# International Cyanide Management Code Certification Audit

## Production Facility – Summary Audit Report

PREPARED FOR

广安诚信化工有限责任公司
Guang'an Chengxin Chemical Co., Ltd

Guang'an Chengxin Chemical Co., Ltd.

DATE
4 January 2026

REFERENCE
0782151-03

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SIGNATURE PAGE

# International Cyanide Management Code Certification Audit

## Production Facility – Summary Audit Report

0782151-03

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## ACRONYMS AND ABBREVIATIONS

| Acronyms | Description |
|---|---|
| ICMC | International Cyanide Management Code |
| ICMI | International Cyanide Management Institute |
| CPV | Cyanide Production Verification |
| UNEP | United Nations Environmental Program |
| MES | Manufacturing Executive System |
| HAZOP | Hazard and Operability Study |
| LOPA | Layers of Protection Analysis |
| DCS | Distributed Control System |
| SIS | Safety Instrumented System |
| IBC | Intermediate Bulk Container |
| WAD | Weak and Dissociable |

# 1.0 OPERATION GENERAL INFORMATION

| | |
|---|---|
| Name of Production Facility: | Guang'an Chengxin Chemical Co., Ltd. |
| Name of Facility Owner: | Guang'an Chengxin Chemical Co., Ltd. |
| Name of Facility Operator: | Guang'an Chengxin Chemical Co., Ltd. |
| Name of Responsible Manager: | Yongzhi Zhang |
| Address: | Chengxin Road, Xinqiao Energy and Chemical Concentration Zone, Guang'an Economic Development Zone |
| State / Province: | Guang'an City, Sichuan Province |
| Country: | China |
| Telephone: | (+86) 0826-2822268 |
| Email: | Zhiliangke009@126.com |

# 2.0 OPERATION LOCATION DETAIL AND DESCRIPTION

Guang' an Chengxin was established in 2007. It is a joint-stock enterprise with 1,800 employees. The company has obtained ISO9001: 2015 certificate, ISO14001: 2015 certificate and ISO 45001:2018 certificate. The company has the right to import and export. The products are sold to many countries and regions, including South America, North America, Africa, Asia and etc.

Guang' an Chengxin is located at Chengxin Road, Xinqiao Energy and Chemical Concentration Zone, Guang'an Economic Development Zone, Guang'an City, Sichuan Province, the surroundings are as below:

- East: Vacant Land
- South: Sichuang Zhongrui Electrical Equipment Co., Ltd.
- West: Guang'an Beixin Construction Materials Co., Ltd.
- North: LNG Plant of Huayou Natural Gas Guang'an Co., Ltd., China National Petroleum Gas Station, Lier Chemical Plant

Guang'an Railway Station is about 4.5km to the east of Guang'an Chengxin. G350 Speedway is about 1.3 km to the south of Guang'an Chengxin. Chongqing Jiangbei Airport is about 90 km to the south of Guang'an Chengxin.

| Guang'an Chengxin Chemical Co., Ltd. | | 4 January 2026 |
|---|---|---|
| Name of Facility | Signature of Lead Auditor | Date |

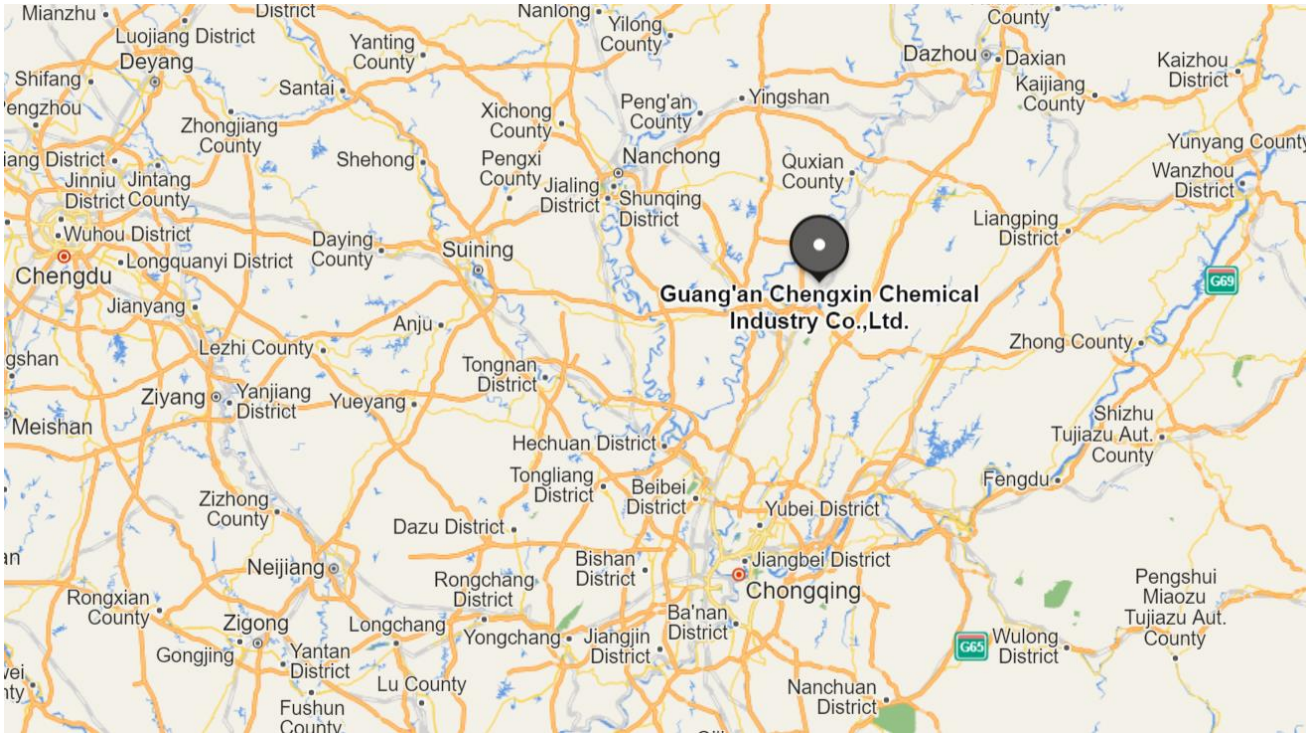


**Figure 1: Regional Location Map**

The part of the Site used to manufacture liquid sodium cyanide and then convert the liquid sodium cyanide into solid sodium cyanide is referred to in this report as 'the cyanide facility'. The term 'the Site' is used in this report to refer to the entire Guang'an Chengxin facility and includes many manufacturing plants, these manufacturing plants are not subject to this report.

Guang'an Chengxin solid sodium cyanide manufacturing processes include:

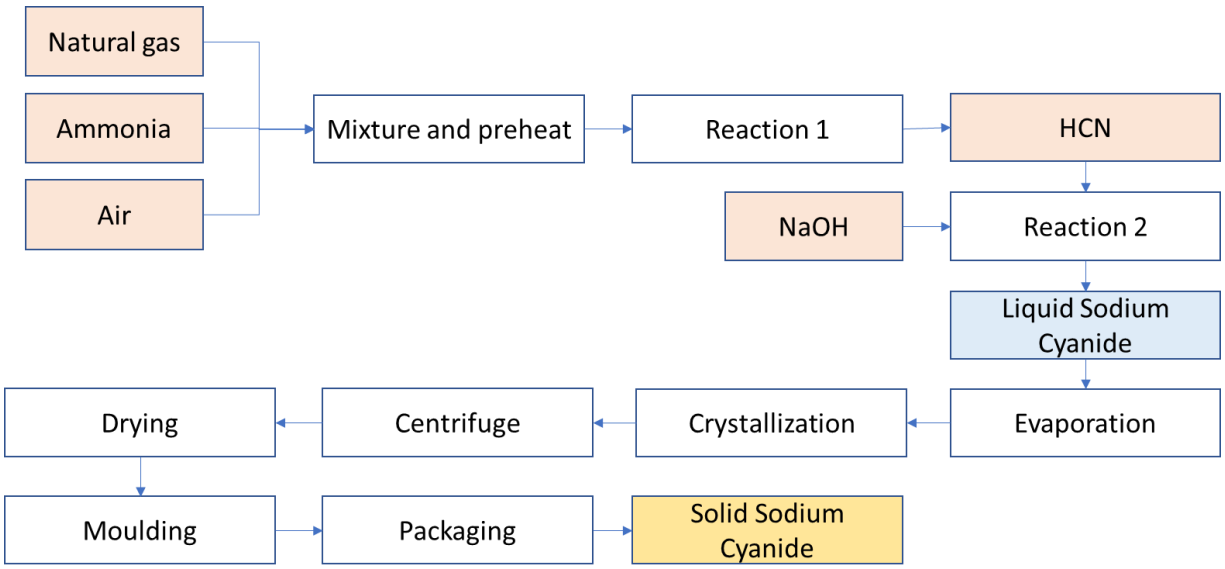


**Figure 2: Solid Sodium Cyanide Manufacturing Process**

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The feedstocks to the cyanide facility are ammonia (stored on Site as liquid ammonia) and liquid alkali. Natural gas is supplied by China National Petroleum Gas Station. General production processes are described as below:

- Mixture and preheat – Ammonia (evaporated to ammonia gas), natural gas and air will be filtered before entered the vessels for preheating and mixing, the mixed gas will be preheated via steam to produce a gaseous mixture.
- Reaction 1 – Gaseous mixture enters the HCN reactor. HCN will be obtained under the action of the platinum-rhodium catalyst mesh at around 1100 degrees.
- Reaction 2 – HCN is reacted with 30% sodium hydroxide to generate liquid sodium cyanide.
- Evaporation and Crystallization – Liquid sodium cyanide is pumped into two liquid cyanide volume measuring tanks, then be pumped into the vacuum evaporator to remove water and the concentrate is fed to the crystallizer.
- Centrifuge – Wet crystals are generated by continuous solid-liquid separation of the concentrated crystal pulp.
- Drying – The sodium cyanide crystals are heated in the dryer to evaporate the residual water, and the crystals are dried into dry powder.
- Moulding – Dry sodium cyanide powders are moulded into "pillows".
- Packaging – Sodium cyanides are delivered to the tablet tank through an oscillatory conveyor and then weighted in the weighing and packing machine. Products are tested by random sampling, and the qualified products are packed in 50 kg drums or 380 kg, 1,000 kg, 1,100 kg timber boxes with inner polyethylene liners or 1,000 kg, 1,200 kg metal box with inner polyethylene liners. The packaged cyanide is stored in the warehouse at the cyanide facility prior to despatch from the Site.

The cyanide facility was constructed in 2012. There were some modifications to the cyanide facility in 2019 and 2021 relating to the replacement of the gas-liquid separation tank, the replacement of activated carbon tanks for ammonia and natural gas, and the renovation of steam pipelines.

The infrastructure at the cyanide facility comprises:

- Natural gas supply pipelines.
- Compressed air supply pipelines.
- Liquid ammonia storage tank farm.
- Sodium hydroxide tank farm.
- Workshop 407 – Liquid Sodium Cyanide Production Unit.
- Workshop 301 – Solid Sodium Cyanide Production Unit.
- A products warehouse for storage of packaged solid sodium cyanide.

The facilities are paved with concrete. The liquid sodium cyanide medium tanks in Workshop 301 are located within concrete bunded areas. The solid sodium cyanide production buildings are both self-bunded with concrete floors, concrete walls, and bunds at each doorway. The

cyanide facilities are connected to the Site's utilities including stormwater drains and the Site's Wastewater Treatment Plant. The annual process wastewater generated from the cyanide facility and the annual amount of waste condensate water generated were summarized below:

1) 132,194 t/a of Cyanide containing process wastewater generated from workshop 301 and was discharged to the site's WWTP on site for further treatment; .
2) 120,870 t/a of Cyanide containing process wastewater generated from workshop 302 (EDTA production) and was discharged to the site's WWTP on site for further treatment
3) 189,754 t/a of Cyanide containing process wastewater generated from workshop 204(Ammonium Sulphate production) and was discharged to the site's WWTP on site for further treatment
4) 518,998 t/a condensate water generated from all production workshops on site and 100% reused to production process.

The first 15-minutes flush stormwater is piped to a first flush system comprising three open concrete tanks: 600 $m^3$, 1600 $m^3$ and 2061 $m^3$.

There are also three emergency collection tanks for emergency release accidents: 5400 $m^3$, 3000 $m^3$ and 5495 $m^3$.

The facility operates on 12-hour shifts, 24 hours per day, seven days per week, with three production teams.

No cyanide exposure incidents occurred during the audit period from 2022 to 2025.

## 3.0 AUDITOR'S FINDING

This operation is

☒ in full compliance

☐ in substantial compliance

☐ not in compliance

with the International Cyanide Management Code.

This operation has not experienced any compliance issues during the previous three year audit cycle.

## 4.0 AUDITOR INFORMATION

| | |
|---|---|
| Audit Company: | ERM (Shanghai) Limited |
| Lead Auditor and Production Technical Expert Auditor: | Hongtao Hu |
| Lead Auditor Email: | Hongtao.hu@erm.com |

| Guang'an Chengxin Chemical Co., Ltd. | Hongtao Hu | 4 January 2026 |
|---|---|---|
| Name of Facility | Signature of Lead Auditor | Date |

Names and Signatures of Other Auditors:

| | | | |
|---|---|---|---|
| Auditor Trainee: | Angie Li | | |
| | Name | Signature | |
| Dates of Audit: | 14 to 16 October 2025 | | |

## 5.0 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.

| | | |
|---|---|---|
| Guang'an Chengxin Chemical Co., Ltd. | | 4 January 2026 |
| Name of Facility | Signature of Lead Auditor | Date |

# 6.0 PRINCIPLES AND STANDARDS OF PRACTICE

## PRINCIPLE 1 | OPERATIONS

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

### STANDARD OF PRACTICE 1.1

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

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

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

The Facility is in FULL COMPLIANCE with Production Practice 1.1 requiring cyanide production facilities to be designed and constructed consistent with sound, accepted engineering practices and quality control/quality assurance procedures.

Quality control and quality assurance programs were established throughout the construction and modification of cyanide production and storage facilities, ensuring that all pertinent quality control and assurance records were systematically retained. Qualified personnel conducted thorough reviews of the facility construction and provided documentation confirming that the construction was executed in alignment with the proposed and approved plans.

The cyanide production facility was designed by the Sichuan Engineering Design Institute of Hebei Province and constructed by Hebei Tiande Chemical Facility Co., Ltd. in 2012. The Sichuan Engineering Design Institute is certified by the Ministry of Housing and Urban-Rural Development of the People's Republic of China to design chemical process plants. Hebei Sanyuan Construction Management Co., Ltd. was engaged as an independent construction management firm, overseeing project management responsibilities including quality assurance and quality control (QA/QC), health, safety, and environmental (HSE) compliance, as well as schedule and cost management.

The Construction Acceptance Report was issued by Hebei Tiande Chemical Facility Co., Ltd. in September 2012. This report underwent a thorough review by Guang'an Chengxin, the construction company, as well as an independent construction management firm. The conclusion drawn from this review was that the cyanide facility met the necessary standards for acceptance.

The cyanide facility is mainly comprised of three units as below:

- Liquid Sodium Cyanide Production Unit: Workshop 407
- Solid Sodium Cyanide Production Unit: Workshop 301
- Solid Sodium Cyanide Warehouse

The atmospheric-pressure tanks and vessels were manufactured by Hebei Chengxin Co., Ltd. Each unit is supported by a retained quality assurance document, verifying that their construction complies with the established standards.

For pressure-bearing tanks, vessels, and pipelines, the retained quality assurance documentation encompasses design specifications, as well as the following certificates and reports: Operation Registration Certificate, Operation Verification Certificate, Safety Function Supervision and Inspection Certificate, and periodic verification reports.

- Quality control and quality assurance records related to the building structure and foundation have been incorporated into the Construction Acceptance Reports for Workshop 407 and Workshop 301. These records primarily include details of: Excavation depth, length and width deviation from design.
- Soil type and quality tests.
- Level of the compacted surface compared to design.
- Moisture content of compacted soil.
- Survey of position and height of each floor of the building.
- Specification, spacing and connections of reinforcing steel in concrete foundations and slab.
- Concrete formwork location for the walls and floors.
- Concrete surface condition following pours.
- Concrete structure dimensions, deviation from design.
- Brick strength compared to specification.
- Roof impermeability experiment.
- Brick wall dimensions.
- Cement render quality.
- Elevator installation test. and
- Lightning and grounding test.

Quality control and quality assurance documentation pertaining to the construction and installation of the cyanide facilities has been incorporated into the Construction Acceptance Report for the Cyanide Facility. This report primarily encompasses the following details:

- Qualification verification for the special operation: such as welding operator, NDT personnel
- Verification of facility, pipelines installation work method
- Materials qualification and certification verification
- Valve testing
- Safety valve testing
- X-ray testing, and
- Pressure testing

Throughout the audit period, several minor modifications were implemented at the cyanide plant. These modifications encompassed the relocation of the cyanide breaking tank, the installation of a closed liquid cyanide sampler, the automation upgrade of the centrifuge, and the technical transformation project involving the raw gas mixing tank (Sets of ABCD) and the air coarse filter.

Quality control and quality assurance documentation is available for the cyanide facilities.

The materials used for construction of cyanide production facilities are compatible with the reagents used and processes employed. No changes to the materials or processes employed have been undertaken during the audit period. The materials used for the cyanide facilities comprise the following:

- Pipe work – 304 grade stainless steel
- Gas-liquid Mixture vessel – 316L grade stainless steel
- Liquid cyanide volume measuring tank – 304 grade stainless steel
- Filter – 304 grade stainless steel
- Evaporators – 304 grade stainless steel
- Crystallisers – 304 grade stainless steel
- Centrifuge – 304 grade stainless steel

These materials are acknowledged as compatible with the chemicals utilized in the production and storage of sodium cyanide.

There are automatic systems or "interlocks" to shut down production systems and prevent releases due to power outages or equipment failures.

The cyanide facilities are powered by two independent electrical circuits. If one circuit fails, the other can fully meet the facilities' power requirements. The facility is also equipped with an Uninterruptible Power Supply (UPS) for emergency outages; this system automatically provides backup power to the facilities for approximately 3 hours, allowing for the safe shutdown of production systems and preventing hazardous releases.

Controls have been implemented to mitigate equipment failures. These measures primarily consist of alarms that activate upon detection of hydrogen cyanide (HCN) gas or when HCN levels in tanks or vessels surpass established safety thresholds. Upon activation of an alarm, operators in the control room promptly shut down the affected section of the process. The system will remain offline until a thorough investigation has been conducted to identify and resolve the root cause of the issue.

The facility has established a Distributed Control System (DCS) and a Safety Instrumented System (SIS) for the cyanide production process.

The elements of the liquid cyanide part of the plant connected to the DCS are:

- High, high-high, low and low-low alarm for temperature of reactor
- High, high-high, low and low-low alarm for inlet pressure of reactor
- High and high-high alarm for ammonia, nature gas and air supply rate
- High, high-high, low and low-low alarm for liquid level of Gas-liquid separator

The elements of the liquid cyanide part of the plant connected to the SIS are:

- High and high-high alarm for temperature of reactor

One of the following linkage values reached, the valve HV0402D of ammonia, nature gas and air supply inlet would be switched off, and the release valve HV0401D of the reactor will be switched on:

The controls for the reactor comprise the following:

- Two of the three temperature detectors of SIS reached 1300℃.
- One of the two temperature detectors of DCS reached 1300℃.
- Liquid level of Gas-liquid separator of DCS reached 400 mm.

- Inlet pressure of reactor of DCS reached 0.08 Mpa.
- Ammonia/Nature gas rate≥0.9 and≤1.4.
- Air/Ammonia rate≥5.3 and ≤7.98.

In Workshop 301, the only equipment with high, high-high, low, and low-low liquid level alarms connected to the DCS is the liquid cyanide volume measuring tank. When the liquid level in this tank reaches 7000 mm, the feed pump in Workshop 407 automatically shuts down. When the level drops to 1100 mm, the evaporator feeding pump in Workshop 301 automatically shuts down.

In the event of a simultaneous failure of both power supplies, the liquid or gas within the process will remain securely contained within their respective equipment, thereby eliminating any risk of environmental release. The reactor represents the critical risk area of the plant. Should a plant shutdown become necessary, the emergency response procedure for the cyanide facility will be initiated. This procedure outlines that a power failure will automatically activate the uninterruptible power supply (UPS), which provides power to the control system, ensuring a safe and orderly shutdown of the production process.

In conclusion, during instances of power or equipment failure, the contents of all vessels and pipes will remain securely contained, preventing any escape into the environment. Notably, over the past three years, the cyanide facility has not encountered a simultaneous failure of both power supplies.

In the event of equipment failures, operators promptly shut down the affected section of the plant. Over the past three years, the cyanide production facility has successfully avoided any unplanned shutdowns, whether manual or automatic, with the exception of scheduled maintenance activities.

Additionally, Guang'an Chengxin conducts Hazard and Operability Studies (HAZOP) and Layer of Protection Analysis (LOPA) every three years to assess the process risks of its cyanide production facilities.

The sodium cyanide production unit areas are paved with concrete.

The cyanide warehouse has a concrete floor and was observed to be in good condition.

The concrete surfaces, including roadways and walkways, were found to be in satisfactory condition. Furthermore, the initial 15 minutes of stormwater, known as first-flush stormwater, is directed to a dedicated first-flush system consisting of three open concrete tanks. These tanks can only be emptied by activating a transfer pump, which is equipped with both automatic and manual controls, to convey their contents to the site-wide wastewater treatment plant that services all facilities, not exclusively the cyanide unit.

The Facility does employ, inspect, test, and maintain systems -- such as level indicators and high-level alarms -- to prevent the overfilling of cyanide process and storage vessels.

The only liquid storage tanks present are two liquid cyanide volume measuring tanks located in Workshop 301. Within this workshop, the liquid cyanide volume measuring tank is the sole piece of equipment equipped with high, high-high, low, and low-low liquid level alarms that are integrated into the Distributed Control System (DCS). When the liquid level in this tank reaches 7000 mm, the feed pump in Workshop 407 is automatically deactivated. Conversely, when the level falls to 1100 mm, the evaporator feeding pump in Workshop 301 is also automatically shut down. The filling process for each tank or vessel is monitored by the control

room operator, who has the authority to deactivate the relevant transfer pump upon the activation of an alarm.

The site has implemented a schedule of regular inspections, which encompasses the evaluation of level indicator equipment and the secondary containment systems for the vessels in storage.

Secondary containments for process storage tanks and containers are constructed of materials that provide a competent barrier to leakage and sized to hold a volume greater than that of the largest tank and container of cyanide solutions within the containment and any piping draining back to the tank, and with additional capacity for the design storm event.

There is no dedicated storage tank for liquid cyanide. The liquid cyanide produced in Workshop 407 is directly transferred to the volume measuring tanks located in Workshop 301. Secondary containment structures for process tanks and containers are constructed using concrete and concrete-rendered brickwork. The secondary containment for the liquid cyanide tanks is designed to accommodate at least 110% of the volume of the largest tank and is paved with concrete.

The containments are constructed of concrete and were observed to be in reasonable condition.

In the event of a loss that exceeds the containment capacity of the liquid cyanide tanks, the facility will rely on the concrete pavement stormwater first flush system to effectively manage the incident. The area surrounding the containment features a concrete-paved pedestrian walkway and roadway, designed to channel runoff into the first flush pits of the site's stormwater system. The cyanide facility will employ this first flush system to contain any potential loss from the tank, ensuring a robust response to such incidents.

The first 15 minutes of stormwater runoff will be channeled to the site's wastewater treatment facility. Following this, the stormwater collected in the first flush system will undergo sampling and analysis to determine the concentration of cyanide before it is released into the stormwater pipelines.

When necessary, the wastewater treatment plant employs sodium hypochlorite to effectively decompose the cyanide.

Spill prevention or containment measures are provided for all cyanide solution pipelines.

The main cyanide solution pipelines are from Workshop 407 to Workshop 301.

Cyanide labels and flow direction signs are in place on the pipelines.

Most of the pipelines are located on overhead gantries which pass over concrete paved roadways which drain to the stormwater first flush system. The rest of the pipelines are located on overhead gantries which pass over the greenbelt. The cyanide solution transfer pipelines consist of metal pipes encased in a stainless-steel outer layer, which acts as secondary containment to prevent pipeline leaks from reaching the ground. Also, there is no flange connection of the pipeline from Workshop 407 to Workshop 301. Daily inspections are

conducted to check for leaks from the transfer pipelines. There are no leak alarms on the cyanide pipelines.

1-hourly inspections are undertaken to include pipe work, flanges, pumps, high level alarms and tanks to identify leaks. Records of the inspections are kept.

In the event of loss from a pipeline within a bunded area, the spill would drain to a sump from where the liquid would be pumped to the Emergency Storage Tank for re use in the process.

The cyanide facility undertakes monitoring of the pipe wall thicknesses every six months. The inspection records note the integrity of the pipe and support structures. The results indicate that all pipelines have wall thickness greater than 2/3 of initial wall thicknesses.

Cyanide is stored with measures to avoid or minimize the potential for exposure of cyanide to moisture and adequate ventilation to prevent the build-up of hydrogen cyanide gas and cyanide dust.

Solid cyanide is stored in three sizes:

- 50 kg plastic bags within steel drums, and
- 380 kg, 1000 kg, 1100 kg within plastic bags within timber intermediate bulk containers (IBCs).
- 1,000 kg, 1,200 kg metal box with inner polyethylene liners

The drums and boxes are stored inside a secure warehouse building with 3 floors prior to dispatch from site. The warehouse is enclosed with concrete floor, walls and roof to prevent exposure of cyanide to moisture.

The warehouse features a natural ventilation shaft and an emergency ventilation system, which undergoes weekly testing for a minimum duration of 30 minutes. Large entry doors facilitate ventilation during forklift operations, enabling efficient movement of products in and out of the facility. The warehouse consists of three floors, each equipped with nine fixed hydrogen cyanide (HCN) monitors, totaling 27 detectors throughout the building. These monitors are linked to the warehouse control room, where they provide both visual and audible alarms.

When products are not being moved into or out of the warehouse, the warehouse building is locked and accessible only via the security office, which is manned by a security person and fitted with security cameras which transmit to the security office. Visits to the warehouse are logged on paper records in logbooks.

The warehouse building is situated within the boundaries of the cyanide facility, which is enclosed by a robust concrete and brick wall. Access to the site is strictly controlled through a manned security gate, ensuring that public entry is prohibited.

Only solid cyanide stored in the warehouse which is separately from incompatible materials.

Dry Powder and Foam Fire Extinguishing System is installed in the warehouse for fire prevention, no water systems for potable use. Emergency shower station is installed beside the entrance of the warehouse which is designed such that leaks or other potential releases will not come in contact with cyanide containers.

The two liquid medium measurement tanks located in Workshop 301 are separate from incompatible materials, with appropriate barriers, as necessary, to prevent mixing. And the area is accessible exclusively to authorized personnel.

## STANDARD OF 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 | Standard of Practice 1.2 |
| | ☐ in substantial compliance with | |
| | ☐ not in compliance with | |

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

The Facility is in FULL COMPLIANCE with Production Practice 1.2 requiring development and implementation of plans and procedures to operate cyanide production facilities in a manner that prevents accidental releases.

The Facility holds ISO certifications for safety, environment and quality management systems.

The Facility does have plans and procedures that describe the standard practices necessary for its safe and environmentally sound operation.

The Standard Operational Procedure is an integrated procedure addressing the full production process.

Operational procedures are included for:

- Raw gas purification
- Reaction
- Ammonia clearance
- Liquid cyanide
- Desulfurization
- Loading and unloading
- Cycle water
- Evaporation
- Dry
- Forming
- Packaging
- Laboratory test
- Centrifugation
- Forklift
- Discharging

The procedures do describe the necessary operating practices including pre-start checks, personal protective equipment and contingency measures.

The Facility has contingency plans for non-standard operating situations that may present potential for cyanide exposures or releases.

The plant is automated and operated via DCS with separate control rooms for the liquid plant and solid plant. Emergency shutdown and interlocks are built into the plant design and managed via the DCS.

The Process Operation Rules for Workshop 301 and Workshop 407 include details of the DCS for cyanide production process and the measures to be taken should an upset occur. There are interlocks built into the system to shut down the process if necessary. And the facility also has UPS for emergency power outage situation which will continue to provide power automatically for the facilities with approximately 1 hour to shut down production systems and prevent releases.

Should there be a cyanide exposure or release these are managed via the site's emergency response plan documents that provide details on the response actions.

The Facility has a procedure to identify when cyanide facilities or operating practices have or will be changed from those on which the initial design and operating practices were predicated, which requires review and sign-off by environment, health, and safety management.

The Management of Change Procedure outlines the specific changes that necessitate its implementation. It specifies the types of work that require review and identifies the responsible parties involved. Process changes must be assessed by both the department supervisor and the safety engineer, in addition to a representative from the Environment, Health, and Safety department. Changes to safety equipment are to be reviewed by the Safety Management department. Furthermore, any alterations related to facility modifications, process changes, new projects, expansion initiatives, or renovation efforts must receive approval from either the Vice General Manager or the Technical Director. The procedure encompasses the entire change process, including inspection, acceptance, commissioning, and post-implementation review, along with necessary training and communication protocols.

Throughout the audit period, a number of minor modifications were implemented at the cyanide plant. These modifications comprised the relocation of the cyanide breaking tank, the installation of a closed liquid cyanide sampler, the automation upgrade of the centrifuge, and the technical transformation project involving the raw gas mixing tank (Sets of ABCD) and the air coarse filter.

Preventive maintenance programs are implemented and activities documented for equipment and devices necessary for cyanide production and handling.

The Facility Operations Management Manual is an integrated procedure that documents the routine inspection and preventative maintenance requirements for the cyanide facility, which includes the requirements as below:

- Annual Facilities Maintenance Plan must be prepared and submitted for approval before January 15 every year.
- The key facilities (which may cause terminal of production) maintenance plan to be prepared and submitted for approval before the second day of each month.
- For the normal facilities maintenance, work permits are applicable to the task.
- Maintenance frequency of key facilities.

The Facilities Maintenance Plans outline and detail the maintenance requirements for each piece of equipment. During the audit period, the equipment maintenance plans for cyanide

facilities were thoroughly reviewed and aligned with the maintenance activities described by site engineers.

The Facility will shut down for approximately a week to conduct overhaul annually.

Process parameters are monitored with necessary instrumentation, and the instrumentation is calibrated according to manufacturer's recommendations.

The procedure requires that the calibration should be conducted according to the planned frequency. Following calibration, a calibration notice must be placed on the equipment. The facility maintains annual calibration lists detailing the instruments on the plant that require calibration during the year. The instruments include high pressure gauges, vacuum pressure gauges, numerical temperature displays and flow meters.

The calibrations are undertaken by an independent externally qualified company: Sichuan Jingzhun Inspection and Testing Group Co., Ltd. Items of equipment were sampled at random and the corresponding calibration records were available covering the audit period. Calibration records for the instrumentation used to monitor process parameters must be retained until the updated records are received to replace the old records.

Procedures are in place and are being implemented to prevent unauthorised/unregulated discharge to the environment of any cyanide solution or cyanide-contaminated water that is collected in a secondary containment area.

Water which collects within the secondary containment structures cannot exit the structure unless it is pumped out or otherwise intentionally removed.

The Emergency Response Plan for Production Safety Accident requires that water which is collected within the secondary containment areas is pumped, via a manually switched pump, and a dedicated wastewater pipe to the wastewater treatment plant first flush stormwater tanks. The tanks are large, in-ground concrete, open-air chambers.

The first 15-minutes flush stormwater flow is also pumped via the stormwater pipe system to the wastewater treatment plant first flush stormwater ponds. Flow exceeding the capacity of the first flush will bypass the stormwater first-flush tanks.

The stormwater is tested to determine the concentration of cyanide. If the concentration of cyanide is greater than 20 mg/L, the water will be treated with hydrogen peroxide or sodium hypochlorite to destroy the cyanide. If the concentration of the water is less than 0.5 mg/L total cyanide, it may bypass the wastewater treatment plant.

Test records were viewed for the stormwater collected in the site's stormwater first flush system at the wastewater treatment plant. The Workshop Site Emergency Response Plan references the use of silver nitrate for testing for the presence of cyanide. This method is also used for quality control testing of cyanide products at the cyanide facility.

The facility monitors cyanide in groundwater up and down gradient of the cyanide facility at three locations. One location is approximately 50 m southeast of the liquid cyanide plant. The other locations are located a significant distance to the northwest of the cyanide plant.

The Facility has environmentally sound procedures for management and/or disposal of cyanide waste or cyanide-contaminated materials.

The types of solid cyanide waste and cyanide-contaminated materials include:

- Contaminated packaging materials, such as plastic bags, plastic drums and timber.
- Protective clothing such as coveralls, respirator filter cartridges and gloves.

Solid cyanide waste and cyanide-contaminated materials are disposed by the Incinerator in the Site. It will be decontaminated with hydrogen peroxide or sodium hypochlorite prior to incineration on Site. The incineration temperature of the incinerator is between 800-1600℃, and the melting point of sodium cyanide is 563.7℃. Cyanide can be destroyed completely. The ashes after incineration will be disposed of in landfills by qualified vendors.

The cyanide-contaminated wastewater from the cyanide-contaminated containers cleaning is collected in a wastewater tank and treated with hydrogen peroxide to break the cyanide. The treated wastewater is pumped to the plant's wastewater treatment station.

The hazardous waste vendor must provide qualifications for the disposal of cyanide-contaminated waste prior to contract signing. Additionally, the Environment Impact Assessment Report of the vendor is publicly available to include specific provisions for decontamination, management, and disposal, as well as the ultimate destination of the disposed material, which complies with local regulations.

There are procedures to ensure that the cyanide is packaged and labelled as required by the political jurisdictions through which the packaged cyanide will pass.

The cyanide facility packages cyanide in accordance with the Chinese standards. Classification and Code of Dangerous Goods (GB 6944-2025) is developed to align with the requirements of the United Nations Recommendation on the Transport of Dangerous Goods – Model Regulations, (2023).

The Standards of GB 19268-2021 and GB 6944-2025 specify the requirements for packing cyanide for export, including the packaging materials and method for inspecting the packaging. The facility sources their drums and IBCs from a third party that obtains compliance certificates with each supply of the packaging.

Standard Operational Procedure for Workshop 301 specifies the packaging requirements, including that the packaging must meet Standard GB 6944-2025.

The Guang'an Customs Bureau has inspected the cyanide facility's packaging systems for each supply consignment during the audit period (2022-2025) and approved the packaging systems for international transport of the cyanide.

Stored cyanide has been observed to be labelled in Chinese and English, marked with global harmonized system GHS pictograms and a UN number that identifies the product.

## STANDARD OF 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 Standard of Practice 1.3
- ☐ not in compliance with

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

| Guang'an Chengxin Chemical Co., Ltd. | | 4 January 2026 |
|---|---|---|
| Name of Facility | Signature of Lead Auditor | Date |

The Facility is in FULL COMPLIANCE with Production Practice 1.3 requiring inspection of cyanide production facilities to ensure their integrity and prevent accidental releases.

The Facility conducts routine inspections of tanks, valves, pipelines, containments and other cyanide production and storage facilities, including:

- Tanks holding cyanide solutions for structural integrity and signs of corrosion and leakage
- Secondary containments for their integrity, the presence of fluids and their available capacity, and to ensure that any drains are closed and, if necessary, locked, to prevent accidental releases to the environment
- Pipelines, pumps and valves for deterioration and leakage
- Containers (Steel Drums, IBCs, Metal Boxes) used for transportation, where the producer is responsible for their integrity

*Tanks and vessels*

The facility maintains a register of tanks and vessels and identifies which ones contain cyanide solutions. Inspections on the integrity of the tanks are completed via 1-hourly inspections are undertaken of the cyanide storage tanks, including pipe work, flanges, pumps, high level alarms and tanks to identify deterioration and leaks. The inspection records are dated.

The inspection records are dated and detail the results of inspection including the following items:

- Tank foundation stability
- Insulation and corrosion prevention materials
- Stairs and fences
- Bund
- Tank volume indicator
- High level alarms
- Tank valves
- Tanks signage
- Pipeline connection integrity
- Flanges and valve condition
- Wastewater collection facilities
- Presence of tank corrosion or leakage.

In addition to the 1-hourly inspection and 12-hourly inspections, the wall thickness of the vessels is tested every 6 months.

*Secondary containments*

A site inspection confirmed secondary containments are in reasonable condition and evidence of periodic maintenance and patching was observed. The facility has updated its inspection process to better define standards for secondary containments.

Minor defects in raw materials unloading area were rectified during the audit.

Discharge from the secondary containment system is facilitated through a manually operated pump, directing the flow to the stormwater first flush containment tanks located at the site's wastewater treatment plant. In the event of a concentrated liquid cyanide spill, the discharge will be routed to a mobile tanker for reuse at the cyanide facility. Consequently, there is no

necessity to ensure that drains are closed or locked to mitigate the risk of accidental releases into the environment.

*Pipes – 6-monthly Pipe Wall Thickness Testing*

The thickness of the walls of cyanide-carrying pipes is assessed biannually. Inspection records document the integrity of both the pipes and their supporting structures. Each record is appropriately dated. Documentation for selected pipelines was reviewed, covering the period from 2022 to 2025.

Guang' an Chengxin is not responsible for cyanide transportation. Instead, a qualified dangerous chemicals transportation supplier will be engaged to handle cyanide transportation, and this supplier shall be responsible for ensuring the integrity of the transportation vehicle containers.

Based on interviews, facility inspection and a review of the inspection records, the frequencies are deemed adequate to ensure that the equipment operates within its design specifications.

The Facility retains records of inspections that are documented. The documentation outlines specific items to be observed and includes the date of the inspection, the name of the inspector, and observed deficiencies. The details and date of corrective actions have been recorded and retained.

## PRINCIPLE 2| WORKER SAFETY

**Protect workers' health and safety from exposure to cyanide.**

### STANDARD OF 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 Standard of Practice 2.1
- ☐ not in compliance with

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

The Facility is in FULL COMPLIANCE with Production Practice 2.1 requiring the Facility to develop and implement procedures to protect plant personnel from exposure to cyanide.

The Facility has developed formal procedures to minimize worker exposure during:

a) Normal plant operations from receipt of raw materials through finished product packaging and shipping
b) Non-routine and emergency operations
c) Maintenance related activities

Safety Operation Rules and Process Operation Procedures are integrated procedures covering the whole cyanide production and packaging operations. The procedures cover normal and non-routine operations, and the production facility is managed via DCSs in two control rooms, one for Workshop 407 and one for Workshop 301.

In addition to the operating procedures there is an online permit to work system that covers:

- Working at heights
- Confined space
- Lifting
- Digging
- Machinery maintenance
- On-site road route change
- Flow isolation plate
- Hot work
- Temporary electricity, and
- Equipment dismantling and scrapping.

The procedure specified that the PPE must be worn, and operators must undertake a field level risk assessment prior to commencing work as well as using a lock out/tag out system for working on all cyanide plants. Decontamination of equipment must be completed prior to its maintenance. It also requires that the maintenance team must communicate with the local

cyanide department prior to the work commencing and report any unsafe conditions to the department supervisor.

The safety permit requires a field level risk assessment to be undertaken prior to the work commencing, the use of a buddy system, records of tagging out, checking of PPE, undertaking flammable and toxicity tests. The permit is signed by the operator, the safety manager and department manager.

The Facility does solicit and considers worker's input in developing and evaluating health and safety procedures.

Employees can make suggestions to the procedures via 'written suggestions' that they can submit in suggestion boxes, hand to their shift leader for forwarding to the supervisor, or directly to the cyanide department safety manager. They also have an option to communicate their opinions to the plant manager via WeChat. Workers interviewed have confirmed that they have opportunities to share their input.

The Safety Operation Rules and Process Operation Procedures for the Cyanide Production Units detail the locations where the risk of hydrogen cyanide and cyanide dust is considered high, and must use PPE, including either a respirator equipped with a filter (suitable for cyanide) or one that provides oxygen.

All the cyanide production areas with HCN release risk have been identified. In total 55 fixed HCN detectors have been installed in these areas, which include liquid cyanide production areas, liquid cyanide medium measurement tanks, solid cyanide production areas and solid cyanide warehouse. The high alarm threshold for the fixed HCN detector is set at 0.8 ppm and the high-high alarm threshold is set at 1.0 ppm.

Pipeline from Workshop 407 to the liquid cyanide medium measurement tanks of Workshop 301 are designed without any flanges or valves. No detector has been installed for the pipeline.

During inspections of the facilities, it was observed that workers were wearing PPE as outlined in the procedures and signage present in the work area.

The Facility uses monitoring devices and associated alarms to confirm that controls are adequate to limit worker exposure to hydrogen cyanide gas and/or cyanide dust exceeding 10 parts per million (ppm) on an instantaneous basis or 4.7 parts per million continuously over 8-hour, as cyanide.

A combination of fixed and portable detectors is employed at the facility. The fixed detectors are set to trigger a high alarm at 0.8ppm and a high-high alarm at 1 ppm. The portable detectors are set to activate a high alarm at 4.7 ppm and a high-high alarm at 10 ppm. Portable detectors are used for task specific activities, while the fixed detectors are intended to detect any issue within the process.

When HCN gas concentrations trigger the high alarm threshold, the site operator is required to wear the filter gas mask for a short time duration not exceeding 30 minutes. When HCN gas concentrations trigger high-high threshold, the site operator must evacuate the site area immediately. The emergency response personnel must wear air breathing apparatus and

heavy protective clothing upon arriving at the site to identify and seal the source of the leakage.

The HCN monitoring equipment is maintained, tested and calibrated according to manufacturer's recommendations, and records are retained for five years. There are fixed detectors within the plant area and portable detectors used for task specific activities. Calibration certificates were reviewed for this monitoring equipment.

The Facility implements a buddy system that mandates employees to work in pairs for roles that involve exposure to cyanide. All operators are provided with explosion-proof radios or explosion-proof mobile phones to ensure effective communication with the associated process control room.

The Facility assesses the health of employees to determine their fitness to perform their specified tasks.

All workers have a medical examination every year at the local hospital (Huanghua City). The medical examination includes a variety of checks, including blood pressure, lung capacity, electrocardiography (ECG), blood, urine, liver scan, nervous system, ear examination, nose and pharynx, blood eosinophil count, pure hearing threshold test air conduction, skin examination. depending on the working location and duration of the service.

The Site has retained records for each worker detailing the date of the examination and whether they are fit to perform their specified tasks.

Additionally, the site conducts fitness tests before using respirators to ensure that individuals are suitable for the half-face respirator, full-face respirator, and Self-Contained Breathing Apparatus (SCBA).

The Facility has a clothing change policy or procedure for employees, contractors and visitors entering areas where there is a risk of cyanide contamination of clothing.

Personnel Protection Equipment Usage Rules outline the protocols for the use and replacement of personal protective equipment (PPE) for employees, visitors, and contractors. All employees and contractors are required to enter the designated exchange room to change into appropriate work attire before commencing their shifts. At the end of each shift, individuals must return to the exchange room to change back into their personal clothing.

Prior to leaving work, employees must visit the workshop locker room to replace and clean the protective equipment worn during their duties. This equipment should be placed in the designated area for proper handling.

It is strictly prohibited to take labor protection supplies home. Additionally, issued protective equipment must not be resold or discarded. Used PPE must be returned to the designated recycling box within the workshop, where it will be managed uniformly. Employees in the cyanide department will have their work clothing laundered on-site by the department.

Visitors will be provided with laboratory coats for use during their time at the facility.

In the packaging area, additional PPE is mandatory, including coveralls, gloves, and full-face respirators. Personnel exiting the packaging facility must proceed to the change room for a shower and to change their clothing.

Warning signs advocating the present of cyanide and use of suitable PPE are posted throughout the Facility.

Warning signs for both sodium cyanide and hydrogen cyanide are placed in all process and storage areas, detailing the PPE requirements.

Warning signs were observed outside of the warehouse buildings at entrance points and inside the warehouse on the outside of the IBCs. Warning signs were present in the work area of Workshop 407, Workshop 301 and solid cyanide warehouse.

All personnel are prohibited from smoking, eating and drinking, and using open flames in areas where there is a risk of cyanide contamination. All process and storage areas have signs stating no smoking, no eating or drinking and no open flames.

## STANDARD OF PRACTICE 2.2

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

| | | |
|---|---|---|
| The operation is | ☒ in full compliance with<br>☐ in substantial compliance with<br>☐ not in compliance with | Standard of Practice 2.2 |

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

The Facility is in FULL COMPLIANCE with Production Practice 2.2 requiring the development and implementation of plans and procedures for rapid and effective response to cyanide exposure.

The Facility has developed specific Emergency Response Plans to respond to cyanide exposures.

Emergency Response Plans for cyanide exposures and On-site Disposal Plans to illustrate detailed treatment procedure to cyanide exposure through ingestion, inhalation, and absorption through the skin and eyes.

The people interviewed were aware of these actions, including relocating exposed individual offsite, removing contaminated clothes, administering cyanide resistant injections, rinsing the contaminated area with flowing water, and contacting the first-aid clinic and hospital for emergency assistance.

Showers, eye wash stations and non-acidic fire extinguishers are located at strategic locations throughout the Facility. They are maintained and inspected weekly, the inspection items include water supply pressure, water spray pattern, tidiness of the stations.

The Facility conducts an annual preventative maintenance and inspection program to ensure optimal performance and safety. The requirements for inspection and maintenance are detailed in the Emergency Equipment, Materials, and Medicine Inspection and Maintenance Procedure, which encompasses the Emergency Shower and Emergency Eye Washing Station. During the audit, a minor deficiency was identified regarding the Emergency Shower in the Sulfuric Acid Pump Station, and it was promptly rectified.

Dry powder fire extinguishers were observed throughout the Facility. No carbon dioxide fire extinguishers were observed throughout the cyanide facility areas.

The Facility is equipped with oxygen, resuscitators, antidotes and communication system or emergency notification method that is readily accessible for use.

Onsite inspection of the facility confirmed that operators are equipped with explosion-proof radio communication devices or explosion-proof mobile phones, and antidotes are stored strategically throughout the plant. Oxygen and resuscitator are available in the medical room on the site. Water is available around the plant through safety showers and fire hydrates.

Personnel interviewed were aware of the location of antidotes and the emergency notification process. Inspection records sampled during the audit period were found to be well organized.

The Facility inspects its first aid equipment regularly to ensure that it is accessible when needed. The first aid and emergency response equipment (including oxygen kits) are stored and tested in accordance with the manufacturer's instructions and replaced as scheduled to ensure their effectiveness at the time of use.

The antidotes' instructions indicate they should be stored at room temperature and protected from the sun. The antidote was stored appropriately and within its expiry date.

The doctors at the Site's first aid clinic inspect the oxygen bottles and resuscitators in the clinic every week.

Fire extinguishers are sent in rotation to an off-site facility and refilling as required by the manufacturer. Fire extinguishers have been inspected and within service duration.

Safety Data Sheets, first aid procedures or other informational materials regarding cyanide safety are provided in the local language understood by the workforce and are available to workers in areas where cyanide is handled.

All signages and procedures are in Chinese, the official language. The SDS has been developed in compliance with global harmonized system (GHS) requirements.

Information boards have been erected at the cyanide handling areas of the plant that detail hazards and precautions. The drum and IBC labels also provide information on cyanide hazards.

Storage tanks, process tanks, containers and piping containing cyanide are identified to be labelled clearly to alert workers of their contents.

The flow direction of the pipes is clearly shown.

The Facility has a decontamination policy or procedure for employees, contractors and visitors leaving the areas where there is a risk of skin exposure to cyanide.

Personnel Protection Equipment Usage Ruleshave specified the requirement of using and replacing personal protection supplies for employees, visitors, and contractors before and after entering the Cyanide Production Units.

Before leaving work, employees must go to the workshop locker room to change and clean the protective equipment used during their shift and put them in the designated area.

It is forbidden to wear labor supplies home, and the used protective equipment is not allowed to be resold or disposed of improperly. The used labor supplies must be returned to the recycling box designated by the workshop, where they will be handled uniformly. All employees in the cyanide production units have their clothes laundered on site by the department.

Visitors are supplied with laboratory coats for use while visiting the facility.

Additional PPEs are required in the packaging area including the use of coveralls, gloves and full-face respirators. Personnel leaving the packaging facility must proceed to the changing room for a shower and clothes changing.

Interviews and site inspection confirmed that the decontamination procedure is implemented and followed.

The Facility is equipped with on-site first aid capabilities for workers exposed to cyanide, but not higher-level medical assistance. The Site has an on-site first-aid clinic operational 24 hours a day, staffed by two fully qualified doctors. Emergency notification buttons have been installed in each workshop with potential cyanide exposure. In the event of an exposure incident, employees can press the button to alert the doctor for on-site emergency treatment.

The instruction manual for the cyanide antidote provided by the Site indicates that the formulation is confidential and is characterized as a clear liquid, either colorless or light yellow. Additionally, sodium thiosulfate and amyl nitrite are stored in the onsite clinic. In the event of an emergency, the doctors of onsite clinic will provide first aid to the poisoned person.

The Facility has conducted training sessions on the appropriate use of cyanide antidotes for the emergency response teams at each workshop. Random interviews with on-site personnel confirm that these employees are well-versed in the correct application of these antidotes, ensuring readiness in emergency situations.

The Facility has its own on-site capability to provide first aid, but not higher-level medical assistance to workers exposed to cyanide. The Site has its own on-site capability to provide first aid or medical assistance to workers exposed to cyanide. The Site has an on-site first-aid clinic which is staffed 24 hours a day by two fully qualified doctors.

All doctors have received certification from the Hygiene Department of Sichuan Province. Additionally, the facility is equipped with an emergency vehicle to transport exposed workers to the designated hospital for medical assistance.

The Facility has made formalized arrangements with local medical facilities of the potential need to treat patients for cyanide exposure, and the Facility is confident that the medical provider has adequate, qualified staff, equipment, and expertise to respond to cyanide exposures.

The Facility has signed a medical service guarantee agreement with Guang' an Fuyuan Hospital. The Hospital is the designated cooperative unit for medical services of the Site. It will undertake the emergency medical treatment of the venue, provide green medical channels for the Site, and provide 24-hour medical services. Before signing the agreement, Dr Jun Tang toured the hospitals and advised that Chinese Traditional Hospital of Guang'an City is satisfied that the facilities have suitable staff and equipment to respond to cyanide exposures.

The Occupational Hazards Current Status Evaluation Report and Emergency Response Plan for Production Safety Accident are in place to investigate and evaluate cyanide exposure incidents to determine if the operations programs and procedures designed to protect worker health and safety as well as to respond to cyanide exposures, are adequate or need to be revised.

It outlines an accident classification system which specifies the type of investigation required, and the accident reporting and communication process. The most serious accident and exposures require investigation by the government or an external party. For accidents without lost working day, the investigation is to be undertaken by the cyanide production units along with the safety engineer to determine the root cause of the incident.

The accident and treatment report details the accident, the accident analysis, the prevention measures, the person/s responsible and their financial punishment decision. It then moves to a corrective measures section which lists the hazard, corrective actions, date for implementation and the person responsible.

No cyanide exposure or cyanide release incidents have been reported during the audit period.

The non-cyanide-related incidents response process has also been specified in the Emergency Response Plan for Production Safety Accident. One forklift hit accident during work at height occurred on March 1, 2024. And the investigation report has been prepared for this accident.

# PRINCIPLE 3 | MONITORING

**Ensure that process controls are protective of the environment.**

## STANDARD OF PRACTICE 3.1

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

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

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

The Facility is in FULL COMPLIANCE with Production Practice 3.1 requiring environmental monitoring to be conducted to confirm that planned or unplanned releases of cyanide do not result in adverse impacts.

The Facility does not have any direct wastewater discharge to surface waterbody. The wastewater will be discharged to the onsite wastewater treatment plant. Quarterly monitoring results of discharges from the site wastewater treatment plant, from 2023 to 2025 are provided for review.

The certified external laboratory was entrusted by the Site to undertakes the analyses in accordance with the method in Chinese National Analytical Standard No. HJ484-2009 (Nicotinic acid-pyrazolone spectrophotometric method and pyridine-barbitone acid colorimetry method). Total cyanide has not been detected and is always below the Method Detection Limit (MDL) of the two methods (0.001 mg/L) in the past 3 years' reports.

A wastewater online monitoring system was installed on-site to conduct real-time monitoring of cyanide concentration. The monitoring records were reviewed during visit, revealing that cyanide concentrations of industrial wastewater at the discharge outlet ranged from 0.024 mg/L to 0.049 mg/L.

The Facility does not have any direct wastewater discharge to surface water.

The first flush of stormwater is collected in the site's first-flush stormwater collection tank and treated by the onsite wastewater treatment plant then discharged to Xinqiao Chemistry Industrial Park's wastewater treatment plant.

Stormwater after the first flush is pumped through the company's rainwater discharge outlet, subsequently entering the stormwater drainage network of the industrial park after being verified by the site lab. According to the site lab records, the total cyanide concentrations have consistently remained below the MDL of 0.004mg/L over the past years. The analytical instrument is calibrated by an independent calibration company on an annual basis.

The total cyanide is tested in accordance with the standard method in Chinese National Analytical Standard No. HJ484-2009 (Nicotinic acid-pyrazolone spectrophotometric method).

The first flush of stormwater is collected in the site's first-flush stormwater collection tank and treated by the site wastewater treatment plant before being discharged to Xinqiao Chemistry Industrial Park's wastewater treatment plant.

The treated effluent from the site's wastewater treatment plant is discharged to Xinqiao Chemistry Industrial Park's wastewater treatment plant, where it undergoes further treatment before being discharged into the surface water body, Lv Xi River.

According to the quarterly monitoring reports of site wastewater treatment plants conducted by the 3rd laboratory from 2023 to 2025, the total cyanide is not detected below the MDL of 0.001 mg/L, which is far below 0.5 mg/L WAD cyanide.

The effluent of the Industrial Park's wastewater treatment plant complies with Class A standards under GB 18918-2002, with a control limit of 0.5 mg/L for total cyanide. Given that the pre-discharge monitoring results at the site's discharge outlet indicated total cyanide concentrations below the Method Detection Limit (MDL) of 0.001 mg/L before entering the municipality pipeline, the treated concentration from the Industrial Park's wastewater treatment plant is considered to be no more than 0.001 mg/L.

External monitoring results at the stormwater outlet for non-process wastewater (the concentrate from water purification system) and stormwater of the company were provided for review, indicated a maximum detected concentration of HCN of 0.004 mg/L, which was below the required ICMI limit of 0.022 mg/L.

The Facility develops a soil and groundwater monitoring plan and engages a certified 3rd party to conduct soil and groundwater water monitoring on an annual and semi-annual basis respectively. According to the plan and monitoring results, there are up to 21 soil sampling points and 8 groundwater sampling wells onsite.

The certified laboratory undertakes the soil sample analyses in accordance with the standard method Chinese National Analytical Standard No. HJ745-2015 4.1, and the groundwater sample analyses in accordance with the standard method Chinese National Analytical Standard No. GB/T 5750.5-2023 7.2.

According to the monitoring results of soil and groundwater from 2022 to 2025, the total cyanide concentrations in soil are around 0.02-0.04 mg/kg, while the total cyanide in groundwater has not been detected and below the MDL of 0.002mg/L.

According to the local regulatory standard GB 36600-2018, acceptance criteria for total cyanide in soil is 135 mg/kg, while the acceptance criteria of total cyanide in groundwater is 0.05 mg/L based on the local regulatory standard GB/T 14848-2017.

The soil and groundwater monitoring results during the audit period were below the acceptance criteria.

The Facility management confirmed that no groundwater was used within the boundary of the facility.

The Facility operations have not caused the concentration of cyanide in the groundwater to exceed the applicable standards; hence no remedial activity has been taken onsite. However, the site develops Soil and groundwater pollution remediation procedures in Chapter 8 of Compilation of Environmental Protection Systems (CXHG/GL-14) to address potential soil and groundwater contamination.

The Facility engages external qualified agency to conduct air emission monitoring on quarterly basis, including point source emission from the solid and liquid cyanide workshops and fugitive emission at boundary. Quarterly monitoring results from 2023 to 2025 are provided for review.

The HCN emissions are tested in accordance with Chinese National Analytical Standard No. HJ /T 28-1999.

Both the monitoring results of HCN emissions from solid cyanide workshops and liquid cyanide workshops have not been detected and below the MDL of 0.09mg/$m^3$. The fugitive HCN emissions have not been detected at the site boundary and below the MDL of $2*10^{-3}$mg/ $m^3$.

According to the local regulatory standard GB 31573-2015, acceptance criteria for point source HCN emissions are 0.3mg/ $m^3$, and for fugitive HCN emissions are 0.0024mg/ $m^3$. The test results were below the acceptance criteria.

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

The frequency of monitoring undertaken at the cyanide facility is:

- Wastewater discharges – quarterly manual monitoring and continuous online monitoring
- Air emissions – quarterly monitoring and continuously online monitoring (only for incinerators)
- Stormwater discharges – Whenever there is rain, by internal laboratory, and continuously online monitoring Soil quality – annually monitoring
- Groundwater quality – semi-annually

The specified frequencies adhere to legal requirements and are deemed sufficient under the current operating conditions to fulfill Code obligations.

## PRINCIPLE 4| TRAINING

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

### STANDARD OF 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 | Standard of Practice 4.1 |
| | ☐ in substantial compliance with | |
| | ☐ not in compliance with | |

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

The Facility is in FULL COMPLIANCE with Production Practice 4.1 requiring employees to be trained to operate the plant in a manner that minimises the potential for cyanide exposures and releases.

The Facility provides training to workers to understand the hazards of cyanide and refresher training is periodically conducted. New employees receive three levels of training comprising company, departmental and operational level training.

Company-level training consists of three days of classroom training. All employees receive a booklet titled 'Safety Training material' during the training. These booklets are available after the course in the control room of cyanide department.

Departmental level training consists of three days' training. The training takes place in both the meeting room and on Site to demonstrate the chemical hazards, emergency response and PPE. The new employee will be familiar with the entire operation of the cyanide production plant. For the staff who may come into contact with cyanide, the training will cover the topics of the health effects of cyanide, the symptoms of cyanide exposure, and the procedures to follow in the event of exposure.

Operational level training consists of three days training on Site within the cyanide department relevant to new employee's role. Each employee is paired with an experienced worker who teaches them how to operate the machinery in that area. During the three days they do not operate the machinery independently, culminating in an examination at the end of the three days. In addition, they go through the operating procedures.

Refresher training is conducted through monthly sessions. Each month, the safety advisor from the cyanide department facilitates a training session that lasts approximately two hours.

A minimum of 72 hours is required for the initial training of new employees, while at least 24 hours is necessary for refresher training.

Interviews with personnel and a review of training records confirmed that workers receive training on cyanide hazards prior to commencing work, along with regular refresher sessions.

The training plan includes training dates and training time, training topic, trainer, training location.

The Facility provides training for workers on the use of personal protective equipment (PPE), including when and where the PPE is required.

PPE training covers all three levels of training (company, departmental and operational). There are specific management and departmental procedures for the selection, storage, use and maintenance of PPE for different operations within the cyanide department.

Interviews with employees confirmed that training on how and when to use PPE is provided.

The Facility trains workers to perform their normal production tasks with minimum risk to their health and safety, and in a manner that prevents unplanned cyanide releases.

The Management Procedures and Safety Operation Rules outline the requirements for safely undertaking specific tasks, including the use of PPE prior to undertaking certain tasks. New employees are paired with an experienced person to gain practical experience, with supervision from the area supervisor.

According to the Safety Operation Regulations, all employees must complete 72 hours of training for new employees prior to handling cyanide. The training records are provided for review as evidence.

Refresher training in normal production tasks has been provided to ensure that employees continue performing their work in a safe and environmentally protective manner.

Refresher training is conducted through monthly sessions, each led by the safety adviser for the cyanide department. These sessions typically last around two hours. To ensure better understanding, a minimum of 24 hours of refresher training is mandated for all employees. Additionally, participants are required to complete a test following each training session.
The training components required for each job are outlined in training materials.

These components include the physical and chemical properties of cyanide, fire prevention, personal protection equipment, emergency response to cyanide exposure and release, critical hazards prevention, and specific training resources related to each role.

As interviewed with Site employees, it is evident that they possess a clear understanding of how to perform cyanide-related tasks and respond effectively in emergencies.

The Facility employs 74 personnel who hold safety management certificates, ensuring well coverage across the site. These qualified individuals deliver internal training programs to enhance employee knowledge and skills.

External training sessions are conducted by qualified agencies, including the local safety bureau, environmental protection bureau, fire department, and special equipment management authority.

The Facility assesses the effectiveness of cyanide training through a systematic testing approach. Questionnaires are utilized during the tiered induction training and are retained for

record-keeping purposes. Additionally, tests are conducted following the annual refresher training and monthly training sessions to ensure ongoing competency.

New employees are paired with experienced mentors who demonstrate tasks and provide guidance while observing the performance of the new team members.

## STANDARD OF PRACTICE 4.2

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

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

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

The Facility is in FULL COMPLIANCE with Production Practice 4.2 requiring employees to be trained to respond to cyanide exposures and releases.

The Facility provides training for workers on the process to take in the event of cyanide exposure or release.

Employees receive training on these procedures through company-wide, departmental, and operational training sessions, as well as through monthly and weekly workshops. There are 74 qualified safety management professionals who serve as trainers.

Also, workers are required to participate in mock drills designed to assess the effectiveness of emergency response processes. Workers interviewed could describe the response processes including evacuation to an upwind location, use of safety showers, reporting the incident and use of antidote. The Site also has appointed emergency responders who receive training on higher level response actions.

The Facility provides training to workers to respond to cyanide exposure and cyanide releases.

Routine mock drills are conducted to test and improve their response skills.

The Facility has conducted mock drills for workers simulating cyanide exposure and release scenarios in Workshop 301 area and the Workshop 407 area. The drills are recorded, and reports evaluate the effectiveness of the exercise along with opportunity for improvements.

Training records are retained for the duration of an individual's employment, documenting the training they have received. The records include the names of the employee and the trainer, the date of training, the topics covered, and how the employee comprehends the training contents.

Training files for employees in cyanide production units were reviewed, which contained evidence of training, including course content, evaluation and certificates.

All employees participated in training sessions focused on personal protective equipment and emergency response procedures for spills or exposure in monthly and annual training sessions.

# PRINCIPLE 5| EMERGENCY RESPONSE

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

## STANDARD OF PRACTICE 5.1

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

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

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

The Facility is in FULL COMPLIANCE with Production Practice 5.1 requiring a detailed emergency response plan for potential cyanide releases.

The Facility developed an Emergency Response Plan to address potential releases of cyanide that may occur on Site or may otherwise require response. Overtopping of ponds, tanks and waste treatment facilities is not applicable as the only open ponds are designed to collect stormwater.

The following emergency response plans were provided for review:

- Emergency Response Plan for Production Safety Accident outlines general response for cyanide related accidents.
- Emergency Response Plan for Environmental Emergencies details the environmental risk assessment and targets response of cyanide release.
- Special Emergency Response Plan for Major Hazard Sources Accidents details the emergency response specific for potential releases of cyanide.
- On-site Disposal Plan for Emergency Leakage of Cyanide at Cyanide Production Units describes response procedures and actions in the event of cyanide spills for each position in the 301 and 407 workshops.
- On-site Disposal Plans for Emergency Leakage of Cyanide at Tank area

The emergency procedures do consider the potential failure scenarios appropriate for its site-specific environmental and operating circumstances conditions.

a) The Emergency Response Plan for Environmental Emergencies outlines the procedures to be followed in the event of a catastrophic release of hydrogen cyanide. In such a scenario, the Site will promptly shut off the inlet and outlet valves at both ends of the pipeline connected to the leak point. Subsequently, the leaked material will be pumped into the wastewater treatment system for safe and effective disposal.

b) The Emergency Response Plan for Environmental Emergencies outlines the procedures to follow in the event of a leakage. To manage the leakage source, the site implements several control measures, including closing valves, halting operations, and adjusting technological

processes. Additional strategies may involve conducting partial shutdowns, cycling, and reducing operational loads. Furthermore, the On-site Disposal Plan elaborates on the control methods applicable at various locations within the workshop, thoroughly addressing potential releases under a range of conditions during packaging, storage, and loading and unloading operations.

c) The Emergency Response Plan for Production Safety Accident outlines the disposal methods in the event of cyanide releases during fires and explosions:

- The rescue team shall first conduct on-site detection and investigation to determine the location and radius of the affected area, the release condition, and to assess the risks to facilities and buildings.
- Promptly shut down or cut off the valves of the equipment and pipelines as much as possible. Based on the progression of the fire and release, the command post issues instructions such as partial shutdown or complete shutdown of the entire production facility.
- The fire decontamination team shall implement on-site fire suppression strategies and work to contain the spread of release.
- If the release persists and becomes increasingly challenging to control, the Site command will notify the local environment authority and the Industrial Park Management Committee.

d) The On-site Disposal Plans for Emergency Leakage of Cyanide at tank farm area outlines the emergency actions for pipe, valves and tank ruptures in multiple positions in the workshop.

e) The Power-off Emergency Response Procedure outlines the emergency actions during power outages.

f) This is not applicable, as the only open ponds are designed to collect stormwater. As reported by the Site, the relative employee will start the pump at the stormwater retention tank and transfer the accident water from the rainwater collection pond to the wastewater treatment plant.

The Emergency Response Plans outline the precise actions to be taken in response to anticipated emergency situations. These actions include the evacuation of site personnel and potentially impacted communities from areas at risk of exposure.

a) The Special Emergency Response Plan for Major Hazard Sources Accidents outlines that the minimum distance for potential leakage must be at least 100 meters. In cases of significant leakage, the evacuation distance in the downwind direction should be adjusted based on the initial isolation distance, considering the specific characteristics of the leaked substance. If leakage occurs in water bodies, the Site must ensure that the public maintains a safe distance from the contaminated water source area.

b) The Special Emergency Response Plan for Major Hazard Sources Accidents outlines the application of cyanide antidotes and first aid measures for cyanide exposure in Chapter 4.2.5.

This section details various first aid actions designed to address the severity of cyanide poisoning effectively.

c) The Special Emergency Response Plan for Major Hazard Sources Accidents outlines specific measures for managing sodium cyanide leaks. In the event of a liquid sodium cyanide leak, the Site will construct a barrier and a dike using sand and soil to contain the spill effectively. For solid sodium cyanide leaks, the Site will cover the affected area with dry sand or other non-flammable materials, followed by a layer of plastic sheeting to reduce dispersion and protect against rain exposure. Additional control actions tailored to various locations within the workshop are detailed in the On-site Disposal Plan.

d) The Emergency Response Plan for Environmental Emergencies, specifically in Chapter 5, outlines the strategies for containment, assessment, mitigation, and future prevention of chemical releases. This section provides detailed measures aimed at preventing chemical accidents.

## STANDARD OF PRACTICE 5.2

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

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

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

The Facility is in FULL COMPLIANCE with Production Practice 5.2 requiring the Facility to involving site personnel and stakeholders in the planning process.

The Facility has involved its workforce and stakeholders, including potentially affected communities, in the emergency response planning process.

The Emergency Response Plans have been disseminated to all departments, each of which has scheduled dedicated training days for employees to discuss the procedures and offer feedback. This procedure clearly delineates the responsibilities of each department, ensuring a well understanding of their roles in the response framework.

The Site is situated in the Guang'an Xinqiao Industrial Park within the Economic Development Zone. Within a 3 km radius, there are no designated environmental protection targets, such as scenic areas, nature reserves, or key cultural heritage sites. The Site actively collaborates with relevant government authorities and neighboring industrial facilities, including Guang'an Beixin Building Materials Co., Ltd., Guang'an Hongyuan Chemical Co., Ltd., Guang'an Lier Chemical Co., Ltd., and Huayou Natural Gas Guang'an Co., Ltd., among others.

The Facility has informed potentially affected communities about the risks associated with accidental cyanide releases and engaged with them directly or through community representatives to determine suitable communications and response actions.

Before the issue of the Emergency Response Plans, the Site had invited neighboring industrial facilities to participate in the symposium, where they were informed about the potential risk of cyanide leakage in the Site and the possible impact on them after the leakage. The measures for risk response have been coordinated with the neighboring facilities, and a communication mechanism for risk response has been established. The sign-in form for the meeting is provided for review.

The Facility has engaged local response agencies such as external responders and medical facilities in the emergency planning and response process.

During the revision and upgrade of the emergency response plans, the Site coordinated with and shared copies of the ERPs with the relevant government authorities and neighboring industrial facilities, and who may come to site to assist in the event of an emergency, including:

- Guang'an Beixin Building Materials Co., Ltd.
- Guang'an Lier Chemical Co., Ltd.
- Huayou Natural Gas Guang'an Co., Ltd
- Guang'an Jiuyuan Chemical Co., Ltd.
- Keta Co., Ltd
- CNPC Transportation Co., Ltd., Guang'an Branch

The process for contacting local fire departments, police, and hospital signed service agreements is also identified in Emergency Response Plans. And they have obligations to coordinate with the factory for emergency response.

Emergency Response Plan for Production Safety Accident and Emergency Response Plan for Environmental Emergencies have been sent to Emergency Management Bureau and Ecological Management Bureau for registration. If the impact of the emergency event exceeds beyond the Site area, the emergency leadership team will change to a related government management department.

The operation engages in regular consultation and communication with stakeholders to assure that the Plan addresses current conditions and risks as detailed in above sections.

## STANDARD OF PRACTICE 5.3

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

| | | |
|---|---|---|
| The operation is | ☒ in full compliance with<br>☐ in substantial compliance with<br>☐ not in compliance with | Standard of Practice 5.3 |

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

| Guang'an Chengxin Chemical Co., Ltd. | | 4 January 2026 |
|---|---|---|
| Name of Facility | Signature of Lead Auditor | Date |

The Facility is in FULL COMPLIANCE with Production Practice 5.3 requiring designated appropriate personnel and committed equipment and resources for emergency response.

The Emergency Response Plans have include the following information:

a) and b): The Emergency Response Plan for Production Safety Accidents, outlined in Chapter 2.1 and Appendix 5, along with the Emergency Response Plan for Environmental Emergencies in Chapter 4, details the structure of the emergency response teams. These teams include the director, deputy director, on-site director, rescue team, security evacuation team, professional fire brigade, logistics support team, communication support team, medical team, environmental monitoring team, and workshop disposal team.

c) Training at both the company and departmental levels on the Emergency Response Plan for Environmental Emergencies, as outlined in Chapter 8.1, is conducted to ensure that emergency responders fully understand the plan's content. This training familiarizes them with their emergency responsibilities, procedures, and on-site emergency disposal plans, empowering them to respond effectively in critical situations.

d) The Emergency Response Plan for Production Safety Accidents, as outlined in Appendix 5, and the Emergency Response Plan for Environmental Emergencies, detailed in Chapter 7.1, provide essential 24-hour contact information for company leaders and team members. All members of the emergency response team are required to keep their phones on at all times to ensure constant communication. The emergency management office has implemented a robust emergency communication network designed to update the emergency contact list and communication methods whenever there are changes in personnel or contact information. Additionally, the call-out process for initiating a response to a cyanide-related emergency is clearly defined within the Emergency Response Plans.

e) The Emergency Response Plan for Production Safety Accidents, outlined in Chapter 2, and the Emergency Response Plan for Environmental Emergencies, detailed in Chapter 4.1, provide a overview of the organizational structure along with the respective responsibilities of all coordinators and team members.

f) The Emergency Response Plan for Production Safety Accidents, outlined in Appendix 4, and the Emergency Response Plan for Environmental Emergencies, detailed in Chapter 7.3.1, provide information on all emergency equipment.

g) Chapter 3.10 of the Emergency Response Plan for Production Safety outlines that the safety department is responsible for conducting monthly inspections of all emergency supplies across the company. If any department is found to have insufficient emergency supplies or fails to maintain them adequately, a deadline for corrective action will be established. The department will then oversee the implementation of these necessary actions.

h) The Emergency Response Plans outline the responsibilities of the hospital, the fire department, and the government safety department, offering essential guidance for effective emergency response.

| Guang'an Chengxin Chemical Co., Ltd. | | 4 January 2026 |
|---|---|---|
| Name of Facility | Signature of Lead Auditor | Date |

The Facility has confirmed that external entities involved in the Emergency Response Plans are informed of their participation of potential emergency rescue. Usually, fire departments will participate the emergency drills. Other entities will be invited to assess the whole emergency drill.

The Emergency Response Plan for Production Safety, as outlined in Appendix 5, indicates that the site has established a collaborative emergency rescue mechanism with six neighboring enterprises, whose names are detailed in above section.

## STANDARD OF PRACTICE 5.4

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

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|---|---|---|
| The operation is | ☒ in full compliance with<br>☐ in substantial compliance with<br>☐ not in compliance with | Standard of Practice 5.4 |

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

The Facility is in FULL COMPLIANCE with Production Practice 5.4 requiring development of procedures for internal and external emergency notification and reporting.

The Emergency Response Plan for Production Safety Accidents, detailed in Appendix 5, along with the Emergency Response Plan for Environmental Emergencies outlined in Chapter 4.4, provides comprehensive procedures and contact information. These resources are essential for promptly notifying site management, regulatory agencies, external response teams, and medical facilities in the event of an emergency.

According to the Emergency Response Plan for Production Safety Accident, upon receiving the alarm, the emergency office will promptly contact the leaders of each emergency rescue team and report to the company's emergency command center. The emergency response director will organize the emergency response team and decide whether to involve external response teams and whether to inform the government department as well as surrounding neighbors. Appendix 5 details the contact information of the Fire, hospital and government office (safety department and environmental protection department), and surrounding industries.

The Emergency Response Plan for Production Safety Accidents outlines that the emergency response director is responsible for determining when to notify potentially affected communities. Additionally, Appendix 5 of the Emergency Response Plan for Production Safety Accidents, along with Chapter 4.4.1 of the Emergency Response Plan for Environmental Emergencies, provides contact information for surrounding industries and village representatives within a 3 km radius of the Site.

The Emergency Response Plan for Production Safety Accidents outlines that the general manager holds the responsibility of engaging with the media.

The operation has a written procedure for notifying ICMI of any significant cyanide incidents, as defined in ICMI's Definitions and Acronyms document.

The Site has established Incident Reporting, Investigation and Handling Control Procedure, which defines that if any significant cyanide incidents occur, the Site will report to the international trade department of Chengxin Group. The International trade department will notify ICMI.

As interviewed, no such significant cyanide incidents have occurred.

## STANDARD OF PRACTICE 5.5

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

| | | |
|---|---|---|
| The operation is | ☒ in full compliance with | Standard of Practice 5.5 |
| | ☐ in substantial compliance with | |
| | ☐ not in compliance with | |

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

The Facility is in FULL COMPLIANCE with Production Practice 5.5 requiring the Facility to incorporate monitoring elements that account for the additional hazards of using cyanide treatment chemicals into response plans and remediation measures.

The Emergency Response Plan for Environmental Emergencies outlines targeted remediation measures tailored to address specific incidents. These measures include the recovery or neutralization of solutions or solids, the decontamination of soils and other affected media, the management and disposal of debris resulting from spill clean-up, and, when necessary, the provision of an alternative drinking water supply.

The Emergency Response Plan for Environmental Emergencies outlines the disposal method for emergency remediation of Cyanide pollution on soil in Chapter 6.4 as follows:

- Employ the "collection + innocuous treatment" method for contaminated soil;
- Apply dedicated chemical agents (e.g., hydrogen peroxide) for digestion post-collection;
- Dispose as hazardous waste upon meeting standards.

This Chapter also outlines the soil remediation method, which involves implementing soil backfilling with uncontaminated clean soil and establishing a surface-layer vegetation cover. Additionally, it mandates semi-annual soil quality monitoring for two years, totaling four sessions, to ensure compliance with the Class II land use requirements as specified in GB 36600-2018.

Multiple remediation methods for soil and groundwater contamination have been specified in Chapter 8 of Compilation of Environmental Protection Management Systems (LGWJ/GL-14)-Soil and Groundwater Contamination Management Procedure.

In Safety Operation Rules for Workshop 301, The detailed emergency response process for hydrogen peroxide treatment has been specified for cyanide destruction treatment. And the hydrogen peroxide is stored in a tank farm where is 300m to the cyanide production area, with a concentration of 27.5%.

The drinking water at the Site is sourced directly from dedicated pipelines, ensuring a reliable supply free from contamination concerns.

There is no surface water on the site or within a 1 km radius of the site therefore the question (Does the Plan prohibit the use of chemicals such as sodium hypochlorite, ferrous sulfate and hydrogen peroxide to treat cyanide that has been released into surface water or that could reasonably be expected to enter surface water?) is not applicable.

Chapter 6.4 of the Emergency Response Plan for Environmental Emergencies outlines the importance of follow-up monitoring for pollutants that persist in water bodies, soil, crops, and other environments, particularly those that are not easily removed or degraded following environmental pollution incidents. To ensure effective monitoring, the sampling methodologies and parameters are detailed in the Annual Soil and Groundwater Monitoring Plan, which shall adhere to national standards.

According to the annual monitoring results of soil and groundwater from 2022 to 2024, there were as many as 21 soil monitoring points and up to 8 groundwater monitoring wells.

## STANDARD OF PRACTICE 5.6

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

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

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

The Facility is in FULL COMPLIANCE with Production Practice 5.6 requiring the Facility to periodically evaluate response procedures and capabilities and revise them as needed.

Chapter 9.1 of the Emergency Response Plan for Environmental Emergencies outlines that plans are typically evaluated every three years. A review will be conducted, and the plan will be updated as necessary under any of the following circumstances:

- Major changes occur in the laws, regulations, rules and standards on which the plan is based.

- The emergency command structure and its responsibilities are modified.
- Major changes occur in the risks faced with production safety.
- Major changes occur in important emergency resources.
- Major issues requiring revision of the plan are discovered during plan drills or emergency rescue.
- Other circumstances that require revision.

Mock emergency drills are conducted periodically as below to test response procedures for various exposure scenarios, with the lessons learned from the drills being incorporated into emergency response planning. The drills simulated the entire emergency response process from the initial emergency callout notification through to the close-out of the response process.

- Mock Drill of Emergency Response Plan for Environmental Emergencies, every year
- Mock Drill of Emergency Release and Spill, 3 times every year
- Mock Drill of On-site Disposal Plans at workshop levels for cyanide exposure incidents to employees, every month
- Mock Drill of fire response, every year
- Mock Drill of emergency evacuation, every 6 months

For each drill the following is recorded:

- Description of emergency scenario
- Record of training attendance and assessment
- Photographs of the event

Independent Emergency Drill Reports are prepared to identify the deficiencies of the Emergency Response Plan. An updated version of the Emergency Response Plan will be prepared to address the deficiencies after the drill if necessary. Monthly mock drills simulating cyanide exposure incidents at workshop levels have been conducted to assess its preparedness of providing first aid and medical treatment to workers. These drills were conducted during this ICMC recertification period.

The Emergency Response Plan for Production Safety Accident Chapter 4.3 and Emergency Response Plan for Environmental Emergencies Chapter 8.2 include the provisions to evaluate the Plan after any emergency and mock exercises and revise it as necessary.

# APPENDIX A IMPORTANT INFORMATION RELATING TO THIS REPORT

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