

ICMI Cyanide Code Gold Mining Recertification Audit

Summary Audit Report

Gualcamayo Operation – Minas Argentinas S.A. San Juan, Argentina

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

2018 Audit Cycle



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MINA GUALCAMAYO
ICMC SUMMARY AUDIT REPORT

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Mining Operation: Mina Gualcamayo

Mine Owner: Mineros S.A.

Mine Operator: Minas Argentinas S.A. (MASA)

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Location and description of the operation

The location of the Gualcamayo mine is presented in the picture below



The Gualcamayo leaching project, operated by Minas Argentinas S.A., is located in the region of Jachal, in San Juan province, Argentina. The project uses heap leaching technology to retrieve gold from crushed ore which is placed in a pad where leaching takes place with cyanide solution. The Leach project is composed of:

- Three-stage crushing circuit: primary, secondary and tertiary crushing.
- Transport and stacking of ore. Application of solution and recovery (leaching).
- Gold adsorption in carbon.
- Desorption of gold from carbon.
- Electrowinning.
- Smelting.

The product extracted from the mine (Right Of Mine - ROM) is initially crushed in a primary crushing plant to reduce the size of the ore from 650 to 139 mm. After primary crushing, ore even more crushed and sieved in secondary and tertiary crushing circuit to reduce the size of the ore by 80 percent, below 17.6 mm. Limestone is added to ensure the alkalinity of the ore during the leaching process and avoid the formation of dangerous hydrogen cyanide gas (HCN). Crushed ore is transported on surface conveyor to the stacking area, where the ore is stacked on the leaching field in panels of 86 m wide and 10 m high. Cyanide solution is applied with to leach gold and separate it from the ore as the solution passes through the stack. Pregnant Leach

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Solution (PLS) is collected in a network of pipes to a central point where is pumped to the Adsorption, Desorption and Recovery Plant (ADR) plant to recover the gold.

Facilities to manage cyanide solution includes the leach tank, which contains pregnant solution, barren and recycled solution; and barren solution pumps, that pumps solution for distribution in the heap leach pad. Cyanide solution is applied through drip emitters. Cyanide in the barren dissolves the gold from the ore, resulting in a solution containing dissolved gold (called pregnant solution). Pregnant solution is returned from the leach pad to the leaching solution tank and pumped to the carbon adsorption plant. Any excess solution that is accumulated in the PLS pond is pumped back to the process.

Pregnant solution enters the carbon adsorption system. The activated carbon in the carbon columns adsorb the gold from the pregnant solution. The barren solution is discharged from the carbon columns and is pumped back to the leach pad for use in the leaching process. Carbon containing adsorbed gold is pumped from the carbon columns to the carbon adsorption system (the process is also known as Elution or separation) for additional processing. Fresh and reactivated carbon is pumped from the reactivation system to the carbon columns to replace the carbon that had been sent to the adsorption circuit.

Carbon is washed with an acid solution to eliminate soluble deposits in acid that could cover the carbon and reduce its effectiveness. Once the carbon is washed it is transferred to the Elution column. Exhausted acid solution is neutralized with caustic soda and is sent to the tank for use in the carbon columns.

The separation solution containing caustic soda and cyanide is pumped to the Elution column containing clean carbon. Gold is desorbed from the carbon and is added to this solution. This solution, called pregnant solution is sent to the electrowinning circuit for recovery of gold and silver.

The carbon where gold was extracted is sent to a high-temperature furnace. The organic material that is on the surface and in the pores of carbon is volatilized to restore the active zones on the carbon surface. Carbon is sieved before it is transferred to the leaching process. Carbon lost during the operation of the circuit is replaced with new coal.

Solution from the carbon desorption circuit passes through electrowinning cells in which gold is recovered in the cathodes as mud. The mud is removed, filtered, dried and smelted to produce gold bars.

The Gualcamayo mine ore processing flowsheet is presented below:

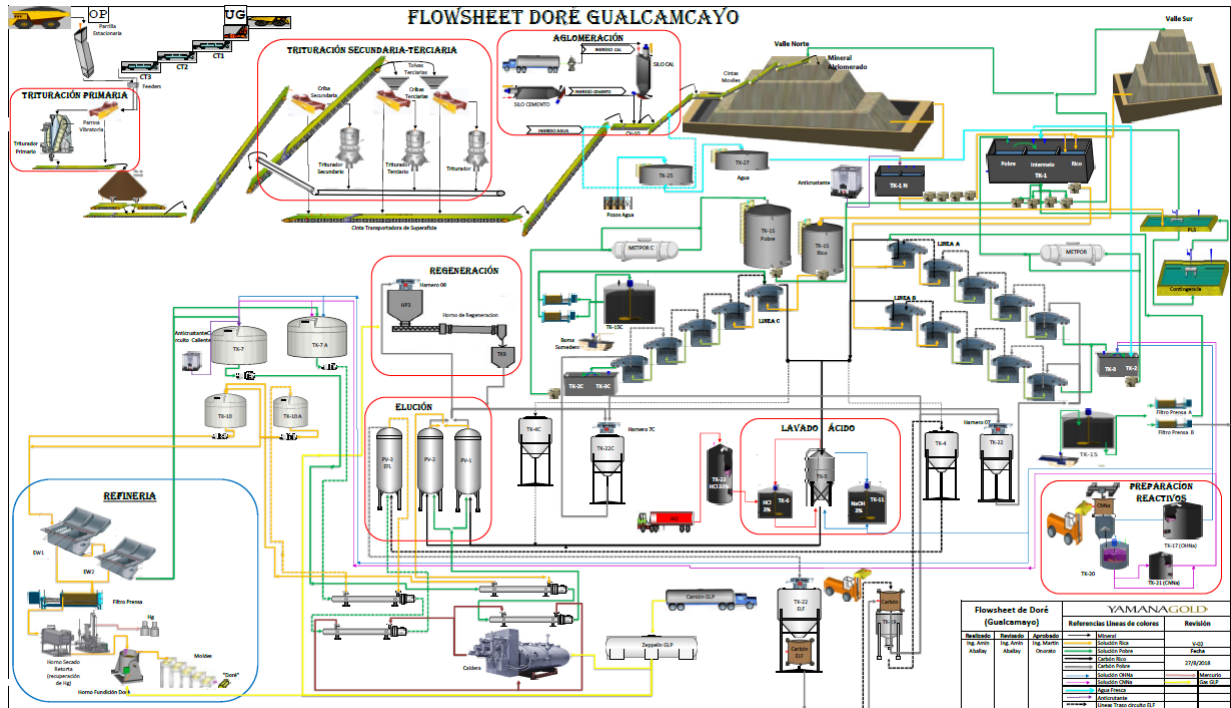
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Auditor's Finding

The International Cyanide Management Institute (ICMI) approved Audit Team verified that the Gualcamayo operation is in FULL COMPLIANCE with ICMI Cyanide Code requirements for Mining operations.

Gualcamayo has experienced zero cyanide incidents during this 3-year recertification audit cycle.

This operation was determined to be in FULL COMPLIANCE with the International Cyanide Management Code.

Auditor's Attestation

Audit Company:	SmartAccEss Socio Environmental Consulting, LLC
Lead Auditor:	Luis (Tito) Campos E-mail: titocampos@smartaccess.us
Mining Technical Auditor:	Fernando Rodriguez E-mail: frodrossi@gmail.com
Date(s) of Audit:	Dec 11 th - 13 th , 2018

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

I attest that this 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 Institute for Mining Operations Verification Protocol and using standard and accepted practices for health, safety and environmental audits.

Gualcamayo Mine

Name of Operations



Signature of Lead Auditor

Feb 1st, 2019

Date

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

Standard of Practice

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

The operation is: ☒ in full compliance
☐ in substantial compliance
☐ not in compliance with Standard of Practice 1.1

Discuss the basis for this Finding/Deficiencies Identified:

During the recertification period, Gualcamayo maintained a contract with the cyanide producer (The Chemours Company, formerly E.I. DuPont de Nemours and Company) requiring that the cyanide must be produced at a facility that has been certified as following the Code. This contract includes the production, supply and delivery of Sodium Cyanide in briquettes. The certification status of the cyanide producer was verified by review of the ICMI website.

The auditor found evidence that in July of 2017, the mine signed a one-time agreement with Casposo Mine to borrow 20 tons of sodium cyanide briquettes. This sodium cyanide was manufactured in Australia by a company recertified in the Code.

2. TRANSPORTATION: Protect communities and the environment during cyanide transport.

Standards 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
☐ in substantial compliance
☐ not in compliance with Standard of Practice 2.1

Discuss the basis for the Finding/Deficiencies Identified:

Written agreements meeting the Cyanide Code's requirements were in place for the supply contract with The Chemours Company that was in effect during this International Cyanide Management Code (ICMC) audit cycle. The cyanide purchase contract include cyanide manufacturer's (seller) responsibility on delivering the product to the mine's site.

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The seller's transportation supply chain is currently certified under the Cyanide Code. The supply chain covers rail, barge & truck transportation from Memphis production plant to the mine site.

The contracts requires appropriate packaging as required by the United Nations for international shipments and by the political jurisdictions the shipment will pass through. Labeling is in English and Spanish as all transportation takes place between the United States and Argentina.

The contracts require that the seller must ensure the products are properly secured at the ports of entry, safety marked, documented, and inspected during handling, loading, transporting and delivery. Seller's responsibility is stated for interim loading, storage prior to shipment, unloading during shipment and transport to the operation. Unloading the containers at the operation and storage at the Gualcamayo warehouse is a responsibility of Gualcamayo operation.

Safety and maintenance of the means of transportation throughout transport is addressed as seller's responsibility in the contracts, as well for task and safety training and emergency response for transporters and handlers throughout transport.

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
☐ in substantial compliance
☐ not in compliance with Standard of Practice 2.2

Discuss the basis for the Finding/Deficiencies Identified:

The contracts states the sellers is responsible for all aspects of transportation of cyanide to Gualcamayo site. The contract commits the Seller to maintaining ICMC certification and signatory status.

All cyanide transporters in the supply chain process for Gualcamayo were verified to be recertified under the Code.

Chemours supplied cyanide to Gualcamayo by means of its US/Canada Rail & Barge Supply Chain comprising Rail & Barge movements from the Chemours Memphis plant to the US ports of export using the Intermodal Cartage Company and Canadian National Railway. It was first ICMC certified on March 05, 2010 and then recertified on August 18, 2017.

The Global Ocean Supply Chain recertification for Chemours includes all possible US ports of departure and ocean carriers, including the Mediterranean Shipping Co. (MSC). It was first ICMC certified on March 05, 2010 and latest recertification obtained on August 18, 2017.

The Argentina Supply Chain, which includes transport within Argentina to customer mine sites by Victor Masson Transportes Cruz del Sur S.A. was initially certified on March 2010 and obtaining their latest re-certification on May 26, 2017. Gualcamayo performed a 20 ton NaCN

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“one-time borrow agreement” with Casposo Mine in 2017 using a certified producer (AGR) and a certified transporter (Victor Masson Transporter Cruz del Sur).

The operation has chain of custody shipping records identifying all elements of the supply chain: producer, transporters and storage facilities that handle cyanide brought to the site, all certified in compliance with the Code. Review of sample shipping papers provided by Gualcamayo between 2015 and 2018 indicates that this practice has remained constant since the date of the last recertification audit.

3. HANDLING AND STORAGE: Protect workers and the environment during cyanide handling and storage.

Standards of Practice

3.1 Design and construct unloading, storage and mixing facilities consistent with sound, accepted engineering practices and quality control and quality assurance procedures, spill prevention and spill containment measures.

The operation is: ☒ in full compliance
☐ in substantial compliance
☐ not in compliance with Standard of Practice 3.1

Discuss the basis for this Finding/Deficiencies Identified:

As stated in the previous recertification audit report, the Mining Authority approved the Environmental Impact Study (EIS) of Gualcamayo - prepared by Knight Piésold Consulting in 2006 and August 2007. The cyanide facilities have been designed according with solid international engineering practices. The engineering company was HATCH. HATCH acquired the Adsorption, Desorption and Recovery (ADR) Plant from Scotia International of Nevada (SION), a qualified Utah based corporation. The assembly of the ADR plant was conducted by KAISER, a qualified engineering and construction company with activities in the oil and mining industry in Bolivia and Argentina. The detailed engineering of the leaching system was conducted by Vector Chile Ltda.

The field component of the audit confirmed that the cyanide mixing area was located within the internal structure of the ADR plant on concrete hardstanding and maintained in good condition. Cyanide mixing and cyanide storage tanks were located within containment concrete berms, which are sized to contain at least 110% volume of the largest tank. The storage and mixing areas are also subject to biweekly inspections to detect any obvious releases or failure in containment.

The facilities for unloading, storing and mixing cyanide remain substantially unchanged from the previous recertification audit. The cyanide loading dock and storage area comprises a platform next to a secured, covered, ventilated building and located over concrete hardstanding. The solid cyanide storage area is located in a dedicated facility located on competent concrete

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hardstanding, which is located far away from communities or surface waters. The area is access controlled with the appropriate cyanide warning signage. The cyanide storage is secured from weather and has adequate ventilation vents along the four sidewalls. The storage area is dedicated to sodium cyanide storage only, with no other materials permitted to be stored. No storage of other materials was observed during the field inspection.

Gualcamayo has one preparation area for cyanide that includes a mixing tank and a cyanide storage tank. There are level indicators and high-level alarms installed on both tanks. These levels are continuously monitored from the ADR control room. Arrangements remain unchanged since the previous recertification audit.

Cyanide mixing and storage tanks are contained within concrete berms with good condition concrete flooring with epoxy sealing to avoid infiltration. The bermed containment areas are sized to contain 110% of the largest tank volume and have been confirmed both previously as part of engineering specification checks and during the field audit. During the field inspection, the containment area was noted to be in relatively good condition, with no significant damage, spalling or cracking evident.

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
☐ in substantial compliance
☐ not in compliance with Standard of Practice 3.2

Discuss the basis for this Finding/Deficiencies Identified:

Procedures for managing empty cyanide containers are prescribed in PES 09-01-3.5-037 "Waste Management". The auditors observed a cyanide mixing process and disposal of cyanide containers and verified that the procedure was followed at all times.

Sodium cyanide is received onsite in the form of Ecopack bags. Procedure PES 09-01-3.5-037 "Waste Management" specifies measures undertaken to ensure that cyanide packaging materials are managed in such a manner to prevent their use for any other purposes. The procedure specifies that empty cyanide Ecopack bags are temporarily stored in metal bins located in a restricted access area and are transported on a weekly basis by an authorized contractor (Eco San Juan) to a final disposal facility located in the city of San Juan, where the Ecopack bags are burned in a pyrolytic furnace.

Procedure POPE-PRO-011 "Cyanide Solution Preparation" requires that empty cyanide bags are rinsed three times with rinse water after the cyanide preparation is completed. A sample of the plastic bag is taken for free cyanide analysis at the lab prior to disposal. This process was observed by the auditors during the field visit.

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Gualcamayo has procedure POPE-PRO-011 "Cyanide Solution Preparation" that outlines the requirements for inspection, observation and mixing of cyanide solutions; as well as the operation and function of valves, pumps and various interlocks within the cyanide mixing process. It also includes instructions for the prefill of the cyanide mixing tank with reclaim water and caustic solution. The procedure includes a requirement for immediate clean-up of any spilled cyanide including flushing the secondary containment of the cyanide mixing area with fresh water. No spills related to cyanide mixing were reported since the last recertification audit.

Gualcamayo has procedure PADM-ABA-001 "Transfer, unloading and storage of sodium cyanide"; that provides instructions for the safe handling of sodium cyanide Ecopack bags including handling upon receipt, storage and transport to and from the mixing area. The Ecopack bags checked in the cyanide storage area as well as in the cyanide mixing area did not present any evidence of rupturing and puncturing. Procedure PADM-ABA-001 limits stacking of cyanide containers to a maximum height of three per stack. This practice was also verified in the field.

Operators are required to use the appropriate PPE during mixing activities. These include steel-toed boots, rubber gloves, rubber boots, approved respirator, goggles or face shield, Tyvek coveralls with attached hood, hardhat, safety glasses and hearing protection. The procedure also requires that two workers are present during the mixing activity. Mixing operations and cyanide alarms are also monitored remotely from the control room.

Gualcamayo is not using colorant dye on site yet. This new requirement of the Code, which will be auditable starting July 1st 2019, was communicated to the site during the audit. Gualcamayo has initiated discussions with the cyanide supplier to implement this practice in the short term (late March 2019).

A cyanide mixing event was observed during the audit. The review indicated that Gualcamayo has appropriate procedures and practices to handle and prepare cyanide solutions in a safe manner.

4. OPERATIONS Manage cyanide process solutions and waste streams to protect human health and the environment.

Standards 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
☐ in substantial compliance
☐ not in compliance with Standard of Practice 4.1

Discuss the basis for the Finding/Deficiencies Identified:

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Gualcamayo has developed several procedures for the safe operation of cyanide facilities, including unloading, mixing and storage facilities, heap leach operations, and disposal. There are approximately 60 procedures for the ADR plant and 27 for heap leach operations. In addition, Gualcamayo has recently achieved ISO14001:2015 and OHSAS 18001 certifications of its management systems in April and Nov 2018, respectively. All procedures include a section related to PPE requirements, considerations of safety hazards and potential impacts on the environment. Procedures were reviewed and found to be sufficiently detailed to enable safe operation.

The plant and heap leach pad procedures include critical parameters for the safe operation of cyanide facilities including the freeboard required at the PLS, cyanide dosing in the plant and leach pad, pH levels, and the designed storm event for process solution ponds (500 years, 24-hour storm event) which is used in the Gualcamayo water balance model.

Gualcamayo has a standard procedure PES-09-00-3.5-005 "Change Management" that is used throughout the company. The change management process includes a review of the proposed changes; analysis of the changes by a multidisciplinary team including health, safety and environmental aspects; and subsequent implementation of the changes. The process includes a format which is signed off by all areas that participated in the evaluation of the changes. The change management process is used consistently across the process area.

Gualcamayo has cyanide management contingency procedures in place that details actions to be taken in case the PLS pond overflows into the contingency pond. In addition, Gualcamayo has a Plan for Operation, Monitoring, Maintenance and Control of Leaching System (POMMyC) that includes actions to be taken in case of cyanide related contingencies including seepage from the leach pad or ponds, cyanide spills during unloading of cyanide boxes, failure of piping, valves or tanks, failure in slopes, runoff in diversion channels and general procedures in emergency situations. The POMMyC also references actions and responsibilities for temporary closure or cessation of operations may be necessary.

The Plan for Operation, Monitoring, Maintenance and Control of Leaching System (POMMyC) include all the inspections, monitoring and maintenance requirements that needs to be conducted for the safe operation of cyanide facilities. The POMMyC requires for visual inspections, topographic inspections of slopes, groundwater monitoring, monitoring of seepages from the leach pad, monitoring of Leak Collection and Recovery Systems (LCRS), supervision of ore placement in leach pad, inspection and maintenance of surface water diversion channels, integrity of leach pad liners during ore placement, among others.

Based on the POMMyC requirements, Gualcamayo has developed and implemented an inspection program for cyanide facilities with frequencies that varies from daily, weekly, biweekly and monthly. Daily inspections include wildlife mortalities at the leach pad area. Weekly inspections include showers, eye wash stations, wildlife in the area and controls (e.g. condition of netting on PLS and TK1 Norte and ponding on leach pads). Biweekly inspections include cyanide storage, sampling stations, pipes and valves, tanks, secondary containments, levels at PLS and contingency ponds, pH meters, level sensors, among others. Monthly inspections include extinguisher and safety harnesses. Records of inspections for the last 3 years are

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retained and were verified by the auditors. It is the professional opinion of the auditor that inspections are conducted on established frequencies that are sufficient to ensure and document that cyanide facilities are functioning within design parameters.

The auditor conducted a field inspection during the site visit and verified the condition of tanks, secondary containments, pipelines, pumps, valves, water diversions, ponds freeboard and heap leach facilities. These inspections also included cyanide unloading, mixing and storage facilities. Records of the inspections conducted by Gualcamayo to cyanide facilities were reviewed by the auditor and were found to be complete.

Gualcamayo has two mechanisms to document, track and close corrective actions identified during inspections: Corrective actions identified that are related to maintenance of equipment at the ADR plant or leach pad area are managed by the Maintenance area. These corrective actions are managed using the Oracle JD Edwards system, where work orders are tracked, prioritized, planned and closed. All other corrective actions not related to maintenance of equipment that are identified through inspections conducted by Management (e.g. Management planned inspections) or Process areas are tracked in the SPA (Action Plan Follow up) system, where the actions are implemented and followed up until closure. Gualcamayo has recently achieved ISO14001:2015 and OHSAS 18001 certifications of its management systems in April and Nov 2018, respectively; which guarantee the retention of documents and records.

The Maintenance area has a preventive maintenance program for pumps, pipelines, valves, flow meters, level sensors, pH meters, sump pumps, tanks and cyanide facilities in general. The preventive maintenance program is used to perform necessary maintenance and inspect the integrity of process equipment, piping and tanks, according to a maintenance program and every time it is needed to keep equipment and installations working properly.


Gualcamayo has two emergency power generators at the ADR plant (450 KVA and 400 KVA) for backup power; and one in TK1N (400KVA) to maintain the water balance and pump water to the heap leach pads. This emergency power system is connected to the critical equipment identified that need to be running to prevent any release to the environment in case of a prolonged power outage. Gualcamayo provided examples of preventive maintenance records for the backup power generators for the last three years. A review of these records, confirmed that the generators are checked on a monthly basis for fuel level, lighting, heating and are also start tested.

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
☐ in substantial compliance
☐ not in compliance with Standard of Practice 4.2

Discuss the basis for this Finding/Deficiencies Identified:

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Not applicable to Gualcamayo as this Standard of Practice solely applies to milling operations.

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

The operation is: ☒ in full compliance

☐ in substantial compliance

☐ not in compliance with Standard of Practice 4.3

Discuss the basis for the Finding/Deficiencies Identified:

Gualcamayo has a net positive evaporation water balance, with annual precipitation below 200 mm. Considering these environmental conditions, Gualcamayo has developed an in-house probabilistic water balance using Microsoft Excel which is an updated version of the previous water balance that was developed by Vector in 2007.

The water balance includes the following factors: solution application rates; precipitation, evapotranspiration; evaporation from ponds; retention of water in the ore; and potential power outages. A description of the water balance model and calculation is described in the Gualcamayo Water Balance presentation dated December 2018.

The Gualcamayo Water Balance describes the solution rates applied to the leach pads, which is 10 liters/m² and considers a 500-year/24-hour storm event of 54 mm of rain. This design storm duration and storm return interval of 500 years provides a sufficient degree of probability that overtopping of the ponds can be prevented during the operational life of the facility.

The Tamberias weather station is situated at the plant and collects rainfall data and rainfall intensity since 2013. Data from this station and from other weather stations of the National Meteorological Service that are located in the vicinity of the mine operation (records since 1991) were analyzed for use in estimating the site design precipitation. The evaporation data is calculated using Penman Monteith Formula (FAO-56) that considers other parameters measured in the Tamberias weather station such as maximum and minimum temperature, relative humidity, dew temperature, relative humidity, wind speed, solar radiation, latitude and elevation. The auditors reviewed on-site meteorological monitoring data and found them to be complete.

The water balance includes the following factors: solution application rates; precipitation, evapotranspiration; evaporation from ponds; retention of water in the ore; and potential power outages. The heap leach operation recirculate water from the PLS and includes addition of fresh water to maintain the required water balance for operations. Gualcamayo does not have water discharges to surface water.

The water balance considers a 24-hour and 48-hour power outage contingency simulation. For both scenarios there is enough capacity between the PLS pond (17,000 m³) and the contingency pond (70,000 m³) to manage the drain down from the leach pads. These contingency scenarios could only occur in case the primary source of power (San Juan grid) and the emergency power

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generators were not in operation. The capacity of the ponds can actually manage up to 66 hours of drain-down prior to an overflow to the environment. Gualcamayo estimates that the probability of occurrence of such event is 0.4%.

Gualcamayo conducts biweekly inspections and monitoring activities to heap leach pad and ponds to ensure they are operated according to the design criteria and requirements of the POMMyC. This frequency is considered adequate considering the low rainfall and high evaporation rates in the area. Inspections include liner integrity, LCRSs, ponding on the heap surface, pH levels in the leachate solution, levels at PLS pond, solution collection system and diversion channels around the heap leach facilities. Records of inspection forms for the last 3 years were reviewed and found to be complete.

Freeboard and solution volumes in the PLS are monitored on a biweekly basis. The auditor reviewed freeboard data for the last 3 years and verified it was managed according to the design criteria.

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

- The operation is: ☒ in full compliance
☐ in substantial compliance
☐ not in compliance with Standard of Practice 4.4

Discuss the basis for the Finding/Deficiencies Identified:

During the last 3 years, Gualcamayo has been successful at preventing wildlife mortalities related to cyanide facilities.

Gualcamayo has implemented net coverings to restrict access of wildlife to open waters where Weak Acid Dissociable (WAD) cyanide exceeds 50 mg/l, which is the case at the PLS pond and at the TK1N and TK1 tanks at both the heap leach area and the plant area, respectively. The bird-netting at the PLS pond was damaged with holes during the first part of 2018 due to snow accumulation. Gualcamayo took corrective action and has installed a hail-netting that is more resistant and is expected to work better than the bird-netting. During the audit, the netting at the PLS and tanks were in good condition. The ADR plant is fenced to prevent access of livestock to the area. This fencing does not include the PLS pond or the heap leach drainage channels. However, in the case of the heap leach channels, Gualcamayo has covered the pipelines with plastic which prevent wildlife access to cyanide solutions that could be present.

The PLS pond and open tanks with WAD cyanide concentrations above 50 mg/l have netting on top to prevent access of wildlife. In addition, the heap leach pads are inspected on a daily basis for ponding and wildlife mortalities. No wildlife mortalities associated to cyanide have been reported during the recertification period.

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During the field visit, the auditors observed two ponding areas on top of the north leach pad. These conditions were already reported by Process personal and corrective actions were already underway and corrected during the audit. Process personnel were interviewed by the auditors and verified that they were aware of the procedures to follow to identify and correct this type of situations conditions.

In addition, procedure POPE-VAL-001 "Preparation of areas for leaching" indicates that leaching should occur with a gradient towards the center of the leach pad to avoid overspray of solution and/or saturation of leach material and potential slides outside the leach pad area.

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

The operation is: ☒ in full compliance
☐ in substantial compliance
☐ not in compliance with Standard of Practice 4.5

Discuss the basis for the Finding/Deficiencies Identified:

Gualcamayo does not have any direct or indirect discharges to surface water. There is a monitoring system (13 monitoring wells) in place to verify presence of any seepage from the leach pad and PLS pond. Monitoring activities are conducted according to the requirements set forth in the POMMyC. Review of groundwater monitoring data confirms no cyanide related impacts have occurred to surface or groundwater receptors.

There is a gorge in the Colorados sector located downgradient of the leaching facilities and the PLS that has not water, and is permanently dry. In case of any indirect discharges from cyanide facilities, it would daylight in this gorge, which has been in dry condition during the las 3 years. As such, it can be confirmed that Gualcamayo has no indirect discharges that could impact surface water.

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

The operation is: ☒ in full compliance
☐ in substantial compliance
☐ not in compliance with Standard of Practice 4.6

Discuss the basis for the Finding/Deficiencies Identified:

Not applicable to Gualcamayo, as there is no actual or designated beneficial use for groundwater beneath and/or immediately downgradient of the operation. Regardless of this, Gualcamayo has an extensive groundwater monitoring network that analyses for cyanide (free, WAD and total)

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concentration. Data collected since the beginning of the operation indicate no detection levels for cyanide species.

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

- The operation is: ☒ in full compliance
☐ in substantial compliance
☐ not in compliance with Standard of Practice 4.7

Discuss the basis for the Finding/Deficiencies Identified:

Spill prevention and containment measures are provided for all cyanide unloading, storage, mixing and process solution tanks. Tanks located at the Adsorption lines A and B, ELF line, Metpor area and TK007 and TK010 tanks are all within an interconnected concrete secondary containment which is in good condition and provides a large containment area. Secondary containments of tanks located at the Adsorption line C carbon line and TK1 tank overflows to the PLS. The mixing and storage tanks, acid wash tanks and TK1N tank have stand-alone secondary containments with sufficient capacity to contain releases.

Secondary containments for cyanide unloading, storage, mixing and process tanks are sized to hold a volume greater (110%) than that of the largest tanks. Some secondary containments are interconnected while other ones are stand-alone and other ones overflow into the PLS pond. The secondary containment volume calculations were reviewed and deemed as sufficient. Furthermore, those containment systems have remained unchanged since last recertification audit. The process areas are 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.

The containment system of the cyanide mixing area is a stand-alone containment that will ultimately drain into the process area. Containment areas have sump pits with dedicated pumps that return collected solutions back into the process circuit. The secondary containment areas are constructed of reinforced concrete. In some cases, polycarbonate containment walls are placed to account for pressurized stream of released solution that could shoot over the secondary containment boundary.

All containment areas have sump pits with dedicated pumps that return collected solutions back into the process circuit. There are no discharges from secondary containments to the environment. In some cases, the secondary containments from the process plant discharge into the PLS pond that has a capacity of 17,200 m³ and could act as a large containment system for the whole plant. The pumps have automatic level sensors to keep the secondary containments free of water. These pumps are inspected on a biweekly basis and are included in the preventive maintenance program.

Cyanide pipelines at Gualcamayo are located within a secondary containment provided for at the process plant and leach pad area, including concrete and plastic lined channels as well as

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pipe-in-pipe containment. In some cases, polycarbonate containment walls are placed to account for pressurized stream of released solution that could shoot over the secondary containment boundary. There are no buried pipelines in the plant area. Pipelines connecting the leach pads, process plant, PLS pond and contingency pond are lined with HDPE through all its extension to convey any leaks to larger containment areas. In addition, Gualcamayo has covered pipelines with plastic liners to prevent any high pressure releases outside of containment.

As mentioned in previous audit reports, no cyanide pipelines present a direct risk to surface water as there is no water courses near cyanide facilities. Pipelines remain unchanged and retain the same safety features identified in previous audits. All facilities are far away from areas that may require special protection.

As stated in previous audit reports, all cyanide mixing, storage and process tanks are constructed of coated carbon steel and concrete; solution pipelines are constructed of steel or HDPE, which is compatible with high pH cyanide solutions. The new Adsorption line C tanks and pipelines at the process plant are also constructed of coated carbon steel and HDPE.

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
☐ in substantial compliance
☐ not in compliance with Standard of Practice 4.8

Describe the basis for the Finding/Deficiencies Identified:

Quality control and quality assurance (QA/QC) programs have been implemented during the construction of cyanide facilities at Gualcamayo. The mine maintains files with QA/QC reports for the facilities constructed before the last recertification audit in 2015, which was found in compliance with the Code requirements, and has implemented QA/QC programs for the new cyanide facilities built during this recertification period.

New facilities constructed since the 2015 audit include an expansion of the leach pad and the Adsorption Line C which was commissioned in September 2015. This new line includes 5 carbon columns, a barren solution tank and a pregnant solution tank. The new facilities were built and tested following a quality control and quality assurance program. The auditor reviewed the QA/QC documentation as well as as-built drawings properly stamped and signed off by the engineer of record.

As mentioned in the previous recertification audit report, the QA/QC program and the records reviewed and verified during the audit demonstrate that the materials are according to design specifications, the compaction has been adequate, the foundations of the tanks are suitable, geomembranes are appropriate and have been placed according to design and assembly specifications.

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The auditor reviewed records of construction reports, including as-built drawings for the new cyanide facilities (Adsorption Line C and leach pad expansion). As-built drawings were properly stamped by a qualified engineer. As mentioned in previous recertification audit reports, construction of all other cyanide facilities were reviewed by reputable engineering companies.

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

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

The operation is: ☒ in full compliance
☐ in substantial compliance
☐ not in compliance with Standard of Practice 4.9

Describe the basis for the Finding/Deficiencies Identified:

Gualcamayo has a written procedure PSSA-MAB-009 "Monitoring of surface and groundwater" for both surface water and groundwater monitoring. This procedure provides details related to sampling techniques, duplicate and blank samples, sampling equipment, calibration of field equipment, preservation techniques, chain of custody procedures and cyanide species to be analyzed.

Qualified personnel of Gualcamayo environmental department prepared the monitoring procedure following Minas Argentinas S.A water sampling standards. The procedure was developed internally by environmental technicians and was reviewed and approved by the Health & Safety and Environmental manager, who is a chemistry engineer with more than 20 years of experience in environmental and health and safety management in mining activities. As mentioned in previous audit reports, sampling and analytical protocols were also approved by the local Environmental Authority.

The monitoring procedure include protocols on how and where the samples should be taken and frequency, preservation techniques, equipment calibration, quality control, chain of custody procedures, shipping instructions, and cyanide species to be analyzed.

Gualcamayo field data sheets for surface and groundwater samples register in writing the weather conditions, livestock/wildlife activity, field parameters (i.e., conductivity, pH, and temperature) and groundwater levels. Completed monitoring field forms were reviewed by the auditor and verified that these conditions are being registered consistently.

Gualcamayo monitors cyanide species (WAD CN, Total CN) for groundwater stations located in the vicinity of the cyanide facilities and surface water stations at a regional level. No cyanide concentrations have been detected in surface and groundwater samples for the last three years.

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During the last 3 years, Gualcamayo has been successful at preventing wildlife mortalities related to cyanide facilities. Although WAD CN values are above the recommended value of 50 mg/l, the controls in place have shown to be effective. The leach pad is inspected daily for wildlife mortalities.

Gualcamayo monitoring procedure includes an annual monitoring program with sampling frequencies that varies between weekly, monthly and quarterly. Samples are sent for analysis to INDUSER lab in San Juan. Cyanide species (WAD, free, total) are analyzed on monthly and quarterly samples. 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.

5. DECOMMISSIONING: Protect communities and the environment from cyanide through development and implementation of decommissioning plans for cyanide facilities.

Standards 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
☐ in substantial compliance
☐ not in compliance with Standard of Practice 5.1

Describe the basis for the Finding/Deficiencies Identified:

Gualcamayo has a conceptual closure plan dated 2016, developed by Knight Piésold Consulting, which includes a section for decommissioning of cyanide facilities. Decommissioning activities include decontamination of equipment, removal of residual cyanide reagents, rinsing of heap leach pads with water and subsequent water treatment prior to discharge to the environment. Decommissioning activities include all the necessary steps to bring the facility's components to a safe, chemically stable condition, such that they do not present a risk to people, wildlife or the environment due to their cyanide content. Gualcamayo indicated that a detailed closure plan is currently under development, which will include more detailed information related to decommissioning activities.

The Gualcamayo conceptual closure plan includes a general implementation schedule. Decommissioning activities and final closure are scheduled to occur between 2021 and 2026. This schedule will be refined as Gualcamayo finalizes development of the detailed closure plan.

Gualcamayo conducts periodic reviews of its conceptual closure plan. The first conceptual closure plan was developed in 2010, and then it was updated in 2016. Local regulations do not

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require mining companies to conduct a periodic review of their closure plans. Minas Argentinas S.A. has internally established to review closure plans every 5 years to reflect changes. Gualcamayo is currently developing a detailed closure plan, which should be ready 2 years prior to cessation of operations.

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

- The operation is: ☒ in full compliance
☐ in substantial compliance
☐ not in compliance with Standard of Practice 5.2

Describe the basis for this Finding/Deficiencies Identified:

Gualcamayo develops and updates on an annual basis a closure cost estimate as part of Minas Argentinas S.A. asset retirement obligation (ARO). The 2016 conceptual closure plan developed by Knight Piésold Consultants includes a total closure cost estimate is US\$ 30.9 million (MM). The costs were estimated using third-party rates. The conceptual closure plan includes a complete list of closure tasks with unit rates. The cost estimate considers the following decommissioning costs: clean-up activities and decontamination of the ADR plant and the cyanide storage area (US\$ 1MM), demolition of ADR plant and cyanide storage area (US\$ 0.7MM); and heap leach pad rinsing (US\$ 0.7MM). The most recent (2017) closure cost estimate is US\$ 32 MM.

According to Minas Argentinas S.A. requirements, Gualcamayo reviews and updates annually its closure costs as part of the Asset Retirement Obligation (ARO) cost estimation exercise.

As local and federal authorities has no requirements for financial assurance of closure activities, Gualcamayo has established self-insurance as a financial assurance mechanism for closure activities, which includes decommissioning of cyanide related facilities. The most recent closure cost estimate of US\$ 32MM has been audited by a qualified external auditor (Deloitte) on January 2nd, 2019 and was submitted to the auditors during preparation of this report. The auditor reviewed the statement from Deloitte and confirmed that the insurance was calculated including the estimated decommissioning cost and that the operation has sufficient financial strength to fulfill the self-insurance obligation. The auditor also verified the professional certification of the financial auditor.

6. **WORKER SAFETY:** Protect workers' health and safety from exposure to cyanide.

Standards of Practice

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

The operation is: ☒ in full compliance

☐ in substantial compliance

☐ not in compliance with Standard of Practice 6.1

Describe the basis for the Finding/Deficiencies Identified:

Gualcamayo has developed operating procedures, plans and guidelines that describe the management and operation of cyanide facilities to help minimize the possibility of worker exposure to cyanide. These documents cover the cyanide storage, preparation area, absorption/desorption circuit and heap leach pads. They provide detailed information for the risks involved with each task (including preparation, plant operations, entry into confined spaces, and equipment decontamination) and adequately describe safe work practices.

These procedures also detail task specific Personal Protective Equipment (PPE) requirements and consideration of safety and potential physical and chemical hazards associated with the job. Verification of the written procedures included review of the specific task and worker interviews. Gualcamayo has developed more than 25 operational procedures related to cyanide management. Procedures were reviewed and found to be sufficiently detailed to enable safe operation and to minimize worker exposure.

The operational procedures also require to conduct pre-work assessments and to obtain a pre-work permit for the most critical cyanide related tasks. Pre work inspections are completed at the beginning of every shift and recorded using a pre-work form called PEACE (Think, Understand the Hazard, Analyze the Risk, Control and Execute). The auditor reviewed records of these inspections for the cyanide preparation area.

Gualcamayo has developed a standard for evaluating changes in processes or operating practices that could increase the potential for cyanide exposure. This process includes a review of the proposed changes, analysis of the changes by a multidisciplinary team including health, safety and environmental aspects and subsequent implementation of the changes.

Gualcamayo considers worker input into the development of health and safety procedures through several mechanisms. Workers have direct communication between supervisors and operators during daily safety talks and pre-work risk assessments.

Individual process tasks undertaken by workers may also be subject to review by peers and supervisors. Where deviations from procedures are noted including those where cyanide handling processes occur, a Field Task Observation may be filled out where improvements to tasks, activities or behavior can be discussed. Health and safety matters are also discussed in the Integrated Management System (EHS) committee and periodic meetings.

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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

☐ in substantial compliance

☐ not in compliance with Standard of Practice 6.2

Describe the basis for the Finding/Deficiencies Identified:

Gualcamayo mine has determined the appropriate pH for limiting the generation of HCN gas during cyanide mix and other production activities. Operational procedures in place requires pH between a range of pH greater than 10 and maximum of 12. Cyanide preparation requires that pH should be always above 10 and adjusted by using sodium hydroxide. Solutions within the leach circuit are used, pH is to be maintained at a minimum of 10 by adding lime in the process. Slurry within the leach circuit is maintained at a pH above 10. The carbon elution process at Gualcamayo Mine requires that the solution should maintain a pH with a range of 11 to 11.5 to minimize risk of HCN gas generation.

Where the potential exists for significant cyanide exposure, the operation uses portable monitoring devices to confirm that controls are adequate to limit worker exposure to HCN gas levels and sodium cyanide dust to 10 parts per million on an instantaneous basis and 4.7 parts per million continuously over an 8-hour period. All operators in the process plant and leach pad areas carry a handheld device. The device is set up to produce a visual and sound alarm if ambient HCN concentrations are above 4.7 ppm, and operator should evaluate the possible source of values and adjust pH setting to minimize HCN gas generation. If HCN values exceed 10 ppm, the area should be evacuated immediately.

Gualcamayo has identified the areas where workers may be exposed to cyanide more than 10 parts per million on an instantaneous basis and 4.7 parts per million continuously over an 8-hour period. Operating procedures for cyanide handling in the warehouse, cyanide mixing, leaching and elution process identify the potential for worker exposure to cyanide with clear indication of tolerable limits and require the use of HCN handheld devices.

Hydrogen cyanide analyzer portable devices are tested and calibrated as directed by an internal calibration procedure and records are retained. Improvements in the testing and calibration procedures were identified during the audit, which triggered the development of new requirements implemented and verified while writing this report. As Gualcamayo does not use stationary devices on site, no requirements for maintenance other than testing and calibration requirements. Gualcamayo is currently performing device testing on a weekly basis and an external calibration certification every six months.

Warning signs are posted in all areas where cyanide is present advising workers that cyanide is present and that smoking, open flames and eating and drinking are not allowed, and that, if necessary, suitable personal protective equipment must be worn. The signs are in Spanish, which is the language of the workforce. The PPE requirements are also posted in each area. The auditor verified the correct signs at the access points of the ADR plant and Leach Pad. When

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performing a visual inspection on site, the auditors noticed some signage missing, however the site installed signage at all these areas soon after, in a proactive effort.

Gualcamayo is not using colorant dye on high strength cyanide solutions yet but has presented written evidence of coordination with The Chemours Company to receive sodium cyanide briquettes with dye addition starting on March 2019.

Gualcamayo has installed showers, eye wash stations and fire extinguishers at strategic locations throughout the operation in all areas where there is a potential for exposure to cyanide. Additionally, bottles of eye wash solution were found at remote locations. Fire extinguishers are inspected and tested monthly. All extinguishers observed were fitted with inspection tags, which documented monthly inspection checks. During the sodium cyanide mixing process, operators were observed to check the condition and operation of safety showers prior to commencing with a cyanide mix.

The operation has identified all tanks and pipes that contain cyanide solution to alert workers of their contents. Pipes containing cyanide are marked as containing cyanide solution and flow direction is indicated. Cyanide storage and process tanks are marked as containing cyanide. Verification was by visual inspection. Auditors followed the cyanide solution circuit from the cyanide mixing area to the heap leach pad facilities. The auditors observed some piping in the processing plant with significant signs of deterioration of the painting, product content and direction. The auditor also observed the use of the same color coding for two products that are incompatible. Subsequent to the field visit and during preparation of this report, Gualcamayo provided evidence of mitigation plans which demonstrates that improvements are under way.

Gualcamayo has available Material Safety Data Sheets and first aids procedures in all areas where cyanide is managed. All information relating to cyanide management including MSDS information, procedures and emergency response plans were found to be in Spanish, the workforce language at the site. The MSDS was provided by The Chemours Company and the auditor verified that it corresponds to the latest version provided by the manufacturer.

Gualcamayo has an incident reporting procedure documenting the requirements for incident reporting and investigation to determine the basic causes of the incident, provide remedial action and medical attention and ensure that a similar incident does not reoccur. As part of the CN mixing task observation, the auditors observed an exceedance on a HCN portable device of one of the workers in the area. Subsequent to the field audit and during preparation of this report, Gualcamayo provided evidence of an incident investigation conducted on this specific event and appropriate mitigation plans are being implemented.

No cyanide related emergencies occurred during this ICMC recertification cycle requiring the implementation of the emergency response procedures.

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

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The operation is: ☒ in full compliance
☐ in substantial compliance
☐ not in compliance with Standard of Practice 6.3

Summarize the basis for this Finding/Deficiencies Identified:

Gualcamayo has made available antidote kits, water, oxygen, resuscitators, radios, telephones, and alarms in the process plant control room and clinic. The process plant control room serves as first response station for cyanide unloading, mixing and processing and has a bottle of oxygen, water, radio, phone, access to video cameras, alarm system, first response kit and trained personnel for acting in an emergency situation.

Emergency response equipment is regularly checked by the Safety and Health Department (which includes the Emergency Response Team and Medical Personnel). This verification includes inspections of cyanide antidote kits (amyl nitrite) and first aid stations. Inspections include checks of expiration dates of cyanide antidote kits.

Gualcamayo has an Emergency Preparation and Response Plan (EPRP) specific to their operations. The EPRP includes potential cyanide exposure scenarios, communication roles and responsibilities, evacuation procedures, required notifications, reporting procedures, incident categories and risk assessment.

Gualcamayo has its own onsite capability (infrastructure, equipment and medical resources) to provide first aid and medical assistance to workers exposed to cyanide. The site has an Occupational Health Doctor that reports to the EHS Manager on site, and who is responsible for ensuring that medical services and occupational health programs at Gualcamayo are implemented and up-to-date.

In regards to transport, treatment and formalized agreements with offsite facilities, Gualcamayo has proven to have adequate medical capabilities, including resources, infrastructure and equipment that would not require off-site treatment of an exposed worker.

Gualcamayo conducts mock emergency drills according to an annual emergency drills program and also holds regular training sessions to the Emergency Brigade every week (on Sundays) and more specialized items on a monthly basis. Drills are developed in advance and risk assessed to minimize potential impact of event unpreparedness.

7. EMERGENCY RESPONSE: Protect communities and the environment through the development of emergency response strategies and capabilities.

Standards of Practice

7.1 Prepare detailed emergency response plans for potential cyanide releases.

The operation is: ☒ in full compliance

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- ☐ in substantial compliance
- ☐ not in compliance with Standard of Practice 7.1

Describe the basis for the Finding/Deficiencies Identified:

Gualcamayo has maintained an up-to-date Emergency Preparedness and Response Plan (EPRP) that sets out emergency response procedures for the entire mine site including scenarios involving cyanide releases. Procedures for alerts, initial response, communication, evacuation, first aid and spill response, training and reporting are also provided in the EPRP.

The ERP considers different scenarios appropriate to the site-specific circumstances and includes procedures to respond to emergency incidents including cyanide releases. Emergency scenarios considered include transportation incidents, releases during unloading, releases, fires and explosions; confined space incidents; power outages and pump failures; and failure of leach pad facilities. The ERP describes the risk control procedures and steps to be put into effect immediately.

Further guidance is also provided within the Plan of Operations for Contingency Maintenance and Monitoring (POMMyC) which outlines steps and measures that would apply specifically to emergencies related to Cyanide release during boxes unloading; ADR Process plant cyanide release due to pipes, valves and tanks failure; and Heap Leach Pad (HLP) cyanide release due to pipes and valves failure.

Agreements between Gualcamayo and the cyanide supplier are in place, whereby the supplier and their transporters are responsible for shipping of cyanide to site. This responsibility extends to consideration of transport routes, the condition of transport vehicles and response in the event of an emergency or release during transport. In the event of an emergency or incident within the mine property limits, Gualcamayo would respond to such an incident.

The EPRP and POMMyC describe specific response actions. In the event of an emergency involving cyanide release, these plans provides for specific actions to be undertaken such as clearing site personnel and communication with potentially affected communities, use of cyanide antidotes and first aid measures for cyanide exposure, control of releases at their source, and containment, assessment, mitigation and future prevention of releases.

7.2 Involve site personnel and stakeholders in the planning process.

- The operation is: ☒ in full compliance
- ☐ in substantial compliance
 - ☐ not in compliance with Standard of Practice 7.2

Describe the basis for the Finding/Deficiencies Identified:

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Gualcamayo involves its workforce in the cyanide emergency response planning. During the Integrated Management System meetings, training of the Emergency Brigade, and after emergency mock drills, staff and the workforce has opportunity to provide feedback. There is evidence that the current version of the EPRP (October 2018) has included several additions and improvements.

Gualcamayo has made nearby communities in La Rioja and Jachal aware of the nature of their risks associated and how to act in case of an emergency during cyanide transportation and usage at the mine site, which includes initiatives as sharing the "Gualcamayo Community Information Manual", "Gualcamayo Monitoring Manual", and presentations related to "Cyanide Management in Gold Extraction".

Considering the location of the mine-site and the possible path of a cyanide release plume, the mitigation controls and recovery plan available, there is very low risk of any type of community impact; therefore, Gualcamayo considers that there is no need for nearby communities in the vicinity of the Operation or downstream of it, to be involved in emergency planning process and response.

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

- The operation is: ☒ in full compliance
☐ in substantial compliance
☐ not in compliance with Standard of Practice 7.3

Describe the basis for the Finding/Deficiencies Identified:

The EPRP provides contact details for the emergency committee which involves the general manager and staff. The General Manager (GM) has authority to ensure that sufficient and adequate resources are allocated to carry out the EPRP. The plan also indicates that the Emergency Brigade (EB) Coordinator will take responsibility of the emergency in absence of the Emergency Chief.

The ERT members are listed and shared among the site on a weekly basis, including their contact information, call-out procedures and 24-hour contact information

The EPRP sets out training requirements for the EB; functions and responsibilities of the emergency coordinators is detailed in the EPRP; emergency response equipment lists including the locations of cyanide antidote kits is provided.

The cyanide emergency response equipment is checked monthly and records of checklists were verified for the last 3 years. Equipment is also inspected by the EB during training sessions on a weekly basis.

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

- The operation is: ☒ in full compliance
☐ in substantial compliance
☐ not in compliance with Standard of Practice 7.4

Describe the basis for the Finding/Deficiencies Identified:

The EPRP provides a communication and notification diagram in the event of an emergency. The Emergency Chief oversees all operations at the facility during an emergency and is responsible for informing the GM and the Emergency Committee members; the GM or a communications coordinator responds to media enquiries; the Human Resources Coordinator communicates with family members of possible affected employees; the EHS Manager advises when reporting to government agencies is required and organizes the incident report and investigation; other members of management staff can provide technical expertise based on a specific emergency case.

The EPRP contains a section that describes external communication procedures, including up-to-date emergency response contact information for community services. Procedures for notifying enforcement agencies and the media are also provided in the EPRP.

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

- The operation is: ☒ in full compliance
☐ in substantial compliance
☐ not in compliance with Standard of Practice 7.5

Describe the basis for the Finding/Deficiencies Identified:

The EPRP provides procedures in the event of cyanide release and addresses cyanide recovery and remediation if necessary. It requires that any cyanide containing solutions spilled from the warehouse, process plant and leach pad that breaches the contained area must be contained, neutralized, absorbed and removed the affected soil for both liquid solutions and for solid cyanide.

Drinking water is supplied in bottles from a certified provincial brand. This bottled drinking water is available throughout the mine site. Gualcamayo does not use groundwater consumption wells of any other source of drinking water from the mine site.

Annex III section 2.2 of the EPRP, prohibits the use of chemicals to treat any cyanide that would have been released into surface water. The transportation company emergency plan indicates that the application of any cyanide destruction agent will be done only if the spill is contained and the solution is limited to small puddles not connected to open waters.

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For process solution spills, is required operators to immediately stop the release of material and notify the event. Samples are collected and provided to the laboratory for analyses. The Environmental Department is responsible for the characterization, extent and remediation of a spill, and is responsible for reporting spills to the regulatory agencies. Gualcamayo Monitoring Plan includes surface water and groundwater sampling and regulatory reporting program that must be initiated if cyanide is detected downstream of process plant and leach pad facility.

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

The operation is: ☒ in full compliance
☐ in substantial compliance
☐ not in compliance with Standard of Practice 7.6

Describe the basis for the Finding/Deficiencies Identified:

Gualcamayo's EPRP latest review has been conducted in October 2018. The POMMyC latest version is dated November 2018. These documents have been reviewed annually to identify any required changes, and to test and review the adequacy of emergency procedures with drills and exercises. Also, the EPRP is reviewed after significant changes, new projects, incorporation of new hazardous materials, new significant aspects or after a significant unwanted event occurs.

Emergency response drills including cyanide related responses are undertaken by Gualcamayo following an annual program. The mock scenarios include a review carried out during a debriefing session. Any necessary changes to management systems or new training requirements based on document changes are implemented.

The EPRP section 16 indicates that the plan will be reviewed if a significant unwanted event occurs. No cyanide related emergencies occurred during this ICMC recertification cycle requiring the implementation of the emergency response procedures.

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


Standards of Practice

8.1 Train workers to understand the hazards associated with cyanide use.

The operation is: ☒ in full compliance
☐ in substantial compliance
☐ not in compliance with Standard of Practice 8.1

Describe the basis for the Finding/Deficiencies Identified:

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The operation trains all personnel who may encounter cyanide in cyanide hazard recognition. New workers at the mine that will work directly with cyanide or might encounter cyanide receive orientation training according to internal procedures. Cyanide hazard recognition and awareness training when unloading, storage, handling and disposal is included as part of the modules.

Specific cyanide hazard recognition refresher training is conducted bi-annually. Cyanide and environmental modules includes chemical and physical properties of cyanide; hazards of cyanide; symptoms of cyanide exposure; emergency response; and first aid, including use of oxygen and amyl-nitrite. The training includes a written test.

Besides the bi-annual Cyanide Refresher Training, site also provides re-training on “Standard Operating Procedures”, which includes cyanide hazards and controls, and is performed in an annual training program.

All training records, including refreshers for supply chain personnel, the process plant operators and contractors are retained by the process plant trainer coordinator in the form of hard copies and also an electronic version stored in Microsoft Excel spreadsheet format.

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
☐ in substantial compliance
☐ not in compliance with Standard of Practice 8.2

Describe the basis for the Finding/Deficiencies Identified:

The operation train workers to perform their normal production tasks, including unloading, mixing, production and maintenance, with minimum risk to worker health and safety and in a manner that prevents unplanned cyanide releases. New employees and any contractor worker that will perform cyanide related tasks in Gualcamayo, receives orientation training, which includes elements specific to the storage, use and disposal of cyanide in the operation.

Operating procedures define the steps required to complete a task and the procedure itself is provided as training material. The annual operational procedures training program is prioritize based on tasks and risk with sign off required from both the trainer and the trainee. Training elements required for a task or area is recorded on a training sheet that is maintained by the supervisor.

Training on specific tasks is provided by the process trainer or by supervisors or lead operators that have successfully passed a “train-the-trainers” course. In some cases, supervisors are also considered qualified to provide training based on their experience.

All employees are trained prior to working with cyanide. Training includes cyanide awareness and, for those that will be working within the process plant and leach pad, review and

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understanding of operating procedures related to their tasks is mandatory. Some the aspects covered include cyanide alarms and monitors, first aid and use of cyanide safety equipment.

Bi-annual refresher training specific on cyanide management is also provided to ensure that employees continue to perform their jobs in a safe and environmentally protective manner. Training includes chemical and physical properties of cyanide; hazards of cyanide; symptoms of cyanide exposure; emergency response; and first aid, including use of oxygen and amyl-nitrite.

The area supervisors evaluate the effectiveness of cyanide training by observation of their trainees and tests. Following the new hire, refresher orientation and annual operational procedures training programs, employees complete a written evaluation to demonstrate understanding of the material. The worker can also sign the relevant procedure to indicate that has read and understand the concepts, controls, steps and risks included in the procedure.

Training records are retained in physical and electronic form. The process trainer also retains specific operational and task training records. Training records contains the name of the trainer, trainee, date, subject covered and is signed by both the trainer and trainee. Written and verbal tests are completed to demonstrate the employees understanding of the training materials.

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

The operation is: ☒ in full compliance

☐ in substantial compliance

☐ not in compliance with Standard of Practice 8.3

Describe the basis for the Finding/Deficiencies Identified:

All operators within the supply chain and process plant operations, which includes cyanide unloading, mixing, production and maintenance personnel, are provided with a bi-annual refresher training including cyanide awareness, hydrogen cyanide monitoring, emergency response, recognition of cyanide exposure symptoms, cyanide exposure first aid, and actions to be taken in the event of a cyanide spill including sampling.

Besides the bi-annual Cyanide Refresher Training, site also provides re-training on “Standard Operating Procedures”, which includes cyanide hazards and controls, possible cases of cyanide exposure, first aid response and decontamination practices, and is performed in an annual training program. This program is prioritized based on tasks and risk with sign off required from both the trainer (process trainer or supervisor) and the trainee.

Emergency Response Coordinator and members of the Emergency Brigade (EB) are trained in the procedures included in the EPRP regarding cyanide, including the use of necessary response equipment. Gualcamayo has an Emergency Brigade (EB) on site, which is formed by an Emergency Chief, two Emergency Coordinators and 31 brigade personnel, all of them from

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different areas of the mine site. EB members are trained through participation in mock drill exercises as well as formal training programs. Emergency responders are available on all shifts.

Regarding emergency responders off-site, Gualcamayo Mine and the CN provider in charge of the transportation has demonstrated that they maintain appropriate resources, medical response infrastructure and emergency plans to manage events of cyanide releases and exposures without the need of off-site responders.

The EB and the medical staff completes regular monthly training sessions including recognition of cyanide exposure, treatment and first aid.

Gualcamayo regularly hold emergency response drills including scenarios for cyanide releases. Emergency Brigade has conducted cyanide related drills between 2016 and 2018 related to Cyanide intoxication at the cyanide mixing area; Cyanide Gas exposure in the ADR plant; Employee intoxication in the acid wash circuit; and Cyanide release within the leach pad.

The drills and scenarios are intended to test the EPRP. It establishes a report which requires a review and assessment of performance during emergency situations or during drill scenarios; to test effectiveness, identify weaknesses, and improve the emergency response program. Observations are recorded the same report and tracked upon completion.

Training records are retained by the process plant trainer. Process Plant new hire and refresher training records are retained and kept current using Microsoft Excel with paper copies kept on file. Operating and task training records are also kept which include sign-off by the employee and trainer. Training records include the names of the employee and the trainer, the date of training, the topics covered, and how the employee demonstrated an understanding of the training materials.

9. DIALOGUE: Engage in public consultation and disclosure.

Standards of Practice

9.1 Provide stakeholders the opportunity to communicate issues of concern.

The operation is: ☒ in full compliance

☐ in substantial compliance

☐ not in compliance with Standard of Practice 9.1

Describe the basis for the Finding/Deficiencies Identified:

Gualcamayo continued using mechanisms to provide opportunities to stakeholders to communicate their concerns related to cyanide management, including engagement programs, meetings, and tours to the mine site. These programs are: the Open Doors Program, The Citizen Participation Program, Grievance Mechanism, The Partnership Program as well as interaction with provincial authorities and any other relevant aspect.

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Gualcamayo also has a grievance mechanism in place to receive, process, manage and resolve written or verbal complaints and grievances in a timely and consistent manner. There have been no cyanide related complaints in the last 3 years.

It is important to mention that Gualcamayo received a significant increase of questions and concerns raised by communities after cyanide related incidents in a mine operation located in San Juan province. The site conducted several meetings to explain the controls and procedures used and confirm that Gualcamayo has not suffered unwanted events that could affect the communities.

The community relations department maintains a community engagement plan, which includes a schedule of meetings with provincial authorities, agencies and communities.

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

- The operation is: ☒ in full compliance
☐ in substantial compliance
☐ not in compliance with Standard of Practice 9.2

Describe the basis for the Finding/Deficiencies Identified:

Gualcamayo utilizes the same mechanisms described in 9.1 as opportunities to interact with stakeholders and provide them with information regarding cyanide management practices and procedures.

Cyanide related information provided to employees and contractors includes information booklets and power point presentations.

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

- The operation is: ☒ in full compliance
☐ in substantial compliance
☐ not in compliance with Standard of Practice 9.3

Describe the basis for the Finding/Deficiencies Identified:

Gualcamayo has developed written and visual descriptions of how their activities are conducted and how cyanide is managed, and has made these available to communities and other stakeholders. These include: The Community Information Manual; Gualcamayo Monitoring Manual; and a Power Point presentation called The Management of Cyanide in Gold Extraction.

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Gualcamayo has presented evidence in the emergency response communication plan that confirms having adequate provisions in place to make information publicly available regarding potential cyanide releases or exposure incidents, if any such incidents were to occur.

There has been no cyanide exposures or incidents resulting in hospitalization or fatality have occurred prior to or since the mine was first certified.

In the last 3 years there has been no cyanide releases on or off the mine site resulting in significant adverse effects to the environment; no cyanide releases off the mine site requiring response or remediation and no cyanide releases that are or that cause applicable limits for cyanide to be exceeded.

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