



SUMMARY AUDIT REPORT

International Cyanide Management Code

*Anqing Shuguang Supply, Sales and Transportation Co., Ltd. –
ICMC Transport Recertification Audit*

Submitted to:

International Cyanide Management Institute
1400 I Street, NW – Suite 550
WASHINGTON, DC 20005
UNITED STATES OF AMERICA

Anqing Shuguang Supply, Sales and Transport Co., Ltd
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Anhui Province
CHINA

Submitted by:

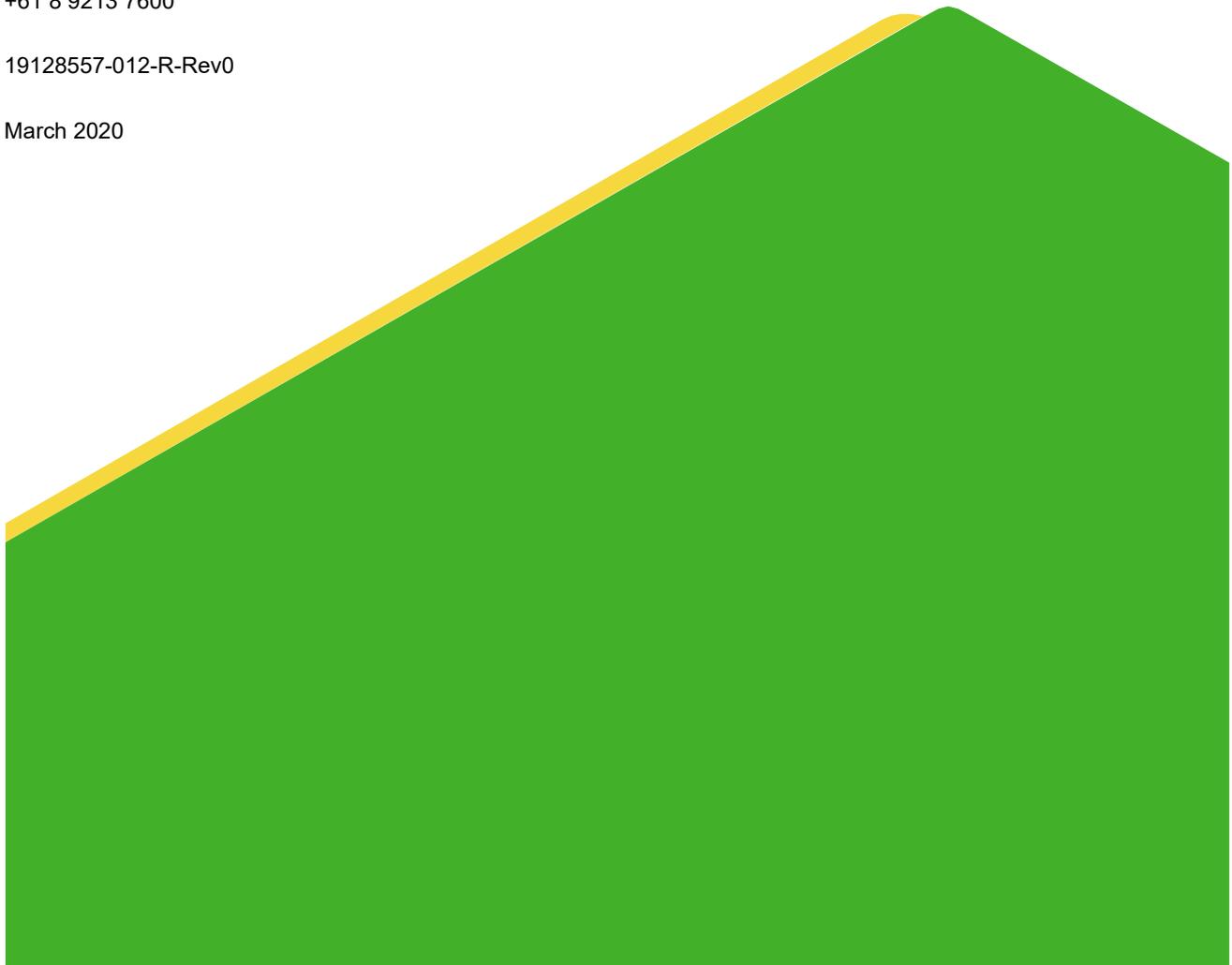
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APPENDICES

APPENDIX A
Important Information

1.0 INTRODUCTION

1.1 Operational Information

Name of Transportation Facility:	Anqing Shuguang Supply, Sales and Transportation Co., Ltd
Name of Facility Owner:	Anqing Shuguang Supply, Sales and Transportation Co., Ltd
Name of Facility Operator:	Anqing Shuguang Supply, Sales and Transportation Co., Ltd
Name of Responsible Manager:	Tao Zhang
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2.0 CYANIDE TRANSPORTATION

2.1 Anhui Shuguang

Anqing Shuguang Supply, Sales and Transportation Co., Ltd (hereinafter referred to as “Shuguang Transport”) was established in 1995 and is located in Anqing City approximately 150 km south of Hefei City , which is the capital of Anhui Province. Shuguang Transport is approved by Anqing City Bureau of Transport for road transportation and handling of dangerous goods. Shuguang employees over 120 people for the transport operation and has a fleet of 42 vehicles that are licensed and certified to transport dangerous goods.

The sodium cyanide product is manufactured and packaged by Anhui Anqing Shuguang Chemical Co., Ltd. (the production company). Solid cyanide is packaged in 50 kg, 380kg drums or one tonne intermediate bulk containers and then into shipping containers. Liquid cyanide is package in vehicle tankers of 28 m³ capability of Anqing Zhenghua Hazardous Chemical Transportation Co. Ltd, (refer to “Zhenghua”). All packaging is undertaken by the production company. Shuguang Transport has subcontracted Zhenghua for liquid cyanide road shipment from April of 2019. Both companies are based at the same location.

Table 1 provides a summary of Shuguang Transport’s main routes for both liquid and solid cyanide. Shuguang Transport uses 13 main transport routes (including one port) to their customers within China.

Table 1: Summary of Main Transportation Routes

Destination	Distance	Product
Shanghai Port	601 km	Solid
Hefei City, Anhui Province	200 km	Solid
Hangzhou City, Zhejiang Province	464 km	Solid
Nantong City, Jiangsu Province	576 km	Solid
Jinan City, Shandong Province	819 km	Solid
Guangnan County, Yunnan Province (Commenced from 2017)	2084 km	Solid
Kunming City, Yunnan Province	2408 km	Solid
Shenyang City, Liaoning Province	1963 km	Solid
Erenhot City, Inner Mongolia	1 984km	Solid
Jinjiang City, Fujian Province	879 km	Solid

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Destination	Distance	Product
Pengze City, Jiangxi Province	139 km	Liquid
Dexing City, Jiangxi Province	350 km	Liquid
Tongling City, Anhui Province	119 km	Liquid

Cyanide is loaded onto the trucks at the production facility and from there is transported directly to the customer or port.

2.2 Transit Storage

Within the scope of this audit, there are no trans-shipping depots or interim storage sites, as defined in the audit protocol.

Storage in transit may occur in the event that receipt at the port is delayed. In this event containers will not be removed from the trailers and the vehicles will only be parked for a maximum of 24 hours.

2.3 Auditors Findings and Attestation

in full compliance with

Shuguang Transport is: in substantial compliance with **The International Cyanide Management Code**

not in compliance with

No significant cyanide exposures or releases were noted to have occurred during Shuguang Transport's recertification audit period.

Audit Company: Golder Associates Pty Ltd

Audit Team Leader: Mike Woods, Exemplar Global (113792)

Email: mwoods@golder.com.au

2.4 Name and Signatures of Auditors

Name	Position	Signature	Date
Mike Woods	Lead Auditor and Transport Technical Specialist		16 March 2020
Hongtao Hu	Auditor		16 March 2020

2.5 Dates of Audit

The ICMC Recertification Audit was conducted over two days between 26 and 27 September 2019 at Anhui Shuguang Transport facilities in Hongshi Road, Anqing City, Anhui Province, China.

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

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

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Date

3.0 CONSIGNOR SUMMARY

3.1 Principle 1 – Transport

Transport Cyanide in a manner that minimises the potential for accidents and releases.

3.1.1 Transport Practice 1.1

Select cyanide transport routes to minimise the potential for accidents and releases.

in full compliance with

Shuguang Transport is in substantial compliance with **Transport Practice 1.1**

not in compliance with

Summarise the basis for this Finding/Deficiencies Identified:

Shuguang Transport is in FULL COMPLIANCE with Transport Practice 1.1 requiring cyanide transport routes to be selected to minimise the potential for accidents and releases.

Shuguang Transport has implemented a process for selecting transport routes that minimises the potential for accidents and releases or the potential impacts of accidents and releases.

Shuguang Transport has developed and implemented a management system for transportation and there is a specific written procedure that details the process and the parameters to be assessed while identifying, selecting and assessing potential transport routes.

The procedure does include the assessment of schools, factories, infrastructure, intersections, towns and city, construction activities, sharp turns and steep gradients, bridges, tunnels, area known for instability, rivers, lakes, natural reserve, historical site, speed limits, seasonal weather conditions (snow, ice, flooding, fog, typhoon, heavy rain and sand storm), medical facilities, service stations and crime risk. In addition to Shuguang Transport assessment the roads need to be approved to transport dangerous goods by local police authority.

Shuguang Transport has one subcontractor that is used for cyanide transport. Zhenghua has been used for liquid cyanide road transportation for selected routes from April of 2019. Zhenghua operates under Shuguang Transport procedures and processes when transporting cyanide.

Shuguang Transport has implemented a procedure to evaluate the risks of selected cyanide transport routes and take the measures necessary to manage these risks. The procedure involves the collection of route data and hazards by safety and dispatch personnel from driving the potential routes. The hazards are assessed against scoring system to generate the risk assessment. The assessment includes population density, proximity of water bodies, seasonal weather conditions, road surface condition and environment impact. For all customer destinations there are one primary and two alternative routes. The primary route is selected on the basis of the highest overall score and the alternative route will be used in the event when the primary route is compromised (e.g. major construction, accident).

The assessment is signed off by the drivers, escorts, coordinators, safety supervisors and producers. Once this review is completed the route is approved by the general manager. Once this pre-assessment is completed, approval must be sought from local government for the use of the route.

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Shuguang Transport has established a procedure to periodically re-evaluate routes used for cyanide deliveries and also has a process for getting feedback on route condition from the transporters' operators.

There is an annual review and update of the route assessment that is then used to provide a briefing to drivers on the route and control measures. Records of route assessments were provided for review and training records were available for the driver briefings. The attendance records note the agenda for the session. In addition, drivers and escorts can provide feedback through the delivery records.

One new route to Guangnan County was introduced in 2017. Annual route assessment documentation was reviewed and confirmed that Shuguang Transport has completed assessment and reviewed in accordance with their procedures.

Shuguang Transport documents the measures taken to address risks identified with the selected routes. The route assessment document details the measures taken to address risks identified with the selected routes. This is then communicated to drivers verbally during briefing sessions with attendance records retained.

Copies of route assessment were reviewed and confirmed to contain details on the control measures such as:

- Posted speed limits must also be obeyed.
- Trucks must slow down when passing through villages and give way to pedestrians.
- When passing schools, the trucks must avoid the school start and finish time.
- The trucks must keep a distance of at least 150 m away from the water resources.

The emergency contact information of hospital and environmental agency was also identified in the assessment report.

Shuguang Transport seeks input from communities, other stakeholders and applicable governmental agencies as necessary in the selection of routes and development of risk management measures. As noted, the approval of local authority is required prior to the transport and are provided with a copy of the route assessment.

Each shipment requires a permit "Road Transportation Permission for Highly Toxic Chemicals" to be issued by local authority allowing transport of cyanide along the designated route within a specified timeframe.

There is also a requirement to inform the local police if the shipment needs to stop overnight. The requirement for noticing local police has been specified on the online application system.

Shuguang Transport has also contacted the hospitals identified along each of its transport routes and provided them with information on cyanide hazards and potential response actions.

All engagements of external stakeholders are managed by Shuguang Transport.

Shuguang Transport has assessed its routes and concluded that no routes require additional control measures for special safety or security considerations. However, cyanide shipments are typical undertaken in a convoy of two or more vehicles but not for security measures.

Shuguang Transport has two drivers for each vehicle with the off-duty driver assuming the role of escort. The emergency response plan is carried in the cabin of the vehicle and contact is to be made with local police in the event of an incident.

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Summarise the basis for this Finding/Deficiencies Identified:

Shuguang Transport is in FULL COMPLIANCE with Transport Practice 1.2 requiring personnel operating cyanide handling and transport equipment can perform their jobs with minimum risk to communities and the environment.

Shuguang Transport only uses trained, qualified and licensed operators to operate its transport vehicles.

Shuguang Transport only uses trained, qualified and licensed operators to operate its transport vehicles. Each employee has been established with individual files which include training records, exam records and certificates.

The Worker Management procedure details minimum requirements including government certification to operate particular vehicles and purpose. To operate a transport vehicle the operators must have:

- Dangerous Chemical Transport Vehicle Driving Licence, issued by Anqing transportation authority
- Dangerous Chemical Transport Vehicle Driving Training, organised by Anqing transportation authority
- Annual Training organised by Shuguang Transport
- Three levels of entry training on safety laws, regulations, cyanide awareness, emergency response measures and protection, organised by Shuguang Transport.

Interviews with drivers and a review of training records and delivery records confirmed that drivers had received the designated training and had current driver's licences. Zhenghua has designated four drivers to Shuguang Transport for liquid cyanide transportation. The drivers are managed as Shuguang Transport drivers for training, performance assessment, operational purposes.

All personnel operating cyanide transport equipment have been trained to perform their jobs in a manner that minimises the potential for cyanide releases and exposures. Shuguang Transport takes responsibility once the container or iso-container has been loaded, checked and sealed. Shuguang Transport's training focuses on managing transport to prevent release and subsequent exposure.

Shuguang Transport develops and implements an annual training plan that provides monthly topics covering elements of their management system on a rotational basis. The content of these sessions includes information and instruction on driving risks, transporting dangerous goods, briefing on cyanide transport route assessment and controls.

A review of training attendance records, training files and interviews with drivers confirmed that training is provided, which included the records of Zhenghua drivers.

Shuguang Transport does subcontract Zhenghua for liquid cyanide road transportation which commenced in April of 2019.

The contract with Zhenghua has specified vehicles and the drivers shall follow all the ICMI requirements and other EHS rules of Shuguang Transportation, which includes driver training. There are four dedicated drivers from Zhenghua that have completed Shuguang Transport mandatory training requirements to enable them to transport cyanide.

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3.1.3 Transport Practice 1.3

Ensure that transport equipment is suitable for the cyanide shipment.

in full compliance with

Shuguang Transport is in substantial compliance with

Transport Practice 1.3

not in compliance with

Summarise the basis for this Finding/Deficiencies Identified:

Shuguang Transport is in FULL COMPLIANCE with Transport Practice 1.3 requiring that transport equipment is suitable for the cyanide shipment.

Shuguang Transport has details of each vehicle combination (prime mover and trailer) including the type, registration, load bearing capacity. Values on the maximum load are provided by the manufacturer and verified through the vehicle certification process. Each vehicle has been established with individual file which mainly include shop instructions, certificates and maintenance records.

Load sizes for solid cyanide are 9.6, 9.7, 31.1, 33.4, 33.5, 34, 34.5, 34.7 tonnes for solid and 28 m³ for liquid cyanide.

Pre-inspections cover roadworthy items of vehicles including:

- Vehicle number
- Mechanical parameters (brakes, types, lights, alarm, steering, transmission, chassis, fire extinguishers, antistatic, signs, power cut, battery, Beidou System, wipers etc.)
- Inspector driver and escort signatures

Pre-inspection records (checklist) of shipping containers:

- Package, labels
- Seals series number
- Actual loading versus maximum loading capacities
- Emergency response equipment (SDS, antidotes, chemical preventive suits, full-face masks, driver physical conditions)
- Inspector signature.

There is an annual inspection process (Level 2 maintenance conducted by a licensed third party) for vehicles transporting dangerous goods. A quality warranty certificate is issued to each individual vehicle. Before departure, there are three rounds of inspection conducted by drivers, escorts, safety department, and security of producers.

All the inspection and maintenance records copies of Zhenghua vehicles have been kept and updated the changes to Shuguang Transport. The records have been provided for review.

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Shuguang Transport has established procedures to verify the adequacy of the equipment for the load it must bear. There are procedures for maintenance that include compliance with annual inspection process for vehicle certification for the transport of dangerous goods issued by the local government. Part of the inspection process is to confirm vehicles are meeting manufacturer’s specifications for load bearing.

Pre-inspection records denote the load bearing capacity and actual load. A review of completed convoy documentation confirmed shipments are within the load capacity of the vehicles.

Zhenghua shall follow the same process as Shuguang Transport.

The pre-departure checks compare design capacity with actual load together with other required items and recorded in the inspection logbook. A review of the completed logbook confirms that loads were within the capacity of the vehicles.

There are two types of vehicles use for transport of cyanide, ridged flatbed trucks for the transport of small consignments (9.6, 9.7 tonnes) of solid cyanide. Otherwise prime movers and trailers are used for consignments of solid. The vehicles tank of 28 m³ are used for consignments liquid cyanide. Shuguang Transport has different containers sizes, but the maximum load for a single container and truck does not exceed vehicle capability. Shuguang Transport operates with a single container load per vehicle.

Zhenghua follows the same process as Shuguang Transport. Shuguang Transport does subcontract Anqing Zhenghua Hazardous Chemical Transportation Co. Ltd for liquid cyanide road transportation which commenced in April of 2019.

The contract with Zhenghua has specified that Zhenghua shall ensure the transport equipment is suitable for the cyanide shipment.

3.1.4 Transport Practice 1.4

Develop and implement a safety program for transport of cyanide.

in full compliance with

Shuguang Transport is in substantial compliance with **Transport Practice 1.4**
 not in compliance with

Summarise the basis for this Finding/Deficiencies Identified:

Shuguang Transport is in FULL COMPLIANCE with Transport Practice 1.4 requiring the operation develop and implement a safety programme for transport of cyanide.

Shuguang Transport has procedures in place so that cyanide is transported in a manner that maintains the integrity of the producer’s packaging.

The Anhui Anqing Shuguang Chemical Company Co., Ltd. is responsible for the packaging and labelling of the cyanide product various manners:

- Solid product into plastic bags and then into metal barrels that are locked and sealed (50 kg). These are package and locked in a shipping container or lockable vehicle hold.
- Solid product into plastic bags and then into metal barrels that are locked and sealed (380 kg). These are package and locked in a shipping container or lockable vehicle hold.

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- Solid product into plastic bags and then into wooden crates which are nailed and strapped to form an intermediate bulk container (IBC) (1 tonne). These are then packaged and locked in a shipping container.
- Liquid product is decanted into a vehicle tankers of 28 m³ capability and seals applied to the cam locks on the valves.

Once the product is packed in the bulk container the transporter takes over. There are procedures in place to regularly check the integrity of packaging during transport and report damage or spillage. There are single use seals placed on the door and on the tanker valves are checked regularly throughout transport. The unique serial number is recorded on the check sheets. Waybills indicating seal is intact at point of delivery.

Zhenghua is required to abide by Shuguang Transport procedures that have been implemented to maintain the integrity of the cyanide containers.

Placards and signage used to identify the shipment as cyanide meet local and international standards. Diamonds placed at front and rear of the vehicle identify load as cyanide and the containers also have labelling that identifies the contents of the container. An inspection of the vehicles and interviews with drivers confirmed that placarding is used.

Placards and signage used on Zhenghua's vehicles are in accordance with Shuguang Transport procedures.

Shuguang Transport has implemented a safety programme for cyanide transport that includes:

- Vehicle inspections prior to each departure are undertaken by the driver and escorts. Inspections include mechanical roadworthiness and particular items. The vehicle coordination will verify the inspection results. After loading, the driver, escorts, security and warehouse of production plant will inspect again prior to each departure/shipment. A monthly plan is prepared to enable compliance with the servicing intervals. Maintenance records indicate routine basic maintenance is regularly performed and there are pre-convoy checks. In addition to the internal preventative maintenance plan there is a 90-day third party inspection and servicing with certificate for government compliance purposes.
- There are daily driving limits applied depending on the distance travelled with increasing frequency/duration of breaks with increased distance. There are two drivers per vehicle to allow for rest and rotation of driving and the vehicle must be parked up between 1 am and 5 am. The driving times is monitored via the Beidou GPS system on Site, which provides real-time monitoring. In practice, for the current routes the hours driven are well below the limits set.
- Solid cyanide product is packaged by the manufacturer into metal drums or IBCs which are in turn loaded into sea container. The sea containers are secured to vehicles by twist locks.
- Liquid cyanide is filled into vehicle tanks of 28 m³ and these are checked prior to departure.
- Procedure SGGY/Z-11-2018 provides the measures for modifying or suspending if conditions such as severe weather or civil unrest are encountered. The procedure outlines the actions to take and who must be contacted.

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- Provisions on control and management during cyanide transportation, which specifies that drivers and guards involved in cyanide transport must not take alcohol or drugs which could affect safe driving, including hypnotic drugs affecting the nervous system, nausea and vomiting drugs, allergy drugs, analgesic drugs, stimulants, anti-hypertensive drugs and epilepsy drugs. The drivers are observed by the security personnel to assess fitness for work.
- Records are maintained that the above activities have been conducted. Maintenance records, inspection and convoy records were sampled from the audit period and found to be complete.

Zhenghua is required to abide by Shuguang Transport systems and procedures described above in order to be engaged for the transportation of liquid cyanide.

Shuguang Transport does subcontract Zhenghua for liquid cyanide transport or handling. Zhenghua operates under the procedures and process of Shuguang Transport to ensure that the transport equipment is suitable for cyanide road transportation. Zhenghua has arranged dedicated vehicles for Shuguang Transport as well as drivers. If vehicles or drivers need to be changed, a new due diligence will be conducted by Shuguang Transport.

Shuguang conducts due diligence audit to Zhenghua biannually, which includes qualification, capability and performance review.

3.1.5 Transport Practice 1.5

Follow international standards for transportation of cyanide by sea and air.

in full compliance with

Shuguang Transport is in substantial compliance with **Transport Practice 1.5**
 not in compliance with

Summarise the basis for this Finding/Deficiencies Identified:

Transport Practice 1.5 requiring the operation follow international standards for transportation of cyanide by sea and air is NOT APPLICABLE to Shuguang Transport.

Shuguang Transport does not and does not intend to transport consignments of cyanide by sea or air within the scope of this audit.

3.1.6 Transport Practice 1.6

Track cyanide shipments to prevent losses during transport.

in full compliance with

Shuguang Transport is in substantial compliance with **Transport Practice 1.6**
 not in compliance with

Summarise the basis for this Finding/Deficiencies Identified:

Shuguang Transport is in FULL COMPLIANCE with Transport Practice 1.6 requiring the operation track cyanide shipments to prevent losses during transport.

Shuguang Transport vehicles have the means to communicate with the transport company, cyanide producer and emergency responders. There are a range of communication systems available and the management system defines the communication methods. All vehicles carry the emergency response plan which includes telephone numbers for each province and hospitals on the transport route.

The primary means of communication is via mobile phone between vehicles and between the convoy and the office. Beidou GPS is used to track progress of the convoy throughout the journey.

The escorts will contact the transport coordinator in the event of an emergency and the coordinator will handle communication with the customer (mine) and supplier/producer.

There is a 24-hour manned contact centre that the drivers can contact to initiate emergency response. The contact details for local police and fire authority are also available to the drivers.

Zhenghua adopts the same communication system of Shuguang Transport and follow the reporting and communication process of Shuguang Transport.

Shuguang Transport does periodically test communication equipment to ensure it functions properly. Checks are completed prior to dispatch as part of pre-departure inspections. Mobile (cell) phones are checked and the Beidou GPS tracking system on a group of trucks are checked at random each day to confirm the tracking system is working. Mobile phone numbers are recorded on a register of contacts

Zhenghua’s communication equipment is tested and inspected by Shuguang Transport prior to departure.

Shuguang Transport has assessed blackspots along its transport routes. There is good mobile coverage along current transport routes with blackouts identified in tunnels. The blackout areas are relatively short distances (1 km) and there is GPS tracking of the vehicles.

Shuguang Transport has systems and procedures to track the progress of cyanide shipments which includes Zhenghua’s transportation. There are Beidou GPS tracking systems installed on the vehicles, the Beidou system is linked to the province government tracking system and Shuguang Transport has its own tracking system that provides information on the vehicles performance including speed and fuel consumption, and the government will check the duty via message response.

The position the vehicles is tracked in real time and the transport coordinator also makes daily contact with the convoy.

Shuguang Transport has implemented inventory controls to prevent the loss of cyanide during shipment. Both the solid and liquid cyanide vehicle dispatch records list provide a register of cyanide delivered, amount and customer, scheduled and actual delivery. This register is based on the completed delivery sheets.

Each vehicle carries a delivery confirmation docket that includes date of vehicle, cargo, weight, unique seal number, signature of receiver (on arrival), sales and coordinator (on dispatch). Seals are applied to the iso-container or shipping container with unique serial numbers.

Shuguang Transport has procedures for GPS tracking and checking of physical security (seals) on the route to provide inventory control.

Zhenghua adopts the inventory controls of Shuguang Transport.

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Shipping records indicating the amount of cyanide in transit and Safety Data Sheets are available during transport. A review of delivery documentation together with pre-departure security checks confirmed that the amount of cyanide on each vehicle is recorded.

There is a copy of the emergency response plan with the SDS booklet held within the cabin of each vehicle, which includes Zhenghua's vehicles.

Shuguang Transport does subcontract Zhenghua for liquid cyanide transport or handling. Zhenghua operates under the procedures and process of Shuguang Transport including tracking and inventory control. Records for Zhenghua routes were reviewed, which confirmed that Shuguang Transport processes were followed and complied with.

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3.2 Principle 2 – Interim Storage

Design, construct and operate cyanide trans-shipping depots and interim storage sites to prevent release and exposures.

3.2.1 Transport Practice 2.1

Store cyanide in a manner that minimises the potential for accidental releases.

in full compliance with

Shuguang Transport is in substantial compliance with **Transport Practice 2.1**

not in compliance with

Summarise the basis for this Finding/Deficiencies Identified:

Transport Practice 2.1 that requires transporters design, construct and operate cyanide trans-shipping depots and interim storage sites to prevent release and exposures is NOT APPLICABLE to Shuguang Transport.

Within the scope of this audit, there are no trans-shipping depots or interim storage sites, as defined in the audit protocol.

Storage in transit may occur at the event that transport is delayed. In this event, containers will not be removed from the trailers and the vehicles will only be parked for a maximum of 24 hours.

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3.3 Principle 3 – Emergency Response

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

3.3.1 Transport Practice 3.1

Prepare detailed Emergency Response Plans for potential cyanide releases.

in full compliance with

Shuguang Transport is in substantial compliance with

Transport Practice 3.1

not in compliance with

Summarise the basis for this Finding/Deficiencies Identified:

Shuguang Transport is in FULL COMPLIANCE with Transport Practice 3.1 requiring the operation prepare detailed Emergency Response Plans for potential cyanide releases.

Shuguang Transport has established two emergency response and rescue plans (ERPs). The ERP SGGY/Z-20-2018 include the following information:

- Introduction
- Hazard and Risk Analysis
- Emergency Organization and Responsibility
- Emergency Protection System
- Accident Prevention and Reporting
- On-site Treatment Measures for Accidental Cyanide Spill
- Emergency Termination
- Accident Communication
- Emergency Support
- Emergency Security
- Emergency Response Capacity Assessment
- Emergency Mock Drills
- Rewards and Accountability.

The ERP specifies the actions required by the Shuguang Transport personnel and external emergency responders in event that an emergency occurs. A copy of the Plan is kept in each vehicle that is used to transport cyanide which includes Zhenghua’s vehicles.

Zhenghua’s designated drivers for Shuguang have the same responsibilities as Shuguang Transport’s drivers. Additionally, they also need to report to Zhenghua if emergency occurs.

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The ERPs are appropriate for the transportation route and Shuguang Transport does not have an interim storage facility.

The ERP SGGY/Z-19-2018 includes details on the actions to be taken in the event of:

- Vehicle breakdown or traffic accident
- Spill on parking lots
- Spill in mountainous areas
- Spill to river
- Spill on the highways, road, freight station, bridge, port, tunnel and storage areas
- Extreme weather accident
- Riot and thievery incidents
- Soil remediation procedure
- Cyanide poisoning medical treatment.

The ERPs detail the emergency numbers for Police, Fire Authority and ambulance. The ERPs also include contact details for the hospitals along the route. The ERP response actions are based on the scenarios developed from the hazards identified through the route assessment process.

The requirement was verified through discussion with the EHS Manager and review of the ERP area of application and document review. The ERPs do consider both physical and chemical form of cyanide.

The sodium cyanide and potassium cyanide in 50 kg or 380 kg steel drums or 1 tonne IBCs is packed in polyethylene supersacks enclosed in plastic and then stored in drum or IBC (e.g. 50 kg steel drums, 380 kg or 1,000 kg plywood containers). The liquid sodium cyanide is in vehicle tanker of 28 m³ capability of Zhenghua. These are transported in sealed shipping containers and vehicle tanks. The ERPs are aligned with this method of transportation of cyanide.

ERP SGGY/Z-20-2018 also provides guidance on response actions and spill treatment principles for anticipated emergency situations. The incident scenarios are considered in ERP SGGY/Z-19-2018.

A storage facility emergency response plan has not been developed as cyanide is not stored at any interim storage facility along the transportation routes.

Section 6.4.7 of the ERP SGGY/Z-20-2018 states "When sodium cyanide is released into water body, it is prohibited to use bleaching powder, hydrogen peroxide, sodium hypochlorite, or ferrous sulfate etc. chemical to do water disinfection".

Zhenghua shall follow the same process as Shuguang Transport.

The ERPs do consider the method of transport for Shuguang Transport and Zhenghua. ERPs is based on the road transportation of solid cyanide in drums or IBCs within a shipping container per vehicle or liquid cyanide within vehicle tanker of 28 m³ capability of Zhenghua. Emergency scenarios and response actions are based on the method of transport and the type of packaging.

The ERPs do consider the aspects of transport infrastructure for Shuguang Transport and Zhenghua. The ERPs response actions are based on the scenarios developed from the hazards identified through the route assessment process. The ERP SGGY/Z-19-2018 has response actions for incidents on different parts of the road infrastructure such as highways, tunnels, or locations close to surface waters.

The ERPs do consider the design of the transport vehicle for Shuguang Transport and Zhenghua. ERPs are based on the road transportation of solid cyanide in drums or IBCs within a shipping container per vehicle of Shuguang Transport or liquid cyanide within 28 m³ tanker of Zhenghua.

The ERP SGGY/Z-19-2018 does include descriptions of response action for 16 anticipated emergency situations.

The ERP SGGY/Z-19-2018 details response for solid and liquid release and details the actions for the driver and escort at the scene and the emergency response team depending on the scale of the incident.

Zhenghua’s designate drivers for Shuguang have the same responsibility as Shuguang Transport’s drivers. Additionally, they also need to report to Zhenghua if emergency occurs.

The ERP SGGY/Z-20-2018 does identify the roles of outside responders including Police, Fire Authority and medical facilities. In the event of an incident the driver’s first duty is to contact emergency services. The roles of the emergency services are detailed as follows:

- Transport Police are responsible for keeping the public away from the incident scene and traffic control.
- The Police are responsible for crowd control and communication with media and the public
- The Fire Authority is responsible for rescue, clearing the scene and cleaning up spills. The Shuguang emergency response team would work with the Fire Authority in cleaning up cyanide.
- Local hospitals and ambulance are responsible for treating cyanide exposure at the scene and in hospital.

3.3.2 Transport Practice 3.2

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

in full compliance with

Shuguang Transport is in substantial compliance with

Transport Practice 3.2

not in compliance with

Summarise the basis for this Finding/Deficiencies Identified:

Shuguang Transport is in FULL COMPLIANCE with Transport Practice 3.2 requiring they designate appropriate response personnel and commit necessary resources for emergency response.

Shuguang Transport does provide emergency response training of appropriate personnel. Training is provided on a monthly basis and topics include:

- Driver briefing on cyanide transport controls
- Regulations on dangerous chemical transport
- Safety management system

- Duties and operations procedures
- Specification dangerous chemicals and personal protective equipment.
- Seasonal driving risks
- Firefighting knowledges
- Medical rescue knowledges (poisoning, chemical burnt, wound, heatstroke)
- Vehicles maintenance.

A review of driver training files and the annual training plan confirmed that drivers received training in emergency response. Interviews with drivers confirmed that they have been trained in the emergency response procedures and were aware of the hazards cyanide presents.

Zhenghua's designate drivers for Shuguang have the same responsibilities and are provided with the same training as Shuguang Transport's drivers.

In addition to the transport company resources, the Shuguang Emergency Response Team that are part of parent company and production facility are available to assist. The production facility (Anhui Anqing Shuguang Chemical Co., Ltd. is certified under the Code, <https://www.cyanidecode.org/sites/default/files/pdf/AnqingShuguangProdSAR2017.pdf>

Shuguang Transport does provide descriptions of the specific emergency response duties and responsibilities of personnel. The duties of the two drivers includes:

- Calling the emergency services
- Clearing the public from the scene
- Contacting Shuguang Transport's control centre
- Administering first aid
- Assisting emergency services
- Responding, containing and cleaning up small scale spills (Level 1 incidents).

The emergency response team (ERT) are deployed and will assist emergency services at the scene for any accident. The plan outlines the responsibilities of the ERT, and the government will be involved.

The emergency contact centre is responsible for contacting the Managing Director who assumes responsibility for liaising with the government and other stakeholders.

Zhenghua's designate drivers for Shuguang have the same responsibilities as Shuguang Transport's drivers. Additionally, they also need to report to Zhenghua if emergency occurs.

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There is a list of emergency response equipment that should be available during transport. The Emergency Response Equipment List in the ERP (within emergency rescue truck) includes: Anti-cyanide injection (formul provided by Chinese military), goggles, eye wash bottles, high-waist rain boots, plastic gloves, plastic cloth, rain prevention tarp, empty engine oil container, noctilucent warning line, warning lampstand, etc. Equipment prepared in solid cyanide vehicle includes hard hat, anti-poison mask, anti-poison respirator, eye wash bottle, raincoat, rain pants, camouflage clothing, reflective vest, high-waist rainboots, towel, detergent, arm-long plastic glove, goggles, plastic cloth, plastic bags, warning line, warning lampstand, head light, emergency medical box, etc.

A copy of the Cyanide Transport Accident and Response and Rescue Plan is kept in each vehicle that is used to transport cyanide.

Pre-inspection records (checklist) of shipping containers includes:

- Emergency response equipment
- Vehicle condition
- Inspector signature.

Zhenghua follows the same rules of Shuguang Transport.

Shuguang Transport has the necessary emergency response and health and safety equipment available, including personal protective equipment during transport.

A selection of transport vehicles was inspected, and the necessary emergency response equipment was found to be present and in serviceable condition and a copy of the current ERP was available.

An inspection of the Emergency Response vehicle found the necessary response equipment was present and in serviceable condition and a copy of the current ERP was available.

A review of pre-departure checklists and interviews confirmed checks are performed and equipment is available during transport.

Zhenghua operated under the management processes of Shuguang Transport.

Shuguang Transport provides initial and periodic refresher training in emergency response procedures including implementation of the emergency response plan.

Shuguang Transport drivers attend training specifically for emergency response annually with the course run twice to capture the workforce as well as Zhenghua designated drivers. A review of driver training files confirmed that drivers attended the training and that the training was conducted on an annual basis. Interviews with drivers confirmed that they were aware of the actions to take in the event of an emergency.

In addition to the transport drivers, the emergency response team employed by Anhui Shuguang Transport who are certified under the Code are available to attend to incidents.

There are procedures to inspect emergency response equipment to assure its availability when required. The inspections are completed as in the pre-departure checks and there is a checklist that details each item of emergency response equipment that is signed by the driver (including Zhenghua designated drivers) and safety supervisor. A review of completed checklists and interviews with drivers confirmed that procedures are in place and being followed.

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Shuguang Transport does subcontract Zhenghua for liquid cyanide transport or handling. Zhenghua operates under the procedures and process of Shuguang Transport for driver training, equipment checks and response actions.

3.3.3 Transport Practice 3.3

Develop procedures for internal and external emergency notification and reporting.

in full compliance with

Shuguang Transport is in substantial compliance with **Transport Practice 3.3**

not in compliance with

Summarise the basis for this Finding/Deficiencies Identified:

Shuguang Transport is in FULL COMPLIANCE with Transport Practice 3.3 requiring that they develop procedures for internal and external emergency notification and reporting.

There are procedures and current contact information for notifying the shipper, the receiver/consignee, regulatory agencies, outside response providers, medical facilities and potentially affected communities in case of an emergency. The contact information is provided within the ERPs and includes contact information for emergency services and hospitals along the route.

The drivers are responsible for contacting Shuguang control centre who will contact the Managing Director. The managing director is responsible for liaising with the government and other stakeholders including the mine and supplier. This escalation process together with contact details is provided in the ERPs. Personnel interviewed described the escalation process provided in the ERPs and contact numbers are updated during the annual route assessment process.

Zhenghua’s designated drivers for Shuguang have the same responsibility as Shuguang Transport’s drivers. Additionally, they also need to report to Zhenghua if emergency occurs.

Systems are in place to ensure that internal and external emergency notification and reporting procedures are kept current. The ERPs are reviewed on annual basis and personnel interviewed confirmed that the contact details are checked as part of the review and updated as needed.

Zheghua operates under management processes of Shuguang Transport.

3.3.4 Transport Practice 3.4

Develop procedures for remediation of releases that recognise the additional hazards of cyanide treatment.

in full compliance with

Shuguang Transport is in substantial compliance with **Transport Practice 3.4**

not in compliance with

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Summarise the basis for this Finding/Deficiencies Identified:

Shuguang Transport is in FULL COMPLIANCE with Transport Practice 3.4 requiring that they develop procedures for remediation of releases that recognise the additional hazards of cyanide treatment.

There are procedures for remediation, such as recovery or neutralisation of solutions or solids, decontamination of soils or other contaminated media and management and/or disposal of spill clean-up debris.

The ERPs detail the actions to be taken in the event of a solid or liquid cyanide spill. The ERP provides that cyanide is to be collected and placed back into container or tanker and taken back to the production facility for disposal.

The ERPs describe neutralisation techniques using hydrogen peroxide for spills onto soils or ground. It provides the amount of hydrogen peroxide per metric tonne of spilt cyanide. All neutralised soil is to be excavated and taken back to the production facility for disposal.

The ERP does prohibit the use of chemicals such as sodium hypochlorite, ferrous sulphate and hydrogen peroxide to treat cyanide that has been released into surface water.

Section 6.4.7 of the ERP SGGY/Z-20–2018 states “When sodium cyanide is released into water body, it is prohibited to use bleaching powder, hydrogen peroxide, sodium hypochlorite, or ferrous sulfate etc. chemical to do water disinfection”.

3.3.5 Transport Practice 3.5

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

in full compliance with

Shuguang Transport is in substantial compliance with

Transport Practice 3.5

not in compliance with

Summarise the basis for this Finding/Deficiencies Identified:

Shuguang Transport is in FULL COMPLIANCE with Transport Practice 3.5 requiring the operation periodically evaluate response procedures and capabilities and revise them as needed.

There are provisions for periodically reviewing and evaluating the Plan’s adequacy and they are being implemented. The ERPs have been updated in 2018 and mock drills have been undertaken as planned over the three years period. The mock drill process includes a debrief process and review of what went well and opportunities to improve response.

Section 12.3 of ERP SGGY/Z-20-2018 requires annual review of the ERP, if any, for the applicable state and local laws, internal and/or external contact numbers, roles and responsibilities of the emergency response team, and any issues identified during the mock drills that requires updates for the ERP. The latest version of the ERPs reviewed at the time of the site visit was dated June 2018.

There are provisions for periodically conducting mock emergency drills and they are implemented. The operation does conduct emergency response drills annually for both liquid and solid cyanide related scenarios. A review of mock drill reports and interviews confirmed that mock drills have been completed in accordance with commitments.

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There is a procedure to evaluate the ERP's performance after its implementation and revise if necessary. The ERP details that the plan will be updated after an incident or if there is a change in process or equipment. Following the annual mock drill, a review of the ERP is undertaken and updated as required.

There have been no incidents involving cyanide transport during the audit period.

4.0 IMPORTANT INFORMATION

Your attention is drawn to the document titled – “Important Information Relating to this Report”, which is included in Appendix A of this report. The statements presented in that document are intended to inform a reader of the report about its proper use. There are important limitations as to who can use the report and how it can be used. It is important that a reader of the report understands and has realistic expectations about those matters. The Important Information document does not alter the obligations Golder Associates has under the contract between it and its client.

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Golder Associates Pty Ltd



Mike Woods

ICMC Lead Auditor and ICMC Transportation Expert

HH/MCW/ds

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APPENDIX A

Important Information

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