## SUMMARY AUDIT REPORT

# AngloGold Ashanti Cerro Vanguardia Mine, Argentina

For The

International Cyanide Management Code

July 2021



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#### Cerro Vanguardia

Name of Mine:	Cerro Vanguardia
Name of Mine Owner:	AngloGold Ashanti
Name of Mine Operator:	Cerro Vanguardia S.A. (CVSA)
Name of Responsible Manager:	Walter Pizarro – Plant Manager
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### Location detail and description of operation:

AngloGold Ashanti (AGA) is an independent, global gold mining company with a diverse, high-quality portfolio of operations, projects and exploration activities across nine countries on four continents. AGA is the third largest gold producer globally and the largest on the African continent.

Cerro Vanguardia mine operation is located in Argentina in the province of Santa Cruz, in the far south of Argentina, at an elevation of 200 meters above sea level. Cerro Vanguardia operates multiple small open pits with high stripping ratios and multiple narrow-vein underground mines that produce gold with silver as a by-product.

Cerro Vanguardia, in which AngloGold Ashanti has a 92.5% stake, is the Company's sole operation in Argentina. Fomicruz, a state company, owns the remaining 7.5%. Cerro Vanguardia is a gold-silver operation with multiple open pit and underground mines located within the property, but mined simultaneously.

Cerro Vanguardia operates a single tailings dam. The state road GO-337 passes close to the operation, providing access for logistics. Power for the mine is supplied and purchased in the open market. Three mining methods are used for underground mining: sub-level stopping (bottom-up and top-down), cut and fill, and room and pillar.

Gold exploration at the site was started in late 1980s by the state owned Fomicruz and Minera Mincorp (JV between Anglo American Argentina Holdings Limited and a local private company Perez Companc).

Cerro Vanguardia commenced as an open pit operation in 1998 and this was supplemented in 2010 with the start of shallow underground mining to access high-grade mined material.

To complement the already existing gold plant, a heap leaching operation was started in 2012.

The mine has been operated by AngloGold Ashanti since 1998.

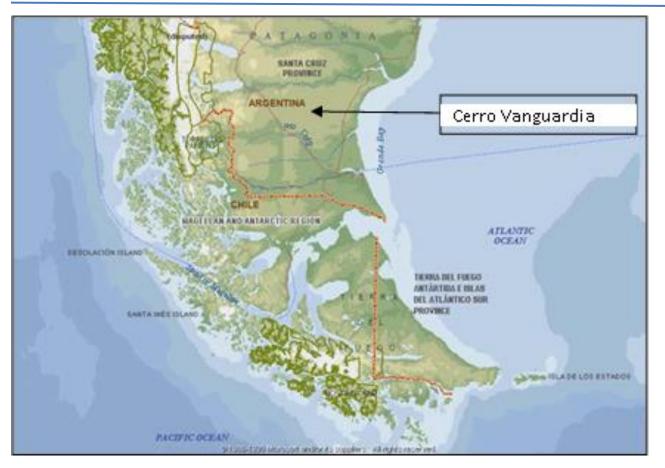
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Cerro Vanguardia deposit is a series of veins and mined using open pit techniques. There are around 15 open pits with variable contents of gold, silver and base metals. Ore is mined at a rate of 1 million tons per year with an average gold grade of 9.5 grams per tons (g/t) and of silver 111 g/t. The Cerro Vanguardia mineral processing plant has a capacity of approximately 3,000 tons per day. The process involves the following steps:

High grade ore:

- Three stages of crushing
- Stockpiling and blending
- Grinding in a ball mill

Low grade ore:

- Heap leach facility (HLF)
- Pregnant leach solution (PLS) pond
- Barren tank
- Emergency pond
- Cyanide leaching in tanks (CIC)
- Washing and thickening in Counter-Current Decant (CCD) units

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- Leach solution clarification
- Carbon in leach (CIL)
- Elution
- Precipitation of gold and silver using zinc powder (Merrill Crowe process)
- Smelting to form metal doré
- Cyanide recovery using volatilization (Cyanisorb)
- Cyanide destruction using hydrogen peroxide
- Deposition of tailings in a tailings storage facility (TSF)

#### **The Production Process**

The ore that arrives from the mine to the profit plant is reduced in size through three crushing stages: a primary jaw crusher, a secondary cone crusher and a tertiary cone crusher, respectively, in this way a 9 mm product is obtained to collect in the dome.

Under an aluminum dome of 70 m in diameter by 21 m in height, is the system of mixing, collecting and recovery of crushed ore. The dome can store between 14 and 15 thousand tons. This serves as a lung to feed the mill when there are maintenance tasks in the crushing area. Once deposited the ore enters through a hopper and is transported by a belt to the ball mill.

#### Milling

At this stage water is added to the mineral to obtain a pulp and inside the mill begins grinding. Three-inch steel balls collide with the ore at high speed and by cataract effect grinding occurs. The ball mill works in closed circuit with a battery of cyclones.

Fresh ore, process solution and reagents are added to the mill. Among the reagents are lime and cyanide. In this way the process of leaching gold and silver begins.

The process solution transports the leached metals and finely ground ore to the grinding thickener. In this thicker the rich solution in the overflow is obtained, which feeds the clarification cones and a pulp with a high percentage of solid by the underflow, which feeds the leaching circuit.

The underflow of the grinding thickener feeds the stirring leach ponds. Stirring leaching is performed in six tanks equipped with double agitators with shaft aeration and diffuser at the end. The tanks of 900 m3 capacity each, are equipped with baffles and feeding drawers. Pipes are available to adjust the concentration of cyanide in the leach tanks.

#### Leaching

The pulp from the leach agitation tanks is pumped into the washing thickener. The thickener that receives pulp from the agitation leaching circuit is called No. 1 Thickener. The underflow of Thickener No. 1 is pumped into the feeder to the CIL (Carbon in Leach) circuit.

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The effect achieved in CCD1 (Counter-Current Decant) is to decrease the concentration of gold and silver in the underflow of the thickener thanks to the dilution caused in the feed to the thickener by the addition of barren solution.

The metals dissolved in the agitation leaching circuit are transported from the overflow of No. 1 Thickener to the process tank and from there to the ball mill, via the process solution. Flocculants are added to these thickeners to help separate the liquid from the solid. The solution that comes out of the top, and has higher metal content, is called rich solution.

The carbon leaching circuit (CIL) consists of seven tanks with a capacity of 380 m3 each. The pulp flows by gravity from Tank No. 1 to Tank No. 7. The tanks are equipped with double agitators with aeration by a shaft and meshes that allow the passage of the pulp, preventing the passage of activated carbon. The meshes are of the Kambalda type. From time to time a certain amount of carbon is removed from the first tank to begin a process called desorption or elution, to recover gold and silver from activated carbon. The rich elution solution is sent to the clarification circuit.

The pulp discharge from the CIL circuit goes to the CCD2 thickener, where it is diluted in order to decrease the concentration of cyanide, the overflow will feed the Cyanisorb plant, while the underflow will go to the tail thickener or tailings, in order to produce a wash of the cyanide in pulp and finally be sent to the tailings dam.

#### **Rich Solution**

The rich solution comes from two circuits: the overflow of the grinding thickener and the elution circuit containing gold and silver, but they differ in that while the grinding circuit is a very large flow with low concentrations; the elution circuit is a very low flow with high concentrations. The clarification is done in two cones of 1,250 cubic meters of capacity. The solution passes through the center of the cone, which has a filter bed - like a sponge- and retains fine particles. Then, it passes to a second stage of filtration, which consists of plate filters (Metpor), where the solution passes through them, the solids are retained in the fabrics and on the other side the clean solution is coming out.

The rich solution, clarified and filtered, is pumped into the deaeration circuit, where the clean solution is forced to pass through a tower where oxygen is extracted

#### Precipitation with Zinc

The goal of precipitation is to obtain the solid and then melt it. The form of precipitation used at Cerro Vanguardia for gold and silver is a method called metal zinc precipitation or Merril Crowe process. As the solution enters, it is added metallic zinc and begins to precipitate, leaving the poor solution with practically no gold / silver and containing all the concentrate in filter presses. The filtrate (poor solution) is transferred to the sterile solution tank, from where it is pumped into the thickener No. 2.

Periodically, the smelting personnel enter the area, open the filters, remove this concentrate and take it to smelting to produce the doré. The precipitate is dried in stoves, weighed and dosed with fluxes to proceed with the loading of the smelting furnace. The doré metal casting is emptied into molds.

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#### Cyanide Recovery Plant (CYANISORB)

The overflow from CCD2 feeds the cyanide regeneration plant, before being sent to the washing thickener. The objective of the cyanide regeneration circuit is to be able to discharge the pulp to the dam with the least amount of cyanide and thus operate within the parameters set by the mining authority and the International Cyanide Management Code requirements. The pulp is washed and the overflow of the thickener is sent to the CYANISORB plant, whereby a purely chemical process the cyanide is recovered from the solution.

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### **Auditor's Finding**

#### This operation is

- ✓ in full compliance with with the International Cyanide Management Code
- $\hfill\square$  in substantial compliance with
- $\Box$  not in compliance with

This operation has maintained full compliance with the International Cyanide Management Code throughout the previous three-year audit cycle.

I attest that I meet the criteria for knowledge, experience and conflict of interest for Code Verification Audit Team Leader, established by the International Cyanide Management Institute and that all members of the audit team meet the applicable criteria established by the International Cyanide Management Institute for Code Verification auditor.

I attest that this Summary Audit Report accurately describes the findings of the verification audit. I further attest that the verification audit was conducted in a professional manner in accordance with the International Cyanide Management Code Mining Operations Verification Protocol and using standard and accepted practices for health, safety and environmental audits.

Audit Company:	BP Cyanide auditor S.A.C.
Lead and Technical Auditor:	Bruno Pizzorni E-mail: bpizzorni@cyanideauditor.com
Date(s) of Audit:	July 20 to 24, 2021

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### **Verification Protocol**

### 1. PRODUCTION:

Encourage responsible cyanide manufacturing by purchasing from manufacturers that operate in a safe and environmentally protective manner.

#### Standard of Practice 1.1

Purchase cyanide from manufacturers employing appropriate practices and procedures to limit exposure of their workforce to cyanide, and to prevent releases of cyanide to the environment.

The operation is	$\checkmark$	in full compliance with	Standard of Practice 1.1	
		in substantial compliance with		
		not in compliance with		
Cerro Vanguardia S.A. (CVSA) has a cu	irren	t agreement with Australian Gold I	Reagents Pty Ltd (AGR) re	eaui

Cerro Vanguardia S.A. (CVSA) has a current agreement with Australian Gold Reagents Pty Ltd. (AGR) requiring the cyanide producer has to be certified as being in compliance with the Code. Throughout the recertification period (August 7, 2018 to date), CVSA has purchased certified cyanide.

The auditor reviewed purchase orders, commercial invoices and goods of receipt for the recertification period for the recertification period. The contracts, shipping documents, reception and purchasing records were available and reviewed. The Supply Manager and Warehouse Manager were interviewed.

Cerro Vanguardia purchases the cyanide from a production plant certified as being in compliance with the Code, last International Cyanide Management Institute (ICMI) certified in September 22, 2020. The current full certification status of this facility was verified by review of the ICMI website.

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### 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.

The operation is

- ✓ in full compliance with Standard of Practice 2.1
- $\hfill\square$  in substantial compliance with
- □ not in compliance with

Cerro Vanguardia has written agreements with the cyanide producer to transport sodium cyanide from the production plant complex at Kwinana, Western Australia, to Puerto Deseado in Argentina, designating responsibilities for cyanide management in the supply chain. From this port, the certified Argentinian transporter Víctor Masson Transportes Cruz del Sur S.A. (Cruz del Sur), is in charge of terrestrial transport until the mine site.

AGR's transport of sodium cyanide within Western Australia is undertaken by rail and/or road along recognized dangerous goods transport routes classified by the relevant authorities. The transport network includes contracted transporters servicing to Fremantle Port for export.

AGR's Western Australia Supply Chain was last recertified in full compliance with the Code in November 15, 2019. This supply chain includes the stevedoring operation at Fremantle Port.

AGR's marine transportation constitutes the Ocean Freight Supply Chain and it is a consolidation of all marine carriers used by AGR to distribute their solid cyanide from Fremantle Port in Western Australia to their global customers. The supply chain forms the marine link between the certified West Australian Supply Chain and the certified supply chain or certified transporter relevant to the customer site. Main routes used by the carriers include Argentinian por Puerto Deseado. The Ocean Freight Supply Chain was last ICMI certified in September 23, 2020.

AGR has also the ICMI certified Central and South America Supply Chain which was found in compliance with the Code in August 31, 2020. CVSA contract with AGR includes cyanide transport until Argentinian ports, in this case they are using Puerto Deseado port. From this point the mine takes control of the cyanide using transporter Cruz del Sur for terrestrial transport until the mine site. Cruz del Sur was last ICMI certified in March 10, 2020.

All transporters have developed emergency response plans for their respective 'chain of custody' areas as it relates to transport of cyanide product to CVSA mine site. Consideration has been given to transportation routes and response capabilities along the way.

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A convoy is used to road transport cyanide product from Puerto Deseado to the mine site. CVSA personnel organize the off-loading of the product once the transport convoy has reached the mine site. Convoy personnel are required to participate in CVSA induction training to familiarize themselves with site protocols.

The written agreements between CVSA, the cyanide producer and the transporters designate responsibility for all the Code requirements. The contracts with AGR and Cruz del Sur were reviewed to verify their responsibilities in writing. The Supply Manager and Warehouse Manager were interviewed.

Although no subcontractors are involved in contract holders of the cyanide supply chain, the agreements specify that the designated responsibilities extend to any subcontractor. Each entity involved in the cyanide transport operation whether by sea, in port or during land transport is operated directly by the contract holder.

#### Standard of Practice 2.2

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

The operation is

- ✓ in full compliance with Standard of Practice 2.2
- $\hfill\square$  in substantial compliance with
- not in compliance with

All agreements reviewed between CVSA mine and the cyanide transporters require the transporter to be certified under the Cyanide Code.

During the audit, it was verified through the ICMI's website, that all cyanide transporters involved in CVSA cyanide supply chain were currently Code certified companies:

- AGR West Australian Supply Chain November 15, 2019
- AGR Ocean Freight Supply Chain September 23, 2020
- AGR Central and South America Supply Chain August 31, 2020
- Cruz del Sur certified on March 10, 2020

CVSA maintains records of the chain of custody documents from the producer, the maritime transporter and land transporter that handle the cyanide brought to its site, all identifying the parties in the supply chain. The auditor reviewed bill of lading documentation covering the recertification audit, finding them in conformance. The Supply Manager and Warehouse Manager were interviewed.

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### 3. HANDLING AND STORAGE

Protect communities and the environment during cyanide.

#### 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

The operation is

- ✓ in full compliance with Standard of Practice 3.1
- □ in substantial compliance with
- not in compliance with

CVSA has constructed a cyanide storage warehouse next to the mine general warehouse. The cyanide storage warehouse is accessed by a gated alleyway between the two buildings. The warehouse consists of a gated and locked area with two roofed and walled (on three sides) storage areas with a central access way open to the air. CVSA receives solid cyanide in 1-ton wooden boxes (IBC).

CVSA has constructed a preparation area inside the plant building designed to operate with IBCs by mean of a hoist and a hopper to prepare the cyanide solutions. The preparation area is accessed through either a locked man-gate or a locked truck gate.

No changes to these facilities has been done during this recertification audit. According to last the last ICMI Certification Detailed Audit Report from Golder Associates Argentina, S.A. (Golder) from May 2018, all unloading, mixing and storage facilities for reagent cyanide have been professionally designed and constructed as concluded in the previous ICMI certifications audits for this area. As built drawings including the design drawings of the cyanide preparation and cyanide distribution systems in the reagent were found properly stamped by a certified professional engineer, and QA/QC records found in compliance with Code requirements. The mixing facilities reviewed were found in accordance with sound and accepted engineering practices. They are the same as those found in full compliance in 2011 and approved by the Argentine authorities.

The auditor confirmed the installations were in good condition during this 2021 site visit and confirmed all records supporting the above information is maintained by CVSA in a dedicated room at the Process Plant. Persons interviewed were the Plant Manager and Metallurgy Chief.

The storage area for sodium cyanide is located within the Process Plant area. The warehouse where cyanide is stored, is away from places where people regularly meet, as offices, maintenance shops, dining room or bathrooms. The cyanide storage warehouse achieved compliance during the initial certification audit. The warehouse is located by itself in a secure compound with a locked gate with keys controlled by warehouse staff. There are no perennial watercourses or waterbodies in the vicinity of the warehouse due to the arid nature of Patagonia. The auditor observed the warehouse to be in good condition during the 2021 site visit.

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Although CVSA does not receive liquid cyanide, IBCs boxes containing solid sodium cyanide pellets are unloaded on a concrete surface that can minimize seepage to the subsurface. Also, the unloading area is designed to drain any cyanide solution, for example from cleaning activities into a contained area.

To prevent the overfilling of cyanide storage tanks and cyanide mixing and storage at the reagent area at CVSA, there are level sensors. These levels are continuously monitored in the plant control room. The preparation area in the plant has three high-strength tanks: mixing tank, storage tank, and second storage tank for cyanide pumped back from the Cyanisorb system. All three tanks are equipped with ultrasonic level sensors that report to the control room in the plant. From the Supervisory Control and Data Acquisition (SCADA) system, visual and audible alarms would be activated, and pumps automatically shut down, in the event that pre-set intervention levels were exceeded. CVSA provided records showing that the level sensors in these tanks had been maintained on a quarterly schedule throughout the recertification period. The auditor reviewed in the screens of the Process Plant control room how the operator monitors the level controls and that these were functioning on these tanks.

The Plant Manager, Metallurgy Chief and Maintenance Planner were interviewed.

Process tanks, including mixing and storage tanks, are built over reinforced concrete foundations, which prevents any seepage from the tank bottoms from entering the ground. Cyanide mixing and storage tanks are located inside concrete secondary containments systems. As noted in the 2011 initial certification report, the high-strength cyanide tanks in the plant preparation area are located on reinforced concrete plinths that prevent seepage to the subsurface. CVSA staff stated there have been no changes since 2011. The auditor observed that all of these concrete foundations and containment systems were in good condition.

The entire process area is contained within a concrete pad surrounded by curbs and walls, providing a competent barrier to seepage. The concrete floor is sloped to drain to concrete trench drains, where any spills or rainwater will be pumped back to the process. As noted in the 2011 initial certification report, the highstrength cyanide tanks in the plant preparation area are located within concrete secondary containment that provide a competent barrier to leakage. CVSA staff stated there have been no changes since 2011. The auditor observed that the concrete containment systems were in good condition at the time of the audit.

The cyanide storage warehouse has a central access way with roofed storage areas open to the air on either side. The preparation area within the plant is equipped with a ventilation fan. The three high-strength cyanide tanks are equipped with air extractors that vent outside the building. CVSA stores cyanide with adequate ventilation to prevent the build-up of HCN gas.

The cyanide boxes in the cyanide warehouse compound are stored under a roof and on wooden pallets (part of the box) that raise the boxes above the concrete floor of the warehouse. No solid cyanide is stored within the plant building. The potential for solid sodium cyanide to come into contact with water is negligible.

Both the cyanide warehouse and the preparation area in the plant are within the secure mine site and the fenced plant area with access controlled by key cards. The cyanide warehouse itself is accessed through

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another locked gate with the key controlled by the warehouse staff. The preparation area within the plant is also accessed through a locked man-gate and truck-gate, both activated by key cards that limit access to authorized operators. As such, public access is prohibited to the cyanide warehouse and preparation area.

Only cyanide boxes are stored within the cyanide warehouse. Only high-strength cyanide solution is stored in the preparation area within the plant. The observed that both the warehouse and preparation area have dedicated sumps such that there is no potential for mixing with incompatible materials along drainage pathways. No acids, strong oxidizers, explosives, food, tobacco, animal feed are stored in the warehouse or preparation area.

#### 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

The operation is

- ✓ in full compliance with Standard of Practice 3.2
- □ in substantial compliance with
- $\Box$  not in compliance with

CVSA has the written procedure for manual mixing as well as for disposal of cyanide boxes and bags - PETS-GOP-PTA-020 Handling Sodium Cyanide. CVSA has been a certified hazardous waste generator under Argentinian regulations. CVSA has sent the empty boxes and bags via a certified transporter to a hazardous waste landfill managed by Pelco. CVSA provided example of shipping manifests and return certificates covering this recertification period to verify that offsite disposal of bags and boxes had resumed via a certified transporter to Pelco.

In accordance with the procedure for managing cyanide, CVSA washes the plastic bags with 5 percent sodium hydroxide solution for 48 hours to dissolve any residual cyanide. The bags are then washed three times with fresh water. This wash water is then sampled and analyzed by the internal laboratory to verify that the concentration of free cyanide is less than 10 ppm. The Auditor reviewed randomly selected laboratory results from throughout the recertification period to verify compliance in a spreadsheet of laboratory data for free cyanide from bag rinse samples.

CVSA's Environmental Department manages disposal of the empty bags and boxes with a certified transporter to Pelco landfill in Santa Fe province. CVSA does not return cyanide containers to the supplier.

CVSA has developed and implemented the following procedures to prevent exposure and releases during cyanide unloading, transfer, and mixing activities:

- PETS-GOP-PTA-020 Handling Sodium Cyanide
- PETS-GAF-ALM-001 Reception and Storage of Sodium Cyanide
- PETS-GAF-ALM-002 Dispatch of Sodium Cyanide to the Plant

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- PETS-GOP-002 Forklift Operation
- PLN-GOP-PTA-003 Spill Management

The auditor reviewed the listed procedures and observed a mixing event to verify compliance. The procedure on handling of sodium cyanide describes how to operate all valves, pumps, etc. for mixing solid cyanide, as well as the minimum tank levels acceptable before the start of mixing.

The procedures of cyanide reception and storage, cyanide dispatch, and forklift operation describe unloading and handling the boxes to prevent rupture or puncture.

The procedure for handling cyanide describes lifting of the boxes to the cyanide mixing platform so as to prevent rupture or puncture.

The procedure for reception and storage requires that the boxes be stored no more than three levels high. The spill management procedure address spills of both solid and liquid cyanide.

The procedure for handling cyanide requires video observation from the control room. The procedure also requires PPE as follows: hard hat, safety glasses, rubber boots, rubber gloves, face shield, respirator, Tyvek overalls, hearing protection, radio, and portable HCN monitor.

AGR's solid sodium cyanide in IBC comes with the colorant incorporated, in such way once that cyanide solution is colored during the cyanide solution preparation process. Interviews with plant operators confirmed that high concentrations of cyanide solutions are color red.

The Plant Manager, Metallurgy Chief and Plant Operator for Mixing Event were interviewed.

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### 4. OPERATIONS

Protect communities and the environment during cyanide transport.

#### 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.

The operation is

- ✓ in full compliance with Standard of Practice 4.1
- □ in substantial compliance with
- $\hfill\square$  not in compliance with

CVSA has developed a management system in alignment with local regulations and ICMI standards among other best practices. This system requires operations to identify key risks, develop Standard Operating Procedures (SOP) and provide task and safety training to employees to ensure they carry out their tasks in a safe manner while monitoring and evaluating effectiveness of programs for continuous improvement.

Documentation and training is organized by section (circuit) of the plant and its associated facilities. These include cyanide warehouse, cyanide preparation area, mill including grinding and thickening, process plant circuits as leaching, counter-current decant (CCD), washing and thickening, carbon-in-leach (CIL), Merrill Crowe, clarification, elution, and carbon reactivation. Procedures also are set for the cyanide recovery plant (Cyanisorb), cyanide destruction circuit for tailings, tailings storage facility (TSF), heap leach facility (HLF), which includes a Pregnant Leach Solution (PLS) Pond and an Emergency Pond.

Procedures were reviewed and were found to be sufficiently detailed to enable safe operation. These procedures are documented, controlled and kept current on the company intranet site and are readily retrievable if required by personnel.

The Plant Manager, Metallurgy Chief, Plant Operations Chief and HLF Manager were interviewed.

Plant procedures have been developed and continuously updated for continuous improvement using the original Plant design criteria as developed by specialized engineering companies in coordination with CVSA, to prevent and control cyanide releases and exposures consistent with applicable requirements. Critical design parameters are referenced in management plans and standard operating procedures.

Procedures reviewed, among others are the annual audits of the TSF and HLF by corporate staff of AngloGold Ashanti, MN-GOP-001 Operations and Metallurgy Induction Manual, PETS-GOP-PTA-020 Handling Sodium Cyanide and the Design Criteria HLF, 2010. The Plant Manager, Metallurgy Chief, Plant Operations Chief and HLF Manager were interviewed.

The minimum freeboard at the TSF is 1.5 m. The minimum freeboard for the PLS Pond and Emergency Pond at the HLF are 1 m and 2.7 m, respectively. The pH for mixing and processing is 11 standard units. The operational

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target for the cyanide destruction system is from 30 to 35 ppm Weak Acid Dissociable (WAD) cyanide at the point of discharge for tailings delivered to the TSF.

CVSA has developed and implemented work procedures for cyanide related tasks, which describe the standard practices necessary for the safe and environmentally sound operation of the cyanide facilities. The operation has identified equipment, personnel, and procedures for cyanide unloading and mixing activities as well as for storage facilities, the Process Plant, tailings pond and all associated piping and pumps as having contact with cyanide.

CVSA has a database for work procedures related to cyanide management. These procedures address environmental, safety, operational controls, inspection requirements and preventative and corrective maintenance aspects of the facilities. Procedures were available for both normal and upset or emergency operating conditions. Operational procedures reviewed are:

- PO-GOP-MET-001 Sampling from the Leach Tanks, CIL Tanks and Thickeners
- PO-GOP-001 Decontamination of Equipment and Materials in the Plant
- PO-SUS-MEA-006 Monitoring of Cyanide Solution Spills
- PO-GOP-HL-013 Sampling Solution in the Heap Leach Area
- PO-GOP-HL-014 Drainage and Repair of Hoses in the Heap Leach
- PO-SUS-MEA-010 Treatment of Wastes Contaminated with Cyanide
- PO-GOP-MAP-ELE-043 Weekly Check of the Cyanisorb and Plant Emergency Generator
- PO-GOP-MAP-ELE-044 Monthly Test of Cyanisorb Emergency Generator
- PO-GOP-PTA-032 Tailings Dam Inspection
- PO-GOP-HL-019 Control of the Emergency Pond Level
- PO-GOP-MET-24 Dosification of Peroxide at the TSF
- PO-SGA-001 Management of Change Procedure
- PO-SEG-SME-025 Planning SME Due to Emergency Stoppages of the Plant
- PO-GOP-MET-002 Generator Use in the TSF for Energy Cuts
- PO-GOP-HL-019 Emergency Pool Level Control
- PO-GOP-HL-020 Mineral Collapse in the Pad
- PO-SUS-MEA-001 Extraction and Handling of Samples for Water Analysis
- PO-GOP-MET-006 Cyanide Titration
- PO-GOP-MET-003 Maintenance of Secondary Spill Containment Systems in the Plant
- PO-GOP-MET-012 Preparation of Cyanide Solution
- PO-SUS-MEA-010 Decontamination of Waste that Contacted Cyanide
- PO-GOP-MET-035 Cutting / Grinding Solution in Pulp
- PO-GOP-MET-040 Leaching Kinetics
- PO-GOT-PTA-011 Sodium Cyanide Assays and Calculations (NaCN)
- PO-GOT-PTA-012 Cyanide Preparation Hopper Cleaning
- PO-GOT-PTA-013 Purge Condensable

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PO-MAN-MAP-MP-022 Works on Cyanide Pumps •

CVSA has developed and implemented a change management procedure - PO-SGA-001 Management of Change Procedure - to ensure that the relevant risks are captured, evaluated and controlled before changes to facilities, equipment, processes, and/or resources and equipment are implemented. The need for changes can be identified via inspections, corrective actions, audits, accident/incident reviews and employee inputs during pre-shift, safety and other meetings. The steps are identification, analysis, risk evaluation, document update, and implementation. The procedure requires risk evaluation with respect to safety and environment. CVSA's change management system requires review and sign-off by health & safety (H&S) and environmental personnel depending on the risk determined for the change.

Examples of completed change management forms were available for review by the auditor in the intranet. Completed forms were reviewed including application details, project scope, department approvals, proposed change description, method and sequence, among others. The Plant Manager, Metallurgy Chief and Plant Operations Chief were interviewed.

CVSA has incorporated the following contingency procedures into various standard operating procedures and management plans at the operation:

- PETS-GOP-PTA-006 Emergency Stop of Cyanisorb plant. •
- PETS-GOP-001 Response to Contingencies and Emergencies at the TSF. •
- CIC-PLN-001 Sodium Cyanide Management Plan. •
- PO-SEG-SME-025 Planning SME Due to Emergency Stoppages of the Plant. .
- PO-GOP-MET-002 Generator Use in the TSF for Energy Cuts.
- GOP-HL-019 Emergency Pool Level Control. •
- GOP-HL-020 Mineral Collapse in the Pad. •

Contingencies procedures are in place to help control the adverse effects from abnormal conditions or process upsets as shutdown at the Cyanisorb plant, upsets at the plant, generator usage in power outages, and events at the plant, TSF, and HLF. Temporary cessation is addressed in Section 9 of the closure plan.

Procedures include step-by-step measures for stopping and starting the plant facilities and provide response measures for emergencies related to failures of cyanide equipment, among others.

CVSA has a program to conduct inspections of cyanide facilities with frequencies that varies from daily, weekly, monthly, quarterly and annually. Inspections are conducted by personnel from different areas to the same facilities, which provide additional certainty that conditions that could generate impacts to health or the environment will be identified.

Daily inspections including pre-start checks are conducted for each shift on each circuit. Operators complete inspections of the plant and its various circuits using the daily log sheets. Engineering staff complete most of the monitoring and inspections for the TSF. The data is compiled in guarterly reports and include piezometers, flow rates in the seepage collection chambers, decant pool water levels, bathymetry of the accumulated

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tailings, discharge rates, among others. Maintenance staff complete inspections according to a planned schedule in the SAP database.

Maintenance inspections are carried out on a routine basis according to the scheduled preventative maintenance system. Work orders are generated by the maintenance system for the various plant facilities and equipment.

The inspection program was found to be sufficient to assure that the operation is safe and functioning within design parameters. Examples of daily log sheets for the plant, TSF, and HLF were reviewed also daily inspection forms for the HLF pumps, pipelines, and ponds. The documentation showing inspections records for the certification audit showed that inspections were done on a consistent manner.

Operators inspect tanks holding cyanide at the beginning of their shifts (two shifts per day). These area visual inspections of the process facilities, including tanks for signs of corrosion, leakage and other potential issues. Inspections include the mixing and storage tanks, and tanks containing cyanide in the Process Plant. The cyanide tanks and vessels are inspected for structural integrity and signs of corrosion and leakage. Maintenance staff conduct formal visual inspections of tanks and vessels every 6 months. Key tanks are subjected to non-destruction testing by a contractor on a rotating 5-year schedule. Examples of non-destructive testing for tanks were reviewed.

Secondary containments are inspected regularly by the operators, but are also subject to in-depth inspection and maintenance every 3 years by an external contractor. The contractor sealed cracks and applied a new coat of epoxy. Secondary containments are also inspected at the beginning of the operators shift, looking for integrity, presence of fluids and available capacity.

The double-lined PLS Pond contains a leak collection and recovery system (LCRS); the single-lined Emergency Pond does not. CVSA properly monitors the LCRS. Monitoring wells are used for leak detection at the plant, HLF, and TSF.

Pipelines, pumps and valves are inspected at the beginning of each shift, for deterioration or leakage. These inspection items are included in checklists and records maintained. The tailings pipeline is inspected through visual inspections. Inspections are recorded in a TSF log sheet that covers the tailings pipeline conditions.

The TSF, PLS Pond, and Emergency Pond are inspected using inspections forms that document water levels and/or volume. The ponds are inspected daily and the TSF is inspected weekly. Records of the inspections conducted by CVSA to cyanide facilities, were reviewed by the auditor and were found to be complete.

Inspections and subsequent corrective actions identified are documented including the nature and date of the corrective actions. Daily and maintenance inspections are recorded on the inspection sheets and any follow up work requests are logged. Inspection sheets and work orders identify the name of the inspector, the date of the inspection and any identified items for corrective actions. Follow-up actions are processed through completion using the SAP software for maintenance.

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CVSA has developed a system to manage all maintenance tasks including those identified during inspections. Planned maintenance schedules are generated in the SAP system which is then automatically issued at the prescribed date and/or frequency as a work order. Maintenance schedules are determined according to the level of risk associated with the equipment and/or manufacturer recommendations and specifications.

Pumps, pipelines, tanks, valves, sensors and safety equipment are all included under the preventative maintenance program. These equipment lists and preventive maintenance (PM) schedules are maintained in the system by process maintenance personnel and are updated as required due to plant changes, incident, audit and/or inspection findings. When determining PM frequency, consideration is given to the level of associated risk and the availability of spare and/or redundant equipment when determining the equipment category.

The corrective maintenance has a weekly schedule. Required actions are identified through the inspection program, where a work order is issued and included in the maintenance weekly schedule. Work Procedures for cyanide equipment covering electrical, mechanical and instrumentation maintenance as well as the workflow summary including identification, scoping, planning and scheduling of maintenance work were reviewed by the auditor. Also were reviewed maintenance histories from the SAP database for selected equipment covering the recertification audit.

CVSA has his power plant for all the mine site and backup diesel powered generators which have adequate capacity to power pumps and other equipment necessary to prevent unintentional cyanide releases and exposures if primary power is interrupted. A maintenance program is in place to maintain backup power availability in case of a power failure. The emergency generators are inspected and tested as part of the self-managed plant preventative maintenance program. CVSA has developed written procedures for testing and using these generators:

- PO-GOP-MAP-043 Weekly Check of the Cyanisorb and Plant Emergency Generator.
- PO-MAN-MAP-ELE-044 Monthly Test of the Cyanisorb Emergency Generator.
- PO-GOP-MET-002 Generator Use in the TSF for Energy Cuts.
- Review from SAP for start-up and maintenance records for selected emergency generators.

CVSA conducts weekly start-up tests and monthly preventative maintenance. The auditor reviewed start-up and maintenance records from the SAP database from throughout the recertification period to verify compliance. The auditor also spot-checked selected emergency generators and observed them to be in good condition. Inspections and testing of transformer and substation are also conducted. The auditor reviewed records of these tests and inspections.

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### Standard of Practice 4.2

Introduce management and operating systems to minimize cyanide use, thereby limiting concentrations of cyanide in mill tailings.

The operation is

✓ in full compliance with

Standard of Practice 4.2

- □ in substantial compliance with
- $\Box$  not in compliance with

CVSA conducts test work for cyanide addition rates to optimize the use of cyanide in the gold recovery process. The results from the test work are compared against historical test work and if required the cyanide set point to the leach circuit will be adjusted to optimize cyanide use in processing activities. The metallurgy team periodically performs bottle roll tests to optimize cyanide addition rates added. The ore comes for a number of open pit mines and an underground mine. CVSA has conducted bottle roll testing during the recertification period to confirm the established dosing curve as a function of silver content. The Auditor reviewed an example spreadsheet for the bottle roll testing and the dosing curve to verify compliance and the procedure OPL-GOP-PTA-001 Concentration of Sodium Cyanide in Tank 1.

CVSA has evaluated both manual titration and inline titration to control cyanide addition to the process. The mine uses only manual titration to control cyanide addition. In-line control did not result because the tailings destroyed the instruments. The Auditor reviewed examples of the plant daily log sheets to verify compliance.

CVSA has implemented a strategy to control its cyanide addition. Results from the daily cyanide concentration analyses are a continuous strategy to control cyanide addition. The results are reviewed and if changes are needed then they are communicated to the process operator. Manual titration is performed every 4 hours at three points in the plant to control cyanide addition: at the ball mill, Tk1 1 and Tk 6. The Auditor reviewed examples of the plant daily log sheets to verify compliance.

#### Standard of Practice 4.3

Implement a comprehensive water management program to protect against unintentional releases.

The operation is

- ✓ in full compliance with Standard of Practice 4.3
- □ in substantial compliance with
- $\hfill\square$  not in compliance with

CVSA developed a site wide probabilistic water balance using the Goldsim software, for the engineering design of the TSF. Then CVSA developed water balances for the TSF and the HLF in Excel spreadsheets which are in use now.

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Both water balances are comprehensive in that they include the appropriate facilities and physical processes. Both are probabilistic in that consider extreme events and uses distributions to reflect the variability in key parameters.

The auditor reviewed the water balance quarterly reports, where observed that 90% of the water used in the process is recovered from the TSF. The evaporation rate is 10 times the precipitation rate.

The water balance includes calculations for impacts from precipitation, seepage, and evaporation. The water balance draws on historical data taken from site rain gauges as well as from local meteorological monitoring locations to account for the seasonal variances in rainfall duration and intensity.

Water inflows and outflows are considered in order to calculate the TSF water balance. Inflows include direct precipitation, run-off from the beach areas, and tailings discharge. Outflows include evaporation, water infiltration through the dam and the recovered water which is sent back to the plant. Water retained in the tailings is also taken into account. The HLF water balance includes the irrigation rates of the ore, return pumping rates from the ponds, precipitation, and evaporation.

Extreme precipitation events have been modeled (> 40 mm of precipitation and return intervals of 100 years or more). For the PLS Pond, Emergency Pond, and the HLF, the solution management systems have been designed for a 1:1000 year rainfall event. The HLF design has be done according to standards of the ANCOLD – Australian National Committee of Large Dam.

CVSA has measured precipitation at the site since 1997 and evaporation since 2001. The water balances have incorporated these data. The mine has a meteorological station on site transmitting data online via intranet. They also use data from San Julian Port meteorological station, 120 km from the mine site.

There is negligible run-on from upgradient as the TSF and HLF are elevated above surrounding ground, but the runoff from the beach within the TSF and the direct precipitation on the decant pool have been included.

Impacts of freezing and thawing are not considered in the water balance as there is no build-up of snow and ice over prolonged periods of time in the region, and there is no large catchment for the dam. Therefore the impact of these freezing and thawing is minimal.

Losses of process solution due to seepage, evaporation, infiltration and recirculation have been taken into consideration in the water balances. The site is in an area of net negative water balance and so this information is used to minimize losses..

In case of power outages, backup generators are available at both the TSF and HLF, the Cyanisorb plant, pumping system to the tailings dam and seepage water recollection from the dam.

CVSA does not discharge from the TSF or HLF to surface waters.

CVSA monitors the depth to water in the wells around the TSF and HLF. CVSA staff stated that the water table is approximately 70 meters below ground surface and does not affect the water balance.

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CVSA Process area performs daily and weekly inspections to the tailings dam , and quarterly reports are generated. These reports include summaries of tailings bathymetry, inflows, outflows, precipitation, evaporation, and freeboard. The HLF water balance was implemented via a written procedure for level control in the Emergency Pond accompanied by daily inspections for the PLS Pond and Emergency Pond and daily HLF datasheets. The auditor reviewed the procedures, inspection forms, and reports to verify compliance. Among the evidence reviewed covering the recertification period were the Quarterly TSF Reports, examples of Weekly TSF Inspections, examples of Pumping and Pipeline Equipment Checks, examples of HLF Datasheets and procedures PO-GOP-HL-019 Control of the Emergency Pond Level and PO-GOP-PTA-032 Tailings Dam Inspection.

The tailing dam daily reports include water volume and free board available, also reviewed the weekly checklists from the dam operator, covering the recertification period. The auditor observed solution levels to be at reasonable levels to prevent overtopping during the site visit.

CVSA has a program to conduct inspections of cyanide facilities with frequencies that varies from daily, weekly, monthly, quarterly and annually. Data collected is used to update and calibrate the water balance periodically.

Operational procedures specify the minimum freeboard requirements for the TSF and HLF to prevent overflows. CVSA has operated the TSF and the HLF with adequate freeboard throughout the recertification period. According to the Quarterly TSF Reports, the minimum freeboard is 1.5 m. CVSA has operated the PLS Pond and Emergency Pond at the HLF with their required freeboards of 1 m and 2.7 m, respectively, throughout the recertification period. The auditor reviewed a time series graph of solution volumes in the PLS Pond that showed the pond was never more than approximately 70 percent full. This graph also indicates that there were no overflows from the PLS Pond to the Emergency Pond during the recertification period. The auditor observed during the site visit that both facilities are being operated according to design parameters.

CVSA has measured precipitation and evaporation at the site throughout the recertification period according to a written procedure for the meteorological station. CVSA staff stated that to date the operational parameters for the TSF and HLF have not been modified because the data have not indicated significant differences to the design parameters. The Auditor reviewed spreadsheets of monthly precipitation and evaporation data to verify compliance.

Meteorological data is collected online via intranet. This data is then updated into the water balance model. CVSA staff compare updated meteorological data against design assumptions and where necessary adjust effluent treatment plant operating practices. The auditor reviewed on-site meteorological monitoring data. The information was found to be complete.

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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.

The operation is

✓ in full compliance with

Standard of Practice 4.4

- □ in substantial compliance with
- not in compliance with

CVSA has implemented measures to restrict access by wildlife from open waters at the site. Measures for the TSF include chain link fencing and cyanide destruction circuit. Measures for the plant include chain link fencing. Measures for the HLF include chain link fencing around the pad; and chain link fencing with a concrete curb around the PLS and Emergency Ponds. The PLS Pond WAD cyanide are in the range of 450 – 500 ppm. CVSA maintains the PLS Pond with bird balls covering the entire surface of the solution.

Safety access to these facilities has been improved during this recertification period installing electrical doors, which can be only accessed with electronic cards by authorized personnel. As a deterrent rather than a physical restriction, CVSA also maintains propane cannons at the PLS and Emergency Ponds. The Auditor observed these measures to be in good condition.

CVSA has demonstrated that the WAD cyanide concentration in open waters was less than 50 ppm, or that physical restrictions are in place for open waters with WAD cyanide concentrations greater than 50 ppm. The quarterly reports for the TSF included results of monthly sampling for WAD cyanide in the spigot discharge and the decant pool. The auditor also reviewed the WAD cyanide data in the PLS Pond and time series graph of solution volumes in the PLS Pond covering the certification period.

Operational checklists at the TSF and PLS Pond require that routine checks are done for wildlife mortalities. Any wildlife mortalities identified at any area of the mine are recorded as environmental accidents and investigations are conducted to ascertain the cause in accordance with reporting protocols and procedure PO-SUS-MEA-016 Methods for Treatment of Samples for Toxicological Examinations.

The CVSA Environmental staff stated that there were no wildlife mortalities related to cyanide exposure during the recertification period. The staff further stated that if there had been suspected cyanide-related mortalities, tissue samples would have been collected for toxicological analysis according to their written procedure to determine whether cyanide exposure was involved.

CVSA applies leach solutions to the HLF via buried drip emitters, about 30 cm depth, thus eliminating the potential for significant ponding on the heap surface, as well as the potential for overspray. The auditor did not observe any ponding during the site visit.

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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.

The operation is

 $\checkmark$  in full compliance with

Standard of Practice 4.5

- □ in substantial compliance with
- not in compliance with

CVSA does not have a direct discharge from the cyanide facilities to surface water. However, CVSA does have a direct discharge from mine dewatering, a non-cyanide facility, to two lakes near the mine. Analytical results from samples collected twice a year at Laguna la Charca and Laguna Flamenco showed non-detect concentrations for total, WAD, and free cyanide throughout the recertification period.

The operation do not has direct discharges from the cyanide facilities to surface water.

CVSA does not have an indirect discharge from the cyanide facilities to surface water. Analytical results from samples collected at two lakes, Laguna la Charca and Laguna Flamenco, showed non-detect concentrations for total, WAD, and free cyanide throughout the recertification period.

#### Standard of Practice 4.6

Implement measures designed to manage seepage from cyanide facilities to protect the beneficial uses of ground water.

The operation is	$\checkmark$	in full compliance with	Standard of Practice 4.6
		in substantial compliance with	
		not in compliance with	

CVSA has implemented a series of measures to manage seepage from the cyanide facilities to protect beneficial use of groundwater, as cyanide destruct circuit for tailings, TSF dam walls lined with High-Density Polyethylene (HDPE) geomembrane, TSF fault zone lined with HDPE geomembrane, TSF beach length maximized, TSF supernatant pool size minimized, TSF seepage collection and return system around the dam perimeter, TSF Tailings and decant return pipelines with secondary containment, HLF and ponds lined with HDPE geomembrane, concrete secondary containments at plant, groundwater monitoring wells around the TSF, HLF, and plant.

Monitoring points are located, among others, around the TSF to identify possible seepage which are monitored. Any seepage escaping from the TSF will be pumped back into the TSF. Samples are taken for monitoring and

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testing purposes by the Environmental department. The TSF was visited by the auditor to verify that it is working according to design parameters.

Although local regulation have not established designated beneficial uses for groundwater and there are no applicable standards or established points of compliance, CVSA takes as reference Law 24585 -called the Mine Code- where Table 3 refers to open water values and Table 6 to water for cattle. All open water at CVSA comes from dewatering. The Environmental Supervisor stated that the Environmental Impact Statement for the mine established a baseline for cyanide in groundwater and that an increase from that baseline would be considered an exceedance. The baseline is non-detect concentrations for total, WAD, and free cyanide.

CVSA collects groundwater samples from monitoring and pumping wells around the TSF, HLF, and Plant on a monthly, quarterly, and quarterly basis, respectively. To date, total, WAD, and free cyanide have not been detected in groundwater around the mine. The samples are analyzed by an external laboratory using a detection limit of 0.02 mg/L for all three cyanide species. The auditor reviewed laboratory data sheets from the TSF, HLF and Plant covering the certification audit period to verify compliance. The data indicated no detection of WAD CN concentrations.

CVSA does not use mill tailings as underground backfill.

CVSA has not detected total, WAD, or free cyanide in groundwater around the TSF, HLF, and plant to date.

#### Standard of Practice 4.7

#### Provide spill prevention or containment measures for process tanks and pipelines.

The operation is

✓ in full compliance with

Standard of Practice 4.7

- □ in substantial compliance with
- not in compliance with

All tanks used for mixing, storing, and/or processing of cyanide and/or cyanide solutions are designed with secondary containment. Level indication, operator inspections, secondary containment and sump pumps help to prevent releases to the environment.

The Plant process areas where cyanide is present, have concrete floor, including the cyanide area, the process solution tanks are surrounded by curbs and walls, providing a competent barrier to seepage. The concrete floor is sloped to drain to concrete trench drains, where any spills or rainwater will be pumped back to the process.

The secondary containment concrete slabs and walls have been painted with two coats of epoxy material that improve impermeability to the containment system. In addition, epoxy paint has been used for joints and small cracks on the concrete slabs. The secondary containment systems are inspected consistently as part of the

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process facilities inspection system. The auditor observed that the concrete containment systems were in good condition at the time of the audit.

All secondary containments at CVSA are designed with adequate storage to contain at least 110 percent or greater of the capacity of the largest tank in the bunded area. This was found in compliance in the previous recertification audit, no new cyanide installation was constructed during the last 3 years certification period.

CVSA has installed sumps and pump back systems in all secondary containments to return spilled solutions to the process circuit. At the heap leach facility the solutions are pumped from the sumps back to the leaching system.

All tanks for cyanide process at CVSA have secondary containment. CVSA has installed four monitoring wells in the vicinity of the leach tanks (CVMP 1 to 4) to check for cyanide in groundwater. To date, total, WAD, and free cyanide have not been detected in groundwater around the plant. CVSA has also developed written procedures for containing spills and monitoring areas affected by cyanide spills, should this be required. The Auditor reviewed groundwater monitoring data and procedures to verify compliance from the monitoring well data and Pozo Cyanisorb (the groundwater monitoring well associated with the Cyanisorb circuit),. Also reviewed procedures PLN-GOP-003 Containment of Spills of Hazardous Materials and PO-SUS-MEA-006 Monitoring of Areas Affected by Cyanide Spills.

CVSA has installed secondary containment for all cyanide-related pipelines. The pipelines are either within secondary containment or have their own containment. The pipelines in the plant are located within concrete secondary containments. The pipelines between the plant and HLF are installed in a geomembrane lined ditch. The pipelines between the plant and the TSF are installed inside a rectangular metal conduit. A geomembranelined dump pond is installed at the low point in the pipeline profile between the plant and TSF to capture tailings or decant water that might be spilled into the conduit. The auditor observed these containments to be in good condition.

In addition to the spill prevention and containment measures for cyanide pipelines, routine inspections and preventative maintenance are performed. Flange covers are also used to minimize the impacts from any spray that may occur on high risk pipelines.

Flow meters are provided on the tailings line with an alarm in the plant control room signaling flow disparity if measurements are outside of expected parameters. Additionally, the tailings line contains pressure sensing equipment to signal a change or a loss in line pressure.

Risk assessments have been conducted to identify special protection needs for areas susceptible to leaks which are located near storm water diversions. Process plant changes and continuous improvements are implemented based on these risk assessments and cyanide related incidents to protect against leaks and ensure that adequate protective measures are Identified and in place for high risk areas.

There are surface water bodies close to the cyanide facilities, however, they drain into contained facilities (e.g. TSF, mill event pond) that will help manage any contingencies. This minimizes the risk of potential impacts due

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to spillages of process solutions. . The TSF seepage collection drains work together with the seepage collection wells and have pump back stations into the TSF. Also, there are monitoring wells below the TSF that are monitored on a monthly basis.

Possible releases from the tailings and decant pipelines between the plant and TSF have the potential to affect the seasonal surface water lakes in the vicinity of the TSF. As indicated in the previous audit report, these are installed inside a rectangular metal conduit and CVSA constructed a geomembrane-lined dump pond at the low point in the pipeline profile to better contain possible spills.

CVSA has installed HDPE, mild or stainless steel materials which are compatible with cyanide will be used to plant construction. In the event that changes to cyanide solution tanks or pipelines are required, a change management plan shall be followed to ensure that compatible materials are used for the installation works.

### 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.

The operation is

✓ in full compliance with

Standard of Practice 4.8

- in substantial compliance with
- □ not in compliance with

Quality control and quality assurance -QC/QA- programs have been implemented during the construction of cyanide facilities at CVSA. QC/QA reports where reviewed during the initial Code certification audit and post audits when any new cyanide installation was built and were found in compliance. In occasion of this recertification audit, the auditor confirmed records of the QC/QA programs are maintained in CVSA part in the intranet and all in hard copies at the Process Plant, available for review.

No new cyanide installations have been constructed during this recertification period. In occasion of the audit work was in progress on the regrowth of the tailings dam. The auditor spoke with the supervising contractor in charge of the QC / QA for the works, verifying this is being done.

As reported in the previous ICMI certification audit reports and found in compliance, as part of the QC/QA programs for all construction and changes to installations, the compatibility and suitability of materials has been considered to ensure that the design and implementation meets the intended requirements. A listing of material types to be used and minimum design/operating requirements is provided for within the QC/QA documentation with sign-off approvals from authorized personnel.

CVSA QC/QA documentation for all cyanide installations includes materials specifications, appropriate testing concerning the suitability of materials, welding, concrete, adequacy of earthworks and soil compaction, and

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installation of liners. The program included the quality of metal fabrication at the tank vendor, subgrade and concrete testing and suitability of materials.

Thea auditor confirmed that records of QC/QA documentation are maintained in hard copies at the Process Plant, project an as built drawings are also maintained in electronic version in CVSA intranet. The document control center is responsible to ensure that adequate QC/QA records are provided and maintained for the life of the mine.

As reported in the previous ICMI certification audit reports and found in compliance, QC/QA records have signoffs from appropriate personnel including qualified engineers and/or operations personnel attesting to the viability of the design, construction and as-built materials. These sign-offs and reviews are documented and maintained as part of the QC/QA documentation.

Qualified engineering companies performed the QC/QA inspections and reviews during construction of the cyanide installations at CVSA and prepared the final construction reports certifying that the facilities were constructed in accordance with the design drawings and technical specifications.

Records of construction reports, including as-built drawings, for the TSF, the Process Plant and the mill, among others, were available for review.

#### Standard of Practice 4.9

#### Implement monitoring programs to evaluate the effects of cyanide use on wildlife, surface and ground water quality.

The operation is

 $\checkmark$  in full compliance with

Standard of Practice 4.9

- in substantial compliance with
- not in compliance with

CVSA has developed the Environmental Monitoring Program and series of procedures which provide the framework for monitoring activities, as the Scope for Water Monitoring and procedure PO-SUS-MEA-016 Methods for Treatment of Samples for Toxicological Examinations. These procedures cover the monitoring activities for the evaluation of possible effects from cyanide use on wildlife, surface water and ground water.

There are procedures for surface water quality sampling and groundwater quality sampling, standard work instructions for monitoring activities for both groundwater and surface water.

A table summarizing the annual monitoring program is developed each year, and is accompanied by a written procedure for water sampling and a scope of work for laboratory analysis. CVSA has also developed a written procedure for sampling tissues from wildlife mortalities in the event that toxicological causes are suspected.

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Sampling protocols developed for the site have been developed, reviewed and implemented with input from qualified internal and external personnel. These protocols are based upon, regulatory, corporate and other requirements with an aim to implementing international best practices. The protocols are supported by a variety of procedures maintained by the environmental and process departments to ensure that proper methods and chains of custody are allowed. p.

CVSA has a team dedicated to environmental monitoring and management as it relates to both routine and emergency sampling. All final reviews and approvals of sampling plans and analytical protocols shall be done by qualified and authorized personnel with appropriate background and experience in sampling and analytical techniques.

The sampling and analytical protocols for the mine have been developed and regularly updated by the Environmental Department staff who are graduated professionals in Biological Science, Environmental Management, Mining Engineering and Environmental Science with 7 years of experience..

CVSA has contracted with Argentaguas SRL external laboratory, for analysis of water samples. This laboratory is certified by the Argentine government as a qualified laboratory, as evidenced on the laboratory's website.

Sampling and handling procedures is addressed in procedure PO-SUS-MEA-001 Extraction and Handling of Samples for Water Analysis. This includes requirements for sample locations, frequency, chain of custody documents, CN species analysis and analytical procedures.

CN species analysis marked on the chain of custody document dependent on the type of sample. Environmental monitoring team members including environmental sampling technicians are trained on these sampling & handling procedures.

The procedure for extraction and handling specifies sampling methods, chain of custody, and handling and shipping of samples. The Scope for Water Monitoring specifies containerization, preservation, cyanide species to be analyzed, and field sampling information. CVSA provided maps showing the sampling locations. The Auditor reviewed these documents to verify compliance.

Documenting the field conditions during the time of sampling is done using monitoring field forms. These forms are used to document possible situations and ambient conditions that may impact the analytical results for each sample. The data is stored in the data base by the Environmental Department

Monitoring reports record in writing the weather conditions, the presence of wildlife, field parameters (i.e., conductivity, pH, temperature), groundwater levels, and other characteristics of the water (i.e., color and smell). Completed monitoring field forms and visits were reviewed by the auditor and verified that these conditions are being registered.

CVSA has monitored for possible cyanide in surface water and groundwater downgradient of the site. Four groundwater monitoring wells are located around the plant; 12 wells are located around the TSF; and 5 wells are located around the HLF and 2 process ponds. CVSA monitors in two seasonal surface water bodies in the

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vicinity of the TSF (i.e., Laguna Flamencos and Laguna La Chacra). The auditor reviewed annual monitoring programs and monitoring results from throughout the recertification period to verify compliance.

CVSA inspects for wildlife mortalities at the TSF weekly and the HLF daily. Given that CVSA destroys cyanide to less than 50 ppm WAD cyanide in the tailings before deposition, the Auditor consider the weekly inspection frequency for the TSF to be adequate. CVSA has developed a written procedure for toxicological analysis of animal tissues suspected of cyanide intoxication. CVSA staff stated that there were no mortalities related to cyanide intoxication during the recertification period. Any wildlife mortalities will be reported to the Environmental department, logged within the wildlife mortality registry and may be investigated to try and ascertain the cause. The Auditor reviewed inspection forms and the procedure to verify compliance.

CVSA monitors groundwater and surface water at frequencies adequate to characterize the medium being monitored and to identify changes in a timely manner. Groundwater is monitored monthly at the TSF and quarterly at the plant and HLF. Surface water is monitored weekly when water is present. Records were available and reviewed by the auditor for all sampling and monitoring activities. The frequencies of the monitoring activities were deemed to be appropriate by the auditor.

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### 5. DECOMMISSIONING

#### Protect communities and the environment from cyanide

#### Standard of Practice 5.1

Plan and implement procedures for effective decommissioning of cyanide facilities to protect human health, wildlife and livestock.

The operation is

✓ in full compliance with

Standard of Practice 5.1

- □ in substantial compliance with
- not in compliance with

CVSA has an updated Mine Closure Plan describing the procedures to decommission the cyanide facilities at the cessation of operations. The auditor reviewed the fourth update of the Plan prepared by Golder Associates in 2018. Local regulations requires the closure plan to be updated every 3 years. On the occasion of the audit, CVSA was finalizing fifth version of the plan to be presented in August to the authority.

The plan has been updated to take account of the changes in quantities as areas are expanded or progressively closed. The Mine Closure Plan was found to follow the International Cyanide Management Code (ICMC) requirements. It includes descriptions for equipment decontamination, the removal of residual cyanide reagents, rinsing of heap leach bed, installation of necessary measures to control and management of surface and underground water, such as pumping and treatment systems that would operate during the closure period of the facilities. The document considers decommissioning strategies for the cyanide facilities and treatment systems which may be cyanide bearing.

In addition to the updated Mine Closure Plan, CVSA has developed procedures for decontaminating equipment and materials used in the process, which are currently being implemented. CVSA would implement these same procedures at cessation of operations. At closure all processing plant items and steel structures will be washed thoroughly with raw water. All concrete surfaces will be thoroughly washed down to remove any residual material. Pipelines will be flushed dependent on the material conveyed and whether they are to be re-used after closure.

Section 11 of the Closure Plan describes the implementation of the closure work program which has been developed to optimize the closing process. The closure activities are shown in the Gantt Chart presented in Annex E of the Plan. These activities are developed and changes and updates are made to the schedule to reflect any impacts including duration and sequencing.

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The current version of the closure plan is from 2018. Updates to the quantities and cost estimate have been undertaken periodically. The plan has been updated to take account of the changes in quantities as areas are expanded or progressively closed.

As part of this review, CSVA personnel review and comment on the plans and the associated scheduling, procedures, and activities. This helps to ensure that the plan is continuously updated and accounts for changes in the mine life planning and associated decommissioning costs, activities and responsibilities.

#### Standard of Practice 5.2

#### Establish an assurance mechanism capable of fully funding cyanide related decommissioning activities.

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

CVSA has estimated the cost to fully fund third party implementation of the cyanide-related decommissioning measures as identified in its site closure plan. Section 12 of the Closure Plan provides an estimation of costs associated with final closure.

The costs have been estimated for each area and per facility and have been calculated to a conceptual level, with an accuracy of approximately  $\pm$  25 percent. The availability of more information with respect to the previous version of this document, has allowed a reduction in the level of uncertainty in 10 percent. The unit costs used are based on the work being executed by third party contractors, hired on the basis of competitive offerings. A 25 percent contingency factor is applied to ensure an adequate financial provision in the case that the unit costs or the quantities are greater than estimated.

Decommissioning and closure costs for the cyanide facilities (including costs for maintenance and monitoring activities) make up approximately 45 percent of the total closure cost. These facilities include the mill, process plants (for concentration and leaching areas), heap leach facilities, process ponds, and the tailings impoundment.

The Mine Closure Plan has been updated within the last 3 years to take account of the changes in quantities as areas are expanded or progressively closed. The previous Closure Plans are documented in reports from Golder Associates.

The auditor reviewed the fourth update of the Mine Closure Plan prepared by Golder Associates in 2018. Section 12.0 Cost Estimates – Closure Plan provides an updated cost estimate.).

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CVSA has established self-insurance as the financial mechanism to cover the estimated costs for cyaniderelated decommissioning activities. A professional financial auditor provided a certified statement that the operation has sufficient financial strength to fulfill the decommissioning obligations.

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### 6. WORKER SAFETY

Protect workers' health and safety from exposure to cyanide.

#### Standard of Practice 6.1

Identify potential cyanide exposure scenarios and take measures as necessary to eliminate, reduce and control them.

The operation is

- ✓ in full compliance with Standard of Practice 6.1
- □ in substantial compliance with
- $\hfill\square$  not in compliance with

CVSA has established safety works procedures for cyanide related work which helps to ensure that worker exposure to cyanide is minimized and/or controlled.

The procedures have been developed for the cyanide storage, preparation area and all process areas at the plant. They are detailed for the risks involved with each task (including preparation, plant operations, entry into confined spaces, and equipment decontamination) and adequately describe safe work practices.

The procedures detail task specific requirements, minimum training requirements to conduct the task, and procedures to follow in case of a contingency. Verification of the written procedures included review of the specific task, plans and worker interviews. Procedures were reviewed and found to be sufficiently detailed to enable safe operation and to minimize worker exposure.

- PETS-GOP-PTA-020 Handling Sodium Cyanide
- PETS-GOP-PTA-004 By-pass of Cyanisorb Plant
- PETS-GOP-PTA-005 Transfer of Recovered Cyanide
- PETS-GOP-PTA-006 Emergency Stop of Cyanisorb Plant
- PETS-GOP-PTA-007 Start-up of Cyanisorb Plant
- PETS-GOP-001 Response to Contingencies and Emergencies at the TSF
- PETS-GOP-002 Forklift Operation
- PETS-GAF-ALM-001 Reception and Storage of Sodium Cyanide
- PETS-GAF-ALM-002 Dispatch of Sodium Cyanide to the Plant
- PETS-GGE-008 Confined Spaces

CVSA procedures provide line item listings of requisite personal protective equipment (PPE) to prevent and/or minimize worker exposure to cyanide and/or cyanide containing solution. In addition to these procedures,

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signage and task safety training is used to provide awareness to personnel of the requisite minimum PPE requirements for an area.

During pre-start checks, operators are required to identify whether they have the requisite PPE to perform the task at hand and/or identity any upset conditions which may require additional precautionary measures. In situations where the task is non-routine, a Job Hazard Analysis (JHA) may be required to identify any risks associated with the work and ensure that adequate PPE is provided to complete the work safely.

Observations during the audit confirmed that hard hat, rubber boots, rubber gloves, chemical suits, face shields, handheld two way radio, and HCN monitors were in use for tasks that were performed at the cyanide mix area.

Pre-work inspections prior to a cyanide preparing event are completed by process personnel. For example, cyanide preparation pre-inspections include pH verification, first aid equipment, cyanide valves, tanks and pumps, and a checklist of the steps to follow. Pre task inspection records were reviewed to verify compliance.

CVSA has implemented a change management procedure (MOC) by mean of the SE SUITE (Document control software) to manage changes to facilities and ensure that these changes do not adversely impact on health, safety and the environment. The SE SUITE is a system for managing proposed process and operational changes and their potential impacts on health and safety of the workers. The procedure requires review and sign-off by health, safety and environment personnel. Involvement and operational personnel helps to identity now changes to a facility or its operating practices may increase cyanide exposure risks and provides a chance to evaluated, address and implement effective change management.

The procedure addresses the current and potential controls put in place to maximize business effectiveness, minimize adverse conditions and promote continuous improvement associated with change management. The auditor reviewed MOC examples in the software, finding it in compliance.

Workers at the operation are given the opportunity to provide input to procedures via a variety of mechanisms including pre-shift meetings. Comments for improvement are directed to supervisors and/or management for consideration.

New and revised documents go through a review procedure which may include feedback from area operators with significant experience in that area. Comments are incorporated and then updated procedures are disseminated to the supervisors for review with the crew for final review and implementation.

The Hygiene and Safety Committee meets every month, and the supervisors from the different process areas participate to review the operating procedures with respect to their work sector. Each supervisor in turn has the obligation to review a minimum of four procedures per month with the collaboration of a Health and Safety Coordinator. In addition, the employees of each process area can request a change if they observe any activity in the process that can be improved or changed. The workers inform their supervisor, and if the observation has merit, it is discussed with the committee and the procedure is changed. Then the change is approved by the Hygiene and Safety Department. The Auditor reviewed examples of meeting minutes of the Hygiene and Safety Committee from throughout the recertification period to verify compliance.

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# Standard of Practice 6.2

Operate and monitor cyanide facilities to protect worker health and safety and periodically evaluate the effectiveness of health and safety measures.

The operation is

✓ in full compliance with Standard o

Standard of Practice 6.2

- □ in substantial compliance with
- $\ \ \square$  not in compliance with

CVSA has determined that a pH greater than 11 is appropriate to limit the evolution of HCN gas during mixing and production activities, as prescribed in Section 4.2.9 of the procedure PETS-GOP-PTA-020 Handling Sodium Cyanide.

CVSA has maintained this pH using a computerized management system, SCADA (Factory Talk View), that automates the pH circuit and detects the pH levels by electronic process logic control (PLC) monitoring and, if necessary, adds lime to the solution in the correct amount.

CVSA has installed an electronic system to detect HCN gas levels in the following areas: Mill, Leaching Plant, Cyanisorb, CIL, Acid Elution Wash, and Cyanide Preparation. This system allows continuous monitoring of HCN gas levels and communicates the results to plant employees via large overhead electronic screens strategically located at the entrances of the plant and the Cyanisorb area. They also have lights indicators announcing HCN levels as a semaphore system, strategically distributed in the plant area.

CVSA has both fixed and portable HCN monitors. CVSA has installed 19 fixed HCN monitors and provided portable units that undergo quarterly calibration. According to a written procedure PLN-GGE-Attachment 1, monitors are set for pre- alarm at 3 ppm and evacuation at 10 ppm. Pre-alarm means operators will verify the situation and take corrective actions as needed until the situation returns to normal. At the Cyanisorb area, monitors are set to evacuate at 4.7 ppm. The fixed units have alarms that are visual (lights) and audible (sirens). The auditor observed the fixed and portable units, the overhead screens, and the alarms during the site visit.

CVSA has established a number of high risk areas where exposure to HCN gas may occur according to the Code requirements, including the Mill, Leaching Plant, Process Plant, Cyanisorb, CIL and Cyanide Preparation. Safe work procedures have been developed for work in these areas, which specify the required PPE. Work procedures are designed to ensure that HCN gas is not emitted at hazardous levels through pH control. CVSA has installed an electronic system to detect HCN gas levels in the areas listed above. This system allows continuous monitoring of HCN gas levels and communicates the results to plant employees via large overhead screens strategically located at the entrances of the plant and the Cyanisorb area.

Signage, procedures and training developed by the process plant help to ensure that workers understand the high risk areas and the alarm responses requirements. Process plant personnel are responsible for ensuring that adequate levels of signage and alarms are maintained throughout the plant to protect against HCN exposures.

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Workers are required to wear personal HCN monitors at the following areas: cyanide storage, cyanide sparge/mix, discharge to the ball mill and cyclone, trash screens, leach tanks #1 and 2, carbon safety screen and upper levels of the detox area.

CVSA has maintained, tested, and calibrated the HCN monitors during the recertification period. CVSA has performed these activities according to the frequency for calibrating the hydrogen cyanide gas detectors recommended by the manufacturers, which is reflected in a maintenance plan (Excel spreadsheet) in which the instrument and the frequency of maintenance are specified. This information is loaded into the SAP database and then the same software generates a notification of the requirement and allows tracking the task. Quarterly calibration records were reviewed to verify compliance. The calibration of the pH meters is performed weekly by CVSA staff. The auditor reviewed the annual instrumentation maintenance plans and Certificates of Calibration of Detectors of HCN covering the certification period.

Signage is displayed at the plant entrance and throughout the various facilities including the tailings facility to alert personnel to the presence and/or possible presence of cyanide, access restrictions and the requisite PPE for the area. The operation posts signs warning of cyanide at the heap leach facilities, process pond and all places where cyanide is present. To support identification of pipeline contents, all pipe work in the plant labeled to identify the line, the contents and flow direction.

In addition to identification of cyanide areas and PPE requirements, signage is also used to restrict eating, drinking, smoking and open flames to authorized areas only. Warning signs are posted in Spanish, the language of the workforce. Verification was through visual inspection of the signs located in areas where cyanide solution is prepared and used.

High strength cyanide solution at CVSA is dyed in red color for clear identification. Dye is sent with the cyanide briquettes inside the IBCs boxes so that at the cyanide solution preparation, the high strength cyanide solution results colored in red. After watching a cyanide solution preparation, the auditor interviewed the plant operators, confirming high strength solution is red. Also reviewed a communication from the cyanide purchaser, confirming dye is included inside the IBC box.

The CVSA processing plant is equipped with a number of fixed safety showers/eyewashes to provide emergency rinsing in the event of chemical exposure, installed at strategic locations throughout the operation in all areas where there is a potential for exposure to cyanide. Safety showers and eyewashes are checked as part of daily inspection checklists to ensure that they are operational and that water streams and flows are adequate. This process of testing the shower and eye-wash station prior to commencing work was observed during the audit. The Auditor randomly checked showers and eyewashes during the site tour to verify functionality. In addition to the daily checks, routine preventative maintenance on the showers is completed by the process maintenance personnel no less than quarterly.

To protect against fire, dry chemical powder fire extinguishers are used in the plant to prevent generation of HCN gas whilst extinguishing a fire. These extinguishers are checked as part of the daily inspections by the area operators. In addition, the Health & Safety team is responsible for routine inspections and replacement of

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undercharged or faulty extinguishers. The Auditor randomly checked fire extinguishers to confirm they are the acceptable type for use with cyanide. Verification was conducted by reviewing CVSA inspection and testing records for showers, eye wash stations and fire extinguishers and records of annual fire extinguishers inspections and maintenance.

Pipelines and tanks that contain cyanide solution are labeled to enable plant personnel to identity the contents. Labeling is typically done at visible places to allow personnel to easily identify and track the lines to identity contents. Cyanide storage and process tanks are marked as containing cyanide.

For pipelines, flow direction arrows for cyanide bearing lines are used to allow personnel to understand the flow and possible exposures and/or response requirements for leaks and/or maintenance work.

Color coding is also used to identify tanks and process solution pipelines. All cyanide-related pipes are identified by a color code, purple. To support identification of pipelines, personnel participate in areas specific training to identify process solution tanks and pipelines in their respective work areas. Verification was by visual inspection.

CVSA maintains Safety Data Sheets (SDS) for all chemicals on site inclusive of sodium cyanide. Hard copy documents and/or permanent stands are maintained locally for bulk chemical storage areas such as the cyanide offloading and storage areas.

In addition to the SDS sheets, signage is available to alert personnel to chemicals and required emergency response requirements in the high-risk cyanide areas.

CVSA has binders containing SDS and first aid procedures for cyanide safety in all areas where cyanide is stored, handled and managed and in the medical clinic. All materials are written in Spanish, the language of the workforce. Verification was conducted by visual verification of material included in the binders.

CVSA has developed procedures to inform, investigate and evaluate incidents of cyanide exposure. Procedure EI-GGE-4.10 "Definition of Incidents" defines the classification of incidents related to hygiene, safety, and environment for CVSA staff and contractors in accordance with Argentine law. CVSA demonstrated that incidents are investigated, the corrective actions are implemented, and the investigations are closed, according to state in the corporative Integrated Standard 4.12 Incidents Management. Incident must be reported immediately and then the investigation report if necessary. Any incident related to cyanide is critical according to the classification. CV Safety is the electronic platform system where all incidents must be reported.

The auditor reviewed in the CV Safety incident report system that in 2019 an environmental incident was reported when there was a small spill of cyanide solution from the tailings dam. No other cyanide related incident was reported during this certification period, which was confirmed by interview with the Safety Coordinator.

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# Standard of Practice 6.3

#### Develop and implement emergency response plans and procedures to respond to worker exposure to cyanide

The operation is

 $\checkmark$  in full compliance with

Standard of Practice 6.3

- in substantial compliance with
- $\Box$  not in compliance with

CVSA has made available water, oxygen, resuscitators, radios, telephones, and alarms in the process plant and clinic, where are the antidote kits. Oxygen bottles and resuscitators are located throughout all the places at the process plant where cyanide in reagent grade is present.

The locations of the emergency equipment were deemed to be appropriate for the operation. The cyanide antidote kits are kept only in the medical clinic. This is because only a medical doctor can administer the hydroxocobalamin. The plant is less than 150 meters away from the medical clinic. Operators are required to carry a radio while performing their tasks. All fixed HCN monitors are equipped and set with an alarm system. Verification was conducted by visual inspection of the cyanide antidote kits and interview with Health and Safety Superintendent.

The alarm systems for all the HCN monitors and showers are visual and sound alarm and are hard wired to the control room that is manned 24-hours/7 days.

CVSA regularly inspects the cyanide first aid equipment to make sure it is available and when needed. First aid equipment is regularly inspected to ensure that the elements are available and in adequate condition for their use. Replacement of materials and equipment is done as recommended by the manufacturers' due dates. Antidote expiration dates and oxygen tank pressures were checked during the audit. All antidote kits were within expiration date and oxygen tanks were fully pressurized. Verification was through visual examination of the antidote kits expiration dates, interviews with process personnel and onsite doctor and nurse, and review of inspection records. Paramedics perform daily inspections of the ambulance, cyanide kit and oxygen located in the medical clinic. Inspections are documented. The oxygen cylinders and masks are inspected every 14 days. The Auditor reviewed inspections to verify compliance, inspection records were available for review during the audit and were found to be complete.

CVSA has developed emergency response procedures to respond to cyanide exposures. The procedure PO-SUS-SME-024 Emergency Action for HCN describes response for the treatment of intoxicated victims with HCN. The procedure describes evaluation of the scene, security, medical care, symptoms, antidotes, recovery and disposal, and Cyanokit (hydroxocobalamin) injection. The procedure PO-SEG-SME-003 Medical Care ensures health and medical care. The Emergency Action for HCN and the Medical Care procedures provide response actions for exposures to solid, liquid, and gaseous cyanide.

CVSA has a medical center and ambulances. The medical team is made up of three doctors, two nurses, one radiologist and a paramedic. CVSA has two ambulances. The ambulances are equipped with oxygen cylinders

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and resuscitators. In the medical center, there are beds, oxygen cylinders, resuscitators, and other equipment for the care of critical patients. A stock of Cyanokits is preserved at controlled temperature at the medical center. This antidote is for administration only by medical services.

Given the remote location and capabilities of local hospitals, CVSA has determined that personnel are best treated at the on-site clinic with its trained staff and equipment. The doctors, nurses and paramedics are qualified to provide medical/emergency assistance. The onsite doctors, nurses, paramedics and the Emergency Response Team (ERT) have been trained in first aid related to cyanide exposure.

CVSA has developed two written plans to respond to cyanide exposures involving transport to offsite medical facilities: PLN-SSMA-SME-001 Work Plan in Emergencies with Cyanide with the Active Forces of the Community and CIC-PLN-APPENDIX 3.6 - Types of accidents and actions, with the objective to provide hospital, police, gendarmerie, and prefecture of nearby communities information on the transfer of cyanide. CVSA will give first aid to victims of cyanide in a state of intoxication by administering Cyanokit by medical services and once the patient is stabilized, they will be transported to the hospital in Puerto San Julián or Puerto Deseado.

Verification was through interviews with the onsite doctors and review of the procedures. The procedures include the name of the hospitals and related contact information.

CVSA has agreements (emails) with the hospitals of Puerto Deseado and Puerto San Julián for the treatment of patients exposed to cyanide. CVSA has ensured that hospitals have the necessary medical training and are trained regarding the possibility of treating patients from cyanide exposure. CVSA has included in its training plan, the training of external response agencies to treat patients intoxicated with cyanide. Among the external response agents participating in these trainings are professionals from hospitals, police, and fire departments The "Work Plan in Emergencies with Cyanide with the Active Forces of the Community", establishes that the corresponding professional training will be carried out annually, with respect to the treatment in case of emergency with cyanide, and that an information conference will be held annually of the conditions and characteristics of the transfer.

The medical staff at CVSA is confident that the medical facilities have adequate, qualified staff, equipment and expertise to respond to cyanide exposure. The auditor reviewed signed letters of agreements with the hospital.

CVSA periodically conducts mock drills for various exposure and spill scenarios to test and improve their response skills. CVSA has developed a procedure to carry out mock drills, including the drill sequence, identification of strengths and weaknesses, improvement actions, simulation observation guide, and photographic record. The cyanide-related mock drills performed during this certification period were:

April 18 2018. HCN gas was detected by a sensor. The objective was verification of the correct The objective was to verify the correct functioning of the automatic sensor system. The calibration contractor participated.

September 2018. They stop the pump at the Cyanisorb plant, checking that no spills occurred.

December 2018. They simulate a collision with cyanide spill and exposure of people in the cyanide convoy of 5 units arriving to the mine site. Participated the transporter Cruz del Sur, the escort Hazmat Argentina and CVSA,

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around 20 participants. There were opportunities for improvement, all the necessary actions were completed and closed.

September 16, 2019. Rupture in irrigation pipe of the leaching pile with spillage. They did it the plant control system (PLC) entering fictitious values. The auditor reviewed the report with opportunities for improvement, responsibilities and closing dates met.

October 18, 2020. In cyanide preparation they simulated spillage of briquettes on wet soil with generation of HCN gas and poisoning of an operator. 15 workers participated, there were opportunities for improvement.

July 11, 2021. They simulated loss of cyanide pulp in the discharge of Cyanisorb, also simulated electronically in the PLC.

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# 7. EMERGENCY RESPONSE:

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

# Standard of Practice 7.1

Prepare detailed emergency response plans for potential cyanide releases.

The operation is

✓ in full compliance with

Standard of Practice 7.1

- $\hfill\square$  in substantial compliance with
- $\Box$  not in compliance with

CVSA has developed a Sodium Cyanide Management Plan to address potential accidental releases of cyanide. This document outlines the various credible event scenarios for the operation and the responsibilities, actions, and notifications required to ensure an effective and efficient response. In addition to this Plan associated documents assist with emergency response scenarios related to cyanide incidents with appendices and procedures to deal with possible cyanide spills and many are scenario or exposure specific. The Plan and associated documents address solid cyanide and cyanide solutions, transport of cyanide, spills, exposure to cyanide (by inhalation, absorption, skin contact and ingestion), evacuation procedures, emergency contact information, remediation measures, etc.

In addition to this plan, the following documents assist with emergency response scenarios related to cyanide incidents:

- Emergency Response Plan with Sodium Cyanide.
- Emergency Plan Cyanide Transportation.
- Emergency Warning Diagram.
- List of Useful Telephone Numbers in Case of Emergency.
- Emergency Action with Hydrocyanic Acid Intoxication (HCN).
- Emergency Operating Procedure with Sodium Cyanide.
- Spill Containment.
- Spill Monitoring of Cyanide Solutions.
- CVSA Crisis Plan.
- Plan in Emergencies with Cyanide with the Active Forces of the Community.
- National Crisis Management Plan CVSA

Verification was conducted by reviewing these documents and interviews with the Health and Safety Superintendent and Medical staff.

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CVSAs Plan lists the various credible event scenarios for the site inclusive of cyanide incidents including cyanide exposures and transportation accidents, among others. For each section, actions and/or supporting procedures are outlined to ensure adequate levels of response. The Sodium Cyanide Management Plan, its appendices, and associated documents cover potential cyanide failure scenarios appropriate for the site-specific environmental and operating circumstances, including the following, as applicable:

- a) Catastrophic release of hydrogen cyanide from storage or process facilities. The planning documents and an associated procedure for HCN emergency action considers catastrophic escape from the Plant and / or Cyanisorb. The plan assigns level 3 and requires the intervention of the emergency brigade and the activation of the crisis committee.
- b) Transport accident. The specific plan for transportation considers an emergency response action in case of cyanide spills during transportation to the mine.
- c) Release during unloading and mixing. The spill monitoring procedure indicates the actions that must be taken when the spill incidents of sodium cyanide.
- Release during fires and explosions. The planning documents consider fires involving cyanide as a level
  3 emergency, requiring the mobilization of the emergency brigade and activation of the crisis committee.
- e) Rupture of tanks and valves. The planning documents consider the rupture of pipes and tanks.
- f) Overtopping of ponds and impoundments. The planning documents contemplate emergencies in the TSF and HLF. The measures include evacuation of the affected area, restricting access of people to 50 m, and notifying the environment department.
- g) Power outages and pump failures. CVSA has emergency generators for the cyanide facilities.
- h) Uncontrolled seepage. The planning documents cover the emergencies at the TSF and HLF; the procedure for contingencies at the TSF also covers seepage.
- i) Failure of cyanide treatment, destruction, or recovery systems. There is a procedure for emergency stoppage at the Cyanisorb circuit.
- j) Failure of tailings impoundments, heap leach facilities, and other cyanide facilities. The planning documents contemplate emergencies in the TSF and HLF. The measures include evacuation of the affected area, restricting access of people to 50 m, and notifying the environment department.

CVSA works together with its ICMC - certified cyanide transporter Cruz del Sur to ensure that all transportationrelated emergencies are considered and that emergency response plans for such incidents are on file and upto-date. Cruz del Sur transports the cyanide delivery in convoys escorted by a pickup truck from CVSA and another from the specialized contractor Hazmat Argentina in emergency response from Puerto Deseado Port in Santa Cruz, Argentina to CVSA's the mine site. Cyanide is transported to site in 20 foot sea containers.

Cruz del Sur did consider the transportation route, physical and chemical form of the cyanide, method of transport (truck), the condition of the roads and the design of the transport vehicle during the development of their emergency response plan.

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Cyanide response plans and procedures have been developed to provide a suitable level of detail to ensure that effective response can be completed in an emergency situation. The Plan and associate procedures cover a range of credible event scenarios and the immediate and longer term actions required to control the event. They describe in detail the procedures for clearing site personnel from the areas of exposure, first aid in case of cyanide exposure, control and containment of releases at their source, assessment of the emergency and mitigation of future prevention of releases. The Plan and procedures specifically address the treatment procedures with cyanide antidotes for personnel who may have been exposed to cyanide and plant and site evacuation, if necessary.

The Plan define team member responsibilities, communication procedures for notifying outside emergency response resources, government agencies, the community, other stakeholders and the press. Detailed emergency responses (i.e. critical valves, switches, pumps) for reagent strength cyanide are found in the specific individual work procedures.

Verification was conducted by reviewing the related documents and interviews with the Health and Safety Superintendent, ERT Coordinator, the Operations Superintendent, the Environmental Manager and the Medical staff.

## Standard of Practice 7.2

#### Involve site personnel and stakeholders in the planning process

The operation is	√	in full compliance with	Standard of Practice 7.2
		in substantial compliance with	
		not in compliance with	

The Sodium Cyanide Management Plan, developed for CVSA involve cross-functional teams from the Process, Health and Safety, Security, Environmental, Social Responsibility and other departments as needed. This helps to ensure that adequate consideration is given to the various impacted stakeholders and ensures that personnel understand and are aware of their roles in an emergency.

External stakeholders do not have a direct involvement in Emergency Preparedness and Response Planning, however the Social Responsibility team maintains contact with community figures and utilizes community liaison officers to share relevant information with affected peoples regarding emergency response planning and address their comments and feedback. Before the COVID-19 pandemic CVSA conducted regular stakeholder meetings with the community of San Julián. Members of the communities were able to visit CVSA's office in San Julián, where they had the opportunity to voice their concerns and ask question to personnel of the operation.

CVSA's workforce is regularly approached by the operation through shift toolbox meeting, monthly safety meetings and tasks hands-on observation activities with the objective of getting their opinion and concerns

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about emergency response practices that can then be incorporated to the emergency response procedures, if necessary.

All employees and contractors at CVSA receive basic emergency response training. The emergency plans and procedures indicate the responsibilities and role of its workforce and stakeholders during and emergency response situation. During this instruction and also through daily and weekly meetings, the mine workforce has the opportunity to give feedback in the emergency response planning.

Verification was conducted by reviewing records of toolbox meetings, topics and attendance records of community meetings, power point presentations and the course attendance records.

Although potentially affected communities do not play a direct role in emergency response planning, CVSA has informed the communities near about cyanide, its use at the mine and the nature of the risks associated with accidental cyanide releases. Informed to local governmental institutions by letters and other relevant entities such as communities, police, and local health providers, among others, during meetings.

Due to the location and response capacities of local agencies, CVSA would maintain responsibility for emergency response activities within the communities when required. Before the pandemic, training has been carried out in Puerto San Julián, Rio Gallego, Puerto Santa Cruz, and Piedra Buena with emergency response groups (police, firefighters, hospitals, among others). Attendance lists for the trainings taught with the subject referred to "Emergency Plan in the Transportation of Cyanide" were provided.

Verification was also through interview with Health and Safety Superintendent, the Social Responsibility Superintendent, medical personnel and ERT Coordinator.

CVSA has not designated specific responsibilities to off-site responders or communities with the exception of the hospital agreements for treating patients that have been exposed to cyanide. CVSA would be responsible for transporting the patient to the hospital. The hospital staff would not provide on-site emergency response.

CVSA emergency response plan states the Plan shall be updated and reviewed as a minimum on an annual basis or when there is a significant change, shift, risk or expansion within the operation as outlined in the scope of this plan. CVSA revision involves responsible operators from all areas in the revision process. Verification was by reviewing the document control section of the Emergency Response Plan ERP and interviewing the Health and Safety Superintendent and ERT Coordinator.

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# Standard of Practice 7.3

### Designate appropriate personnel and commit necessary equipment and resources for emergency response.

The operation is

✓ in full compliance with

Standard of Practice 7.3

- in substantial compliance with
- not in compliance with

The emergency response plan contains the following cyanide related elements:

The operation has a volunteer Emergency Response Team (ERT) with 24/7 site coverage. A Security Control Center (SCC) is in place to receive calls and notify ERT of emergency situations as reported via phone, radio or other means. The SCC, ERT and/or Area Supervisors have been designated the appropriate authorities to commit required resources and take command of emergency situations including handover to more senior or better trained personnel as required.

The Plan explain the emergency resources available to respond to emergencies at the process plant and ancillary facilities. These documents list the various responsibilities and activities of personnel including the minimum training requirements which have been established. These training requirements include but are not limited to: Emergency Call-Out procedures, CN Spill Response, Cyanide First Aid, HAZMAT response.

To support the emergency response programs on site, an Emergency Equipment List has been developed which lists all relevant cyanide emergency equipment, frequency of inspection and responsibility for checks.

The ERP include a 24-hour call out procedure and a full internal contact information list that includes coordinators and members of the ERT, include a complete list of the equipment and materials available to be used for on-site emergency response. Inspections to the emergency response equipment are on a monthly basis to ensure that they are maintained in working conditions.

CVSA has not assigned specific responsibilities for internal emergency response to outside agencies.

Verification was through interviews with the Health and Safety Superintendent, ERT Coordinator, medical staff and review of the ERP and the Process Plant ERP.

Although CVSA has not assigned specific responsibilities for internal emergency response to outside entities, however, outside entities that may participate in emergency response scenarios include local agencies (police, fire, medical) as well as community service contractors working for CVSA. These personnel will work with and under the direction of CVSA personnel as requested to assist with mobilization of people. CVSA has confirmed that outside agencies are aware of their role in case of need their involvement.

Verification was through interviews with the Health and Safety Superintendent, ERT Coordinator medical staff and review of Hazardous Training attendance records.

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# Standard of Practice 7.4

## Develop procedures for internal and external emergency notification and reporting.

The operation is	
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✓ in full compliance with

Standard of Practice 7.4

- in substantial compliance with
- $\hfill\square$  not in compliance with

The Plan document the notification requirements for both notification to internal management personnel and external agencies. The Plan includes procedures and contact information for notifying corporate and CVSA management, regulatory agencies and the hospital in Puerto San Julián. The Plan has a communications flow chart for emergency situations. The emergency response procedures include contact information and measures for communicating with the media regarding cyanide-related emergencies.

The plan also establishes that the convoy escort must communicate with the public agencies involved in the situation such as civil defense, fire station, police, environment, and traffic.

The Plan provide clear lines of responsibility and contact information for relevant departmental personnel to contact and notify community members of emergency situations. Verification was conducted by reviewing the Plan and ERT Coordinator.

# Standard of Practice 7.5

# Incorporate into response plans and remediation measures monitoring elements that account for the additional hazards of using cyanide treatment chemicals.

The operation is

 $\checkmark$  in full compliance with

Standard of Practice 7.5

- □ in substantial compliance with
- not in compliance with

The Plan and associated documents detailed information on cyanide event remediation activities including control and containment of any spilled/released material. Specifically, the plans include guidance on:

- a) Recovery or neutralization of solutions or solids. The Sodium Cyanide Management Plan describes the measures to recover spilled solution and neutralize the contaminated soil. Decontamination chemical are stored at the mine warehouse.
- b) Decontamination of soils or other contaminated media. The soil detoxification procedure describes how to detoxify soil and other contaminated media using sodium hypochlorite. This task consists of spraying the material to be decontaminated with 8% sodium hypochlorite causing the neutralization of cyanide compounds possibly present on the surface of the residue. Contact of this product with the entire surface of the residue must be ensured. Once the entire residue is covered,

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it will be left to act for 48 hours. After 48 hours of action of the product and the activity of ultraviolet radiation, the entire surface will be sprayed again. 48 hours after this second action, the sampling identified as DECONTAMINATED will be carried out for CVSA laboratory shipment. If analytical results of < 10ppm of free cyanide are obtained, the decontamination task will be considered completed and the removal of said hazardous waste will be managed.

- c)
- d) Management and / or elimination of the spill cleanup of debris. The spill monitoring procedure describes how to manage clean-up debris. All soil and media contaminated must be sent to final disposal as hazardous waste of type Y33, in accordance with the provisions of the Provincial Law on Hazardous Waste Law No. 2567.
- e)
- f) The provision of an alternative drinking water supply. Bottled drinking water is provided on site.

An appendix to the Sodium Cyanide Management Plan specifies that sodium hypochlorite, hydrogen peroxide and ferrous sulfate should never be used to treat released cyanide in natural bodies of surface water, as these chemicals are toxic to aquatic life.

CVSA procedure Monitoring Spills of Cyanide Solutions and procedure Extraction of Water Samples for Analysis require monitoring of spilled process solution and sampling of water bodies.

The Environmental department has developed and maintains an emergency sampling procedure which specifies the sampling methodology, sample types and parameters for emergency samples. The procedure also contains an emergency environmental monitoring point map to support sampling teams.

The procedure Monitoring Spills of Cyanide Solutions requires that water is sampled and monitored after a cyanide spill in order to assess the magnitude of the impact and implement the correct mitigation measures as necessary. The document describes the procedure for sampling including methodologies and parameters.

# Standard of Practice 7.6

## Periodically evaluate response procedures and capabilities and revise them as needed.

The operation is

in full compliance with

Standard of Practice 7.6

- □ in substantial compliance with
- □ not in compliance with

CVSA Plan states to be updated at least once a year, or more often if changes need to be implemented as a result of mock drill evaluations or changes in the operation. These changes were verified during the audit.

CVSA conducts mock emergency drills scenarios to test the emergency preparedness and response of relevant departments and personnel. Drills are developed to include a variety of locations and scenarios including

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cyanide environmental release and exposure responses. Drills are developed in advance and risk assessed to minimize potential impact of event unpreparedness. In addition to the mock drills, any event will be also used to test emergency response capabilities. Records of cyanide drill outcomes and reviews are stored by Health & Safety personnel.

Verification was through interviews with the Health and Safety Superintendent, ERT Coordinator and review of the cyanide mock drills records, reports and photos performed during the recertification period.

The Plan requires that all cyanide related emergencies are investigated to develop corrective actions and continuous improvement opportunities. Events and mock drills will be debriefed to identify and document improvement opportunities and actions for assignment to appropriate personnel. During this recertification period there was no event needing to activate de emergency response plan, no reviews to the ERP have been performed due to this reason.

# 8. TRAINING:

Train workers and emergency response personnel to manage cyanide in a safe and environmentally protective manner.

## Standard of Practice 8.1

Train workers to understand the hazards associated with cyanide use.

The operation is

✓ in full compliance with

Standard of Practice 8.1

- in substantial compliance with
- □ not in compliance with

All personnel and visitors to the site attend a site induction training which discusses cyanide hazards present on the site. In addition to the general site induction, a Process Plant Induction is required for all personnel with process plant access. This training provides a plant overview and includes environmental, health, and safety standards for working inside the plant area inclusive of cyanide risks and safe operating practices.

The training covers but is not limited to locations where cyanide is present, alarm response, PPE requirements, safe handling and management guidelines, symptoms of exposure, cyanide first aid and emergency response.

For personnel and visitors requiring infrequent plant access, escorts are used to ensure their safety whilst inside the plant facilities.

The general induction which is provided to all workers, contractors and visitors includes a section about cyanide management. This was verified during the general induction training received by the auditor upon arrival to site.

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CVSA has a training matrix for employees that details which training should be received depending on their job description. The training matrix includes personnel from all departments. Records for training are maintained in an electronic database.

Verification was by interview with process and training personnel, random interviews to operators and contractors, and review of employee training records covering the recertification period.

CVSA requires all its employees receive a refresher of the courses related to cyanide every year. Based on a survey of learning needs, employees have personalized training plans. The Auditor reviewed training plans and examples of training records to verify compliance.

The Human Resources Department is responsible for maintaining training records for all personnel on site in the Training Center database. Each area of the operation maintains files with training records on specific cyanide hazards. Records kept include trainee and trainer name, training type, course, date of completion and test scores. The auditor was able to review both electronic and hard copy records, including records for those employees that were interviewed during the site visit. Employee training requirements and completion records are maintained and managed.

# 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.

The operation is	✓	in full compliance with	Standard of Practice 8.2
		in substantial compliance with	

not in compliance with

All personnel that work in the plant must undergo training prior to being allowed to work at the process plant. Prerequisite training includes site induction, plant induction and specific job training and orientation, to ensure that all operators understand and are able to operate the various areas of the plant in a safe and environmentally responsible manner. In addition, after successful completion of these training sessions, operators are assigned to a specific circuit and work under the direction of a competent operator until they have been deemed competent to work without direct supervision.

Formal training in working procedures is given in cyanide-related tasks, among others, including cyanide unloading and storage, preparation, production and maintenance. Determination of competency is based on test score and observations by qualified and/or experienced plant operators and/or maintenance personnel.

Verification was reviewing training records covering the recertification period and interviewing field personnel.

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Training elements for each specific job are identified in the work procedures and presentations that are used as training material. Personnel are trained following the work procedures, which include the step by step process to perform the job. These work procedures include the objective of the procedures, photos of the task/activity to be conducted, required PPE, decontamination requirements, risks associated with the cyanide task, contingency plans and the individual task specific steps. All information was found to be complete.

CVSA has experienced personnel in cyanide and milling processes conducting the Process department training. Process supervisors with several years of experience in the Plant processes provide task specific training to operators. The instructors are generally supervisors that have accumulated years of experience, but some training is provided by vendors with special expertise. Verification was through interviews with process people and review of training records to verify compliance.

All personnel in job positions that involve the use of cyanide and cyanide management are required prior to working with cyanide, to receive training on how to perform their assigned tasks with minimum risk to worker health and safety. After completing the pre-requisite training, employees complete a classroom-training program prior to working with cyanide.

Individual training is provided for each specific cyanide related task that an operator will perform and includes cyanide work procedures. A senior/junior on-the-job training approach is used to further training for the personnel on job activities and cyanide safety. New trainees are assigned to work in one of the circuits under the supervision of a competent operator. These trainees are required to work under direction of these competent operators until they demonstrate ability to work without direct supervision In a safe and responsible manner.

This requirement was verified with through interviews with the Training supervisor and field personnel and review of training programs and records.

Cyanide awareness refresher training is delivered no less than annually. To ensure that personnel maintain proper work procedures and performance levels, supervisors routinely and randomly conduct Planned Task Observations (PTOs) of various activities for each crew. Feedback from the PTO is then provided to each employee to correct and/or improve work/task behaviors.

Training track data base includes all training given to the process plant employees. The system is checked periodically for trainings sessions for people that are due for refresher or for the ones that have expired. Training records and test results covering the recertification period were reviewed by the Auditor and were found to be complete.

To evaluate the effectiveness of task specific training related to cyanide, tests are usually taken after a classroom training session while planned task observations are conducted by the supervisor of the trainee after on-the-job training sessions. Training programs include an assessment component to ensure that personnel are able to understand the training that they have completed. Testing can be done either via a written exam or practical assessment by qualified Process Plant trainers.

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For classroom training, written tests are developed and suitable pass rates are established for personnel taking the exam. Test scores are then recorded in employee's training records with a "Pass/Fail" designation.

Training records and testing results were reviewed and were found to be complete. Verification was by interview with training and process personnel, and review of training records.

Employee training records are entered into the training database for each employee. These records are maintained for the duration of employment and include the names of the employee and the trainer,, the dates, topics covered, test and assessment scores/ratings.

A training matrix is generated from the training database to assist process plant personnel in their training progression and refresher exercises. Samples of records were available and reviewed and were found to be complete. Verification was through interview with training and process personnel and review of training records covering the recertification period.

# Standard of Practice 8.3

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

The operation is

- ✓ in full compliance with Standard of Practice 8.3
- □ in substantial compliance with
- □ not in compliance with

Operators participate in process plant induction training which discusses the response requirements for cyanide releases including first aid measures. A number of personnel from each crew are also nominated to attend first responder and/or first aid training to provide initial emergency response before the ERT arrives. These emergency response training sessions are conducted by qualified personnel from both internal and external sources and include courses such as decontamination, HAZMAT response, CN and basic first aid.

Verification included review of training record and interviews with operators as well as process and safety personnel. Operators were interviewed and demonstrated good awareness of what actions are to be taken in the event of cyanide release. Records of training attendance were reviewed by the auditor and found them complete.

Process plant first responders and ERT personnel are trained in cyanide first aid, decontamination and cleanup procedures. To supplement the training program, personnel are routinely involved in drills to test their retention of emergency response. First responders and ERT members undergo periodic refresher training exercises to ensure they are able and ready to respond to various scenarios across the plant.

Verification included review of training records, mock drill reports and random interviews with operators.

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The operation has an Emergency Response Team (ERT) trained in the emergency response procedures, requirements, including cyanide events, and in the use of necessary response equipment. Knowledge of these plans and understanding of the plans is tested through periodic drills and actual events. Formal brigades are in place for fire, first aid, spill, and evacuation. Emergency responders are available on all shifts. Training records and emergency drills were reviewed by the Auditor.

CVSA has made offsite emergency responders familiar with cyanide-related emergency planning via a community emergency work plan. As part of this work plan, CVSA has provided training in emergency response to police, firefighters, hospitals, and others in Puerto San Julián, Rio Gallego, Puerto Santa Cruz, and Piedra Buena. The Auditor reviewed communications informing the community about the transfer of cyanide, safety measures and training of medical personnel. CVSA conducted a survey among the authorities that assess their ability to respond to an emergency. The emails between CVSA and the authorities demonstrated coordination with HAZMAT Argentina, a company that offers consulting services and escort security for cyanide transport.

Refresher training for cyanide events is conducted as part of the site training and mock drill programs. Training requirements from the training matrix are routinely monitored and refresher training is scheduled as required. CVSA has provided refresher training to ensure that employees can respond to cyanide exposures and releases. CVSA has carried out a survey of learning needs in each work area in conjunction with training staff to develop an annual training schedule. This training schedule shows annual refresher courses for various types of cyanide training that include response measures. The Training Center database helps track staff retraining. The Auditor reviewed training records to verify compliance.

Cyanide emergency response drills are scheduled no less than one per year to test the emergency response systems and capabilities of site personnel. Various types of responses are tested including both cyanide spillages and exposure scenarios.

The Emergency Response Team (ERT) trains to ensure that are able to respond to an emergency and that their skills remain current.

At the completion of emergency response drills, debrief sessions are held to review and identify the actual versus expected outcomes of the emergency response to identity opportunities for improvement and changes to training and awareness programs. When deficiencies are identified in the response, corrective actions are assigned to relevant personnel which may include modifications to training and/or awareness programs to ensure that gaps are addressed.

The auditor reviewed the mock drills reports and supporting documentation to verify that action items identified for the mock drills have been accomplished. Records of the mock drills debrief and training sessions were also reviewed to verify the evaluation of drills considers the adequacy of training.

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Records of emergency response training are documented in the Training Center database. These include training conducted by internal and external parties. Training records are administered by the Human Resources Department with inputs from the functional areas.

Samples of records were reviewed and found to be complete. The name of the employee, the name of the trainer, the date of the training, the topics covered, and the result of the testing are maintained as part of the record files. Verification was through interview with training and process personnel and review of training records.

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# 9. **DIALOGUE:**

Engage in public consultation and disclosure.

## Standard of Practice 9.1

Provide stakeholders the opportunity to communicate issues of concern.

The operation is

✓ in full compliance with

Standard of Practice 9.1

- □ in substantial compliance with
- $\hfill\square$  not in compliance with

CVSA has developed a community engagement plan with a variety of activities and programs to engage community members and other external stakeholders on a regular basis. Although these programs have been in hold due to the pandemic, the programs include community information centers, routine face-to-face meetings/engagements, complaints and grievances, site tours, company website, media relations team and communications. Communication engagement meetings are targeted at groups identified by stakeholder mapping activities. The program provides stakeholders with the opportunity to share and discuss cyanide concerns. Opportunities include:

"Intranet" for CVSA personnel with direct access to the "Cyanide Handbook" and contact information for questions or input.

"CVSA Internet website" with access to "Certifications of the Cyanide Code" and access to the "Participatory Monitoring" entries. A video describing the operation, including mentioning the ICMI certification, is available for viewing. This website also has telephone contacts for the mine and CVSA offices in Puerto San Julian and Buenos Aires, as well as the ability to share the content via Twitter, Facebook, and Google Plus.

"WhatsApp Cerro Vanguardia" for mobile phones where each of the interested parties receives general information about CVSA and can respond with questions or input.

"Radio and print media" through local radio stations in the community of Puerto San Julian (FM Bahia, FM Generación, FM Radio Municipal and FM Líder), and graphic media from Puerto San Julián, notifying those interested in participatory monitoring and providing contact information.

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# Standard of Practice 9.2

### Initiate dialogue describing cyanide management procedures and responsively address identified concerns.

The operation is

✓ in full compliance with

Standard of Practice 9.2

- in substantial compliance with
- $\Box$  not in compliance with

Operating practices and programs are shared with local communities and questions are answered by Social Responsibility and Communications personnel. With regards to cyanide management, CVSA shares information with communities about the company's responsible management practices and offers an overview of the cyanide facilities and programs during site tours.

Stakeholder concerns or complaints identified via tours, meetings, community information centers or other means are logged in the stakeholder management database. Here, these concerns are reviewed, evaluated and responses are provided to concerned persons and/or groups.

Before the pandemic CVSA provided the opportunity to interact with stakeholders through their office in Puerto San Julián and through regular visits to the communities. The office has an "open door" policy by which stakeholders can communicate issues of concern related to the operation.

CVSA offers mine site tours and has a specific procedure for the tours to formalize the organization and conduct of mine site tours as well as describe and spell out safety and operational procedures for all site tours. The purpose of site tours is to expose stakeholders to the CVSA operations in order to enhance their appreciation of the company's activities. Site tours are also strategic engagement tools aimed at reducing negative perception about mining as well as maintaining their social license to operate.

# Standard of Practice 9.3

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

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

CVSA utilizes a website to share information on cyanide management practices and information as it relates to global operations. Information regarding the operation management systems that are used to manage environmental, safety, health, and community relation topics is available on the internet.

CVSA has developed fact sheets to share with community members in a way that can be easily understood. Also, has developed written descriptions of how their activities are conducted and how cyanide is managed and has made these available to communities and other stakeholders.

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CVSA has developed written descriptions of how cyanide is managed. A general description of the process carried out in the plant and the use of cyanide is described in the publication "Veta", which is distributed to all staff who usually take the publication to their homes where their families can access this information. CVSA continues to publish the Bulletin "Veta" with six copies per year. Several issues contained information related to cyanide.

The "Cyanide Manual" explains what is cyanide, cyanide in mining, how it is transported, cyanide handling procedures, emergency response, etc. CVSA personnel may access the Cyanide Manual via the intranet.

Institutional brochures (both in Spanish and English versions) have been developed that contain information related to the cyanide process inside the plant and at the tailings dam. The brochures also mention the Cyanisorb plant that recovers most of the cyanide used in the gold recovery process, and the existence of a "closed circuit" between the plant and the dam. These brochures are distributed not only to mine personnel, but also to external institutions, such as the Embassy of South Africa in Buenos Aires.

Although there is no official figure available on illiteracy levels, based on interviews and surveys conducted by CVSA in nearby areas (Puerto San Julián, Piedra Buena, Puerto Deseado, Rio Gallegos), it was determined that the levels of illiteracy are very low. Nonetheless, CVSA makes information available in verbal form as follows:

A video "Making Sustainable Mining" is delivered in DVD format, which shows the production process, the social responsibility actions, and environmental protection carried out by CVSA.

The "Participatory Monitoring" program has been recorded on video and broadcast on the TV program "TVO", on Channel 9, Río Gallegos.

Radio dissemination occurs through local stations in the community of Puerto San Julián (FM Bahía, FM Generación, FM Radio Municipal and FM Líder).

Video tour of the mine and its processes, including a mention of the ICMI certification. The video is also available via You Tube.

CVSA's parent organization, AngloGold Ashanti (AGA), publishes an annual sustainability report (Integrated Report or IR) providing a variety of sustainability event information as submitted by each mine site across the company's portfolio. Information on the site covers the performance of AngloGold Ashanti Limited and its subsidiaries and investments, describing elements their operational, financial, environmental, social and governance (ESG) performance and related information, including Health, Safety and Environmental incidents.

In addition to the sustainability reporting, media events and statements are organized as required by the Communications team to provide the media and interested stakeholders with relevant data regarding performance and events that impact the mine site and/or surrounding communities.

The information, regarding health, safety and environmental incidents, that the operation makes publicly available in the AngloGold Ashanti annual Sustainability Report, addresses all items required in the Standard of Practice 9.3 of the ICMI's Mining Operations Verification Protocol. The information would separately identify

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any such incidents occurring at the Cerro Vanguardia operation so that stakeholders would be aware of their nature and location.

No cyanide exposures have occurred at CVSA during this certification period. CVSA will immediately report any cyanide exposure resulting in hospitalization or fatality to the Provincial Police, Ministry of Health and the Ministry of Labor. CVSA has developed a risk assessment matrix that ranks the severity of various cyanide events. Depending on the nature of the event and severity there would be different levels of notification both to AGA and various National and Provincial agencies. The information reported to the Provincial Police, Ministry of Health, and Ministry of Labor, regarding cyanide exposure incidents, will be available to the public by those agencies.

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