



# SUMMARY AUDIT REPORT

Initial Certification Audit - Quimtía Eucaliptos Warehouse

Lurín, Perú

FOR THE  
INTERNATIONAL CYANIDE MANAGEMENT CODE

JUNE 2022



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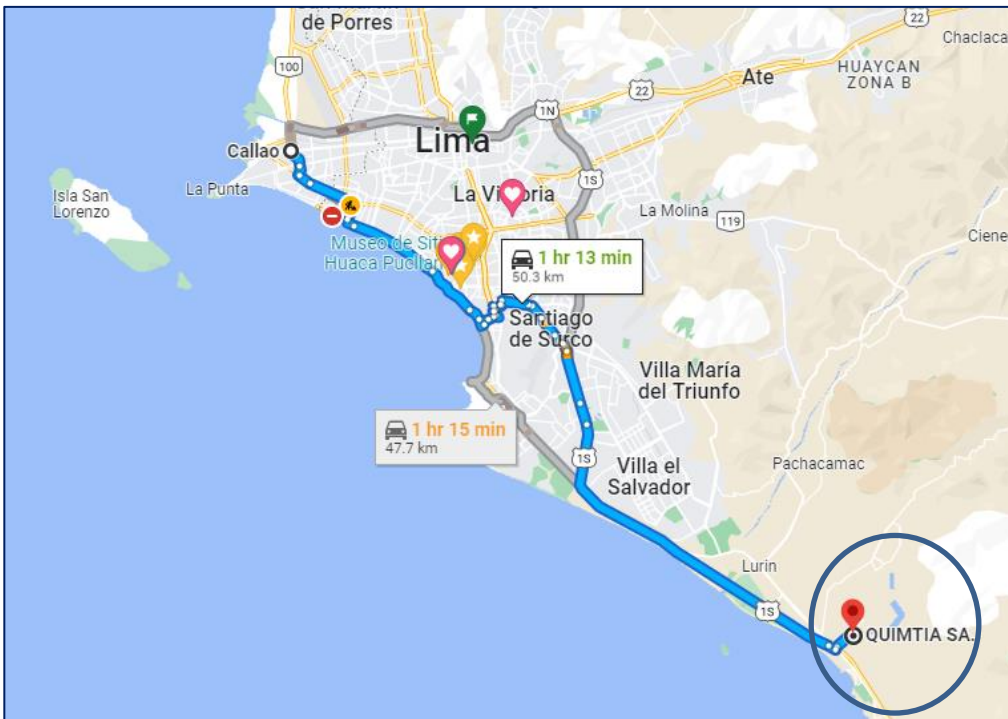
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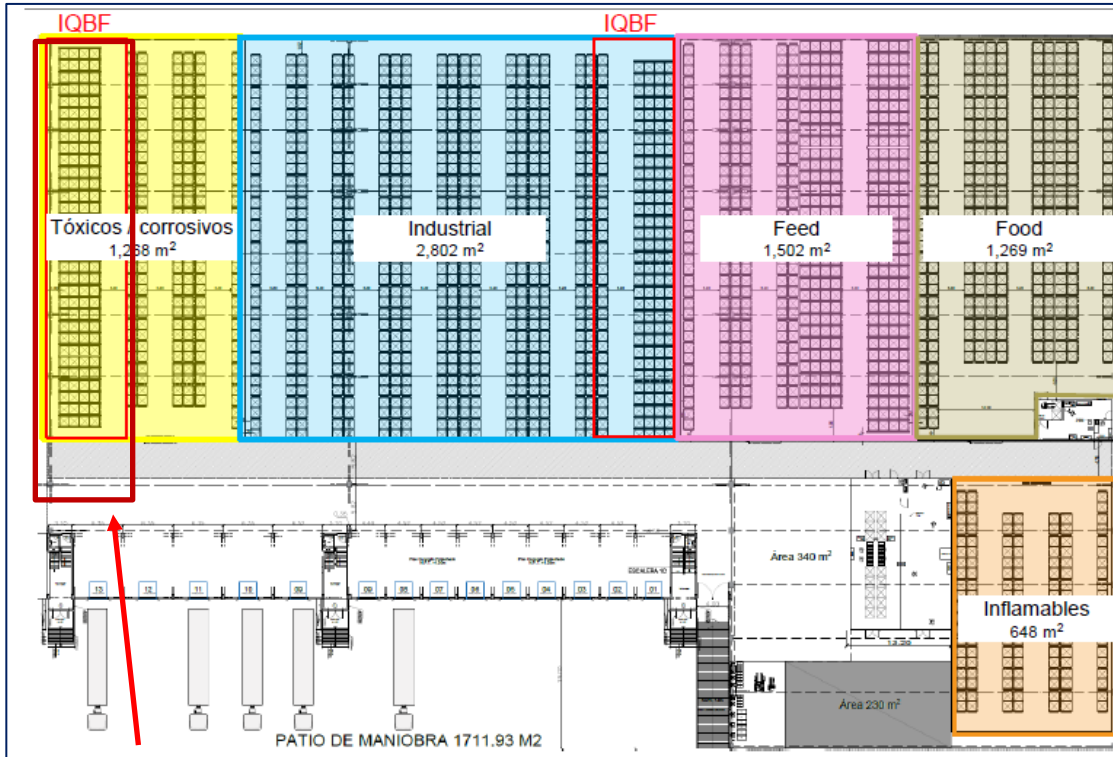
## Operation General Information

Name of Production Facility: Quimtia Eucaliptos Warehouse Lurín  
 Name of Facility Owner: Quimtia S.A.  
 Name of Facility Operator: Quimtia S.A.  
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## Operation Location Detail and Description



**Quimtia - Lurín Warehouse Location from Callao Port**



### Cyanide Warehouse area

Quimtia is a company that operates in the chemical distribution market for Latin America, with presence in Brazil, Peru, Colombia and Argentina. With more than 55 years of experience, Quimtia manages a wide portfolio of products, services and knowledge. Among others, stores chemical products including sodium cyanide.

Quimtia's warehouse subject to this initial ICMI audit, called the Eucaliptos Warehouse, began operating with sodium cyanide in August 2018. The facility is located within an industrial area in Lurín district at Lima, Peru, about 50 km south of the port of Callao, Lima. Previously, cyanide was stored in its ICMI certified warehouse at Callao; now all cyanide is managed through the Eucaliptos Warehouse in Lurín.

The activities that take place within the warehouse or Distribution Center (CD) are:

- Reception of chemicals and hazardous materials.
- Storage of chemicals and hazardous materials.
- Dispatch of chemicals and hazardous materials.
- Transportation of chemicals and hazardous materials.
- Reception, storage and dispatch of sodium cyanide.
- Conditioning of chemical products.

The warehouse is located away from industrial activities which could pose a serious threat of product contamination and away from exposition to floods. The warehouse has an area of 12,241 m<sup>2</sup>. The area destined for cyanide storage, the cyanide rack area, is 50 m by 11.30 m wide, in total 565 m<sup>2</sup>. The warehouse is built by reinforced concrete columns, as well as columns, beams and metal joists, with the roof cover of sheet metal plates. The perimeter closure is with metal plates, the internal divisions area made of drywall.

Quimtia receives trucks loaded with maritime containers from Callao Port containing solid sodium cyanide in Intermediate Bulk Containers (IBC) which are deconsolidated at the entrance ramp of the warehouse headquarters using a forklift which deposits the IBC inside the warehouse in a covered reception area and from where, another forklift accommodates it into the cyanide racks. For cyanide dispatch to clients, in the same way, the boxes are removed from the cyanide racks by means of the forklift which deposits the boxes in an adjacent covered area and from there are picked up by another forklift to take them into the truck transporter maritime container.

Storage in the cyanide racks area is carried out on open racks in multiple rows up to 11.5 m high. This area has fire insulation by means of a fire wall with at least three hours of insulation, limiting the enclosure with the other exterior walls of the General Warehouse. It has a fireproof door of 3 m high by 3 m width that allows the operation of the forklifts through the entrance / exit corridor. The height of the wall is approximately 16 m and reaches the ceiling of the main building, with the entrance door on the front face. The back face and the side face are part of the structure of the warehouse.

Bollards have been placed to protect the fire wall from collisions by forklifts or other mobile equipment.

Mechanical ventilation is installed in the cyanide rack area, for which an air injection and extraction system capable of handling this requirement was installed. The extractors are on the roof of the enclosure and the fans were installed on the side walls. In case it is required to connect the mechanical ventilation system to a generator, a generator set with a power of 30 kW was provided, sufficient to keep the extraction system running according to the engineering calculations.

The cyanide warehouse has an advanced fire detection system and a manual firefighting system by means of dry chemical powder (PQS), for which they have four wheeled fire extinguishers of high capacity (100 Kg) reaching 18 m height, which are distributed covering the area of the cyanide racks.

## Auditor's Finding

This operation is

- in full compliance
- in substantial compliance
- not in compliance

with the International Cyanide Management Code.

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

This facility has not experienced any compliance issues or significant cyanide incidents since began operating the cyanide warehouse.

## Auditor Information

Audit Company: BP Cyanide Auditors S.A.C.  
Lead and Technical Auditor: Bruno A. Pizzorni  
Dates of Audit: June 7 and 8, 2022

## Auditor Attestation

I attest that I meet the criteria for knowledge, experience and conflict of interest for a Cyanide Code Certification Audit Lead Auditor, 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 Cyanide Code Auditors.

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

## Principles and Standards of Practice

### Principle 1 | OPERATIONS

Design, construct and operate cyanide production facilities to prevent release of cyanide.

#### Production Practice 1.1

*Design and construct cyanide production facilities consistent with sound, accepted engineering practices and quality control/quality assurance procedures.*

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

*Summarize the basis for this Finding/Deficiencies Identified:*

Quimtia cyanide warehouse has been professionally designed and constructed to prevent and minimize the risk of a cyanide release. Building floors and walls provide impermeable barriers to potential releases, forklifts and racking systems used to move and store cyanide Intermediate Bulk Containers (IBC) are appropriate for handling and storing containers IBC.

The warehouse is built by reinforced concrete columns, as well as columns, beams and metal joists, with the roof cover of sheet metal plates. The perimeter closure is with metal plates, the internal divisions area made of drywall. The structure guarantees the protection of the products from any possible external contamination. The roofs have gutters that allow the evacuation of rainwater that prevents the transfer of water to the interior.

The floors are constructed with a concrete slab, waterproof, non-absorbent, washable and non-slip materials; with crack-free finishes and are easy to clean and disinfect. Floor drains are properly protected by metal grids or other suitable means.

The walls are made of waterproof, non-absorbent and washable materials, and light in color. Up to a height appropriate for operations, they are smooth, crack-free, and easy to clean and disinfect. The joints between floor and wall facilitate the removal of debris and dirt to be in good condition and with accessibility to the means of cleaning.

The ceilings are high and metal panels with wind extractors. The activities to be carried out do not generate humidity so the possibility of mold formation is extremely low. The doors have smooth surfaces and are built of resistant material, not absorbent, the width of this has enough slack to facilitate the passage of people and equipment as the case may be. Likewise, the proper handling of cargo is allowed. There are no windows that adjoin external areas towards the

storage areas.

The reception area consists of 5 docks, which according to the need are assigned exclusive docks for reception of the products. The dispatch area consists of 9 docks, considering that the transport units are exclusive for each type of product and that a dock is assigned to a transport unit, there is no risk of it being mixed with another type of material.

Forklifts and racking systems used to move and store cyanide Intermediate Bulk Containers (IBC) are appropriate for handling and storing containers IBC. The storage racks are distributed and separated into areas to store food, industrial, pigments, flammables, peroxides and cyanide.

On the first level are the areas intended for the operational staff of the warehouse, including bathrooms and 4 changing rooms. On the second level are the offices for administrative staff, as well as the dining room.

The ventilation of the establishment is adequate to prevent steam condensation, facilitate the removal of heat and odors typical of the processes. They have 35 wind extractors distributed in each storage section). The office areas and administrative areas have ventilation by means of air conditioning and natural.

The areas have adequate natural and artificial lighting so that dirt, debris and facilitate inspection operations in a hygienic manner and the safety of personnel. The luminaires are protected.

Records demonstrating the implementation of quality control and quality assurance (QC/QA) programs during construction of these facilities, including QC/QA records for the racking system and as-built drawings stamped by a certified professional engineer were available for the auditor's review. Construction records also include documents with a sign-off by the construction engineer that the facilities have been built in accordance with the design specifications and drawings. Records of the review and approval of the facility's design (building permit) and construction (declaration of manufacture) issued by the Peruvian regulatory agency were also available to provide evidence of compliance with this Production Practice.

Cyanide is managed on a concrete impermeable surface that prevents seepage to the subsurface; the floors are constructed with a concrete slab, waterproof, non-absorbent, washable and non-slip materials; with crack-free finishes and are easy to clean and disinfect. Floor drains are properly protected by metal grids or other suitable means. Handling and storage of IBC packaged solid cyanide at the warehouse operation is conducted on a concrete impermeable surface. To wash the pavement the operation has machines that clean the floor with minimum water and collect it at the same time so they do not generate surface water runoff. Anyway, the operation has a gutter that would collect the contaminated water to a



septic tank and then collected by a specialized company to its final disposal. No water is used to decontaminate clothing as workers use disposable Tyvec suits.

The auditor inspected Quimtia's warehouse and confirms that concrete surfaces are intact and do not have cracks that compromise their ability to contain released cyanide.

The warehouse floor serve as sufficient secondary containment for stored IBCs. the operation has a gutter that would collect the contaminated water to a septic tank. Compliance with this provision was determined through the auditor inspection of the facility and review of construction and maintenance records.

Solid cyanide is stored in a building with roofed and enclosed structures to prevent contact with precipitation. The safety shower near the cyanide storage area is designed such that leaks will not come in contact with cyanide containers.

The enclosed area where cyanide is stored has ventilation that prevents the build-up of cyanide dust and hydrogen cyanide gas. Adequacy of ventilation was confirmed through visual confirmation that the enclosed warehouse area holding solid cyanide in IBCs is, in fact, ventilated in the event that cyanide is released and/or comes in contact with water. The ventilation of the establishment is adequate to prevent steam condensation, facilitate the removal of heat and odors typical of the processes. They have 35 wind extractors distributed in each storage section. In addition Quimtia has installed forced ventilation provided by mechanical extractors in the cyanide storage area which have been installed based on an engineering design where they calculated the amount of air and total renewal of the air volume in a set time. The office areas and administrative areas have ventilation by means of air conditioning and natural.

Cyanide is stored to prevent access by the public and unauthorized personnel, within a secure area configured with a total enclosure within the general storage building for Quimtia products. This is a confined and separated area only for cyanide, has an access gate which remains closed and is only accessed by authorized personnel. Quimtia warehouse is located inside a guarded area in the form of an Industrial Park, where only authorized persons have access. Surveillance 24/7. Quimtia is equipped with closed-circuit television cameras for the warehouse surveillance operated by a private security company.

Cyanide is separated of incompatible materials as acids and strong oxidizers, there are no explosives. The auditor verified the flow path that a released material would take and determined that there would be no possibility that emissions from the separate areas could mix.

## Production Practice 1.2

*Develop and implement plans and procedures to operate cyanide production facilities in a manner that prevents accidental releases.*

The operation is  in full compliance with  
 in substantial compliance with Standard of Practice 1.2  
 not in compliance with

*Summarize the basis for this Finding/Deficiencies Identified:*

The warehouse operation has written procedures for unloading, loading and handling containers of cyanide and for managing any contaminated materials. The procedures describe how cyanide containers and contaminated materials are managed in a safe and environmentally sound manner that prevents cyanide releases and exposures.

The warehouse is certified in ISO 14000:2015 environmental management, ISO 9001:2015 quality management and ISO 45001:2018 worker safety management system.

The auditor review the following facility's written operating plans and procedures, among others, to confirm that they address the safe management of cyanide:

- CD-PE-SN-MI-001 Good Storage Practice Manual V03
- PE-ALM-P-001 Reception of Materials and Supplies V
- PE-ALM-P-002 Storage Procedure V
- PE-ALM-P-003 Inventory Control V
- PE-SSMA-I-001 SSMA Dialogues V02
- PE-SSMA-C-004 Sodium Cyanide Handling Primer V.04
- PE-SSMA-P-018 Waist Management V05
- PE-SSMA-P-004 Accident and Incident Investigation V03
- PE-SSMA-P-014 Risk Management in the Change of Processes, Facilities and New Projects V01
- PE-QA-P-002 Procedure for the Control of Non-Compliant Outputs
- Safe Operational Manual for Handling Sodium Cyanide
- PE-RD-P-005 Change Management V03



- SSMA Program 2022
- PE-MN-P-001 Procedure for Scheduled Maintenance

The procedure CD-PE-SN-MI-001 Good Storage Practice Manual V03 details how products must be stored within the rack's positions according to the assigned order and thus prevent risks of cross-contamination. It should be noted that the areas are properly located and labeled. The storage of the products keeps the following spaces free.

- Free space to the floor (platforms, pallets, standards): 0.20 m or international standard.
- Free space to the ceiling: not less than 0.60 m.
- Free space between rows of heaps: not less than 0.50 m.
- Free space between heaps: not less than 0.20 m.

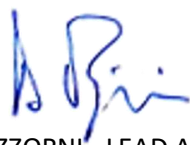
The general verification of good storage practices is carried out by the quality assurance area and documented in the format F-CD-PE-SNMI- 001-001 Inspection of Good Storage Practices on a monthly basis, also, before the identification of non-conformities those involved will apply corrective actions necessary for the survey.

Implementation of these plans and procedures was confirmed through observation of these activities, as during the site visit the auditor observed on consecutive days, the arrival of 20 feet maritime containers loaded with sodium cyanide IBC's which was being discharged and stored in the cyanide racks according to the written procedures. One forklift unloaded the maritime container placing the IBC's into the loading ramp where another forklift picked up the boxes to properly store them in the cyanide racks.

The auditor also had interviews with the personnel responsible for performing these tasks, and reviewed the available documentation, finding it in conformance.

The operation management system includes contingency plans for non-standard operating situations, such as damage to a cyanide box on arrival inside a beaten or dented sea container and during handling but without the release of cyanide briquettes. This situation is addressed in the booklet Safe Operational Manual for Handling Sodium Cyanide, Section 1.7. Reception of boxes of non-compliant sodium cyanide.

The procedures states in case the forklift operator observes a box in poor condition, will stop the activity and will communicate to the warehouse and distribution supervisor. In cases of minor damage (scrapes, blow, box breakage in conditions that do not compromise the inner big bag), the forklift operator will remove the product from inside the vehicle and isolate it to the side of the operating area. In case of major damage (embedding between boxes, box breakage with conditions that do not allow the normal withdrawal of the product or possible damage to



the inner big bag), the SSMA supervisor will provide the support determining how to proceed for the withdrawal / release of the product (girdles and / or slings will be used to link the boxes, be slightly raised by the forklift/stacker equipment and placed at floor level) coordinating and monitoring execution with the warehouse and distribution supervisor. The forklift operator shall place red film to the damaged boxes, label and store in the final locations at floor level. The warehouse and distribution supervisor shall inform the mining area of the stored quantity of non-conforming sodium cyanide boxes.

Non-compliant products are physically identified with a red reject label; it is then blocked in the SAP system, which automatically assigns a location. The actions to be taken with respect to non-conforming products, depending on the type of defect can be directed to a claim to the supplier or will be handled according to the Procedure for the control of non-conforming outputs PE-QA-P-002.

Another situation that the warehouse has identified as a contingency is described in the emergency response plan and deals with the possible entrapment of cyanide boxes at rack location. The response actions for this case are described in such detail in the emergency response plan. When the forklift operator (stacker) is performing the storage or unloading of the sodium cyanide boxes in the locations of Rack No. 1 or personnel who are performing work within that area and notices that one or more boxes of sodium cyanide are inclined or trapped between the structures of the rack, this must immediately report to the Warehouse Supervisor, who must follow the written procedure for these cases.

The warehouse operation facility has a formalized procedure of managing changes to the facility, PE-SSMA-P-014 Risk Management in the Change of Processes, Facilities and New Projects V01. The procedure states to identify changes to the facility or its operating practices that may increase the potential for cyanide releases and adverse impacts on worker health and safety before such changes are implemented so that they can be evaluated and addressed, as necessary. The written procedure requires written notification to environmental, health and safety personnel and a sign-off before the change can be instituted is the best way to address this.

Verification was through a review of the procedure as well as completed forms F-PE-RD-P-005-001 Request for Changes that have been signed off by health, safety and environmental (HSE) personnel. For example, the auditor reviewed an operational change made from 2 shifts to 1 shift only, expanding roles and functions applied to Quimtia personnel (forklifts, stackers and cargo auxiliaries). Other change procedures reviewed was the project to modify and place plugs in pipes, close and block water ingress valves of the fire system, which affect the

reception, storage and dispatch area of solid sodium cyanide.

The warehouse operation has a preventive maintenance program for its forklifts, rack stackers, racking systems and mechanical ramps used to unload, load and manage cyanide to prevent a failure that results in a cyanide release or exposure. The tank and piping associated with managing potential contaminated wash water are also included in the preventive maintenance program. No sea container maintenance is the responsibility of the warehouse.

The Procedure for Scheduled Maintenance PE-MN-P-001 covers all scheduled maintenance activities, from the generation of the maintenance program to the creation of the Work Order and applies to all equipment, machines, facilities and infrastructure of Quimtia.

The frequency of the different preventive maintenance activities is scheduled in the Annual Maintenance Program F-PE-MN-P-001-001 and documented in the Maintenance Order F-PE-MN-P-001-002, along with the basis for the maintenance frequency, such as hours of operation and set time periods between maintenance. The type of maintenance corresponds to the equipment and machines of the facility. P1M corresponds to monthly inspection of stop and roll route to the mechanical and electrical specialties. P3M, P4M and PM6 corresponds to 3-, 4- and 6-months preventive maintenance work, respectively. P1A corresponds to the maintenance tasks that will be carried out annually. Warehouse dock levelers are inspected and maintained every 6 months.

The preventive maintenance of the four forklifts and two rack stackers is carried out according to the hours of use. *Derco*, an external contractor, hires these equipment's to Quimtia and is in charge of its preventive maintenance, according to the hours worked. Forklifts preventive maintenance is performed every 3 months or 300 hours and for rack stackers is every 250 hours. The auditors inspected the cyanide facility, reviewed the maintenance records and interview employees determining compliance with this provision. Also reviewed the forklifts and rack stackers annual operating certificate. These equipment's are renewed every 2 or 3 years.

During the audit, the maintenance records of forklifts and stackers were not available, Quimtia was required to show the records of preventive maintenance performed on forklifts and stackers of the last 6 months. Soon after the audit, the operation sent completed registers of the contractor *Derco* with the required maintenance records. No additional information was required to find this in full compliance.

The cyanide warehouse has impermeable floors and walls to provide secondary containment

in the event that cyanide is released from storage. The operation has a written procedure within its emergency response plan (ERP) Contingency Plan Lurín Headquarters PE-SSMA-PL-002 describing how any water collected in the building is handled, how the operation determines if the water contains cyanide, and how it treats and/or would dispose of water contaminated with cyanide. There are no outside storage areas.

To wash the pavement the operation has machines that clean the floor with minimum water and collect it at the same time so they do not generate surface water runoff. No water is used to decontaminate clothing as workers use disposable Tyvec suits. Anyway, the operation has a gutter that would collect the contaminated water to a septic tank and then collected by the specialized company Hepar to its final disposal at Huaycoloro hazardous materials landfill, managed by external contractor Petramas.

During the audit, detailed descriptions were not found of how the operation will properly dispose of solid cyanide waste, as well as contaminated material in the event of a spill that they must attend with their emergency response team for Level 1 and 2 emergencies, according to the emergency response plan. Also, the contractor's procedures were not available as he would be in charge of a Level 3 spill. Quimtia was required to have written procedures for handling cyanide materials, such as the out-of-specification or unsaleable cyanide product, spilled product, and cyanide-contaminated materials, such as packaging or used equipment. Since a contractor may also participate for this purpose, its procedure was required. After the audit Quimtia sent an updated version of the Contingency Plan Emergency (ERP) detailing the process of environmentally sound procedures for management, transport and final disposal to the landfill of cyanide waste or cyanide-contaminated materials, including the contractor's procedure. Also sent training records of the updated ERP. No additional information was required to find this protocol question in full compliance.

Quimtia detailed how the used Tyvek suits that are potentially contaminated with cyanide are managed, stored onsite while awaiting disposal and its final disposal. Appendix 5 Use of Personal Protection Equipment (PPE) for Cyanide Storage and Dispatch, of the procedure PE-SSMA-P-015 Personal Protection Equipment (PPE) Management v3. Tyvek suits must be hung on the hook and stored in the cyanide PPE cabinet exclusively, which is safeguarded by the Warehouse and Distribution Supervisor. Tyvek suits can only be used up to 3 times, exclusive use for work in cyanide zone. In case the user feels that this is not comfortable before the 3 sets, it is changed for a new one with the approval of the warehouse and distribution supervisor or Health and Safety Supervisor.

The Handbook for Good Storage Practices requires in Section 6.3 Clothing, that warehouse

personnel must change with their respective uniform before entering the warehouses which must be in perfect condition of cleanliness and must be for the exclusive use of the activities of the area. Compliance with the use of uniform is verified with the inspection format FCD-PE-SN-MI-001-001 Inspection of good practices of Storage of the Distribution Center.

The solid waste is placed in plastic containers with caps, the same ones that have a bag inside to facilitate its removal. Once the containers are filled to 3/4 of their capacity, the bags are removed and closed to be evacuated by the operators. There is a collection center in the maneuvering yard. Solid waste management is carried out following the guidelines of the procedure PE-SSMA-P-018 - Solid Waste Management. Tyvek suits for disposal are placed in the Hazardous Waste Warehouse, a place where hazardous solid waste from the different areas of Quimtia is temporarily consolidated or stored in spaces and containers for subsequent collection and final disposal. This is, segregated in a protected area destined for hazardous waste until its collection and final disposal by the authorized contractor who takes all this waste to a landfill for hazardous waste and provides a certificate of adequate final disposal.

The ERP section 1.8.1.4.5 Activities in the Disposal and Disposal of Hazardous Chemical Waste and the procedure Safe Operational Manual for Handling Sodium Cyanide describe procedures for management and/or disposal of cyanide waste or cyanide-contaminated materials cyanide materials such as off-specification or otherwise unsellable cyanide product, spilled product, and cyanide-contaminated materials such as packaging. The procedures specify how any cyanide released from its primary containment is disposed of and how wastes contaminated with cyanide are to be managed.

Procedures of the contracted entities Hepar and Petramas include language specific to decontamination, management, and disposal of cyanide-contaminated materials, including the ultimate destination of any disposed material.

Quimtia stores solid sodium cyanide in Intermediate Bulk Containers (IBCs) and occasionally in drums. The warehouse has procedures to ensure that the cyanide is packaged and labeled as required by the political jurisdictions through which the packaged cyanide will, including international standards. This includes requirements for the container itself as well as for signage on containers identifying the presence of cyanide and its risks to health and the environment.

Procedure PE-ALM-P-001 Reception of Materials and Supplies V requires in Section 6.1.9 the reception assistant to print the labels of the downloaded product according to corresponds, then proceeds the labeling considering the main data: SAP Process Control code, material



description, expiration date, lot and quantity. The labeling must be done by product and presentation (drums, IBCS and boxes). UN 1689 and maritime contaminant signaling is required for each package. The procedure is in place to confirm that labeling and packaging has not been compromised when it is shipped to customers.

### Production Practice 1.3

*Inspect cyanide production facilities to ensure their integrity and prevent accidental releases.*

The operation is  in full compliance with  in substantial compliance with  not in compliance with Standard of Practice 1.3

*Summarize the basis for this Finding/Deficiencies Identified:*

The facility does not have tanks, pipelines, pumps and valves holding cyanide solutions. As secondary containment the warehouse floor is inspected periodically for its integrity, and to ensure that the gutter is clean and operative. Although Quimtia is not responsible for the sea containers used for transportation, they inspect them and report any substandard condition to the shipper.

The warehouse inspects all loading, unloading, and storage areas and secondary containments to identify releases of solid cyanide or situations that pose a risk of a cyanide release as cracking of impermeable surfaces and racks structural integrity. The Quality Area carries out monthly inspections of the racks, warehouse infrastructure, floors and walls for cracks. The Health, Safety and Environment (SSMA) Are also carries out monthly inspections, looking at safety aspects. The auditor reviewed reports that include inspections of the loading and unloading areas and cyanide storage to check the physical state of the racks. In addition, they have night patrols where the guards verify any substandard condition.

Documentation is retained and was available for the auditor's review demonstrating that inspections have been conducted, that they have been focused on the identification of releases and on the elements critical to the prevention of releases and exposures, and that necessary clean-up measures and maintenance and repairs are made in a timely manner when deficiencies are identified. The inspection forms provide sufficient detail regarding what to look for or what condition is acceptable. The auditor's inspection of the facilities confirmed evidence the facility's inspections are identifying potentially hazardous conditions.





The facility inspections are conducted frequently enough to identify potential problems before they present a risk of cyanide release or exposure. According to the auditor judgment, the frequency of inspections is sufficient to assure and document that equipment is functioning within design parameters.

The facility inspection and maintenance records are documented and include the date of the inspection, the name of the inspector and any observed deficiencies. The nature and date of corrective actions are documented in the SAP platform, a software for business process management, which facilitates processing of data and the flow of information. The auditor reviewed this information, verifying that this information is recorded.

## Principle 2 | WORKER SAFETY

Protect workers' health and safety from exposure to cyanide.

### Production Practice 2.1

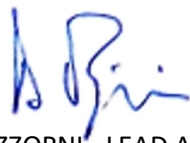
*Develop and implement procedures to protect facility personnel from exposure to cyanide.*

The operation is  in full compliance with  in substantial compliance with  not in compliance with Standard of Practice 2.1

*Summarize the basis for this Finding/Deficiencies Identified:*

The operation's management system discussed in Production Practice 1.2 address all aspects of the operation (reception, storing and dispatching of cyanide), that are necessary for protection of workers. This includes inspection programs for the cyanide warehouse and preventive maintenance programs for critical equipment, during normal operations, for non-routine and emergency operations, and maintenance related activities. The same procedures, manuals, plans and programs explicitly address the related safety issues as they describe safe practices. The level of detail in these procedures is adequate with the risks involved with the task. These documents include statements to use personal protective equipment and for pre-work inspections, as appropriate and necessary for the operation. Pre-work inspections are required for cyanide reception and dispatch operations. Also is addressed in the procedures, safety training programs and to post signs in specific work areas where cyanide is present.

Pre-work inspections are typically focused on safety and operational issues and documented in the inspection checklist Rack Inspection Log and the Pre-Operational Inspection Record for



Sodium Cyanide Handling. The operation has also procedures in its emergency response plan, describing the specific steps necessary to decontaminate emergency response equipment which could have been in contact with cyanide. The auditor reviewed these procedures confirming they describe safe work practices and are implemented, through employee interviews and observation.

During the task observation of the cyanide unloading and storage, the auditor found that the operators did not check for water in the emergency shower station and low-pressure eyewashes, although it was recorded as conforming to this item in the pre-work inspection checklist. Quimtia was required to provide refreshment training in the correct inspection to do and in the use of the checklist. After the audit, the operation modified the Operational Safe Workbook Handling Sodium Cyanide. PE-SSMA-C-004 and the pre-operational inspection record PE-SSMA-C Sodium Cyanide, including the need to validate the flow of emergency shower water and eyewashes and sent the required training records of its operators. No additional information was asked to find this in full compliance.

The operation has diverse methods for getting employee input regarding its health and safety procedures and considers this input in developing and evaluating its procedures. These consist of formal monthly safety meetings with the Health and Safety Committee, the annual safety week, suggestions boxes and daily 5 minutes meetings at 10 o'clock in the morning. This last activity is performed according to the procedure SSMA Dialogues PE-SSMA-I-001, with the objective to establish a daily communication tool on Health, Safety and Environment issues that involves all personnel, including contractors, and to establish guidelines for its development in Quimtia's operations, so that staff are sensitized to the prevention of accidents and incidents. Topics treated, among others, include work procedures, instructions risks assessment, applicable regulations, sub-standard acts and conditions detected during operations, incident and accident investigation report, and operational controls of the day's activities.

The auditor reviewed the written procedure, observation of meetings and suggestion boxes, documentation of formal safety meetings and interviews with personnel.

The operation has identified the area of the cyanide warehouse and the activities that may expose its workers to harmful cyanide concentrations and require all personnel entering these production areas to use necessary personal protective equipment. Protection from exposure to levels of cyanide greater than 4.7 ppm cyanide continuously over an 8-hour period as hydrogen cyanide gas is controlled through work procedures, where they specify the areas where cyanide is present and list the required personal protective equipment (PPE) to use.



They have signals posted in the warehouse where cyanide is stored. The PPE required to work with cyanide are safety helmet, glasses and boots, Tyvek suit, full face respirator with cartridges for dust, organic and acidic gas, and leather rubbers.

The auditor confirmed that the operation has determined the areas and activities where such exposures may occur and confirmed the operation requires appropriate PPE and use administrative controls, as necessary. The auditor also observed and interviewed workers to confirm that these protective measures are being implemented.

The warehouse operators working in areas where cyanide is stored must wear portable hydrogen cyanide (HCN) gas detectors to confirm that workers are not exposed to concentrations of cyanide gas or dust. Alarms are used to identify when areas exceed HCN concentrations. Compliance with this provision was verified during by observation of the 3 portable monitoring equipment Drager PAC 6000.

During the audit it was not clear in the written procedures, the actions to take when the hydrogen cyanide gas (HCN) detector alarm is triggered at 4.7 ppm and for the alarm at 10 ppm, were not identified. The operation was required to identify in writing the actions to be taken when the areas exceed concentrations of 4.7 ppm and 10 ppm, as the alarms of the HCN monitors are activated and to show training records on this regard to all personnel involved in the operation of the warehouse. After the audit, Quimtia updated the Contingency Plan detailing actions to be taken at 4.7 and 10 ppm and the training records. First alarm set at 4.7 ppm, indicates the operators must withdraw from the area and to monitor until HCN levels drop below 4.7 ppm. In the event that the alarm sounds at 10 ppm they must evacuate the area. No additional information was required to find this in full compliance.

Cyanide monitoring equipment are maintained, tested and calibrated as recommended by the manufacturer. Records of these activities are retained and were available for review by the auditor. HCN monitors are calibrated by the external contractor ACIS Process, which is a gas laboratory that performs verification, calibration and certification of equipment. Calibration records included the actual calibration information indicating that the equipment calibration was completed.

During the audit, no provision was found to ensure that a buddy system is used, although in practice the cyanide operators carry out their work in an accompanied way and with means of communications as two way radios and cellphones. The warehouse was required to implement provisions prohibiting an employee from entering the cyanide warehouse area or performing cyanide work alone such as loading, storage, and unloading, unless accompanied by a second



employee who can immediately call for help in the event of exposure to harmful concentrations of cyanide. Also, to establish that means of communication must be available to call for help in storage areas or other places that present a risk. After the audit Quimtia modified the Operational Safe Workbook Handling Sodium Cyanide PE-SSMA-C-004 and the pre-operational inspection record for the handling of Sodium Cyanide PE-SSMA-C, including the obligation to carry out the cyanide tasks accompanied and to use two way radios as means of communication. No additional information was required to find this in full compliance.

The Safe Operational Manual (Workbook) for Handling Sodium Cyanide requires the cyanide handling operation in the warehouse, both for unloading, storage and subsequent dispatch of cyanide to customers, always be carried out by three people. Since the operation requires two forklift operators, one with the rack lift car, and the other with the forklift for unloading/loading the truck, the procedure also requires the Warehouse Supervisor always to be present before and during the operation to enforce this procedure and verify the operational controls. These operators can notify and communicate with other personnel for assistance if necessary as all are equipped with radio. The auditor confirmed compliance with this provision through review of the cyanide operational manual, interviews and observation of employees during cyanide IBC's reception and storage operations.

Quimtia has implemented procedures to assess the health of their employees when they are hired and periodically thereafter to ensure their fitness for their jobs. Specific medical issues to be evaluated include the ability to use a respirator, hearing and vision, and pulmonary function. Evidence that such assessments are being conducted was available for the auditor's review.

The health of employees is evaluated when they are hired, which include hearing, vision, pulmonary function, and ability to use a respirator. Then the workers' health of is controlled annually, by medical occupational analysis. Results are registered in the F-PE-SSMA-I-020-004 Medical Surveillance Occupational Medical Examinations and through the renewal of the health card in order to check the good state of health and that they do not constitute a contamination vehicle for foodstuffs they handle. The Health and Safety Supervisor is in charge to follow up medical examinations needs by mean of an Excel spreadsheet. *MEPSO* is the medical center in charge to perform these assessments.

Quimtia has a procedure to ensure that individuals working or visiting the facility do not leave the site with cyanide on their clothing. All warehouse operators must change clothes before entering the warehouse areas and this clothing is left on site when they leave, so that it can be washed. Where they may come in contact with cyanide, they must wear disposable Tyvec overalls.

The standard working clothes required are long sleeved t-shirt, pant, helmet, steel toe shoes, dust mask and gloves, according to the work to be done. The warehouse operators must change into their respective uniform before entering the warehouse, which must be clean and it must be used exclusively for the activities of the area. The uniforms are washed through a third service by Quimtia, to which is the responsibility of the workers to leave their dirty uniforms in the buckets ready for it. The verification of compliance with the use of uniform is carried out by register format FCD- PE-SN-MI-001-001 Inspection of Good Storage Practices of the Distribution Center. The auditors confirmed compliance with this provision by reviewing these inspections records, the procedure in Section 6 of the Good Storage Practice Manual, and also interviewing and observing employees.

Quimtia has placed legible signage throughout the cyanide operation area as necessary to ensure that all workers who may be exposed to cyanide are aware of the risks and take appropriate protective measures. Workers are alerted to the presence of cyanide and the need for appropriate personal protective equipment. The auditor verified compliance by observation of signage around the facility, interviews with site personnel and review of the overall safety and training programs regarding to cyanide safety.

Quimtia prohibits smoking, eating, drinking and having open flames in all areas of the warehouse storing facility with emphasis where cyanide is present. The prohibition is included in the operation’s safety training and is re-enforced by signage in these areas. The auditor reviewed the training plans and records, interviewed the employees and observed on site signage throughout the facility finding this in compliance with this provision.

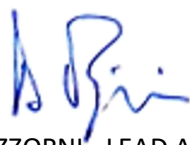
## Production Practice 2.2

*Develop and implement plans and procedures for rapid and effective response to cyanide exposure.*

The operation is  in full compliance with  in substantial compliance with  not in compliance with Standard of Practice 2.2

*Summarize the basis for this Finding/Deficiencies Identified:*

The operation has the written Emergency Response Plan (ERP) *Contingency Plan Lurín Headquarters PE-SSMA-PL-002*, detailing the necessary response to inhalation of cyanide gas or skin contact with solid cyanide, including a Medical Response Flowchart. A poster with instructions for cyanide poisoning is also posted in the cyanide storage area.



The auditor found the description in the ERP for cyanide exposures omitted to use the HCN gas detector to secure the area before approaching the victim, also omits decontamination in the emergency shower for cases of contamination with sodium cyanide. The operation was required to review the written instructions detailing the necessary response to inhalation of cyanide gas or skin contact. After the audit Quimtia sent and updated version of the ERP, where all these findings were addressed. No additional information was required to find this in full compliance.

Safety showers, eye wash stations and fire extinguishers are available near areas of the warehouse where workers may be exposed to cyanide. The warehouse operation has several showers, low-pressure eye wash stations strategically located along all the warehouse area as they store different chemicals. One of these stations, designed, constructed and maintained to minimize the potential for water to come into contact with cyanide containers or cyanide released from containers during handling, is located outside of the confined cyanide racks area. Eye wash stations operate at low pressure to avoid driving contaminants into the eyes.

The auditor inspected the operation confirming that emergency showers, low pressure eye wash stations and dry powder nonacidic fire extinguishers are available where they may be needed and tested the emergency showers confirming they are functional. The auditor also checked the eye wash stations confirming that they are in good working order and that they operate with low water pressure. Maintenance and inspection records were available to confirm that this safety equipment has been routinely evaluated to ensure it is available when needed.

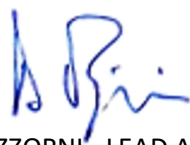
During a previous gap audit carried out at Quimtia's warehouse, it was observed there was an automatic fire extinguishing system by means of water sprinklers installed on the roof of the warehouse, which represented a risk of cyanide contact with water in case the firefighting system is activated. On the occasion of this certification audit, the water sprinklers on the cyanide storage area were eliminated. Quimtia presented a new system for fire extinguishing, based on a manual system of dry chemical powder extinguishers, also made up of various elements described below.

The solution adopted is based on an enclosure with insulation of at least 3 hours (High Risk for having more than 70 kg / m<sup>2</sup> of wood from cyanide boxes in accordance with the National Building Regulations (RNE) - Art. 169- RNE A130) to separate the area from the rest of the warehouse, which has forced ventilation and where the water sprinkler meshes were removed from the place of insulation, in order to ensure the absence of accidental water inside the accident, even in the event of an earthquake.

As an extinguishing element, dry chemical powder (PQS) is used, complemented by a VESDA-type smoke suction detection system that activates a pre-alarm signal and an alarm signal according to the smoke concentration detected. In case of pre-alarm, the message will be received at the fire control panel located in the Security and Control office and will be sent to field personnel to immediately verify the causes of the signal of pre-alarm inside the sodium cyanide area. In the event of alarm, the enclosure will also be immediately closed to verify the origin of the signal. As the case may be, PQS mobile extinguishers will be used to extinguish any fire that was being generated. In summary, the elements of protection for the cyanide storage area are conformed by:

- Insulation of the area by means of a fire wall of at least 3 hours of protection with panels type "MGO-Magnesium Oxide Boards" with European CE Certification for 20 mm plate. The height of the wall is approximately 16 meters and reaches the ceiling of the main building, with the entrance door on the front face. The back face and the side face are part of the structure of the building.
- Firewall wall protection by bollards that protect the fire wall from shocks by forklifts or other mobile equipment.
- Motorized roller fire door with a control system that allows it to receive a signal from the fire panel and close automatically in case of fire alarm.
- Ventilation / mechanical extraction using an air renewal ratio of 9 times / hour the volume of the interior of the enclosure, by means of 5 ventilators (in the side wall that faces the outside) and 5 extractors in the roof of the building. The ventilation / extraction system is governed by a control board, which, in case of fire alarm, will deactivate the engines automatically to avoid both the supply of oxygen and the possible expulsion of cyanide in case of fire.
- Fire detection system by suction and temperature. The cyanide rack temperature detection system, using a temperature detector cable, is activated at 68°C, of the fuse type, which will send an alarm signal when the temperature around the cable rises above the factory-programmed range
- Manual extinguishing system by chemical dry powder, with 4 high capacity PQS wheeled extinguishers (100 Kg), with a jet range of 18 meters, distributed covering the cyanide warehouse area. In case a pre-alarm signal or alarm of the fire detection system is activated in the cyanide rack, or in the event of the development of an obvious emergency, the security personnel would approach the place of the event and after verifying the emergency would proceed to fight the fire by applying discharges from the extinguishers.

The equipment is maintained and tested on a regular basis to ensure that it functions properly when needed.





The warehouse operation has the necessary equipment available for emergency response to a worker's exposure to cyanide stored at the medical center. The operation has a medical oxygen 3,200 L capacity bottle with a valved mouthpiece that can also be used as a resuscitator. Also they keep 3 kits of antidotes for cyanide poisoning made up of amyl nitrite, sodium thiosulfate and sodium nitrite. The auditor confirmed the dates on antidotes have not expired and also that they are stored at the temperature specified by their manufacturer to ensure it will be effective when used. The warehouse operation inspects their cyanide first aid equipment monthly, although the inspection records were not available in occasion of the audit. The operation was required to show these inspection records, including oxygen and cyanide antidotes inspections. After the audit, Quimtia sent the required inspection records. No additional information was required to find this in full compliance.

They also have emergency communication by radio, alarm system and telephone readily available for use. The auditors confirmed compliance with this provision through inspection of the facility and interviews with employees

Employees have access to the Safety Data Sheets (SDS) and information on cyanide first aid in areas where cyanide is manipulated. All safety information provided by the operation is in Spanish, the language of the workforce. The auditor observed that safety and warning signs, SDS and first aid procedures are available within the context of the operation's overall safety and training programs. The auditor found the SDS did not correspond to the manufacturer's brand, it was a generic SDS for cyanide. Quimtia was required to keep the cyanide manufacturer's SDS in Spanish within reach of employees. After the audit Quimtia replaced the SDS with the ones from AGR, the cyanide manufacturer. In addition, Quimtia reviewed the purchasing procedure to include as a necessity, the request to the cyanide suppliers, the mandatory shipment of the SDS in Spanish and other technical documents with each cyanide dispatch. No additional information was required to find this in full compliance.

The warehouse exclusively manage cyanide in solid form. All IBCs containers of cyanide at the warehouse area clearly identified as such. The auditor determined compliance with this provision through the inspection of the cyanide containers stored at the operation.

Quimtia has implemented procedures for hand washing or showering for individuals who have been in areas of the facility posing the potential for skin exposure to cyanide. The Manual of Good Storage Practices D-PE-SN-MI-001 states in Section 6 the necessary controls for the employee's decontamination, they also have the instructive Hand Cleaning and Disinfection Instructions CD-PE-SN-I-001. The control of hygiene of the personnel, is verified and registered in the format F-CD-PESN-MI-001-001 Inspection of Good Practices of Storage of the Distribution Center. The auditor reviewed the procedure and confirmed its implementation



through observation of and interviews with employees.

The auditor interviewed a member of the first aids brigade on duty who showed not competent to administer oxygen in case of an emergency of cyanide intoxication. The operation was required to provide refreshing training to its emergency response brigadists in cyanide first aid on site to respond in the event of an exposure to cyanide. After the audit, Quimtia sent training records showing that first aid brigades, warehouse and distribution personnel received practical training in taking vital signs to and oxygen administration. No additional information was required to find this in full compliance.

The warehouse has operations personnel who are trained in cyanide first-aid on-site to respond in the event of a cyanide exposure including administration of oxygen and amyl nitrite. Intravenous antidotes will be administrated by external medical personnel, for which the staff who transfer contaminated patients to the emergency department will carry the antidote kit. The auditor reviewed the training records demonstrating that the individuals have received, first aid training to workers exposed to cyanide including the use of oxygen.

Quimtia has developed a written procedure in the event that an exposed worker requires transport to an off-site medical facility for treatment. The Flowchart of Medical Attention requires the Health and Safety area to communicate with Healthy World, the external medical contractor hired by Quimtia, to transfer the injured with an ambulance or with private mobility to the nearest qualified off-site medical facilities. The procedure stablishes the victim will be accompanied by the area supervisor, first aid brigade or medical personnel. The auditor reviewed the operation's response procedure confirming compliance with this provision.

Quimtia has made a formalized arrangement with Healthy Word planning to transport a cyanide exposure victim to an off-site medical facility for treatment. The operation has determined Clinic San Pablo – Surco medical facility has adequate and qualified staff, equipment and expertise to treat the patient. As the Clinic does not has its own antidotes onsite, Quimtia will accompany the ambulance carrying the cyanide antidotes with them during transport of an exposed worker to the medical facility, to be administered by medical personnel of the Clinic. The auditor reviewed the operation's documentation of this coordination with the off-site medical facility as necessary to ensure proper care for exposed personnel.

Quimtia has a written procedure for investigating and evaluating incidents, including of cyanide exposure, to determine if the operation's policies and programs to prevent such incidents are adequate or whether they need to be revised. The auditor reviewed the written

procedure Accident and Incident Investigation PE-SSMA-P-004 as well as records of past investigations. The procedure includes a flowchart indicating the necessary actions for the initial report of the accident and then details step by step the necessary actions to be carried out until the process is closed with corrective actions and communication to all personnel. The accident reporting procedure includes the following registers:

- F-PE-SSMA-P-004-001 Immediate Accident/Incident Report
- F-PE-SSMA-P-004-002 Accident and Incident Investigation Report
- F-PE-SSMA-P-004-003 Monitoring and Control of Accidents and Incidents
- F-PE-SSMA-P-004.004 Testimonies
- F-PE-SSMA-P-004-006 Dissemination of Accident/Work Incident

There have not been any cyanide-related incidents, but records of other accidents and incidents were reviewed confirming that the general program for investigation of accidents and incidents is being implemented.

### Principle 3 | MONITORING

Ensure that process controls are protective of the environment.

#### Production Practice 3.1

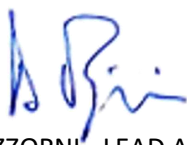
*Conduct environmental monitoring to confirm that planned or unplanned releases of cyanide do not result in adverse impacts.*

✓ in full compliance with

The operation is  in substantial compliance with Standard of Practice 3.1  
 not in compliance with

*Summarize the basis for this Finding/Deficiencies Identified:*

The warehouse operation does not discharge potentially contaminated water (including wash water or rainwater) to streams, rivers or other surface water. Quimtia is not required by local regulations to monitor surface or ground water. Warehouse facilities are located away from areas exposed to floods and watercourses. The cyanide warehouse operations exclusively handles cyanide in solid form, the potential sources of indirect discharges are limited to leakage and spills from wash water systems and from secondary containments which enter a



surface water body through the subsurface. The warehouse floors have been sealed to prevent leaks to the subsoil, any water product of washing or any emergency will be collected by means of the gutter into a septic tank isolated from any external sewer network.

The facility has no direct or indirect discharge to surface water.

Other than using portable HCN monitors for the safe operation, the operation does not conduct such monitoring. Quimtia is not required by local authorities to monitor these emissions as do not pose a health risk to workers and communities.

Quimtia does not conduct environmental monitoring as there are no planned releases of cyanide, and for unplanned releases, on the auditor’s professional judgment it is appropriate to consider it will not result in adverse impacts. Quimtia is not required by local authorities to monitor emissions.

**Principle 4 | TRAINING**

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

**Production Practice 4.1**

*Train employees to operate the facility in a manner that minimizes the potential for cyanide exposures and releases.*

The operation is  in full compliance with  in substantial compliance with  not in compliance with Standard of Practice 4.1

*Summarize the basis for this Finding/Deficiencies Identified:*

In occasion of the audit, it was not found in the training material, content regarding understanding the dangers of cyanide, when reviewing the material used for initial training (induction). Quimtia was required to include in its induction program, the necessary training elements in cyanide recognitions, its effects in human health and in recognizing cyanide intoxication symptoms, and procedures to follow in case of exposure to all personnel who may encounter cyanide. Also, that periodic refresher training should be provided in this regard. After the audit, the auditor review the training material and training records that Quimtia sent,



where all these requirements were full filled. No additional information was required to find this in full compliance.

Quimtia has written training programs and training materials that provide all personnel who may encounter cyanide with training in recognizing the cyanide materials present at the operation, the health effects of cyanide, the symptoms of cyanide exposure, and the procedures to follow in the event of exposure. Periodic refresher training is provided to ensure employees retain this potentially lifesaving knowledge.

The auditor reviewed the Health, Safety and Environment Program CD Lurín 2022 F-PE-SSMA-PL-001-001 which includes in the Induction and Training Program, training in cyanide materials and requires refresher training to be periodically conducted. Also reviewed the training material presentation Safety Induction in the Handling of Sodium Cyanide, the participants assistance records and interviewed employees to verify that cyanide hazards are addressed and potentially exposed personnel receive both initial and periodic refresher training.

Quimtia trains its workers regarding the proper use of personal protective equipment and the specific personal protective equipment required for various tasks and in different areas of the facility. The use of personal protective equipment is addressed in the operating procedures, the safety training program and in signs posted in the specific work areas.

The auditor review the operation's documentation of this annual training included in the Induction and Training Program: Correct and Safe Use of Personal Protective Equipment, where the health Safety and Environmental (HSE) supervisor is responsible for the training of the operational personnel. Also observed the use of personal protective equipment at the facility and interview employees regarding their training, finding it in conformance.

All personnel involved in the management of cyanide is trained to perform their assigned tasks in a safe and environmentally sound manner. Task training instruct employees on how to accomplish their assigned tasks safely, and the required procedures to accomplish the task in a manner that prevents exposures and releases. Verification of compliance was through interviews with personnel engaged in cyanide management activities and review of the operation's training materials as the Safety Induction in the Handling of Sodium Cyanide and the training assistance records.

Task training is provided to employees before they are allowed to work with cyanide in an unsupervised manner. This requirement is specified in the work procedures and in the Induction and Training Program. The auditor verified its compliance by reviewing the training



materials and records and interviewing operational and supervisory personnel. Also reviewed the Excel spreadsheet Registration of Personnel Authorized for the Activity of Handling Sodium Cyanide, where only five forklifts operators are allowed to work with cyanide as they received training in cyanide training in operational safe work, in sodium cyanide safety data sheet and in HAZMAT III courses.

Refresher training on normal tasks involving cyanide is provided annually to ensure that employees continue to perform their jobs in a safe and environmentally protective manner. This training is specific to their assigned tasks and address cyanide safety. The register of personnel authorized to work with cyanide shows the date of its annual refresher training. Formal evaluations were verified by review of the evaluation records.

The warehouse Induction and Training Program identifies the specific cyanide management elements on which each job position must be trained in to properly perform the required tasks. Training based on the operating procedures Sodium Cyanide Handling Booklet comply with this provision, also the procedure Reception of Materials and Supplies and the Chemicals Reception Booklet. In these procedures there are identified the important elements that must be conveyed to a new employee regarding how various cyanide-related tasks must be performed. The auditor reviewed the training materials and interview workers and trainers finding this requirement in compliance.

Employee task training is conducted both by internal personnel as the HSE supervisors with experience in training and experienced operators with knowledge of the specific tasks to be accomplished, and by external contractors with experience in effective communication techniques. Verification included interviews with the internal trainers to determine their level of expertise in operating the facilities and in training, finding this in conformance.

Quimtia evaluates the effectiveness of their cyanide task training by testing of employees at the completion of training and observation of employees performing their tasks after initial training. The auditor reviewed records for formally documented evaluations, finding it in compliance.

## Production Practice 4.2

*Train employees to respond to cyanide exposures and releases.*

The operation is  in full compliance with  in substantial compliance with  not in compliance with Standard of Practice 4.2

*Summarize the basis for this Finding/Deficiencies Identified:*

Employees working in areas where cyanide is present are trained in what to do in the event they observe a cyanide release and/or exposure. Employees are trained to call for the assistance of the designated Emergency Response Team to provide cyanide first aid.

The training given to all workers is Safety Induction in the Handling of Sodium Cyanide which includes training in the following topics: first aid, medical treatment, spill management and decontamination. The auditor reviewed the training material, attendance records and comprehension tests, finding this requirement compliant.

The auditor reviewed the operation's training program for the Emergency Response Team (ERT) including procedures and plans to determine how the operation's response program is structured confirming that appropriate training is provided to site personnel. Verification of the implementation of this provision was through review of the response plan and records of response training, and through interviews with facility personnel.

The ERT is trained to carry out cyanide exposure and release response actions as they are assigned in the operation's ERP. The operation's requirements for employee training, including records of the training that these employees receive, are included in the operation's training program, ERP and training records reviewed by the auditor, including training in hazardous materials (HAZMAT).

All emergency response training records are retained throughout each worker's employment. The auditors reviewed this documentation and interviewed trained personnel determining compliance with this provision, documenting the training they have received and including the names of the employee and the trainer, the date of training, the topics covered, and how the employee demonstrated an understanding of the training materials.

## Principle 5 | EMERGENCY RESPONSE

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

### Production Practice 5.1

*Prepare detailed emergency response plans for potential cyanide releases.*

in full compliance with  
 The operation is  in substantial compliance with Standard of Practice 5.1  
 not in compliance with

*Summarize the basis for this Finding/Deficiencies Identified:*

Quimtia has established an emergency response system composed of a series of members who act together, interactive and organized to manage emergencies that may arise during the reception, storage, dispatch of sodium cyanide, chemicals and hazardous materials in the warehouse.

The operation has developed the Emergency Response Plan (ERP) Contingency Plan Lurín Headquarters PE-SSMA-PL-002 for responding to a cyanide release emergency. The ERP is a specialized document addressing cyanide emergency response information, also has the publication documents Instructive Cyanide Poisoning First Aid Instruction and a detailed Medical Care Flowchart that includes a list of emergency telephone numbers, both published in the warehouse.

The Plan addresses the potential release scenarios at the site in a realistic manner and with an appropriate degree of specificity. The operation's Emergency Response Plan and related documentation is focused on its onsite specific circumstances and responses, with respect to cyanide. The auditor determined these documents address those release scenarios that may be expected to occur and result in significant impacts to its workers, community and environment, as applicable to the site-specific features of the operation and its environmental setting.

The Plan considers minor and major cyanide spills and the emergency response procedures detail the procedure to limit the spread of releases and control the releases at their source. The warehouse manipulates one box at a time, during cyanide reception, storage and deliver of IBCs and consequently any release is limited to a maximum of 1.1 tons of solid cyanide which

is expected to be readily contained within the confines of the warehouse facility. The possibility of massive or catastrophic release of hydrogen cyanide due to contact water was eliminated after removing from the cyanide area the automatic fire fighting water sprinklers from the roof of the cyanide storage area. The warehouse is located in an arid area, free of floods.

The ERP do consider releases of solid cyanide during storage, loading and unloading operations. The plan do not consider scenarios of pipe, valve and tanks rupture as there are none of these elements at or near the cyanide storage area.

In case of power outages or equipment failures, the warehouse operations will simply stop, no emergency scenario will be generated. Also, there are no ponds, tanks and waste treatment facilities at the site. In case it is required to connect the mechanical ventilation system to a generator, a generator set with a power of 30 kW is provided, sufficient to keep the extraction system running according to the engineering calculations.

The Plan addresses the types of releases and responses that may be expected to occur at the facility. The Plan details the response actions required for individual persons involved in the management of the emergency: evacuating personnel from the working area and the warehouse. No potentially affected communities are near the area of exposure. The emergency scenarios considered in the Plan, associated with the risks of handling boxes and cylinders with sodium cyanide are solid cyanide spillage during reception, storage and dispatch without and with generation of HCN gas; worker intoxication with HCNs; emergencies by fire in the cyanide storage area; and spillage of incompatible chemical product.

The Plan states the use of the cyanide antidotes amyl nitrite, sodium nitrite and sodium thiosulfate. Injectables antidotes only to be administered by certificated medical personnel (external), as Quimtia personnel is not trained to administer injectables. For first aid measures the Plan states the use of oxygen, among other measures for cyanide exposure.

The Plan considers any release is limited to a maximum of 1.1 tons of solid cyanide which is expected to be readily contained within the confines of the warehouse cyanide area. Also, the Plan describes detailed procedures necessary for containment, assessment, mitigation and future prevention of releases. The auditor's evaluation of the Emergency Response Plan and related documents determined its level of detail is appropriate.



## Production Practice 5.2

*Involve site personnel and stakeholders in the planning process.*

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

*Summarize the basis for this Finding/Deficiencies Identified:*

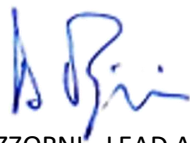
The operation has involved its own site personnel in the emergency planning process. Stakeholders such as the tenant of the facility complex where the warehouse is located, also share the emergency response plan. Given the location of the warehouse in an industrial area where there are no nearby communities, the possibility of affecting these stakeholders is not considered for the plan, as well as its participation for emergency response planning.

The external contractor IFSEC Group, company dedicated to risk prevention, emergency response and environmental control, will respond to a cyanide spill of greater proportions, if required. Hepar with external contractor Petramas are involved in the collection, destruction and final disposal of solid waste from the spilled product. Civil Defense and firefighters are also involved in the review of the plan as a requirement to grant and then renew the operating license of the premises as a chemical products warehouse.

Community consultation has been in the form of coordination with local municipal authorities, Civil Defense and firefighters' meetings and inspections. No community has been identified as likely to be affected, based on a review of potential releases from the warehouse facility and the distances involved. The warehouse is located in an industrial area. The worst-case scenario at the facility would involve dropping an IBC during cyanide manipulation operation resulting in a maximum spillage of 1.1 tons of solid cyanide. It was determined that the zone of influence of such a case was limited to the transfer facility building. The immediate response and cleanup as described in the Plan limits the generation of HCN and the zone of influence.

External entities as firefighters and external medical assistance have designated role in the emergency response and are identified in the Plan.

Healthy World is the external contractor involved in the Plan, to provide ambulance service, immediate medical assistance in an emergency and will take the worker to Clinic San Pablo – Surco, the nearest medical center to treat cyanide exposure victims when brought to the



facility.

Periodic interaction Healthy World and Hepar external contractors is performed as they have specific responsibilities under the Plan. The Plan does not designate any responsibilities communities. The auditor's finding is based on interviews with on-site personnel. Quimtia is engaged to maintain their involvement in ongoing improvement of the Plan.

### Production Practice 5.3

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

The operation is  in full compliance with  in substantial compliance with  not in compliance with Standard of Practice 5.3

*Summarize the basis for this Finding/Deficiencies Identified:*

The Emergency Response Plan in Section 2 - Organization of the Emergency Response System - designates the primary emergency response coordinator as the Vice President of Administration and Finance with explicit authority to commit the resources necessary to implement the Plan, also an alternate responsible, stating the Administration and Finance Section is responsible for the provision of resources necessary for the attention of the emergency.

It was found during the audit that the list of equipment in the Emergency Response Plan does not identify the oxygen bottle, the HCN sensor and the cyanide antidotes. Quimtia was required to include this equipment in the list oxygen and antidotes for cyanide. After the audit Quimtia sent the reviewed version of the Emergency Response Plan where the list of equipment was completed with oxygen bottle, cyanide antidotes and the HCN detector device. No additional information was required to find this in full compliance.

The Plan in Section 2 also identifies the Emergency Response Team. Section 6 lists the appropriate training required for emergency responders, as HAZMAT and first aids, among others. Call-out procedures and 24-hour contact information for the coordinators and response team members figures in Section 6 of the Plan, as well as the specific duties and responsibilities of the coordinators and team members. Annex E has the list of all emergency response equipment that should be available. The Plan states to inspect emergency response

equipment and assure its availability when required and describe the role of the external responders as the firefighters, Healthy World for medical assistance and FSEC Group, entities having designated roles in emergency response procedures.

Although the auditor reviewed inspection records of first aid equipment, no provisions for inspections on oxygen and antidotes were found. Quimtia was required to include provisions that monthly must be inspected the oxygen bottle for pressure and cyanide antidotes for adequate storage temperature and expiration date. After the audit Quimtia sent the reviewed version of the Emergency Response Plan where this requirement was included, also sent completed inspection record where these items were checked. No additional information was required to find this in full compliance. The auditor confirmed that all the above provisions mentioned are being implemented at the site, through inspection of the warehouse operation and employee interviews.

The auditor could not verify that the firefighters were informed of its functions in the warehouse Emergency Response Plan. Quimtia was required that external responders must be aware of the functions assigned to them in the Emergency Response Plan and must be part of any response drill that simulates a cyanide leak or exposure that triggers their participation. After the audit Quimtia provided documentation of the ERP being sent to the firefighters, confirming their awareness and engaging them in ongoing development of emergency arrangements. Quimtia has determined that the role required of these organizations is such that they do not need to be involved in all mock drills, therefore they have not been included as necessary in mock drills and implementation exercises.

**Production Practice 5.4**

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

- in full compliance with
- The operation is  in substantial compliance with Standard of Practice 5.4
- not in compliance with

*Summarize the basis for this Finding/Deficiencies Identified:*

Quimtia’s Emergency Response Plan include procedures and contact information for notifying the company management, regulatory agencies, firefighters, external response contractors’ providers and medical facilities of the emergency, as appropriate. Procedures require notification to the International Cyanide Management Institute in case of a cyanide emergency



that constitutes a “significant cyanide incident,” as defined in the Code’s Definitions and Acronyms.

No information on emergency telephones for the emergency external responder was found in the Plan. Quimtia was required to include contact information for notifying external entities that may play a role in the emergency response, such as the response contractor for a Level 3 emergency. After the audit Quimtia included this information in the reviewed version of the Emergency Response Plan. No additional information was required to find this in full compliance

The Plan contains flow charts describing the call out procedures for emergencies. Management, contractors, emergency response team, outside response providers and medical facilities are included within the flow charts. Duties for all positions and entities listed within the Plan are clearly described. The Plan includes contact information for any regulatory agencies required to be notified. The auditor reviewed the Emergency Response Plan verifying that this information is available and up to date.

The warehouse is located within an industrial area, no residential community is near. Quimtia’s hazard evaluation identified the worst-case scenario at the warehouse operation would involve dropping an IBC during the operation resulting in a maximum spillage of 1.1 tons of solid cyanide. It was determined that the zone of influence of such a case was limited to the warehouse building. The immediate response and cleanup as described in the Plan limits the generation of HCN and the zone of influence.

The Plan describes the procedure to notify the external support to achieve a more effective emergency response. The emergency response procedures also include measures for contacting and communicating with the media in the event of an emergency. The information was available for the auditor’s review in the Emergency Response Plan.

The Emergency Response Plan includes a requirement and details to notify ICMI of any significant cyanide incidents, as defined in ICMI’s Definitions and Acronyms document. No such communications have been done as there was no significant incident in the operation.

## Production Practice 5.5

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

in full compliance with  
 The operation is  in substantial compliance with Standard of Practice 5.5  
 not in compliance with

*Summarize the basis for this Finding/Deficiencies Identified:*

The warehouse Emergency Response Plan address recovery solids, decontamination of contaminated media, and management and disposal of spill clean-up debris. Provision of an alternate drinking water supply is not considered as the operation only manages solid cyanide over impermeable surfaces, a release from the operation is not considered can adversely impact a drinking water supply. Although Quimtia is supplied with drinking water from the public drinking water network, the warehouse personnel drinks bottled water.

Procedures for recovery of released sodium cyanide solids specify these materials will be collected by the specialized company Hepar to its final disposal with external contractor Petramas at Huaycoloro landfill. Procedures for neutralization and decontamination of cyanide spills identify what treatment chemical is to be used and where it is stored. Neutralization of cyanide will be done using lime in proportion 3 to 1, that is, for every 3 kilos of residual sodium cyanide, will use approximately 1 kilo of lime. To remediate cyanide residuals will use ferrous sulfate, for every 1 kg of sodium cyanide spilled, they will use 1.6 Kg of ferrous sulfate. No soil remediation is considered in the Plan, as all operations in the warehouse are performed over concrete and asphalt floors.

The external emergency response contractor procedures on which the warehouse relies for major emergencies IFSEC Group, were not verified as these procedures were not available on site, in occasion of the audit. Quimtia was required to maintain a copy of the contractor's operation procedures to ensure that its procedures include language that addresses the decontamination, handling, and disposal of cyanide-contaminated materials, including the final destination of any material disposed of. After the audit Quimtia sent the required procedures, finding them in conformance as these address recovery solids, decontamination of contaminated media, and management and disposal of spill clean-up debris. No additional information was required to find this in full compliance.

There is no surface water in the surroundings of the warehouse. Closest surface water bodies to the property are the Pacific Ocean 4,000 m to the west and the Lurín river 8,500 m north of the site. According to the Auditor Guidance for Gold Mines of the ICMI, the auditor considers this prohibition does not apply as the warehouse also does not have drainages that connect to surface water gradient below. All drainages in the plant are collected into an internal tank. In the area where the plant is located annual precipitation rate is extremely low, being 9.3 mm /year as average of the last 10 years according to data from INEI (National Institute of Statistics and Informatics).

As mentioned above, in occasion of the audit the warehouse did not show the external contractor emergency response procedures, but after the audit the auditor reviewed a copy of the contractor’s procedures prohibiting use of chemicals on surface waters, such as sodium hypochlorite, ferrous sulfate and hydrogen peroxide to treat cyanide, finding this in conformance.

The potential need for environmental monitoring to identify the extent and effects of a release, is not considered in the Plan, as all operations in the warehouse are performed under roof and on waterproofed surfaces made of concrete and asphalt floors; there is no surface water in the surroundings of the warehouse.

**Production Practice 5.6**

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

- in full compliance with
- The operation is  in substantial compliance with Standard of Practice 5.6
- not in compliance with

*Summarize the basis for this Finding/Deficiencies Identified:*

A requirement for reviewing and evaluating annually or after an emergency the Emergency Response Plan adequacy, including the emergency telephone contact list, the names and contact information for Emergency Response coordinators and Response Team members, is stated in Section 6.1.4 Review and Update of Documentation. In occasion of the audit, the Plan was in its first version less than one year old.

Requirements to conduct annually mock emergency drills are included in the operation’s Emergency Response Plan, Section 6, to evaluate the operation’s plans, training, resources,



and preparedness for a response to cyanide releases and to cyanide exposures of workers. The warehouse Health, Safety and Environment Program CD Lurín 2022 includes in its Drill Program, to perform during this year, the following mock emergency drills: liquid HAZMAT, solid HAZMAT spill, earthquake and tsunami, oil spill from outsourced transport, accident with trauma and hemorrhages, and a petroleum liquid gas leak drill.

In April 2021 Quimtía performed an emergency drill simulating a cyanide spill with workers exposition. The auditor reviewed the mock drill report confirming compliance with this provision. The operation documented the emergency scenario, the personnel involved, and the response actions taken, and evaluated the drill to determine how well its procedures worked and the adequacy of the training provided to response personnel.

The Plan calls for its evaluation after any emergency that required its implementation. The operation did not conduct any such reviews as no cyanide emergencies occurred during this initial audit period documentation review of approximately one year.