintenance workers, are trained in decontamination and first aid procedures. They also take part in routine drills to test and improve their response skills.

Emergency Response Co-ordinators and members of the Emergency Response Team are trained in the procedures included in the Emergency Response Plan regarding cyanide, including the use of necessary response equipment.

It was confirmed that all employees and contractors, listed on the training matrix, need to complete a certain set of modules applicable to their job. However, all personnel complete the Handling Cyanide Safely and Cyanide First Aid Training modules. Required pass rate is 100%.

Training presented by Sasol Base Chemicals on Handling of Cyanide/Caustic/HCL is conducted 6 monthly and attended by all plant employees at least once a year.

ER24 ambulance service and the Highveld Medi-Clinic in Trichardt are involved with the mock drills and training. ER24 and hospital staff are trained in cyanide emergencies through training by Sasol.

Cyanide emergency drills are periodically undertaken and evaluated from a training perspective to determine if personnel have the knowledge and skills required for effective response.

Mock drills are undertaken at least twice annually. The drill schedule for 2016 and 2017 were observed, they included environmental and man down incidents. The drill records were observed. The drill on the 18 January 2017 included an ambulance to the hospital and the hospital's response. The records include attendance register, positives and negatives of the drill, details of a follow up meeting and a root cause analysis of the issues found.

Records are retained documenting the cyanide training, including the names of the employee and the trainer, the date of training, the topics covered, and how the employee demonstrated an understanding of the training materials.

PRINCIPLE 9 – DIALOGUE

Engage in Public Consultation and Disclosure

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

☒ **in full compliance with**

The operation is

☐ in substantial compliance with **Standard of Practice 9.1**

☐ not in compliance with

Summarise the basis for this Finding/Deficiencies Identified:

The operation is in full compliance with Standard of Practice 9.1 to provide stakeholders with the opportunity to communicate issues of concern.

Local township Nyakallong (opposite the Plant), local police, local traffic police, ambulance services, teachers, councillors and fire station were given a presentation on cyanide using English, Xhosa and Sotho on 18 February 2017. There was an opportunity at the end of the presentation for questions. The presentation was observed in addition to photographs of the presentation being given. The presentation was given at the Mine Club Hall due to its proximity to the community.

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

☒ **in full compliance with**

The operation is

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

☐ not in compliance with

Summarise the basis for this Finding/Deficiencies Identified:

The operation is in full compliance with Standard of Practice 9.2 to initiate dialogue describing cyanide management procedures and responsively address identified concerns.

Local township Nyakallong (opposite the Plant), local police, local traffic police, ambulance services, teachers, councillors and fire station were given a presentation on cyanide using English, Xhosa and Sotho on 18 February 2017. There was an opportunity at the end of the presentation for questions. The presentation was observed in addition to photographs of the presentation being given. The presentation was given at the Mine Club Hall due to its proximity to the community.

A public communication flyer was observed regarding cyanide, how it is used and why it is dangerous.

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

☒ **in full compliance with**

The operation is ☐ in substantial compliance with **Standard of Practice 9.3**

☐ not in compliance with

Summarise the basis for this Finding/Deficiencies Identified:

The operation is in full compliance with Standard of Practice 9.3 to make appropriate operational and environmental information regarding cyanide available to stakeholders.

The operation has developed written descriptions of how their activities are conducted and how cyanide is managed. These descriptions are available to communities and other stakeholders.

The operation has disseminated information on cyanide in verbal form where a significant percentage of the local population is illiterate. Presentations are given in Sotho, Xhosa and English to enable illiterate individuals to have access to the information regarding cyanide.

The operation makes information publicly available on confirmed cyanide release or exposure incidents.

There have been no incidents of cyanide exposure in the last 3 years.

There have been no cyanide releases off the mine site in the past 3 years.

The Stakeholder Engagement Policy SEP-001, 8 August 2013, stipulates that employees will not disclose any information to the press or public during an emergency incident.

Incidents involving cyanide releases or exposure incidents will be handled via Corporate Communications Department. Newsflashes are distributed within the Company via e-mail. Incidents are reported to the Department of Mineral Resources (DMR) by mine management. The DMR reports selectively on repeated or critical incidents. Information on significant cyanide exposures are made available, after appropriate investigations in the Integrated Annual Report.

Harmony Target Gold Plant
Name of Facility

Signature of Lead Auditor

9 August 2017
Date

Report Signature Page

Ed Perry
Lead Auditor

Marie Schlechter
Gold Mine Auditor

Date: 6 June 2017