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Summary Audit Report for Mining Operations

Name of Mine: St Ives Gold Mine (SIGM)

Name of Mine Owner: Gold Fields Australia Pty Ltd

Name of Mine Operator: St Ives Gold Mining Company Pty Ltd

Name of Responsible Manager: Peter Bogensperger, Processing Superintendent

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Location Detail and Description of Operation

The St Ives Gold Mine (SIGM) is located 20 kilometres south-east of Kambalda, Western Australia. It is 100% owned by the South African mining company Gold Fields Limited. Located adjacent to Lake Lefroy in the gold-producing Eastern Goldfields region of Western Australia, SIGM is approximately 80 kilometres south of Kalgoorlie and 630 kilometres east of Perth.

The mine's geological setting is on the Norseman-Wiluna Greenstone Belt, which forms part of the Yilgarn Craton in Western Australia. It is a highly mineralised granite-greenstone terrain with world-class deposits of gold and nickel.

St Ives has produced in-excess of 10.5 million ounces of gold, with the first major gold mining expedition commencing in the mid-1980s. The continued exploration success and drilling of the mine's extensive greenfields project pipeline has consistently led to further discoveries and new mines. The Operation produced 385,000 ounces of gold in 2020. It features both underground and open-pit mining operations, and employs over 1,000 staff and contractors.

SIGM employs Semi-Autogenous Grinding (SAG) milling, gravity, carbon-in-leach (CIL), and elution and electrowinning technology to recover gold. The Processing Plant treats ore at a rate of 4.8 million tonnes per annum. The major unit processes within

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the processing plant are crushing, grinding, gravity recovery, gold leaching, gold recovery, cyanide destruction, and tailings disposal.

SIGM operate a cyanide destruction circuit to reduce cyanide concentrations in the tailings slurry prior to discharging to the tailings storage facilities.

Australian Gold Reagents Pty Ltd (AGR) manufactures and transports liquid sodium cyanide to SIGM via its West Australian Supply Chain.

The operation receives sodium cyanide solution at a nominal concentration of 30% w/w, although the concentration is modified slightly upwards in summer and downwards in winter, to account for the freezing point of the solution. The sodium cyanide solution is transported in isotainers by rail from AGR's production facility located at Kwinana some 40 km south of Perth within the state of Western Australia, to a trans-shipping facility at Kalgoorlie, from where it is then transported by road to the operation. No solid cyanide, other than minor quantities used in the site laboratory, is transported to, stored, mixed or used at the operation.

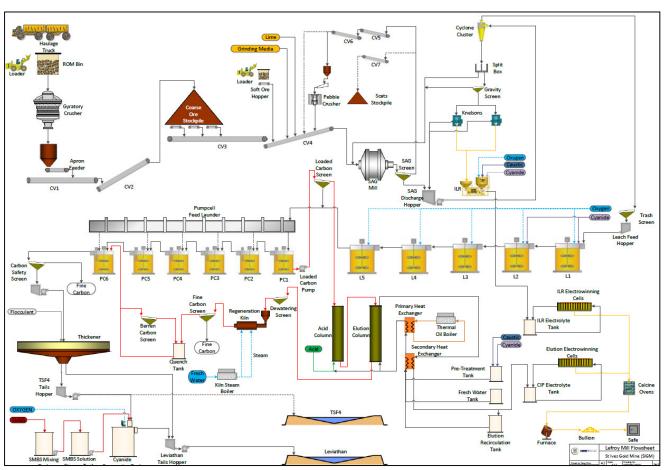


Figure 1 St Ives Gold Mine Simplified Ore Processing Flowsheet



SUMMARY AUDIT REPORT

Auditor's Finding

This Operation is	
☑ in full compliance	
\square in substantial compliance	
\square not in compliance	
with the International Cyanide Managemer	nt Code.
This Operation has experienced no sign previous three-year audit cycle.	ificant compliance problems during the
Audit Company: Audit Team Leader: Email: Dates of Audit:	Veritas Metallica Pty Ltd Tom Gibbons Tom_G@westnet.com.au 19 – 23 July 2021 inclusive
Names and Signatures of Other Auditors:	
Greg Smith 10 February 2022	
I attest that I meet the criteria for knowled Code Verification Audit Team Leader, e Management Institute, and that all member criteria established by the International Verification Auditors. I attest that this Summary Audit Report verification audit. I further attest that the professional manner in accordance with the Verification Protocol for Mining Operations for health, safety and environmental audits	stablished by the International Cyanide ers of the audit team meet the applicable Cyanide Management Institute for Code accurately describes the findings of the ne verification audit was conducted in a EInternational Cyanide Management Code and using standard and accepted practices
St Ives Gold Mine	

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PRINCIPLE 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.

	oxdot in full compliance with	
The Operation is	\square in substantial compliance with	Standard of Practice 1.1
	\square not in compliance with	

Summarize the basis for this Finding/Deficiencies Identified:

SIGM is in FULL COMPLIANCE with 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.

SIGM's contract with its sole cyanide supplier requires that the cyanide be produced at a facility that has been certified as being in compliance with the Code. SIGM's cyanide supply does not include distributor(s).

SIGM has a contract with the cyanide manufacturer and supplier Australian Gold Reagents Pty Ltd (AGR). The contract requires that that the cyanide be produced at a facility that has been certified as being in compliance with the Code. The term of the contract was active for the entire audit period.

AGR is the management company of the unincorporated joint venture between CSBP Limited (CSBP) and Coogee Chemicals Pty Ltd. CSBP is part of the Wesfarmers Chemicals, Energy and Fertilisers Division of Wesfarmers Limited. CSBP is the major participant in the venture and acts as operator and sales agent for the AGR business. As the operating agent, employees of CSBP act on behalf of AGR.

During the audit period, SIGM purchased cyanide solely from Australian Gold Reagents Pty Ltd (AGR).

During the audit period, all cyanide purchased by SIGM was manufactured at a facility certified as being in full compliance with the Code. SIGM has purchased cyanide solely



from Australian Gold Reagents Pty Ltd (AGR) during the audit period, with all supplied cyanide being manufactured at Australian Gold Reagents Pty Ltd (AGR)'s Kwinana Production Facility.

The cyanide supplied by Australian Gold Reagents Pty Ltd (AGR) was solely in the form of sodium cyanide solution within 22 cubic metre isotainers. The supplied sodium cyanide solution strength is nominally 28.0% w/w +/- 1.5% in winter, and 31.5% +/- 1.5% w/w in summer.

The cyanide supplied to SIGM was manufactured at Australian Gold Reagents Pty Ltd (AGR)'s Production Facility in Kwinana, Western Australia. This Production Facility remained certified in full compliance with the Code during the audit period, and was most recently certified in full compliance with the Code on 22 September 2020.

SIGM did not purchase cyanide from any independent distributors during the audit period.

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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.

	oxdot in full compliance with	
The Operation is	\square in substantial compliance with	Standard of Practice 2.1
	\square not in compliance with	

Summarize the basis for this Finding/Deficiencies Identified:

SIGM is in FULL COMPLIANCE with 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.

A written agreement exists between SIGM and AGR, who is both the Cyanide Producer and Transporter, designating that AGR is responsible for the transportation of Sodium Cyanide Solution purchased under this Agreement to the Operation and the unloading of the Sodium Cyanide Solution at the Delivery Point.

The active sodium cyanide supply of goods contract between SIGM and Australian Gold Reagents Pty Ltd (AGR) requires that transportation be carried out via a supply chain that is certified in compliance with the Code.

AGR has been continuously certified as a Transporter since September 2006. SIGM forms part of AGR's West Australian Supply Chain, the most recent date of recertification date of which is 15 November 2019. This supply chain was the sole means of cyanide transportation to SIGM during the audit period, and remained certified in full compliance with the Code during the audit period.

Despite the contract not specifying all designated aspects of transportation responsibility as required by the Code, compliance is addressed through both the contractual requirement that AGR is responsible for transportation up until the point of delivery at the Operation, and AGR's West Australian Supply Chain remaining



certified in full compliance with the Code during the audit period, and as such SIGM is in full compliance with this Standard of Practice.

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Standard of Practice 2.2:

Require that cyanide transporters implement appropriate emergency response plans
and capabilities and employ adequate measures for cyanide management.

	$oxedsymbol{ec{ox}}$ in full compliance with	
The Operation is	\square in substantial compliance with	Standard of Practice 2.2
	\square not in compliance with	

Summarize the basis for this Finding/Deficiencies Identified:

SIGM is in FULL COMPLIANCE with Standard of Practice 2.2: Require that cyanide transporters implement appropriate emergency response plans and capabilities and employ adequate measures for cyanide management.

SIGM's contract with the cyanide transporter requires that the transporter be certified under the Code.

SIGM has continued to utilise AGR as sole Producer and Transporter of cyanide during the audit period and contractually requires that AGR be certified under the Code. The contract addresses roles and responsibilities for safety, security, release prevention and emergency response. AGR's compliance with the Code includes verification of the adequacy of emergency response plans and capabilities applicable to the transportation of cyanide to SIGM.

The cyanide transporter is certified under the Code. The most recent recertification date of AGR's West Australian Supply Chain, which includes all aspects of transportation of cyanide from their Kwinana Production Facility to SIGM, is 15 November 2019.

AGR's identified road transportation subcontractor/carrier, Qube Bulk, is certified in full compliance with the Code. The most recent certification date is 29 November 2018.

SIGM has chain of custody records identifying all elements of the supply chain that handle the cyanide brought to its site. All identified transporters are certified in compliance with the Code.

SIGM has maintained chain of custody records for cyanide supply/transportation over the audit period. The transporter (AGR) and the identified road transportation



subcontractor, Qube Bulk, are certified in full compliance with the Code. The AGR Supply Chain, which identifies all elements of the supply chain that handle the cyanide brought to its site, is certified in full compliance with the Code.

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PRINCIPLE 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.

	oxdot in full compliance with	
The Operation is	\square in substantial compliance with	Standard of Practice 3.1
	\square not in compliance with	

Summarize the basis for this Finding/Deficiencies Identified:

SIGM is in FULL COMPLIANCE with 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.

SIGM facilities for unloading and storing cyanide have been designed and constructed in accordance with cyanide producers' guidelines, applicable jurisdictional rules and other sound and accepted engineering practices.

SIGM receives only sodium cyanide solution, thus no cyanide mixing facilities exist at the Operation.

SIGM continue to maintain records of design compliance with relevant construction standards and statutory approval requirements.

SIGM unloading and storage areas for liquid cyanide are located away from people and surface waters.

SIGM continue to unload liquid cyanide on a concrete surface that can minimize seepage to the subsurface.

The SIGM cyanide unloading area is designed and constructed to contain, recover or allow remediation of any leakage from the tanker truck.



The concrete unloading pad is designed and constructed with a gradient such that spillage reports to the bunded concrete secondary containment for the liquid cyanide storage tanks. This containment area has a sump and pumping facilities to allow return of spillage to process tanks.

A method exists to prevent the overfilling of cyanide storage tanks.

Several layers of protection exist to prevent overfilling of cyanide storage tanks, including multiple level indicators, high-level alarms, and inspection, observation and unloading procedures. SIGM implements a Cyanide Unloading/Delivery Procedure, which includes multiple checks to prevent overfilling of cyanide storage tanks. Local signage at the Unloading facility advises personnel of cyanide unloading procedures and tank level checks to be performed prior to delivery to prevent overfilling of cyanide storage tanks.

Cyanide storage tanks are located on a concrete surface that can prevent seepage to the subsurface.

Liquid cyanide is unloaded on a concrete surface that can minimize seepage to the subsurface.

Secondary containments for SIGM cyanide storage tanks are constructed of concrete that provides a competent barrier to leakage. SIGM continue to address the condition of cyanide storage tank secondary containments via focused secondary containment inspections and refurbishment programs.

The cyanide storage area has adequate ventilation and the cyanide is stored securely where public access is prohibited, and away from other incompatible chemicals.

The cyanide storage tanks are located in open areas exposed to the atmosphere, and have purpose-designed vents approved by the Cyanide Producer, with air vented to atmosphere to minimise the risk of personnel exposure to hydrogen cyanide gas.

The cyanide storage tanks are located externally, and have purpose-designed vents approved by the Cyanide Producer to prevent the build-up of hydrogen cyanide gas. They are located within concrete secondary containment bunds to safeguard against potential comingling with incompatible materials. The cyanide storage facility is secured within fenced areas with gates that are locked when not in use. The facilities are further located within restricted areas of the operation where personnel movements are restricted to individuals inducted and trained as per the Cyanide Storage Compound Access procedure. The, cyanide unloading and storage facilities

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are separated from acids, strong oxidizers and explosives through the physical location of the facilities and use of secondary containments and bund walls.

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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.

	$oxedsymbol{ec{ox}}$ in full compliance with	
The Operation is	$\hfill\Box$ in substantial compliance with	Standard of Practice 3.2
	\square not in compliance with	

Summarize the basis for this Finding/Deficiencies Identified:

SIGM is in FULL COMPLIANCE with 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.

SIGM continue to solely utilise liquid sodium cyanide for processing requirements, and as such no cyanide mixing facilities exist on site.

The only applicable empty cyanide containers are liquid cyanide isotainers. The containers are cleaned after unloading as part of the standard unloading procedure, and depart site immediately thereafter. There are no remnant empty cyanide containers on site.

Delivery procedures require tanker and isotainer flushing and wash-down within the designated unloading area prior to the tanker leaving site. A Spotter (Sentry) is required to observe and supervise the unloading procedure and activities are documented by both the Spotter and the delivery driver.

SIGM has developed and implemented multiple plans or procedures to prevent exposures and releases during cyanide unloading activities. Salient plans and procedures implemented include, but are not limited to: the Cyanide Management Plan, CSBP Sodium Cyanide Solution Isotainer Unloading at Mine site, Cyanide Unloading/Delivery procedure, Cyanide Storage Compound Access procedure, and Cyanide spill ground decontamination procedure.

Operation of hoses, valves and couplings for unloading liquid cyanide are addressed in the CSBP (CSBP Limited) Sodium Cyanide Solution Isotainer Unloading at Mine site Handbook and SIGM Cyanide Unloading/Delivery Procedure.



SIGM continue to receive only sodium cyanide solution in 22 cubic metre Isotainers which are immediately unloaded into the cyanide storage tanks upon arrival at the mine site; hence there no handling or stacking of containers occurs.

Timely clean up of spills during cyanide unloading is addressed within the Cyanide Unloading/Delivery Procedure, Cyanide Spill Procedure and Emergency Response procedures. The unloading and storage area was inspected and found to be free of any signs of spillage.

SIGM provide for safe unloading of liquid cyanide and by requiring appropriate personal protective equipment and having a second individual observe from a safe area.

A SIGM Process Technician (second individual) observes every cyanide unloading event from a safe area. This second individual is known as the Spotter or Sentry, and is trained in the Cyanide Unloading/Delivery Procedure.

Both the Spotter and delivery truck driver complete an unloading checklist detailing items to be inspected and recorded before, during and after unloading.

Appropriate personnel protective equipment is kept at the cyanide unloading area, and checks are performed routinely as part of the unloading procedure. Required personnel protective equipment for safe unloading of liquid sodium cyanide is included within the CSBP Sodium Cyanide Solution Isotainer Unloading at Mine site Handbook and SIGM Cyanide Unloading/Delivery Procedure.

Addition of colorant dye to liquid cyanide prior to delivery to site is addressed within the Cyanide Management Plan.

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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 utilizing contingency planning and inspection and preventive maintenance procedures.

	oxdot in full compliance with	
The Operation is	\square in substantial compliance with	Standard of Practice 4.1
	\square not in compliance with	

Summarize the basis for this Finding/Deficiencies Identified:

SIGM is in FULL COMPLIANCE with Standard of Practice 4.1: Implement management and operating systems designed to protect human health and the environment including contingency planning and inspection and preventive maintenance procedures.

SIGM have developed written management and operating plans and procedures for cyanide facilities including, but not limited to, unloading and storage facilities, leach plants, tailings impoundments and cyanide treatment systems. No cyanide mixing facilities, active heap leach operations, or cyanide regeneration and disposal systems exist at SIGM.

SIGM continue to maintain a comprehensive Cyanide Management Plan. Individual work instructions and guidelines exist for cyanide-related tasks within SIGM's cyanide facilities.

SIGM continue to maintain plans and procedures that identify the assumptions and parameters on which the facility design was based (including but not limited to freeboard required for safe pond and impoundment operation and the cyanide concentrations in tailings on which the facility's wildlife protective measures were based) as necessary to prevent or control cyanide releases and exposures consistent with applicable regulatory requirements.

Key plans and procedures used to achieve this include, but are not limited to, Cyanide Management Plan, Tailings Management Plan, Environmental Performance Standard



Tailings, Environmental Performance Standard Water, Water Capacity and Availability Model, Lefroy Mill Operating Specifications, and Preparing For Significant Rainfall Events.

SIGM continue to implement plans and 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, including inspections and preventive maintenance activities. These plans, procedures and work instructions describe the nominal operating conditions, systems, operating and maintenance inspections, and preventative maintenance activities.

SIGM implements a comprehensive Preventative Maintenance System, with triggering/prompting of preventative maintenance tasks, planning, scheduling, execution, and close-out documentation.

SIGM 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.

SIGM continue to implement a Management of Change (MoC) 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.

The MOC Form requires review and sign-off from relevant departments including representatives of the Environment and Safety Departments and the Training Department where required.

A cross-section of completed cyanide-related MOC items were reviewed and found to be consistent with the intent of evaluating the potential for the release of cyanide and to incorporate the necessary release prevention measures.

SIGM has cyanide management contingency procedures for situations when 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 operations may be necessary.

SIGM contingency procedures address loss of containment of fresh, raw, hypersaline or process water or process slurry, overtopping or loss of containment from Tailings Storage Facilities (TSFs), emergency catchments, and cyanide or other reagent discharge to air or ground. A Leak detection system is installed beneath significant cyanide-containing tanks within the CIL circuit to identify potential leakage, and an extensive groundwater monitoring system monitors any potential cyanide-containing seepage.

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SIGM implements a Processing Work Escalation Procedure to ensure that significant events relating to loss of processing efficiency, lost production, mechanical failure, equipment damage, injury, or environmental incidents are rapidly communicated to supervisors and senior management for appropriate and timely response.

In addition to the existing plans and procedures, SIGM employs process control equipment such as high level instrumentation, alarms, process interlocks, magnetic flowmeters, and automatically activated pumps to response to process upsets.

SIGM undertakes cyanide facility inspections on an established frequency to assure and document that they are functioning within design parameters.

Inspections are broadly divided into Operational Inspections and Maintenance Inspections. Operational inspections are focused upon operating parameters, but also require inspection of equipment and infrastructure. Maintenance inspections are focused more specifically upon equipment and infrastructure within a specific cyanide facility. The frequency of inspections is designated with the Cyanide Management Plan for Operational inspections, and within the Preventative Maintenance System for maintenance inspections.

Operational and Maintenance Area inspections occur monthly and focused on cyanide facility areas, with maintenance inspections occurring at a range of frequencies determined by equipment requirements and risk, and focused on equipment and infrastructure.

In addition to internal inspections, SIGM utilises third party experts to conduct specialised inspections, including but not limited to; annual Tailings Storage Facility (TSF) audits; specialised internal and external inspection of tanks for corrosion, metal thickness, and other parameters; secondary containment and infrastructure concrete condition, thermographic and vibration surveys, and annual inspection/audits of Cyanide Unloading and Storage Area by the Cyanide Producer.

SIGM carries out inspections on the following at unloading and storage and process areas, as applicable for the site: Tanks holding cyanide solutions for their integrity and signs of corrosion and leakage; Secondary containments for their integrity, the presence of fluids and their available capacity, and to ensure that any drains are closed and, if necessary, locked, to prevent accidental releases to the environment; Leak detection and collection systems at leach pads and ponds, as required in the design documents; Pipelines, pumps and valves for deterioration and leakage; and Ponds and impoundments for the parameters identified in their design documents as critical to their containment of cyanide and solutions and maintenance of the water balance, such as available freeboard and integrity of surface water diversions.

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Inspections are documented, including the date of the inspection, the name of the inspector, and any observed deficiencies. The nature and date of corrective actions are documented and records are retained. A cross-section of completed inspection forms were reviewed and found to be consistent with stated requirements. Site electronic storage of inspections was verified.

SIGM continue to implement and document preventative maintenance programs and activities to ensure that equipment and devices function as necessary for safe cyanide management.

A detailed demonstration of the Preventative maintenance system was provided. During the demonstration, a cross-section of cyanide-specific equipment was interrogated and maintenance plans and records verified. Existence of prompting of preventative maintenance tasks, planning, scheduling, execution, and close-out was verified.

The existence of Maintenance inspection and Work Order Field Sheet records spanning the audit period was verified.

SIGM has necessary emergency power resources to operate pumps and other equipment to prevent unintentional releases and exposures in the event its primary source of power is interrupted. The back-up power generating equipment maintained and tested.

Emergency power is available through portable gensets which are hired on an as needs basis. Skid and trailer mounted pumps are also available on site. Procedures have been established for the restart of critical equipment and the plant to prevent unintentional releases.

The existence of maintenance and testing records for emergency power resources spanning the audit period was verified.

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Standard of Practice 4.2:

$\hfill \square$ in full compliance with $\hfill \square$ in substantial compliance with $\hfill \square$ not in compliance with $\hfill \square$	Introduce management and operating systems to minimize cyanide use, thereby limiting concentrations of cyanide in mill tailings.			
	The Operation is	\square in substantial compliance with	Standard of Practice 4.2	

Summarize the basis for this Finding/Deficiencies Identified:

SIGM is in FULL COMPLIANCE with Standard of Practice 4.2: Introduce management and operating systems to minimize cyanide use, thereby limiting concentrations of cyanide in mill tailings.

SIGM 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.

SIGM continue to conduct routine testwork and implement standard operating procedures to optimise cyanide addition rates.

Third party metallurgical testwork is undertaken to characterise potential new ore sources and for evaluation of leaching parameters and cyanide consumption.

SIGM conduct routine metallurgical testwork on plant samples to optimise cyanide addition rates.

Operational evidence of optimisation of cyanide addition rates was observed during field inspections and found to exist within operational records within logsheets and operating reports.

SIGM has evaluated various control strategies for cyanide additions.

Plant metallurgists routinely evaluate control strategy variables such as cyanide dose points and cyanide dose ratios, using the Supervisory control and data acquisition (SCADA) interface, a custom third party process control module for cyanide addition optimisation, on-line free cyanide analyser, and on-line weak-acid dissociable (WAD) cyanide analyser, to optimise cyanide dosing.

SIGM has implemented a strategy to control cyanide addition.

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The cyanide addition strategy is articulated in the Cyanide Management Plan, the Control of Cyanide Addition Within the Leach Circuit Work Instruction, and the Lefroy Mill Operations Specifications.

Cyanide addition rates are reviewed by site metallurgists daily, based upon multiple information sources including Leach & Carbon-in-Pulp (CIP) Tank profiles (Daily Assay Report), online free and WAD Cyanide analysers, Leach & CIP circuit Free CN titrations; daily process control reports analysed by site metallurgists and process control experts; and Weekly cyanide consumption monitoring.

SIGM Process Supervisors and Process Technicians demonstrated a strong understanding of the existing cyanide control strategy and importance of optimising cyanide consumption, consistent with SIGM procedures and work instructions.

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Standard of Practice 4.3:

Implement a c	omprehensive	water n	nanagement	program to	protect	against
unintentional i	releases.					

	oxdot in full compliance with	
The Operation is	\square in substantial compliance with	Standard of Practice 4.3
	\square not in compliance with	

Summarize the basis for this Finding/Deficiencies Identified:

SIGM is in FULL COMPLIANCE with Standard of Practice 4.3: Implement a comprehensive water management program to protect against unintentional releases.

SIGM continue to implement a water management program, utilising a number of complementary management plans, operating manuals and standard operating procedures, including a Probabilistic Water Balance Model, Tailings Management Plan, Water Environmental Performance Standard, Preparing For Significant Rainfall Events Work Instruction, and Heap Leach Solution Management Plan.

SIGM have developed and continue to utilise a comprehensive, probabilistic water balance model, developed by Expert Third Party Consultants.

The existing SIGM GOLDSIM model incorporates all major slurry and water flows between the Processing Plant and the various Tailings Storage Facilities and Pits. Inputs to the model include the 2 year budget tonnage plan, the ore characteristics, water supply constraints, and TSF and Pit survey data. The output of the model is a numerical and graphical representation of the water sources for the mine, and the resultant TSF and Pit levels. The user can then assess when the TSF and Pits will reach capacity, and ensure that the planning pipeline for TSF lifts or new in-pit deposition licences is maintained. This allows the dams to be run while always maintaining the required freeboard.

The water balance model continues to be run by the Processing Superintendent on a quarterly basis, encompassing seasonal simulations spanning the audit period, with outputs entered into a Summary Report issued to the Unit Manager —Processing. The results of the modelling showed no risk of overtopping of impoundments and ponds during the audit period.

SIGM utilise third-party surveying consultants to assess relevant volumes and dimensions for input to the model.



The Probabilistic Water Balance model remains unchanged since the previous recertification audit, other than adjustments for quantities in relation to tailings storage capacity. The model considers the following aspects in a reasonable matter as appropriate for the facilities and environment: the rates at which tailings are deposited into tailings storage facilities; a design storm duration and storm return interval that provides a sufficient degree of probability that overtopping of the pond or impoundment can be prevented during the operational life of the facility; the quality of existing precipitation and evaporation data in representing actual site conditions; solution losses in addition to evaporation, such as the capacity of decant, drainage and recycling systems, allowable seepage to the subsurface; the effects of potential power outages or pump and other equipment failures on the emergency removal of water from a facility; tailings density, borefields water supply, and process water requirements.

SIGM Operating procedures incorporate inspection and monitoring activities to implement the water balance and prevent overtopping of ponds and impoundments and unplanned discharge of cyanide solutions to the environment.

The TSF is inspected 3-4 times daily, and level sensors are installed on most ponds. The quarterly TSF surveys that are used as inputs to the water balance model also provide a check on the 300mm Freeboard requirement. The SIGM TSF's undergo a third-party technical audit on an annual basis.

SIGM ponds and impoundments are designed and operated with adequate freeboard above the maximum design storage capacity determined to be necessary from water balance calculations.

The Preparing For Significant Rainfall Events Work Instruction provides operating steps with a stated purpose of ensuring that the management of water recovery from the surface of Tailings Storage Facilities is controlled and exposure to overtopping of the Decant Return water dams is minimised. The Tailings Management Plan provides detail on how the water balance is implemented and managed. This includes management of water dam levels at TSFs and within the Lefroy Plant, and instruction on how to manage any failure of the leak detection system.

Despite the dormant nature of the Heap Leach Facility, the system continues to be managed within SIGM's water balance and monitoring systems. The Heap Leach Solution Management Plan details procedures to manage and monitor the heap leach water balance. The heap leach ponds and pads are monitored regularly.

TSFs are managed to the Western Australia Arid Climate industry standard minimum of 300 mm freeboard.

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SIGM measures precipitation and compares results to design assumptions, with revision of operating practices as necessary.

SIGM uses Bureau of Meteorology rainfall data for the nearby town of Kambalda, some 20km southeast of site. Rainfall can be updated in the water balance model for probabilistic model execution.

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Standard of Practice 4.4:

Implement measures to protect birds, other wildlife and livestock from adverse effects of cyanide process solutions.

	$oxedsymbol{ec{ox}}$ in full compliance with	
The Operation is	\square in substantial compliance with	Standard of Practice 4.4
	\square not in compliance with	

Summarize the basis for this Finding/Deficiencies Identified:

SIGM is in FULL COMPLIANCE with Standard of Practice 4.4: Implement measures to protect birds, other wildlife and livestock from adverse effects of cyanide process solutions.

SIGM maintains fences and other physical barriers around the perimeter of open water facilities with potential to exceed 50mg/l, and several dormant ponds with relatively low WAD CN concentrations remain fenced.

SIGM continues to implement an alternative protection strategy for birds and other wildlife at the TSF when WAD cyanide levels in tailings exceed 50mg/l. This alternative strategy is based on the maintenance of elevated salinity levels (i.e. >50,000mg/l total dissolved solids) as a deterrent to wildlife, and referred to as a hypersaline protective mechanism. SIGM have maintained Code certification related to this Standard of Practice since initial certification in March 2007 primarily on the basis of the hypersaline protective mechanism. This strategy is achieved in concert with the operation of a cyanide destruction circuit to reduce cyanide concentrations in the tailings slurry prior to discharging to the tailings storage facilities.

SIGM achieved initial Code certification and subsequent recertifications with tailings discharge exceeding 50 mg/L WAD cyanide concentration, via the peer-reviewed and accepted protective mechanism of tailings hypersalinity (>50 000 mg/L total dissolved solids). The study that determined the protective mechanism was Minerals & Energy Research Institute of Western Australia M398 — Cyanide Ecotoxicity at Hypersaline Gold Operations (M398). The study and peer review reports contain operating parameters that are considered compliance conditions. These primarily comprise a comprehensive chemical monitoring of designated operating parameters, and routine daily and intensive third-party wildlife monitoring.



With the exception of numerical exceedances discussed below, SIGM has continued to operate in accordance with site specific Operating Conditions required to demonstrate the continued existence of the hypersaline protective mechanism.

SIGM's existing operating conditions for salinity and WAD cyanide concentration in final tailings slurry discharge (Spigot) consist of a minimum salinity concentration of 50,000 mg/l total dissolved solids (TDS), a maximum cyanide concentration of 132 mg/l WAD cyanide, and a maximum 80th percentile cyanide concentration of 112 mg/l WAD cyanide, which has been demonstrated by a peer-reviewed scientific study to be protective of wildlife.

Likewise, the existing operating conditions for salinity and WAD cyanide concentration in decant solution (Supernatant) consist of a minimum salinity concentration of 50,000 mg/l total dissolved solids (TDS) and a maximum cyanide concentration of 65 mg/l WAD cyanide, which has been demonstrated by a peer-reviewed scientific study to be protective of wildlife. No maximum 80th percentile cyanide concentration conditions exist for decant solution (Supernatant).

In addition to the numerical operating conditions, addition conditions exist for vegetation suppression in and near cyanide-bearing water bodies, minimisation of infrastructure in the vicinity of cyanide-bearing habitats, expert intensive wildlife and chemistry monitoring, carcass detection investigation, QA/QC of laboratory analytical analysis, training of staff in wildlife observation, and bat monitoring.

SIGM continue to utilise a Third Party Expert Environmental and Wildlife Consultant to assess compliance with all operating conditions. Assessments are done on a quarterly frequency to assure ongoing compliance is maintained, and any items of concern are rapidly addressed. SIGM has demonstrated high compliance levels with all operating conditions during the audit period.

Four maximum/minimum exceedances occurred during the audit period. Two exceedances of the final tailings slurry discharge (Spigot) maximum cyanide concentration, one exceedance of the decant solution (Supernatant) maximum cyanide concentration, and one exceedance of the decant solution (Supernatant) minimum salinity concentration. In each case, the exceedance was rapidly identified and immediate actions were implemented to restore the concentration to compliance, resulting in the exceedances being of transitory nature. All exceedances were captured within SIGM's incident reporting system, and resulting remedial actions implemented. No wildlife mortalities at corresponding open waters were observed on the exceedance dates or those immediately following.

No exceedances occurred for seasonally assessed 80th percentile WAD cyanide concentration conditions during the audit period.



No significant wildlife mortality in open waters was observed via either local observation or intensive expert third party wildlife monitoring during the audit period.

There were no recorded wildlife mortalities where cyanosis was identified as the cause of death.

There are no active heap leach facilities at SIGM.

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Standard of Practice 4.5:

Implement measures to protect fish and wildlife from direct and indirect discharges of cyanide process solutions to surface water.

	$oxedsymbol{ec{ox}}$ in full compliance with	
The Operation is	\square in substantial compliance with	Standard of Practice 4.5
	\square not in compliance with	

Summarize the basis for this Finding/Deficiencies Identified:

SIGM is in FULL COMPLIANCE with Standard of Practice 4.5: Implement measures to protect fish and wildlife from direct and indirect discharges of cyanide process solutions to surface water.

SIGM continue to have no direct or indirect discharge to surface water from any defined cyanide facility.

Inspection records for the cyanide facilities show no indication of indirect discharge of cyanide process solution to nearest surface water, which is a hypersaline ephemeral lake with no defined beneficial use.

SIGM has a licence to discharge de-watering mine water to the adjacent hypersaline ephemeral lake (Lake Lefroy). The mine water system is completely separate from all cyanide facilities. SIGM routinely monitors this discharge for several analytes including WAD cyanide concentration. Monitoring results are reported to the applicable legislative jurisdiction and within the SIGM Annual Environmental Report. WAD cyanide monitoring results remain well below 0.5mg/l, and predominantly below the WAD cyanide detection limit.

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Standard of Practice 4.6

Standard of Practice 4.6:

The Operation is

Implement measures designed to manage seepage from cyanide facilities to protect
the beneficial uses of ground water.
☑ in full compliance with

☐ in substantial compliance with

☐ not in compliance with

Summarize the basis for this Finding/Deficiencies Identified:

SIGM is in FULL COMPLIANCE with Standard of Practice 4.6: Implement measures designed to manage seepage from cyanide facilities to protect the beneficial uses of ground water.

SIGM implements specific water management or other measures to manage seepage to protect the beneficial use(s) of ground water beneath and/or immediately down gradient of the operation.

Seepage water management measures include tailings deposition techniques, monitoring bores, and recovery bores. The existence of groundwater monitoring bores, and production bores was verified during field inspections.

There are no identified beneficial uses of groundwater beneath or immediately down gradient of the operation.

The numerical standard for cyanide concentration in groundwater established by the applicable jurisdiction, the Western Australian Government Department of Water and Environmental Regulation, is 0.5 mg/l WAD CN.

SIGM monitor and report ground water quality on a quarterly basis to the local jurisdiction — the Western Australian Government Department of Water and Environmental Regulation. Groundwater quality, including WAD cyanide concentration, is also reported on an annual basis within SIGM's Annual Environmental Report, which is submitted to the Western Australian Government Department of Water and Environmental Regulation.

The cyanide concentrations in groundwater monitoring bores continue to be below detection limit in most instances. No exceedances of the groundwater WAD CN limit of 0.5mg/l occurred during the audit period.



SIGM has evaluated the potential impacts to worker health and the beneficial uses of ground water of the use of mill tailings as underground backfill, and have been evaluated and measures as necessary to address them.

SIGM operate two underground backfill plants - Hamlet North Paste Plant and Invincible Paste Plant. Neither is classified as a cyanide facility, as no streams contain cyanide concentrations greater than 0.5mg/I WAD cyanide. The make-up water for the paste backfill is mine dewatering water, which is independent of the processing plant and does not contain cyanide.

Both Paste Plants use reclaimed dry tailings from long-dormant TSFs. Reclaimed tailings are tested for WAD cyanide on a monthly frequency. All tailings sampling for the period 08 April 2019 - 16 June 2021, comprising a total of 182 separate samples, returned assay results of <0.5mg/kg WAD CN.

Seepage from the operation has not caused cyanide concentrations of ground water to rise above levels protective of beneficial use.

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Standard of Practice 4.7:

Provide spill preven	tion or containment measures for pro	cess tanks and pipelines.
	$\ensuremath{\square}$ in full compliance with	
The Operation is	\square in substantial compliance with	Standard of Practice 4.7
	\square not in compliance with	

Summarize the basis for this Finding/Deficiencies Identified:

SIGM is in FULL COMPLIANCE with Standard of Practice 4.7: Provide spill prevention or containment measures for process tanks and pipelines.

SIGM continue to provide a number of measures for spill prevention or containment for all cyanide unloading, storage and process solution tanks.

No cyanide mixing tanks exist at SIGM.

SIGM utilise impermeable concrete secondary containment bunds for process solution tanks, including the Cyanide Storage Tanks and Carbon-In-Leach Process Tanks.

SIGM's Carbon-In-Leach process tanks have concrete ring beam foundations with no impermeable barrier between them and the ground. SIGM continue to implement a risk-based tank inspection program and leak detection system as spill prevention and detection measures.

The leak detection system consists of five radial leak detection pipes beneath each Tank, directing any solution to a valved outlet port at the external perimeter of the ring beam. All ports are inspected, and sampled if flow is detected, on a monthly frequency.

Other spill prevention measures include, but are not limited to: weekly maintenance tank area inspections; monthly operations inspections of tank areas, including the Cyanide Storage Area and CIL Tank Area; detailed internal and external tank inspection and refurbishment by Third Party Specialist Engineers; and preventative maintenance concrete inspections.

The Cyanide Unloading Area, including the Cyanide Storage Tanks, is audited annually by Australian Gold Reagents, SIGM's Cyanide Producer/Transporter.

Secondary containments for cyanide unloading, storage, 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.



Cyanide storage tanks have secondary containment concrete bunding suitable to hold at 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.

Cyanide process tanks utilise concrete secondary containments and an unlined Containment Pond (Last Chance Pond), which together are suitable 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. SIGM maintain volume calculation records.

SIGM continues to implement procedures to prevent discharge to the environment of any cyanide solution or cyanide-contaminated water that is collected in a secondary containment area.

Relevant procedures include Operator Housekeeping Requirements Work Instruction, Cyanide Ground Spill Decontamination Work Instruction, Cyanide Management Plan, Lefroy Tailings Management Plan, Cyanide Emergency Response Plan, Heap Leach Solution Management Plan, and Work Instruction Power Outage Immediate Action and Critical Equipment Restart.

Any cyanide solution or cyanide-contaminated water that collects in secondary containments is removed in a timely manner via sump pumps, which returns process solution to the Process Plant, in order to prevent unintentional release to the environment.

Two spillage events resulted in leach tailings process slurry entering the Last Chance Pond during the audit period. The volumes of spillage for the occurrences were 0.50 cubic metres and 0.75 cubic metres respectively. Clean up of spillage and decontamination occurred in accordance with the SIGM Cyanide Ground Spill Decontamination procedure.

SIGM provides spill prevention or containment measures for all cyanide process solution pipelines to collect leaks and prevent releases to the environment.

Process solution pipelines within the Process Plant have secondary containment primarily via concrete bunds, and in some cases via pipe-within-pipe containment, with potential spillage draining to a concrete bunded area. Pipe sections which traverse secondary containment bund areas were observed to have secondary containment via HDPE sheaths or collection trays, with potential spillage draining to secondary containment bunds.

Daily TSF inspections include all pipelines, ponds, pumps and seepage control. TSF and decant return pipelines are located within an earth trench. The trench is equipped with emergency sumps at low points along the delivery route to the TSF's. Daily pipe inspections are conducted and logged. Return dam solutions are routed in the same



trenches as the residue lines. All TSF pipelines are included within the SAP planned maintenance systems. Process Solution Pipelines between the Processing Plant and the TSF have pressure sensors and flowmeters that provide leak detection via differential flow/pressure monitoring.

A section of the pipeline corridor between the Processing Plant and the TSF, containing process solution pipelines for process plant tailings slurry and decant return water, was observed to be buried. The length of the buried pipeline corridor was estimated at approximately 80 metres. Examination of civil drawings showed that the buried pipelines were located within a concrete box culvert. SIGM have acted in a timely fashion to dig trenches to provide visual leak detection, and have assayed soil samples at three locations along the buried section, with results showing no indication of WAD cyanide contamination, with all assays returning results below the detection limit of 0.1mg/kg WAD CN.

SIGM sampling of soil beneath the scats stockpile continues to show no indication of contamination, with all assay results being below the detection limit of 0.1mg/kg WAD CN.

No areas exist where cyanide pipelines present a risk to surface water, as no cyanide pipelines exist in areas that may present such risk.

Cyanide tanks and pipelines are constructed of materials compatible with cyanide and high pH conditions. The material of construction is mild steel for tanks and thickeners, with internal corrosion and wear resistant linings. Mild steel, High Density Polyethylene, and in some cases stainless steel is used for pipelines.

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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.

	$oxedsymbol{ootnotesize{\sigma}}$ in full compliance with	
The Operation is	\square in substantial compliance with	Standard of Practice 4.8
	\square not in compliance with	

Summarize the basis for this Finding/Deficiencies Identified:

SIGM is in FULL COMPLIANCE with Standard of Practice 4.8: Implement quality control/quality assurance (QA/QC) procedures to confirm that cyanide facilities are constructed according to accepted engineering standards and specifications.

SIGM implement quality control and quality assurance programs during design and construction of all new cyanide facilities and modifications to existing facilities, including cyanide unloading, storage, and other cyanide facilities.

The two new facilities constructed during the audit period were the Cyanide Destruct Circuit and the Carbon Safety Screen Upgrade. Quality assurance and quality control programs were implemented for the construction of both new facilities. Stamped and signed As-built drawings exist for both newly constructed cyanide facilities.

The quality control and quality assurance programs for the newly constructed cyanide facilities address the suitability of materials and adequacy of soil compaction for earthworks as applicable for the identified newly constructed facilities.

The QA/QC records for the newly constructed facilities include inspection and test plans, soil compaction test results, civil and concrete material test certificates, welding records, non-destructive testing records, painting and protective coating quality control inspection reports, and valve and pressure vessel certificates.

Quality control and quality assurance records been retained for cyanide facilities, as verified by observation of site records, and including the two identified newly constructed facilities during the audit period.

Appropriately qualified personnel have reviewed cyanide facility construction and provided documentation that the facility has been built as proposed and approved.

Cyanide Facility construction at SIGM has been reviewed by appropriately qualified personnel, including construction project managers, certified Civil, Mechanical and

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Corrosion Engineers, QA/QC Engineers, and Vendor engineers. Documentation exists verifying that facilities have been built as proposed and approved.

Relevant documentation includes Manufacturer's Data Report, inspection and test plan (with engineering and QA/QC completion sign-off), certificates of structural integrity, and stamped and signed as-built drawings.

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Standard of Practice 4.9:

Implement monitoring surface and ground w	ng programs to evaluate the effects on water quality.	f cyanide use on wildlife,
The Operation is	☑ in full compliance with☐ in substantial compliance with☐ not in compliance with	Standard of Practice 4.9

Summarize the basis for this Finding/Deficiencies Identified:

SIGM is in FULL COMPLIANCE with Standard of Practice 4.9: Implement monitoring programs to evaluate the effects of cyanide use on wildlife, surface and ground water quality.

SIGM has developed and continues to implement a range of written standard monitoring procedures, as summarised in the Cyanide Management Plan.

Examples of procedures and Work Instructions include Wildlife Observations Work Instruction, Surface and Groundwater Monitoring Procedure, WAD CN Monitoring Work Instruction, and Water Sample Handling and Preservation Work Instruction.

The sampling and analytical protocols and wildlife monitoring procedures have been developed by appropriately qualified personnel, being Professionals holding tertiary qualifications in either Chemistry, Environmental Science, or Metallurgy.

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

Sampling and observation conditions such as weather, livestock/wildlife activity, and anthropogenic influences are documented in writing, including water sampling conditions that may affect analyses.

SIGM continue to monitor for cyanide in ground water and surface water down gradient of the site.

SIGM continue to have no direct discharge of process solution to surface water from any defined cyanide facility.

SIGM inspect for and record wildlife mortalities related to contact with and ingestion of cyanide solutions.



SIGM continue to undertake wildlife monitoring including specific monitoring for wildlife mortalities at the Tailings Storage Facilities and the process water ponds.

SIGM records wildlife incidents and mortalities via an electronic event reporting and safety management software database.

SIGM record, investigate and document wildlife mortalities, including additional analysis and review by Third Party Wildlife Experts.

Monitoring at SIGM continues to be conducted at frequencies adequate to characterize the medium being monitored and to identify changes in a timely manner.

SIGM monitoring frequency is developed based upon legislative licence conditions, expert third party advice, and also upon specific studies undertaken at SIGM.

Daily wildlife monitoring continues to be carried out by trained SIGM personnel, and intensive diurnal third party wildlife monitoring, including acoustic bat monitoring, continues to be carried out quarterly.

Groundwater quality around active and inactive Tailings Storage Facilities are monitored quarterly, and around inactive Heap Leach Pads on a 6 month frequency, and includes WAD cyanide.

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PRINCIPLE 5 - DECOMMISSIONING:

Protect communities and the environment from cyanide through development and implementation of decommissioning plans for cyanide facilities

Standard of Practice 5.1:

•	th, wildlife and livestock.	oning of cyanide facilities to
	$oxedsymbol{arDelta}$ in full compliance with	
The Operation is	\square in substantial compliance with	Standard of Practice 5.1
	\square not in compliance with	

Summarize the basis for this Finding/Deficiencies Identified:

SIGM is in FULL COMPLIANCE with Standard of Practice 5.1: Plan and implement procedures for effective decommissioning of cyanide facilities to protect human health, wildlife and livestock.

SIGM has developed written procedures to decommission cyanide facilities at the cessation of operations.

SIGM continue to maintain and revise its closure and decommissioning plans over the period of certification. These plans include the plant, tanks, TSF, heap leach pads, piping, pumps and valves.

The SIGM Decontamination and Decommissioning Plan includes an implementation schedule for decommissioning activities.

SIGM has developed a site wide Mine Closure Plan and a Decontamination and Decommissioning Plan for cyanide facilities which contains implementation schedules for decommissioning activities.

SIGM review its decommissioning procedures for cyanide facilities during the life of the operation and revise them as needed.

Cost estimates specifically for cyanide facilities are provided in the SIGM Decontamination and Decommissioning Plan.

SIGM review their Decontamination and Decommissioning Plan annually, and their Mine Closure Plan triennially.



The latest update of the Decontamination and Decommissioning Plan includes the cyanide destruction plant consideration of closure works undertaken of the Heap Leach Pad process infrastructure.

SIGM have complied with their review obligations within the audit period.

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Standard of Practice 5.2:

Establish an assura decommissioning a	nce mechanism capable of fully fundin ctivities.	ng cyanide related
	$\ensuremath{\square}$ in full compliance with	
The Operation is	$\hfill\Box$ in substantial compliance with	Standard of Practice 5.2
	\square not in compliance with	

Summarize the basis for this Finding/Deficiencies Identified:

SIGM is in FULL COMPLIANCE with Standard of Practice 5.2: Establish an assurance mechanism capable of fully funding cyanide related decommissioning activities.

SIGM has developed an estimate of the cost to fully fund third party implementation of the cyanide-related decommissioning measures as identified in its closure plan, using a closure plan model. Detailed costings for closure of cyanide facilities are estimated by SRK using their costings model 'Standardised Reclamation Cost Estimator'. Costings are maintained in a spreadsheet: SIGM – DOA/LOM 2020 – Reclamation Plan.

SIGM review and update the cost estimate at least every five years and when revisions to the plan are made that effect cyanide-related decommissioning activities.

SIGM continue to revise decommissioning costs using a third party review of decommissioning costs by consultants on an annual basis.

SIGM participate in the financial mechanism required by the applicable jurisdiction to cover the estimated costs for cyanide-related decommissioning activities as identified in its decommissioning and closure strategy.

The Government of Western Australia replaced mine site bonds with a Mining Rehabilitation Fund (MRF) in 2014. The Fund is managed by the Department of Mines, Industry Regulation and Safety (DMIRS). MRF imposes an annual levy of 1% of the estimated closure costs for rehabilitation of the existing disturbance on tenements. Participation in the Mining Rehabilitation Fund and payment of the levy is mandatory. SIGM participates fully in the Government of Western Australia's Mine Rehabilitation Fund by paying annual levies that take into account the degree of disturbance on the SIGM leases and closure costs.

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PRINCIPLE 6 - WORKER SAFETY:

Protect workers' health and safety from exposure to cyanide.

Standard of Practice 6.1:

Identify potential cya eliminate, reduce or o	nide exposure scenarios and take me control them.	easures as necessary to
The Operation is	☑ in full compliance with☐ in substantial compliance with☐ not in compliance with	Standard of Practice 6.1

Summarize the basis for this Finding/Deficiencies Identified:

SIGM is in FULL COMPLIANCE with Standard of Practice 6.1: Identify potential cyanide exposure scenarios and take measures as necessary to eliminate, reduce and control them.

SIGM 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 minimize worker exposure.

Procedures and work instruction have been developed for cyanide-related tasks such as cyanide unloading, plant operations, entry into confined spaces, spill management and equipment decontamination prior to maintenance. These are stored electronically within the SIGM document control system.

The SIGM integrated management system consists of primarily three levels of documentation, standards, plans and procedures /work instructions. SIGM has a number of written procedures and work instructions describing how all commonly performed cyanide-related tasks are to be conducted to minimise worker exposure, based on systematic risk assessment.

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

The operation's safety management systems are effective in identifying potential cyanide hazards and has developed effective hazard control measures. An example of this is in the area of confined space where there is a Corporate standard, a site-based



procedure and risk assessments and work instructions for particular tank entries for example.

All SIGM operating procedures and work instructions for cyanide related activities identify PPE requirements, provide specific PPE instructions where appropriate and identify hazards and health and safety considerations. Procedures and work instructions include a task preparation section that includes pre-work inspections. Prework inspections and preparation are contained in the procedure steps, for example steps 1 to 4 of SIG-PRO-WI068 RE003-Cyanide Unloading/Delivery. All personnel in operational areas are trained in field risk assessment techniques such as Take5's and Job Hazard Analyses (where required).

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

SIGM has a Management of Change (MOC) system to trigger and document reviews of proposed process and operational changes and new installations for any potential impacts on worker health and safety. Sign off by a representative of the Safety Department is required for MoC reviews where a change in risk to workers is identified in the Risk Assessment. The MOC system is managed electronically through InControl.

SIGM solicits and actively considers worker input in developing and evaluating health and safety procedures, and when new cyanide related procedures are developed or periodically reviewed.

This consultation includes discussing the new or reviewed procedures in monthly Site Safety Committee meetings with safety representatives from all departments, management meetings, safety handover meetings and safety meetings crew changeover days. Formal and informal safety discussions are also held as part of Task observations, task observation performed by supervisors (TOPS) and Job Hazard Analysis (JHA) development.

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Standard of Practice 6.2:

periodically evaluat	te the effectiveness of health and safe	ty measures.
	☑ in full compliance with	
The Operation is	\square in substantial compliance with	Standard of Practice 6.2
	\square not in compliance with	

Operate and monitor cyanide facilities to protect worker health and safety and

Summarize the basis for this Finding/Deficiencies Identified:

SIGM is in FULL COMPLIANCE with 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.

SIGM has determined the appropriate pH for limiting the evolution of hydrogen cyanide gas during production activities. No cyanide mixing facilities exist at SIGM.

SIGM operates its Carbon-In-Leach facilities in the pH range of 9.4 to 9.6 to limit the evolution of hydrogen cyanide gas. The hypersalinity of locally available bore water limits the practical extent to which the slurry pH can be elevated. Daily specific gravity (SG) testing of the process water is undertaken to assist in determining the target pH and quicklime dosing rates in the Carbon-In-Leach circuit. SIGM undertakes routine activities to optimise pH dosing and control, including determination of process water salinity, process water specific gravity, protective alkalinity, and lime consumption. The SIGM Processing Plant utilises both manual and automatic pH measurement, with automatic pH probes installed within Carbon-In-Leach tanks. Automated control and lime dosing is implemented via process control instrumentation and dosing valves and displayed within the Plant Control operator interface system. The automated analysis is verified via manual pH determinations.

Access is restricted to the processing plant areas, with no one permitted to enter the processing plant area until the necessary inductions have been completed which include cyanide awareness training or they are escorted by a fully inducted person.

SIGM uses fixed (ambient) and personal hydrogen cyanide monitors to verify that controls are adequate to limit worker exposure to hydrogen cyanide gas from process slurries and solutions and confirm that controls are adequate to limit worker exposure to 10 parts per million on an instantaneous basis and 4.7 parts per million continuously over an 8-hour period. Red emergency flashing beacons are activated if the measured hydrogen cyanide concentration exceeds 4.7ppm.



No solid cyanide is used at SIGM for ore processing, and hence no monitoring occurs for cyanide dust.

SIGM procedures require a personal hydrogen cyanide monitor to be carried by all workers or visitors entering all areas of the processing facility where there is a potential for hydrogen cyanide gas to be present including on the Carbon-In-Leach tanks, elution area, pump cell tanks, trash and carbon safety screens and in the tailings thickener area. Signage reminding personnel that they are entering these restricted areas remains in place.

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

SIGM has identified specific hydrogen cyanide gas risk areas as the top of the Carbon-In-Leach tanks and pump-cell tanks, trash screens and the tailings thickener area. Respirators are required on top of the pump-cell tanks and the carbon safety screens area. These areas have been identified as having potential to expose workers to hydrogen cyanide gas in excess of 10ppm on an instantaneous basis and 4.7ppm continuously over an 8-hour period.

If a personal hydrogen cyanide monitor reaches 4.7ppm, an audible alarm is initiated and the worker is required to notify other workers in the area and they must all leave the area. The shift supervisor is to be notified by the end of the shift, and if the exceedance is above 20 ppm the area must be barricaded.

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

Fixed hydrogen cyanide monitors are calibrated on site by the manufacturer on a six-monthly basis. Personal hydrogen cyanide monitors are bump tested on site at least once per swing. If a personal hydrogen cyanide monitor fails a calibration test, it is taken out of use and serviced by the manufacturer. The manufacturer's monotox docking station is tested and calibrated on site in accordance with manufacturer's directions.

Warning signs are placed at appropriate locations where cyanide is used. Signage advises workers that cyanide is present, and that smoking, open flames and eating and drinking are not allowed, and that, if necessary, suitable personal protective equipment must be worn.

High strength cyanide solution dyed for clear identification.



All cyanide solutions deliver to site contain a Carmoisine red dye added to the solution. Consequently, all high strength cyanide solutions on site are identifiable by this red dye.

Low pressure combination Safety shower/ eye wash stations and dry powder fire extinguishers are located at strategic locations throughout the operation and are maintained, inspected and tested on a regular basis.

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

Storage tanks containing high strength (>1%) cyanide solution are identified by a painted lilac band. All piping carrying high strength cyanide solution is labelled "CYANIDE" and is painted lilac in colour. The "CYANIDE" label includes an arrow showing the flow direction.

SIGM also identifies lower strength cyanide process tanks and piping to alert workers of their contents and direction of flow. This is achieved via a combination of signage, labelling, training, and inductions.

MSDS, first aid procedures or other informational materials on cyanide safety in the language of the workforce are available in areas where cyanide is managed.

SIGM maintains current English language MSDS and first aid procedures at strategic site locations.

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 need revising.

In the event of cyanide exposure incidents, SIGM incident investigation procedures include the requirement to evaluate the establish root causes of incidents and the sufficiency of operational controls including procedures and training materials.

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Standard of Practice 6.3:

worker exposure to	cyanide.	rocedures to respond to
	$\ensuremath{\square}$ in full compliance with	
The Operation is	\square in substantial compliance with	Standard of Practice 6.3
	$\hfill\square$ not in compliance with	

Summarize the basis for this Finding/Deficiencies Identified:

SIGM is in FULL COMPLIANCE with Standard of Practice 6.3: Develop and implement emergency response plans and procedures to respond to worker exposure to cyanide.

SIGM has water, oxygen, a resuscitator, and radio and alarm system for communication and emergency notification readily available for use at the cyanide unloading and storage locations and elsewhere in the plant.

SIGM has a defined raising of emergency procedure. Audible alarms are established through the process plant to raise the alarm if high hydrogen cyanide gas or other emergencies are triggered, as well as local alarm displays within the Plant Control operator interface system. All personnel carry two-way radios so they can readily report on emergencies. There is also a PA system allowing personnel to raise the alarm.

Potable water, oxygen and resuscitators are located at the cyanide unloading and storage area, Process Plant Control Room, and elsewhere in the plant. The cyanide antidote kit, which utilises Hydroxycobalamine, is stored in the nearby Process Plant/Admin Medical Centre.

SIGM inspects its first aid equipment monthly to ensure that it is available when needed; that materials such as cyanide antidotes are stored and/or tested as directed by their manufacturer; and replaced on a schedule to ensure that they will be effective when needed.

The Cyanide Kit Checklist is completed on a monthly basis by the Site Registered Nurse. The medical oxygen cylinders, resuscitators, ambulance equipment, and cyanide kit are checked on a monthly basis.

The cyanide response equipment located within the processing area is inspected monthly including oxygen resuscitators with actions identified as required.

All in inspection reports are stored in hard copy and/or electronically.

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A third party expert Medical Contractor services resuscitators, and medical equipment within the Medical Centre including the ambulance, on an annual basis.

On call nursing staff are provided with competency-based training in the use of the cyanide antidote kit and external support by phone from Healthwatch in the administration of cyanide antidotes.

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

SIGM has a Cyanide Emergency Response Plan (CERP) and a site wide Emergency Crisis Management Plan (ECMP) which contain first aid procedures to respond to worker exposure to cyanide.

SIGM has its own on-site capability to provide first aid or medical assistance to workers exposed to cyanide.

SIGM has a Medical Centre adjacent to the administration building next to the Process Plant. It is a single bed facility and has medications, medical consumables, antidote kits, and advance airway management kits. A registered nurse on 24 hour call is on site at all times, with ancillary support from Emergency Response Team medics with training in advanced first aid. The operation's emergency response resources for cyanide exposures include a dedicated ambulance adjacent to the Processing Plant which contains a trauma kit, oxygen resuscitator, and also airway adjuncts for medical administration of oxygen by the Registered Nurse and/or Emergency Response Team medics.

The cyanide antidote is Hydroxycobalamine, which is held under the care of the Registered Nurse in the Medical Centre. The cyanide antidote is only administered under the supervision of the site registered nurse, and in consultation with nominated off-site support from medical doctors from Health Watch. SIGM also has a document Standing Orders for the Treatment of Cyanide Exposure which is to be followed if a cyanide antidote is to be administered.

SIGM has developed procedures to transport workers exposed to cyanide to locally available qualified off site medical facilities.

Transportation of a cyanide exposure patient to a medical facility is considered in the Cyanide Emergency Response Plan. The procedure addresses transport of a cyanide exposure casualty to the nearest hospital.

The procedure includes the following elements: casualty decontamination, first aid by first responder, cyanide exposure emergency response guidance chart, personnel protective equipment, medical equipment, medical centre treatment, and transporting patients, including personnel protective equipment and medical equipment required during casualty transport.



SIGM has made formalized arrangements with local hospitals, clinics, etc., so that these providers are aware of the potential need to treat patients for cyanide exposure. The operation is confident that the medical facility has adequate, qualified staff, equipment and expertise to respond to cyanide exposures.

SIGM has a formalised arrangement with Kalgoorlie Hospital which has been notified of the potential for cyanide-related exposures. SIGM participates in emergency planning with off-site agencies through the Kambalda Local Emergency Management Committee (LEMC) of which Kambalda St Johns, the Shire of Coolgardie and Kambalda Police and Fire service are a part. Meetings are regularly held and attended by SIGM representatives.

SIGM conducts mock emergency drills periodically to test response procedures for various cyanide exposure scenarios. Lessons learned from the drills are incorporated into response planning. The drills involve emergency response personnel, plant personnel and medical staff.

Emergency Response Debriefs are conducted following each drill to identify deficiencies and lessons to be learnt, with subsequent incorporation into response planning.

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PRINCIPLE 7 - EMERGENCY RESPONSE:

Manage Protect communities and the environment through the development of emergency response strategies and capabilities.

Standard of Practice 7.1:

Prepare detailed em	ergency response plans for potential	cyanide releases.
The Operation is	☑ in full compliance with☐ in substantial compliance with☐ not in compliance with	Standard of Practice 7.1
Summarize the basi	s for this Finding/Deficiencies Identif	ied:

SIGM is in FULL COMPLIANCE with Standard of Practice 7.1: Prepare detailed emergency response plans for potential cyanide releases.

SIGM has developed a Cyanide Emergency Response Plan to address potential accidental releases of cyanide.

SIGM has a Cyanide Emergency Response Plan (CERP) and the site wide Emergency Crisis Management Plan (ECMP) to guide responses to cyanide emergencies. The Cyanide Emergency Response Plan provides additional detail to the Emergency Crisis Management Plan specifically for responding to cyanide related emergencies. SIGM also has a Lefroy Mill Emergency Management Plan and a Tailings Management Plan which contain area specific response planning to a cyanide related emergencies.

The Cyanide Emergency Response Plan considers the following potential cyanide failure scenarios appropriate for its site-specific environmental and operating circumstances: Standard Hazardous Chemical Response (Including Cyanide) relevant to all cyanide scenarios, Catastrophic Release of HCN gas > 50ppm for scenarios; Transportation accidents, Fires Involving Cyanide and Liquid Sodium Cyanide Spill outside Bunding. SIGM's cyanide supply contracts with AGR specifies the responsibilities and response actions for transport related cyanide emergencies. SIGM has developed and implemented a cyanide transport incident response pre incident plan for scenarios that may occur once trucks are onsite.

The Lefroy Tailings Management Plan (SIG-PRO-PL002) contains the following Emergency Response Procedures relating to the Tailing Storage Facility and associated pipes, valves and pumps in Section 4: Over Topping of Water Storage Dams scenario;



Tailings and Return Water Line Systems scenario; and Tailings Storage Embankment Failure.

The WAD CN Monitoring Work Instruction (SIG-PRO-WI094) contains the pre-incident plan for Cyanide Destruct Plant Not Functioning, including detailed operating instructions, notification and communication, escalation of response, and shutdown of the process plant if required.

The Cyanide Emergency Response Plan and Emergency and Crisis Management Plan are reviewed every two years and have been reviewed and revised where appropriate over the period of certification.

The SIGM Emergency and Crisis Management Plan (ECMP), Cyanide Emergency Response Plan (CERP), and the Lefroy Mill Emergency Plan describe specific emergency response actions appropriate for the anticipated emergency situations.

The SIGM Cyanide Emergency Response Plan, Emergency Crisis Management Plan and Lefroy Mill Emergency Plan all describe response actions for clearing site personnel from the area of exposure. Mitigation of cyanide releases is considered in the Cyanide Spill Ground Decontamination Work Instruction which provides a procedure for clean-up and decontamination of areas subject to a cyanide spill. It includes safety considerations and PPE required.

The SIGM Cyanide Emergency Response Plan contains a Pre-Incident Plan for a cyanide related injury and a Pre-Incident Plan for Liquid Spills Outside a Bunded Area. It includes a flowchart for first aid response. The use of cyanide antidotes is described in the Standing Orders for the Treatment of Cyanide Exposure which is located in the Medical Facility.

Future prevention of cyanide releases following an incident is addressed through the Hazard / Incident Reporting And Investigation Guidelines which include methods to determine underlying causes of an incident and to implement additional controls or actions to prevent or reduce the likelihood of recurrence.

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Standard of Practice 7.2:

Involve site personne	el and stakeholders in the planning pr	ocess.
The Operation is	☑ in full compliance with☐ in substantial compliance with	Standard of Practice 7.2
·	\square not in compliance with	

Summarize the basis for this Finding/Deficiencies Identified:

SIGM is in FULL COMPLIANCE with Standard of Practice 7.2: Involve site personnel and stakeholders in the planning process.

SIGM involves its workforce and stakeholders, including potentially affected communities, in the cyanide emergency response planning process.

SIGM's workforce continue to be involved in the emergency planning process, including participation in annual Emergency Management Plan reviews and mock drill exercises.

SIGM also involves workers and provides avenues for feedback and discussion on cyanide emergency response planning in a number of other ways including through monthly Safety meetings and daily tool box meetings that discuss cyanide safety and environment incidents reviews of plans and procedures; risk assessment sessions; plant inductions; training in core procedures including cyanide hazard awareness; supervisor training including cyanide emergency first response.

SIGM has made potentially affected communities aware of the nature of their risks associated with accidental cyanide releases, and consulted with them directly or through community representatives regarding appropriate communications and response actions.

Examples of consultation include local community forum meetings, engagement with local Aboriginal groups, and participation in local shire and emergency response committees.

SIGM has involved local response agencies such as outside responders and medical facilities in the cyanide emergency planning and response process.

SIGM is a member of the Kambalda Local Emergency Committee which provides a mechanism for SIGM to discuss and seek input to SIGM emergency response plans. The Local Emergency Management Committee includes Kambalda St Johns, the Shire of Coolgardie, and Kambalda Police and Fire service. Local Emergency Management



Committee meetings are held regularly and attended by a representative from SIGM, typically the Emergency Services Officer. Mock drill with LEMC and SIGM participants are held periodically and provide a means of testing emergency response procedures.

SIGM has a signed Memorandum of Understanding with Kalgoorlie Health Campus (Kalgoorlie Hospital) for the treatment of patients suffering from exposure or suspected exposure to cyanide. SIGM also has a signed Memorandum of Understanding with the Government of Western Australia Department of Fire and Emergency Services for the mutual support in planning and responding to emergency Incidents within the Kambalda area and environs.

SIGM engage in consultation or communication with stakeholders to keep the Emergency Response Plan current.

SIGM engage with the Local Emergency Management Committee membership through quarterly meetings and periodic mock drills. The Local Emergency Management Committee includes the Shire of Coolgardie, Kambalda and Coolgardie Police, Government of Western Australia Department of Fire and Emergency Services, St Johns and other local mining operations.

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Standard of Practice 7.3:

Designate appropriat emergency response.	e personnel and commit necessary e	quipment and resources for
	☑ in full compliance with	
The Operation is	☐ in substantial compliance with☐ not in compliance with	Standard of Practice 7.3

Summarize the basis for this Finding/Deficiencies Identified:

SIGM is in FULL COMPLIANCE with Standard of Practice 7.3: Designate appropriate personnel and commit necessary equipment and resources for emergency response.

The SIGM Emergency Response Plan and the SIGM Cyanide Management Plan, in relation to cyanide elements of the plans, designate primary and alternative emergency response coordinators who have explicit authority to commit the resources necessary to implement the plans; identify emergency response teams, require appropriate training for emergency responders, include call-out procedures and references to 24-hour contact information for the coordinators and response team members; specify the duties and responsibilities of the coordinators and team members; list emergency response equipment, including personal protection gear, on site; include procedures to inspect emergency response equipment to ensure its availability; and describe the role of outside responders, medical facilities and communities in the emergency response procedures.

SIGM have confirmed that outside entities included in the Emergency Response Plan are aware of their involvement and are included as necessary in mock drills or implementation exercises.

Outside entities are familiar with SIGM's Cyanide Emergency Response Plan and Emergency Crisis Management Plan via the Kambalda Emergency Management Committee (LEMC) which includes the Shire of Coolgardie, Kambalda and Coolgardie Police, the Government of Western Australia Department of Fire and Emergency Services (DFES), St Johns and local mining operations. SIGM engages with the LEMC membership through quarterly meetings and periodic mock drills.

SIGM continue to involve local response agencies through the Kambalda Local Emergency Management Committee and MOUs with Kalgoorlie Health Campus (Kalgoorlie Hospital) and the Government of Western Australia Department of Fire and Emergency Services (DFES). The Kambalda Local Emergency Management



Committee includes which Kambalda St Johns, the Shire of Coolgardie and Kambalda Police and Fire service. Local Emergency Management Committee meetings are held regularly and attended by a representative from SIGM, typically the Emergency Services Officer. Mock drill with Local Emergency Management Committee and SIGM participants are held periodically and provide a means of testing emergency response procedures.

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Standard of Practice 7.4:

Develop procedures f	or internal and external emergency r	notification and reporting.
	lacksquare in full compliance with	
The Operation is	\square in substantial compliance with	Standard of Practice 7.4
	\square not in compliance with	

Summarize the basis for this Finding/Deficiencies Identified:

SIGM is in FULL COMPLIANCE with Standard of Practice 7.4: Develop procedures for internal and external emergency notification and reporting.

The SIGM Cyanide Emergency Response Plan contains the process of notifying and communicating with off-site medical facilities such as Kambalda St Johns and Kalgoorlie Hospital in Pre-Incident Plan 1. The Emergency Crisis Management Plan contains the process for off-site communication and notifying and engaging off-site government and non-government organisations of emergencies including a cyanide related emergency.

An External contacts list including relevant off-site emergency response providers and medical facilities is located on the Emergency Services board.

The SIGM Emergency Crisis Management Plan contains communication protocols for communication with outside entities; media interaction; and Next-of-Kin notification and management.

Notifications to the Local Emergency Management Committee of an emergency would occur as required in accordance with the mutual aid agreement which includes the Coolgardie Shire Council. The Memorandum of Understanding with the Government of Western Australia Department of Fire and Emergency Services outlines legislative responsibilities and the Emergency Response and Incident Management Structure.

There are no potentially affected communities in proximity of the site that could be impacted by an onsite cyanide incident. The most likely scenario affecting communities is from a transport incident and in this scenario notifications would be according to CSBP/AGR's notifications processes.

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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.

	$\ensuremath{\square}$ in full compliance with	
The Operation is	\square in substantial compliance with	Standard of Practice 7.5
	\square not in compliance with	

Summarize the basis for this Finding/Deficiencies Identified:

SIGM is in FULL COMPLIANCE with 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 SIGM Cyanide Emergency Response Plan describes specific remediation measures as appropriate for the likely cyanide release scenarios, and includes: Recovery or neutralisation of solutions or solids; decontamination of soils or other contaminated media, and; management and/or disposal of spill clean-up debris. Additionally, the Cyanide Spill Ground Decontamination Work Instruction provides a clear procedure with further details on decontamination of cyanide spills.

The provision of an alternate drinking water supply is not applicable to the SIGM operation. The SIGM Cyanide Emergency Response Plan prohibits the use of chemicals such as sodium hypochlorite, ferrous sulfate and hydrogen peroxide to treat cyanide that has been released into or near surface water.

The SIGM Cyanide Emergency Response Plan identifies the potential need for environmental monitoring to identify the extent and effects of a cyanide release.

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Standard of Practice 7.6:

Periodically evaluate needed.	e response procedures and capabilitie	s and revise them as
	oxdot in full compliance with	
The Operation is	\square in substantial compliance with	Standard of Practice 7.6
	\square not in compliance with	

Summarize the basis for this Finding/Deficiencies Identified:

SIGM is in FULL COMPLIANCE with Standard of Practice 7.6: Periodically evaluate response procedures and capabilities and revise them as needed.

SIGM continue to review and evaluate the cyanide related elements of its Emergency Response Plan for adequacy on a regular basis.

The SIGM Emergency Management Plan and Cyanide Emergency Response Plan are located in Controlled Documents and both documents are reviewed annually. Automated reminders are sent out to the document owner to trigger a review. The current version of the Emergency and Crisis Management Plan is dated 13 July 2021 with a review do be completed by 13 July 2022. The current version of the Cyanide Emergency Response Plan is dated 02 June 2021 with a review do be completed by 02 June 2022.

SIGM conducted mock cyanide emergency drills annually in the certification period as part of the Emergency Response Plan evaluation process. Four cyanide emergency mock drills were conducted and debrief reports were produced. All mock drill documentation is lodged in the InControl (INX) system, including any actions that arise from mock drills.

SIGM has provisions in place to evaluate and revise the Cyanide Emergency Response Plan and the Emergency Crisis and Management Plan after any cyanide related incident or emergency. Review of procedures and documents following an incident is driven by the incident investigation and reporting process as described in the Hazard / Incident Reporting and Investigation Guideline.

During the audit period, there were no cyanide related emergencies that required the implementation of the Emergency Response plan.



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 und	lerstand the hazards associated with	cyanide use.
	oxdot in full compliance with	
The Operation is	\square in substantial compliance with	Standard of Practice 8.1
	\square not in compliance with	

Summarize the basis for this Finding/Deficiencies Identified:

SIGM is in FULL COMPLIANCE with Standard of Practice 8.1: Train workers to understand the hazards associated with cyanide use.

SIGM continue to train all personnel who may encounter cyanide in cyanide hazard recognition.

All personnel who undertake work in cyanide areas must complete cyanide awareness training including short term contractors. The training package is provided by cyanide suppliers AGR. The Cyanide Awareness training includes information on liquid sodium cyanide, the health effects of cyanide, symptoms of cyanide exposure and procedures to follow in the event of exposure.

All employees and contractors who undertake work in the processing area must undertake the Plant Induction unless escorted. The Processing Induction includes cyanide awareness, first aid, emergency response and hazard recognition.

Cyanide Awareness refresher training is required every 12 months. AGR send out refresher notifications directly to the person at 90 days, 60 days and 30 days. If it falls under the 30 days Training department follows up with emails. Swipe access to the plant can be denied where cyanide awareness training compliance has expired.

SIGM uses Success Factors for managing training records. Cyanide awareness training certificates provided to SIGM are retained electronically for 10 years.

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Standard of Practice 8.2:

procedures that pro	otect human health, the community ar	nd the environment.
	☑ in full compliance with	
The Operation is	\square in substantial compliance with	Standard of Practice 8.2
	\square not in compliance with	

Train appropriate personnel to operate the facility according to systems and

Summarize the basis for this Finding/Deficiencies Identified:

SIGM is in FULL COMPLIANCE with 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.

SIGM conducts operational training for all workers performing cyanide-related tasks including normal production tasks, including but not limited to: Cyanide unloading and delivery, Cyanide compound access, Cyanide control, pH control, pH meter calibration, Safety Shower Eye Wash Station Inspection, Cyanide Spill Ground Decontamination, Decontamination of Equipment for Maintenance or Removal, Free Cyanide Titration, Tailings Storage Facility Inspection, WAD Cyanide Analysis, Elution Column Drainage, Elution Sequence, Tails Pump Start-up, Final Tails Sample Collection and Preparation, and Wildlife Observations.

The plant Induction provides an induction to the whole of the processing area and includes cyanide related topics such as hazard recognition and management, use of cyanide specific PPE, signage, and locations of safety showers and initiating emergency response. The processing area induction provides an understanding on the management cyanide hazards and risk management that underpins cyanide task training. A written assessment must be passed before the plant can be accessed unescorted.

Cyanide task training is based on the Buddy system where trainees are taught to perform cyanide related tasks by experienced operators. Training materials used at SIGM identify the training elements necessary and task steps for each job involving cyanide. Training materials and document templates are accessed electronically by employees and trainers via the SIGM Controlled Document Environment.

The training elements required for jobs involving cyanide are identified in the training documents for Processing Operators, Processing Reagents Area, Processing Tails



Thickener, and Processing Leach Area. The documents list core competencies for each process area which contains cyanide.

The core procedure must be completed before an employee can be deemed to be competent and work unsupervised in an area.

The procedures identify the purpose of the procedure, PPE required, hazards associated with the task and requirements of the procedure. For work instructions the task is broken down into steps to be completed sequentially.

Training and Assessment Documents are reviewed every 12 to 24 months or on an as needs basis if required on a shorter time frame.

Refresher training is undertaken every two years for the Plant Induction and for all cyanide related, core procedures.

The training Department uses Success Factors to manage training requirements and records.

Training is undertaken by an authorised person who has been deemed competent in the procedure being assessed or by a Subject Matter Expert (typically the Supervisor) who holds competency in the procedure.

Upon competition of the training the supervisor must confirm that the Trainee has the required knowledge and to undertake the task. The supervisor can then authorise new employee to work without direct supervision.

Training occurs on day shift only.

SIGM evaluate the effectiveness of cyanide training by competency testing, task observation, and safety interactions.

SIGM retain records throughout an individual's employment 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 an understanding of the training materials.

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Standard of Practice 8.3:

Train appropriate workers and personnel to respond to worker exposures and
environmental releases of cyanide.

oxinesize in full compliance with The Operation is oxinesize in substantial compliance with Standard of Practice 8.3 oxinesize not in compliance with

Summarize the basis for this Finding/Deficiencies Identified:

SIGM is in FULL COMPLIANCE with Standard of Practice 8.3: Train appropriate workers and personnel to respond to worker exposures and environmental releases of cyanide.

Cyanide unloading, production and maintenance personnel at SIGM are trained in in the procedures to be followed if cyanide is released.

Procedures to be followed if cyanide is released are included in the Processing Area Induction, Cyanide Spill Ground Decontamination Work Instruction, Cyanide Emergency Response Plan, Lefroy Mill Emergency Response Plan and the Tailings Management Plan.

Everyone accessing the Mill un-escorted must undergo the Processing Area Induction, which includes direction on how to respond to a chemical spill and the InControl (INX) system reporting requirements. All plant personnel are trained in the Cyanide Spill Ground Decontamination Work Instruction SIG-PRO-WI077 which is a core procedure for the Processing area.

Processing Supervisors are trained in the Lefroy Mill Emergency Response Plan SIG-PRO-PL001. Section 8.3 of this plan contains step to be taken in the event of a cyanide release. Section 8.2 of the Plan contains actions to be taken in the event of overtopping of the TSF due to cyclonic activity. The SIG-PRO-WI085-Preparing for Significant Rainfall Events Work Instruction also provides guidance on preparation to avoid such events.

The Tailings Management Plan (SIG-PRO-PL002) contains emergency response procedures in section 4 including discussion on response actions for small and large tailings embankment failures.

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



SIGM receives only sodium cyanide solution, thus no cyanide mixing facilities exist at site

The Processing and Engineering (Maintenance) departments had a high compliance rate for the Processing Plan Induction and Cyanide Spill Ground Decontamination Work Instruction. All workers who were not identified as New starters, off-site or apprentices had a compliant status for both.

All personnel who access the plant require Cyanide Awareness Training which includes basic cyanide exposure response.

Processing and Engineering (maintenance) are trained in the Oxygen Soft Pack Use Work Instruction SIG-PRO-WI076. This describes the process of administering oxygen to cyanide affected patients and identifies the locations of the four oxygen soft packs stored within the Mill.

Processing Supervisors are trained in the Lefroy Mill Emergency Response Plan SIG-PRO-PL001 which contains actions to be taken for persons exposed to cyanide solution or hydrogen cyanide gas as well as a flow chart of First Aid for Cyanide/HCN Gas Exposure including notification of an emergency, removal of casualty from danger, decontamination of the patient and provision of oxygen.

Emergency Response Coordinators 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.

Weekly Emergency Response Team training regularly includes HAZMAT training sessions with five verified for 2019, four verified for 2020 and two verified for the first six months of 2021. HAZMAT training sessions include cyanide scenarios but also drill other chemical hazard scenarios. A HAZMAT drill conducted on 24/06/21 was reviewed and included objectives which are consistent with training in Cyanide Emergency Response Plan emergency response procedures contained in the Cyanide Emergency Response Plan Pre-Incident Plans.

SIGM has made off-site Emergency Responders, such as community members, local responders and medical providers, familiar with those elements of the Emergency Response Plan related to cyanide.

Local external providers are familiar with SIGM's Emergency Management Plan for cyanide emergencies via the Kambalda Local Emergency Management Committee (LEMC) which includes the Coolgardie Shire Council, Kambalda Police, Government of Western Australia Department of Fire and Emergency Services (DFES), and Kambalda St Johns.

SIGM has agreements with Kalgoorlie Hospital and DFES to provide support in the event of a cyanide incident requiring assistance or medical attention.



Mock drills are conducted periodically with the Kambalda Local Emergency Management Committee including DFES.

Cyanide unloading, production and maintenance personnel at SIGM are trained in in the procedures to be followed if cyanide is released. No cyanide mixing facilities exist at the operation.

SIGM regularly conducts refresher training for response to cyanide exposures and releases.

Refresher training is required for all plant personnel members every two years for all cyanide related procedures including in relation cyanide exposures and releases responding to cyanide exposures and releases. This includes the Cyanide Spill Ground Decontamination Work Instruction; and Cyanide awareness which covers aspects of cyanide spill response.

SIGM periodically conducts simulated cyanide emergency drills covering both worker exposures and environmental releases for training purposes. Drills are evaluated from a training perspective to determine if personnel have the knowledge and skills required for effective response. Training procedures are revised if deficiencies are identified.

SIGM tests response procedures and training adequacy for various cyanide exposure scenarios through periodic mock cyanide emergency drills which involve emergency response personnel, plant personnel and medical staff. Four cyanide exposure mock drills were conducted during the audit period, and included scenarios for both cyanide exposure and environmental release. Emergency Response Debriefs are conducted following each drill to identify deficiencies and lessons to be learnt. Recommendations are made and incorporated into training practices based on lessons learnt.

Cyanide Emergency Drill Debrief documentation was produced for each of the drills and typically included the scenario being drilled; participants; action logs for the drill; debrief notes that include adequacy of the response according to relevant categories: Emergency Communications, Incident Management Team (IMT) Activation, Emergency Response Team response, rescue equipment status, rescue and recovery; problems identified; recommendations; and notes and comments.

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

All documentation of cyanide training is retained electronically or on-site if in hard copy and includes 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.

All training records including documentation of mock drills and weekly Emergency Response Team training (including HAZMAT training) are stored in the InControl (INX) system and retained. All current hard copy records are stored on site however obsolete records are archived.

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PRINCIPLE 9 - DIALOGUE:

Engage in public consultation and disclosure.

Standard of Practice 9.1:

Provide stakeholders	the opportunity to communicate issue	es of concern.
The Operation is	☑ in full compliance with☐ in substantial compliance with	Standard of Practice 9.1
	□ not in compliance with	5.0.000

Summarize the basis for this Finding/Deficiencies Identified:

SIGM is in FULL COMPLIANCE with Standard of Practice 9.1: Provide stakeholders the opportunity to communicate issues of concern.

SIGM continue to provide the opportunity for stakeholders to communicate issues of concern regarding the management of cyanide.

SIGM is in a regional location in Western Australia and the workforce either drives in and out or lives at the company camp or in private housing in nearby Kambalda. The site is located approximately 20 km south-east of the nearest community, Kambalda. SIGM provides the opportunity for stakeholders to communicate issues of concern regarding the management of cyanide, via forums such as Site Inductions, Toolbox and Safety Meetings, SIGM Family Fun Days and Kambalda Community Engagement Days. In addition to the above interactions, opportunity for communication for stakeholders exists via Gold Fields website (https://www.goldfields.com/contact-details.php), public feedback telephone number, and community feedback email address. At SIGM's community engagement forums, a large cyanide information Poster is on display to disseminate information concerning cyanide-related activities. SIGM's annual Environmental Report is publicly available. Site Personnel receive cyanide awareness training.

Annual reports are provided to the WA Department of Mines, Industry Regulation and Safety (DMIRS) as per regulatory requirements. These reports are available to the public once authorities have reviewed and authorised posting to their websites.

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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

Summarize the basis for this Finding/Deficiencies Identified:

SIGM is in FULL COMPLIANCE with Standard of Practice 9.2: Initiate dialogue describing cyanide management procedures and responsively address identified concerns.

SIGM provide a range of opportunities for SIGM and external stakeholders to interact with the operation and obtain information regarding cyanide management practices and procedures. Avenues for engagement with external stakeholders include Family Day events; Community Engagement Days; the Gold Fields Website; Community Forum meetings; Public consultation sessions which occur periodically when environmental approvals are proceeding; and Local Emergency Management Committee meetings which involve the Coolgardie Shire Council.

Avenues for engagement with external stakeholders, including a number that live in Kambalda and Coolgardie local communities, include: Site Inductions; Cyanide Awareness Training; Training in the Plant Induction and cyanide related activities; and Toolbox and Safety Meetings.

SIGM periodically engages Ngadju, Widji and Kalamaia Kabu traditional elders and community members directly for communications on mine activities.

Goldfields Australia continues to post their annual Sustainability Report, which includes SIGM, on their website for public viewing. The report notes reportable cyanide incidents.

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Standard of Practice 9.3:

Make appropriate operational and environmental information regarding	cyanide
available to stakeholders.	

	$\ensuremath{\square}$ in full compliance with	
The Operation is	\square in substantial compliance with	Standard of Practice 9.3
	\square not in compliance with	

SIGM is in FULL COMPLIANCE with Standard of Practice 9.3: Make appropriate operational and environmental information regarding cyanide available to stakeholders.

SIGM has developed written descriptions of how their activities are conducted and how cyanide is managed, and these descriptions are available to communities and stakeholders.

SIGM holds community and stakeholder open days, where interaction is encouraged. At SIGM's community engagement forums, a large cyanide information Poster is on display to disseminate information concerning cyanide-related activities.

There is no significant illiteracy in the local population in the region surrounding the operation. SIGM maintain a Gold Fields standard internal and external reporting system for incidents, including those that involve cyanide. Cyanide incidents, including confirmed cyanide release and exposure incidents, are reported in SIGM's Annual Environmental Report. This report is submitted to the Western Australian Department of Water and Environmental Regulation and Department of Mines, Industry Regulation and Safety, with reports publicly available.

Releases (environmental and exposures) that cause applicable limits for cyanide to be exceeded are advised to regulatory authorities as required by the safety and environment incident reporting and investigation procedure. All mining operations within Western Australia are required to report serious occurrences and mining injuries (including cyanide exposures) to the Department of Mines, Industry Regulation and Safety on designated forms.

The Coordinator of Sustainable Development confirmed that notification of significant cyanide releases to community stakeholders including landholders, indigenous groups and employees would occur where required. No such incidents occurred during the audit period.



APPENDIX A: Important Information

Important information and limitations concerning the preparation and submission of this Audit Report both in its complete and summarised forms.

Kindly take notice of the following important qualifications and limitations in connection with the preparation and submission of this report ("Report").

- 1. The Report has been prepared in good faith by the signatory for and on his own behalf and as an authorised representative of Veritas Metallica Pty Ltd ("VMPL");
- 2. The Report is intended for the exclusive use of St Ives Gold Mining Company Pty Ltd ("Client").
- 3. It is not intended to be relied upon by any party other than the Client.
- 4. No permission is given by the author for reliance on this Report by any third party and the author takes no responsibility for publication thereof on any media by others.
- 5. The Report has been prepared on the basis of instructions, information and data supplied by the Client, and on the basis of the physical conditions and location of the site at which tests (if any) were undertaken.
- 6. The author of the Report gives no warranty or guarantee and makes no representation, whether express or implied, with respect to the content of this Report or the completeness or accuracy thereof.
- 7. No reliance should be placed upon anything other than that which is expressed in this Report.
- 8. The author of this Report accepts no responsibility or liability for any loss or damage suffered by any party which is incurred in reliance upon the contents of this Report. In particular and without limitation, the author shall not be liable for any loss or damage or economic loss suffered by any party which arises out of any of the contents of this Report or anything which is omitted from the contents of this Report.
- 9. Readers of this Report are alerted to the possibility that the conditions which existed at the time of the preparation of this Report may have changed both prior to and after the preparation of this Report and in no way does this Report encompass, take account of or refer to such changed conditions.

St Ives Gold Mine

Signature of Lead Auditor

10 February 2022