



June 2015

INTERNATIONAL CYANIDE MANAGEMENT CODE – CYANIDE SUPPLY CHAIN AUDIT

Orica Australia Limited Latin America Supply Chain Amendment, Summary Audit Report

Submitted to:
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(ICMI)
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REPORT

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APPENDICES

APPENDIX A

Limitations



1.0 INTRODUCTION

1.1 Operational Information

Name of Transportation Facility:	Orica Latin America Supply Chain
Name of Facility Owner:	Not Applicable
Name of Facility Operator:	Orica Australia Pty Ltd
Name of Responsible Manager:	Alexis Soto, Cyanide Lead - Americas
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1.2 Description of Operation

1.2.1 Sodium Cyanide Transportation


The Latin America Supply Chain covers the transportation of containerised intermediate bulk containers (IBCs) from the Port of Brisbane, Melbourne, Busan and Shanghai to the Ports of Callao, Peru; Buenos Aires, Argentina; Puerto Deseado, Argentina; Santos, Brazil; Puerto Angamos, Punta Arenas, Chile; and Veracruz, Mexico using shipping contractors Maersk Australia Pty Ltd (Maersk), Hamburg SUD Group (Hamburg SUD), MSC Shipping (MSC) and Naviera Ultrana Ltda Transmares Division (Transmares). Within South America road contractors are contracted by Orica to transport cyanide from the Port of Callao, Peru to the Orica Production Facility in Ventanilla with subsequent transportation by road to gold mines in Peru and Chile. Within Venezuela, Argentina, Brazil and Chile solid sodium cyanide is transported by these road contractors to end point users.

The transportation of cyanide along the Orica's Latin America Supply Chain to gold mining customers in Peru, Chile, Argentina, Venezuela and Brazil is coordinated from Orica's Yarwun cyanide production facility (Yarwun Facility).

1.2.2 Orica Australia Limited

Orica is an Australian-owned, publicly listed company with global operations. Orica is managed as discrete business units that produce a wide variety of products and services. The Mining Chemicals unit is based in Australia and exports products to Asia, Africa and the Americas, as well as supplying the local Australian industry. The unit's main product is sodium cyanide (cyanide), which is manufactured at Orica's Yarwun Facility in Queensland, Australia. Orica Mining Chemicals is the world's second largest producer of cyanide.

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1.2.2.1 Yarwun Facility

Orica's Yarwun Facility, which is located at Yarwun, approximately eight kilometres (km) by road from Gladstone, Queensland, commenced operations in 1989 and is engaged in the manufacture of cyanide (both solid and liquid forms), ammonium nitrate, nitric acid, chlorine, sodium hydroxide, sodium hypochlorite, hydrochloric acid and expanded polystyrene balls.

Solid sodium cyanide is packaged in either sparge isotainers, which have a maximum gross weight of 26 tonnes, or IBCs, which in turn, are packed into a container. A maximum of 20 IBCs can be packed into a freight container with a maximum gross weight of 28 tonnes. Liquid cyanide is packaged into isotainers with a maximum gross weight of 26 tonnes.

Cyanide manufactured at the Yarwun Facility is used in gold mining operations within Australia, Asia, Africa, Papua New Guinea, New Zealand, Solomon Islands and South America.

Orica's Yarwun Facility was re-certified as being in full compliance with the Code on 29 October 2013.

1.2.2.2 Ventanilla Transfer Facility

Solid manufactured at the Yarwun Facility and destined for the Latin America Supply Chain is only packaged in intermediate bulk containers (IBCs), which are in turn packed into a container. The Ventanilla Bag to Bulk Transfer Facility (Transfer Facility) is used by Orica to repack cyanide from IBCs into sparge isotainers. At the time of the audit, only Minera Yanacoocha in Peru utilised Orica cyanide transported within sparge isotainers.

Orica's Ventanilla Bag to Bulk Transfer Facility was recertified as being fully compliant with the Code on 11 January 2012.

1.2.2.3 Anhui Anqing Shuguang Chemical Co Ltd Production Facility

Anhui Anqing Shuguang Chemical Co Ltd Production Facility (Shuguang) is a large enterprise manufacturing high-purity solid sodium cyanide in the People's Republic of China. Shuguang has a production capacity of 50 000 tonnes per annum, and services both domestic Chinese and export markets in South America and Asia.

Orica purchases solid cyanide from Shuguang packaged in 1 000 kg IBCs packed into 20' general purpose shipping containers. The shipping containers are then transported by road to the Port of Shanghai by Anqing Shuguang Supply, Sales and Transportation Co Ltd, a Code certified transporter.

Shuguang was recertified as being fully compliant with the Code on September 12, 2013.

1.2.2.4 Tongsoh Petrochemical Corporation, Ltd

The Tongsoh Petrochemical Corporation, Ltd (Tongsoh) plant is located in Ulsan, South Korea. The sodium cyanide plant of Tongsoh, since it was established in 1985, has expanded to a current production capacity of approximately 70,000t per annum.


Tongsoh was recertified as being fully compliant with the ICMC on March 3, 2014.

1.2.3 Marine Transportation

1.2.3.1 Maersk Australia Pty Ltd

Maersk, headquartered in Geneva, Switzerland, operates a fleet of containers vessels with worldwide shipping coverage. The fleet consists of more than 500 container vessels with the capacity to handle more than 1 900 000, 20 foot containers. Maersk operates a container booking and tracking system called the Global Customer Service System (GCSS). The system is also the management tool for handling the dangerous goods cargo for the proper control of the stowage of hazardous cargo.

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All of Maersk's vessels are registered by the Lloyd's Register Group, which provides classification and certification of ships, and inspects and approves important components and accessories. This registration is a requirement of the Australian Customs Act.

Orica uses Maersk for its international shipping to South America due to its selection of services available from the Ports of Brisbane, Melbourne, Busan and Shanghai.

1.2.3.2 Hamburg SUD Group

Hamburg SUD is a carrier service providing international shipping of containers on a fleet of their container vessels. Containers containing solid sodium cyanide are placed and secured on their vessels at the loading port (Ports of Brisbane, Melbourne, Busan and Shanghai) by the stevedoring company and removed at the port of destination by the stevedoring company at that port.

An export or international route will include the following:

- Orica production, packaging and despatch
- Road and rail transportation to port
- International shipping to destination port
- Road transportation to customer (mining operation).

Orica uses Hamburg SUD for its international shipping to South American ports due to its selection of services available and its regular shipping schedule from Ports of Brisbane, Melbourne, Busan and Shanghai.

1.2.3.3 MSC Shipping

MSC is a carrier service providing international shipping of containers on a fleet of their container vessels. Containers containing solid sodium cyanide are placed and secured on their vessels at the loading ports (Ports of Brisbane, Melbourne, Busan and Shanghai) by the stevedoring company and removed at the port of destination by the stevedoring company at that port.

MSC is the leading provider of direct port calls, serving the 6 continents and calling at 316 ports through 200 direct and combined weekly liner services. MSC is one of the few carriers able to offer worldwide coverage with one MSC bill of lading, allowing the rapid movement of goods through dedicated transshipment hubs. MSC therefore provides swift connections and efficient on-carriage services.

Orica mainly uses MSC Shipping for its international shipping due to its selection of services available from the Ports of Brisbane, Melbourne, Busan and Shanghai.


1.2.3.4 Naviera Ultrana Ltda Transmares Division (Transmares)

Founded in 1969, Transmares is a transport company dedicated to the transport of bulk cargo, break bulk and containers within South America. Through a multipurpose service, Transmares connects ports along the west coast of South America, while in Chile cabotage service is offered for both container and bulk cargoes and also feeding to the main exporting and importing container lines. Transmares, via its technical administrator Humboldt Ship Management, is accredited under ISO 9001 and ISO 14001.

Within Chile, Transmares services the ports of San Antonio, San Vicente, Chacabuco, Punta Arenas, Angamos and Arica. From Chile, Transmares also services ports in Peru, Ecuador and Columbia.

Orica mainly uses Transmares for its shipping due to its selection of services available from ports within South America.

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1.2.4 Ports

1.2.4.1 Port of Shanghai, China

The Port of Shanghai is used by Orica for the export of sodium cyanide from China to South America and is situated at the middle of the 18 000 km-long Chinese coastline where the Yangtse River flows into the sea. It is the leading port in the T-shaped waterway network composed by the Yangtse River and the coastline, and is also China's largest comprehensive port and one of the country's most important gateways for foreign trade.

Shanghai International Port (Group) Co. Ltd. (SIPG) is the exclusive operator of all the public terminals in the Port of Shanghai. In total, SIPG operates 125 berths on a total quay length of approximately 20 km, among which 82 of these berths can accommodate vessels of 10 000 dwt class or above. In addition to the container terminal, SIPG also owns public bulk, breakbulk, specialized Ro/Ro and cruise terminals. SIPG operates warehouses with a total area of 293 000 m², storage yards with a total area of 4 721 000 m², and owns 5143 units of cargo handling equipment.

There are three major container port areas operated by SIPG in the Port; Wusongkou, Waigaoqiao and Yangshan. The Port of Shanghai Harbour Master oversees all port operations. These include:

- Management of port protocols for vessel docking
- Entry to port by Port Pilots
- Vessel approaches
- Shipping activities to port activities changeover.

Stevedoring operations include:

- Handling of full/empty containers on and off vessels, container storage areas for general cargo, port security, etc.
- Management programmes for container placement and movement including identification of hazardous cargoes.

Orica uses Hamburg SUD, Maersk and MSC to transport its shipments from the Port of Shanghai in China.

1.2.4.2 Port of Busan, South Korea


The Port of Busan is used by Orica for the export of sodium cyanide from South Korea to Africa. It is located at the mouth of the Naktong River at the southeastern tip of the Korean peninsula, facing the Sea of Japan. It is approximately 50 kilometres south-west of the Port of Ulsan.

The Port of Busan is Korea's main port and is the largest transshipment port in north-east Asia and the fifth busiest container port in the world. The Port of Busan handles approximately 40% of Korea's overseas cargo and 80% of its container cargo. The Port of Busan currently handles approximately 14 million twenty-foot equivalent units (TEUs) of containerized cargo per annum. The Busan Port Authority (BPA) is responsible for developing, managing and operating the Port of Busan.

The Port of Busan is made up of five components:

- South Port
- North Port

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- Central Port
- Gamcheon Port
- Busan New Port.

During periods of transit at the Port of Busan containers of hazardous materials, including solid sodium cyanide, are stored at the Korail Interim Storage Facility in a dedicated dangerous goods area with an on-site security presence, including CCTV system to monitor container movements as well as anyone who may be in the storage facility. All container movements in and out of the transit storage facility are monitored using a bar code system operated from a central control room.

1.2.4.3 Port of Callao, Peru

The Port of Callao is the largest port in Peru and is where all solid sodium cyanide from Orica Mining Chemicals enters for the Peruvian market place.

The Port of Callao is protected by two artificial breakwaters. The northern breakwater is approximately 1 300 metres in length and the southern breakwater is approximately 400 metres in length. The opening between the two breakwaters is about 180 metres in width. Pilots board vessels about one mile off the port entrance. The port has a good approach and navigation aids. There is a "traffic separation scheme" which is well marked on navigation charts. The access channel is well marked by sea buoys and lights on each breakwater.

Orica uses Hamburg SUD, Maersk and MSC to transport its shipments to the Port of Callao in Peru.

The "Terminal Portuario Callao" TPC is owned and operated by "Empresa Nacional de Puertos" ENAPU S.A. (a state company) and operated by two dealers: APM Terminals and DP World. There are 16 berths for grains, general, bagged and liquid cargoes, lubricating and vegetable oils, mineral concentrates, containerised cargo, discharge of crude oil, clean products, propane gas, chemicals and water and passengers. There are seven open storage zones for the use of imported goods.


The Port of Callao Harbour Master oversees all port operations. This includes:

- Management of port protocols for vessel docking
- Entry to port by Port Pilots
- Vessel approaches
- Shipping activities to port activities changeover.

Stevedoring operations include:

- Handling of full/empty containers on and off vessels, container storage areas for general cargo, port security, etc.
- Management programmes for container placement and movement including identification of hazardous cargoes.

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1.2.4.4 Port of Buenos Aires, Argentina

The Port of Buenos Aires is located in Puerto Nuevo, Buenos Aires in Argentina is operated by Terminales Río de la Plata (TRP). TRP operates the port 24 hours a day, 365 days a year. The port includes a 430 000 m² operating areas and has a handling capacity of 740 000 TEUS/year.

The berths for full container ships include a 465 m long berth for vessels up to 300 m long and a 680 m long berth for two vessels of up to 300 m long. There are also two berths for general cargo, project cargo and feeder vessels. The port has five post-Panamax gantries, three Panamax mobile gantries, two mobile Gottwald cranes and 25 rubber tyred gantry cranes.

TRP has an integrated management system which is certified against international standards for quality (ISO 9001:2008), environment (ISO 14001:2004) and security for the supply chain (ISO 28000:2007).

Orica uses Hamburg SUD, Maersk and MSC to transport its shipments to the Port of Buenos Aires.

1.2.4.5 Port of Puerto Deseado, Argentina

The Port Authority of Puerto Deseado is the controlling authority for the Port of Deseado in Argentina. The port is situated within a natural coastal harbour and possesses mobile and floating cranes, as well as a medium sized dry dock.

Orica uses Hamburg SUD, Maersk and MSC to transport its shipments to the Port of Deseado.

The Port of Puerto Deseado Harbour Master oversees all port operations. This includes:

- Management of port protocols for vessel docking
- Entry to port by Port Pilots
- Vessel approaches to the port
- Shipping activities to port activities changeover.

Stevedoring operations include:

- Handling of full/empty containers on and off vessels, container storage areas for general cargo, port security, etc.
- Management programmes for container placement and movement including identification of hazardous cargoes.


1.2.4.6 Port of Santos, Brazil

The Ministry of Ports in Brazil is the controlling authority for the Port of Santos. The port is used for Orica's importation of sodium cyanide into Brazil due to its location in regards to the end user destination and the facilities available.

The harbor is formed on the east by the island of Santo Amaro and on the west by the island of Sao Vicente. In calm and completely protected channel and extends from the bar to the 'Macuco Novo' quay. Approximately 10 800 m of dock space is available, of which 6 700 m is for general cargoes.

The port has 36 warehouses with a storage capacity of 650 000 t and 39 external storage areas with a capacity of 2 000 000 t. The port also has cold storage and liquid (flammable and chemical) storage facilities.

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There is a modern container terminal at Conceicaozinho on the left bank of the river, on the opposite side to the dock system. It covers an area of 32 ha and is equipped with five container gantry cranes of 35 t capacity on the quay and various yard gantries, front handlers, tractors and trailers etc. There are three large warehouses for storage of unstuffed volumes and a centre for container repair and maintenance and 210 points for refrigerated containers. The terminal has road and rail connections with the city of San Paulo and the interior of the state. Three vessels can work simultaneously alongside the quay which is 510 m long and has a depth alongside of 13.5 m.

Orica uses Hamburg SUD, Maersk and MSC to transport its shipments to the Port of Buenos Aires.

The Port of Santos Harbour oversees all port operations, including:

- Management of port protocols for vessel docking
- Entry to port by Port Pilots
- Vessel approaches to the port
- Shipping activities to port activities changeover.

Stevedoring operations include:

- Handling of full/empty containers on and off vessels, container storage areas for general cargo, port security, etc.
- Management programmes for container placement and movement including identification of hazardous cargoes.

1.2.4.7 Port of Puerto Angamos, Chile

The Port of Puerto Angamos in Chile is used for the importation of Orica's solid sodium cyanide into Chile. The managing agency for the port is Compania Portuaria Mejillones. The Port is situated in a deep bay with a wide supporting areas and more than 20 km of coast. The bay is protected from swells and southerly winds.

Port facilities include:

- Storage area for 80 000 t of copper
- Container depot with a 4000 TEU capacity
- 2700 TEUs of container stacking capacity
- Four berths.


The port is accredited to ISO 14001, ISO 9001 and OHSAS 18001.

Orica uses Hamburg SUD, Maersk and MSC to transport its shipments to the Port of Puerto Angamos.

The Port of Puerto Angamos Harbour Master oversees all port operations. This includes:

- Management of port protocols for vessel docking
- Entry to port by Port Pilots
- Vessel approaches to the port

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- Shipping activities to port activities changeover.

Stevedoring operations include:

- Handling of full/empty containers on and off vessels, container storage areas for general cargo, port security etc.
- Management programmes for container placement and movement including identification of hazardous cargoes.

1.2.4.8 Port of Punta Arenas, Chile

Located in the Magellan Strait, the Port of Punta Arenas was built to allow the development of the Magellan and Chilean Antarctic Region through the cheapening of mobilisation costs and load transfers.

Orica shipments of cyanide are received at two different terminals within the Port of Punta Arenas; Mardones Terminal and Magallanes Terminal.

Mardones Terminal

The Mardones Terminal, owned and operated by Empresa Portuaria Austral (EPA Austral), began operation in August 1998. It is located in Bahia Catalina area to the north of Punta Arenas, and was built to receive the growing demand for products in the area. Today the Mardones Terminal services container vessels, fishing ships and also serves as support and a docking terminal for larger tourist cruise liners that cannot be docked at other local terminals.

Terminal facilities include:

- One 'L' shaped dock, 20 m wide by 150 m long
- Three ship berthing areas
- 1 600 m² of sheltered storage space
- 240 000 m² of support areas.

Magallanes Terminal


The Magallanes Terminal, owned and operated by ASMAR, has undergone several relocations before settling in its latest location at the Port of Punta Arenas in 1999. It is the southernmost shipyard in the world with all its facilities approved by ISPS Code (International Ship & Port Facilities Security) the International Quality Standard ISO-9001:2008.

Terminal facilities include:

- A marine railway for ships up to 3,570 tons
- A 212 m longitudinal transference line and a 135 m parallel transference line
- Nine docking positions
- A 300m pier
- Associated range of workshops.

The Shipyard also builds 9.5m self-propelled barges for loading and unloading operations, allowing the transport of 20" containers.

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Orica uses Hamburg SUD, Maersk, Transmares and MSC to transport its shipments to the Port of Punta Arenas from Port of San Antonio.

1.2.4.9 Port of Veracruz, Mexico

The Port of Veracruz is located in the Gulf of Mexico and is one of the principal ports in the gulf and the main entrance of shipments coming from Europe and the east coast of the United States of America. Access to the Pacific Ocean is through the Panama Canal. The port is managed by Administración Portuaria Integral de Veracruz (APIVER) and the terminal is operated by ICAVE (Internacional de Contenedores Asociados de Veracruz S.A. de C.V.).

The port consists of:

- 507 m of quay, with two berthing positions
- A total area of 42 ha, which includes separate yards for export, import and empty containers
- Two railroad docks for container transfer
- An extensive fleet of cranes, trucks and forklifts.

Orica supply cyanide at the Port of Veracruz on a Cost, Insurance and Freight (CIF) basis, where the end user arranges cyanide road transportation.

1.2.5 Road Transportation

1.2.5.1 Transaltisa S.A

Transaltisa is a company dedicated to the transport of hazardous materials with operations in Peru. Transaltisa is part of the corporation Cervesur and provides logistics services and is focused in the mining industry and long term contracts. At the time of the audit, Transaltisa transported Orica's cyanide to the Minera Yanacocha in Peru.

Transaltisa was recertified as being fully compliant with the Code on 3 July 2013.

1.2.5.2 Stiglich Transportes S.A

Stiglich is a company specialised in the transport of hazardous materials and oversized loads. At the time of the audit, Stiglich transported Orica's cyanide to Minera Yanacocha in Peru.


Stiglich was recertified as being fully compliant with the Code on 25 November 2013.

1.2.5.3 Victor Mason Transportes Cruz del Sur

Cruz del Sur is a sodium cyanide transporter in Argentina. At the time of the audit, Cruz del Sur transported Orica's cyanide to the Gualcamayo and Veladero mines located in western Argentina.

Cruz del Sur was recertified as being fully compliant with the Code on 28 February 2014.

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1.2.6 Transit Storage

Storage in transit does occur at Ports identified in Section 1.2.4 while formalities such as customs clearance and carrier releases are performed. Once formalities are complete, the cyanide containers are collected by the respective road or ocean (from Port of Shanghai and Port of Busan) transporters. At no stage along the Latin America Supply Chain, with the exception of Orica's Ventanilla Transfer Facility, is cyanide removed from the containers prior to unloading at customer mine sites. Unloading, storage and repackaging at the Ventanilla Transfer Facility was addressed independently as part of the Code Verification audit of that facility.

Depending on weather, cargo types and other operational matters, shipping lines may tranship their cargo from one vessel to another. This involves unloading the cargo at a terminal facility, temporary set down and loading onto another vessel for the continuation of the delivery. Such trans-shipping does occur with Orica's sodium cyanide. Orica has no control over when and where this happens, but through its due diligence investigations has satisfied itself that the shipping lines used (Hamburg SUD, Maersk, MSC and Transmares) undertake the shipping of the product in accordance with the *International Maritime Dangerous Goods Code* (IMO DG Code) and in a professional manner. This extends to the selection of terminals for trans-shipping.

Trans-shipping ports used include the Port of Singapore and the Port of San Antonio.

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1.3 Auditors Findings and Attestation

in full compliance with **The International Cyanide Management Code**
 in substantial compliance with
 not in compliance with

Audit Company: Golder Associates Pty Ltd
Audit Team Leader: Ed Clerk, Exemplar Global (113792)
Email: EClerk@golder.com.au

Orica's Latin America Supply Chain did not experience any significant cyanide incidents or compliance problems during the previous three year audit cycle.

1.4 Name and Signatures of Other Auditors:

Name	Position	Signature
Ed Clerk	Lead Auditor	
David Rushton	Auditor	

1.5 Dates of Audit

The initial Orica Latin America Supply Chain Certification Audit was undertaken on 10 April 2014 based on the following due diligence reports:

- Due diligence review of the Port of Shanghai. The due diligence was undertaken by Orica on 29 July 2014
- Due diligence review of the Port of Callao. The due diligence was undertaken by Orica on 17 March 2014
- Due diligence review of the Port of Buenos Aires. The due diligence was undertaken by Orica on 24 March 2014
- Due diligence review of the Port of Puerto Deseado. The due diligence was undertaken by Orica on 27 March 2014
- Due diligence review of the Port of Santos. The due diligence was undertaken by Orica on 18 September 2013
- Due diligence review of the Port of Puerto Angamos. The due diligence was undertaken by Orica on 17 January 2014

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- Due diligence review of the Port of Punta Arenas. The due diligence was undertaken by Orica on 19 November 2014
- Due diligence review of the Port of Veracruz. The due diligence was undertaken by Orica on 11 March 2014
- Due diligence review of Maersk Australia Pty Ltd. The due diligence was undertaken by Orica on 27 July 2014
- Due diligence review of Hamburg SUD Group. The due diligence was undertaken by Orica on 26 July 2014
- Due diligence review of MSC Shipping. The due diligence was undertaken by Orica on 29 July 2014.
- Due diligence review of Transmares. The due diligence was undertaken by Orica on 24 November 2014
- Assessment of the Port of Busan undertaken by Golder on behalf of Orica on 18 December 2014.

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

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

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2.0 CONSIGNOR SUMMARY

2.1 Principle 1 – Transport

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

2.1.1 Transport Practice 1.1

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

in full compliance with

The operation is

in substantial compliance with

Transport Practice 1.1

not in compliance with

Summarise the basis for this Finding/Deficiencies Identified:

The Orica Latin America Supply Chain is in FULL COMPLIANCE with Transport Practice 1.1 requiring the transport of cyanide in a manner that minimises the potential for accidents and releases.

Orica

Orica has developed procedures to guide the selection of transport routes to minimise the potential for accidents and releases, or the potential impacts of accidents and releases. Routes are selected by Orica’s Supply Chain Compliance Coordinator in consultation with Orica’s transport contractors and customers and with reference to *Sodium Cyanide Transport Management Policies* and the *Selection of Transport Routes – Transportation of Sodium Cyanide (NaCN) to Customer Sites or Stock Points* procedure.

Orica has developed procedures to evaluate the risks of selected cyanide transport routes and take the measures necessary to manage these risks. The evaluation and selection of the route(s) is undertaken through a risk assessment process conducted in accordance with Australian Standard AS 4360: 2004 Risk Management. Risk assessments are undertaken for all route alternatives selected for assessment. Additionally, route risk assessments are also undertaken for product loading and departure, product storage, and product unloading and delivery. Mitigation measures used to reduce risks to acceptable levels were detailed in the risk assessment documentation for the specific routes.


Orica has implemented a procedure to periodically re-evaluate routes used for cyanide deliveries. The *Transport Routes – Route Conditions and Transportation Agency Feedback* procedure was developed by Orica to ensure that relevant feedback from transportation agencies relating to routes utilised for the movement of cyanide is provided to Orica for assessment and follow up on actions, as appropriate.

Orica has documented the measures taken to address risks identified with the selected routes and developed procedures to evaluate the risks of selected cyanide transport routes and take the measures necessary to manage these risks. Mitigation measures are then detailed in the risk assessment documentation of the transport contractor.

Orica, in conjunction with its road transport contractor, seeks input from stakeholders and applicable governmental agencies as necessary in the selection of routes and development of risk management measures.

Where routes present special safety or security concerns, Orica ensures the transport contractor uses convoys, escorts or other additional safety or security measures to address the concern. South America is assessed by Orica as having a risk rating of Level II and all containers are transported under escorted convoy conditions. Security measures implemented by Orica for transportation of cyanide within the Latin America Supply Chain include the use of locked and sealed containers, and constant monitoring and reporting of the progress of the convoy by the transport contractors.

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Orica, through its transport contractor, has advised external responders, medical facilities and communities as necessary of their roles during an emergency response. Orica's *Sodium Cyanide Transport Management Plan* notes that emergency response responsibility will extend only to aspects of supply to which Orica is contractually responsible, however, Orica will work with all customers and assist where possible in maintaining an emergency response plan and provide specialist advice in the event of any emergency. The *Sodium Cyanide Transport Management Plan* also notes that agents, distributors and transport companies shall have an appropriate emergency response plan for handling any sodium cyanide incident that falls within their contractual responsibility. The emergency response plan shall address the entire delivery route.

Orica's *Management of Contracted Operations* procedure defines the requirements for the management of contractors who conduct product-related operations on behalf of Orica. Such operations include the transport of sodium cyanide. The procedure guides the contractor selection process, preparation of contracts/agreements, monitoring and measurement and management of change of contractors.

Orica's *Carrier Assessment Questionnaire* is used to assess the compliance of contracted entities against a number of criteria, including Code certification. Completed assessments for the transporters were available for review.

Transaltisa

Transaltisa was recertified as being fully compliant with the Code on 3 July 2013.

Stiglich

Stiglich was recertified as being fully compliant with the Code on 25 November 2013.

Cruz del Sur

Cruz del Sur was recertified as being fully compliant with the Code on 28 February 2014.

Maersk, Hamburg SUD, MSC and Transmares

Orica uses Maersk, Hamburg SUD, MSC and Transmares for its international shipping to South America due to its selection of services available from the Australian, Korean, Chinese and South American Ports.

Orica does not have control of the routes taken by the shipping lines contracted to transport sodium cyanide. In selecting a route, shipping lines must take into account factors such as tides, currents, winds, storms and load compatibilities.

Due diligence were conducted by Orica of Maersk on 27 July 2014, Hamburg SUD on 26 July 2014, MSC on 29 July 2014 and of Transmares on 24 November 2014. The due diligences indicated that the shipping companies transported cyanide in compliance with the IMO DG Code.

Ports of Shanghai, Busan, Callao, Buenos Aires, Puerto Deseado, Santos, Puerto Angamos, Punta Arenas and Veracruz


Due diligences of the Ports, except the Port of Busan, were conducted by Orica between September 2013 and July 2014. An assessment of the Port of Busan was conducted by Golder in December 2014.

Orica take into consideration the shipping services available to service the intended target market, which include the quality of the ports. Orica only operates in export markets that are serviced by major international shipping companies with the ability to offer scheduled container services from the Australian, South Korean, Chinese and South American Ports to the selected destination port.

Port of Busan

Golder's assessment of the Port of Busan concluded that the port meets the requirements of the ICMC.

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Orica takes into consideration the ports available to service the intended target area. Orica only operates in export markets that are serviced by major international shipping companies with the ability to offer scheduled container services from the Port of Busan to the selected destination port. These shipping companies also provide the correct manifest documentation to the destination port which provides them with a list of the cargo types and in the case of sodium cyanide and any other hazardous cargo the number and reference of the containers.

2.1.2 Transport Practice 1.2

Ensure that personnel operating cyanide handling and transport equipment can perform their jobs with minimum risk to communities and the environment.

in full compliance with

The operation is

in substantial compliance with

Transport Practice 1.2

not in compliance with

Summarise the basis for this Finding/Deficiencies Identified:

The Orica Latin America Supply Chain 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.

Orica

Orica does not employ transport drivers or directly operate transport vehicles in its Latin America Supply Chain, this is undertaken by its contractors Stiglich, Cruz del Sur and Transaltisa. Despite this, Orica does ensure its transport contractors and subcontractors use only trained, qualified and licensed operators to operate its transport vehicles.

Orica’s *Sodium Cyanide Transport Management Plan* states that agents, distributors, transport companies and other parties contracted to Orica shall be responsible for implementing the Code and contracts between Orica Mining Chemicals and these parties shall incorporate the obligations of each party in meeting the Code’s requirements.

Orica’s *Sodium Cyanide Transport Management Plan* clearly describes the minimum training standards expected by Orica in the transportation of cyanide. The document also notes that where subcontractors are utilised by prime contracted agencies, the prime contractor is to have an appropriate procedure to ensure that all relevant subcontractor personnel meet the specified training requirements.


Orica’s *Management of Contracted Operations* procedure that defines the requirements for the management of contractors who conduct product-related operations on behalf of Orica. Such operations include the transport of sodium cyanide. The procedure guides the contractor selection process, preparation of contracts/agreements, monitoring and measurement and management of change of contractors.

Orica’s contracts with their road transporters have conditions stating that said contractor is responsible for the implementation of the Code within its business. Orica’s *Carrier Assessment Questionnaire* is used to assess the compliance of contracted entities against contract/agreement requirements. Completed assessments for the transporters were available for review.

Transaltisa

Transaltisa was recertified as being fully compliant with the Code on 3 July 2013.

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Stiglich

Stiglich was recertified as being fully compliant with the Code on 25 November 2013.

Cruz del Sur

Cruz del Sur was recertified as being fully compliant with the Code on 28 February 2014.

2.1.3 Transport Practice 1.3

Ensure that transport equipment is suitable for the cyanide shipment.

in full compliance with

The operation is

in substantial compliance with

Transport Practice 1.3

not in compliance with

Summarise the basis for this Finding/Deficiencies Identified:

The Orica Latin America Supply Chain is in FULL COMPLIANCE with Transport Practice 1.3 requiring that transport equipment is suitable for the cyanide shipment.

Orica

Orica does not directly operate transport vehicles in its Latin America Supply Chain; this is undertaken by Transaltisa, Stiglich, and Cruz del Sur.

Orica does ensure that contractors only uses equipment designed and maintained to operate within the loads it will be handling. Orica's *Sodium Cyanide Transport Management Policies* states that:

All equipment utilised is to fit for purpose and in accordance with the relevant regulatory requirements in place in each area of operation. Transportation agencies must be able to identify the carrying capacities of transportation equipment and equipment combinations and lifting equipment used throughout the supply chain.

A procedure for *Carrier Maintenance Programs* that details the minimum safety requirements that Orica requires its prime contractor and associated subcontractors to implement.


Orica has developed procedures to verify the adequacy of the equipment for the load it must bear and that his equipment is not overloaded. The *Transport Management Policies* state that agents, distributors and transportation agencies must ensure that:

- *All transportation assets are load capable within the regulatory requirements of the area of operation*
- *Only one container/isotainer/isotank is to ever be transported on transportation assets...*

Orica's *Management of Contracted Operations* procedure that defines the requirements for the management of contractors who conduct product-related operations on behalf of Orica. Such operations include the transport of sodium cyanide. The procedure guides the contractor selection process, preparation of contracts/agreements, monitoring and measurement and management of change of contractors.

Orica's contracts with their road transporters have conditions stating that said contractor is responsible for the implementation of the Code within its business. Orica's *Carrier Assessment Questionnaire* is used to assess the compliance of contracted entities against contract/agreement requirements. Completed assessments for the transporters were available for review.

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Transaltisa

Transaltisa was recertified as being fully compliant with the Code on 3 July 2013.

Stiglich

Stiglich was recertified as being fully compliant with the Code on 25 November 2013.

Cruz del Sur

Cruz del Sur was recertified as being fully compliant with the Code on 28 February 2014.

2.1.4 Transport Practice 1.4

Develop and implement a safety program for transport of cyanide.

in full compliance with

The operation is

in substantial compliance with

Transport Practice 1.4

not in compliance with

Summarise the basis for this Finding/Deficiencies Identified:

The Orica Latin America Supply Chain is in FULL COMPLIANCE with Transport Practice 1.4 requiring the operation develop and implement a safety programme for transport of cyanide.

Orica

Orica does not directly operate transport vehicles in its Latin America Supply Chain; this is undertaken by Transaltisa, Stiglich and Cruz del Sur. Despite this, Orica does ensure its transport contractors and subcontractor implement a safety program for the transport of cyanide that ensures that cyanide is transported in a manner that maintains the integrity of the producer’s packaging and that the product is placarded to identify the shipment as cyanide, as per local regulations and international standards.


Orica’s Yarwun Facility was recertified under the Code on 29 October 2013. As a Code certified cyanide producer, Orica has systems in place to ensure their containers are labelled in accordance with the IMO DG Code.

The Orica Australia Supply Chain Audit addresses items such as cyanide packaging, labelling, container loading and security. The Latin America Supply Chain is a continuation of the Australia Supply Chain and containers are not opened until they arrive at the final destination. This supply chain was certified on 5 October 2010 and underwent a recertification audit in October 2013. The detailed and summary audit reports were submitted in in full compliance to the ICMI for completeness review in November 2013.

Orica ensures that its transport contractors and subcontractors implement safety programmes for cyanide transport. The *Transport of Sodium Cyanide – Carrier Safety Program* procedure notes that the minimum safety requirements/programmes required to be in effect for all carriers/transporters effecting transportation of sodium cyanide on behalf of Orica are:

- Vehicle inspections prior to the commencement of each and every departure/shipment of product
- A preventative maintenance programme for all vehicles and trailers used in the transportation of sodium cyanide
- An approved fatigue management programme in accordance with local regulatory requirements
- Procedures in place to prevent shifting of loads in transit

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- Procedures through which transportation can be modified, suspended or cancelled if conditions warrant (e.g. severe weather conditions, civil unrest, etc.)
- A drug abuse prevention programme, including over the counter medications
- Retention of records providing documentary evidence that the above activities have and are being conducted.

Orica's *Management of Contracted Operations* procedure that defines the requirements for the management of contractors who conduct product-related operations on behalf of Orica. Such operations include the transport of sodium cyanide. The procedure guides the contractor selection process, preparation of contracts/agreements, monitoring and measurement and management of change of contractors.

Orica's contracts with their road transporters have conditions stating that said contractor is responsible for the implementation of the Code within its business. Orica's *Carrier Assessment Questionnaire* is used to assess the compliance of contracted entities against contract/agreement requirements. Completed assessments for the transporters were available for review.

Transaltisa

Transaltisa was recertified as being fully compliant with the Code on 3 July 2013.

Stiglich

Stiglich was recertified as being fully compliant with the Code on 25 November 2013.

Cruz del Sur

Cruz del Sur was recertified as being fully compliant with the Code on 28 February 2014.

2.1.5 Transport Practice 1.5

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

in full compliance with

The operation is

in substantial compliance with

Transport Practice 1.5

not in compliance with

Summarise the basis for this Finding/Deficiencies Identified:

The Orica Latin America Supply Chain is in FULL COMPLIANCE with Transport Practice 1.5 requiring the operation follow international standards for transportation of cyanide by sea and air.


Orica

Orica does transport consignments of cyanide by sea within the scope of this audit. As identified during the Orica Australia Supply Chain certification audit, all containers (i.e. freight containers of IBCs, sparge isotainers or liquid isotainers) are placarded at the Yarwun Facility in accordance with the requirements of the IMO DG Code with UN numbers, the Class 6 dangerous goods class label and the environmentally hazardous substance label. This level of placarding is consistent with the requirements of the ADG Code.

A container intended for sea transport has documentation prepared in accordance with the IMO DG Code, which is faxed to the shipping agent. The normal road documentation prepared in accordance with the ADG Code accompanies the load on its road/rail voyage to the Australia Ports.

Orica does not transport consignments of cyanide by air within the scope of this audit.

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Orica's *Sodium Cyanide Transport Management Policies* notes that no sodium cyanide manufactured by Orica Mining Chemicals or manufactured by third parties on behalf of Orica Mining Chemicals will be permitted to be transported by air without express written permission of Orica Mining Chemicals.

Transaltisa

Transaltisa was recertified as being fully compliant with the Code on 3 July 2013.

Stiglich

Stiglich was recertified as being fully compliant with the Code on 25 November 2013.

Cruz del Sur

Cruz del Sur was recertified as being fully compliant with the Code on 28 February 2014.

Maersk, Hamburg SUD, MSC and Transmares

Due diligences of Maersk, Hamburg SUD, MSC and Transmares conducted by Orica indicated that the shipping companies transported cyanide in compliance with IMO DG Code. The due diligence specifically referenced provisions of the IMO DG Code that are required to be addressed under this question.

Ports of Shanghai, Callao, Buenos Aires, Puerto Deseado, Santos, Puerto Angamos, Punta Arenas and Veracruz

Due diligences of the Ports, except the Port of Busan, were conducted by Orica between September 2013 and July 2014. An assessment of the Port of Busan was conducted by Golder in December 2014.

The due diligences indicated that the ports were in compliance with the IMO DG Code. The due diligences specifically referenced provisions of the IMO DG Code that are required to be addressed under this question.

Port of Busan

Golder's assessment of the Port of Busan concluded that the port meets the requirements of the ICMC and the IMO DG Code.

2.1.6 Transport Practice 1.6

Track cyanide shipments to prevent losses during transport.

in full compliance with

The operation is

in substantial compliance with

Transport Practice 1.6

not in compliance with

Summarise the basis for this Finding/Deficiencies Identified:


The Orica Latin America Supply Chain is in FULL COMPLIANCE with Transport Practice 1.6 requiring the tracking of cyanide shipments to prevent losses during transport.

Orica

Orica does not employ transport drivers or directly operate transport vehicles; this is undertaken by its contractors Transaltisa, Stiglich and Cruz del Sur. Despite this, Orica does ensure its transport contractor vehicles have means to communicate with the transport company, the mining operation, the cyanide producer or distributor and/or emergency responders.

Orica's *Transportation of Cyanide – Tracking of Shipments* procedure requires Orica and its contracted transportation agencies to maintain a vehicle tracking system that shall provide:

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- Duress notification by the driver
- Visibility to external users to current location of vehicles carrying product
- Download capability relating to each vehicle and each individual trip
- Geo-fencing, if practicable.

Orica does ensure contractor communication equipment (GPS, mobile phone, radio, pager, etc.) is periodically tested to ensure it functions properly through the engagement of Code certified transporters.

Orica does ensure communication blackout areas along the Latin America Supply Chain have been identified and ensures special procedures are implemented for the blackout areas. This is achieved through the engagement of Code certified transporters.

Orica does ensure its transport contractor implements systems or procedures to track the progress of cyanide shipments. Orica's *Transportation of Cyanide – Tracking of Shipments* procedure requires Orica and its contracted transportation agencies to maintain a vehicle tracking system.

Orica does implement inventory controls and/or chain of custody documentation to prevent loss of cyanide during shipment. Orica's *Sodium Cyanide Transport Management Policies* requires that agents, distributors and transportation agencies ensure that:

Chain of responsibility requirements are met.

Orica does ensure that its transport contractors carry records indicating the amount of cyanide in transit and Material Safety Data Sheets are available during transport. This is achieved through the engagement of Code certified transporters.

Orica's *Management of Contracted Operations* procedure that defines the requirements for the management of contractors who conduct product-related operations on behalf of Orica. Such operations include the transport of sodium cyanide. The procedure guides the contractor selection process, preparation of contracts/agreements, monitoring and measurement and management of change of contractors.

Orica's contracts with their road transporters have conditions stating that said contractor is responsible for the implementation of the Code within its business. Orica's *Carrier Assessment Questionnaire* is used to assess the compliance of contracted entities against contract/agreement requirements. Completed assessments for the transporters were available for review.

Transaltisa

Transaltisa was recertified as being fully compliant with the Code on 3 July 2013.


Stiglich

Stiglich was recertified as being fully compliant with the Code on 25 November 2013.

Cruz del Sur

Cruz del Sur was recertified as being fully compliant with the Code on 28 February 2014.

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2.2 Principle 2 – Interim Storage

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

2.2.1 Transport Practice 2.1

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

in full compliance with

The operation is

in substantial compliance with

Transport Practice 2.1

not in compliance with

Summarise the basis for this Finding/Deficiencies Identified:

The Orica Latin America Supply Chain is in FULL COMPLIANCE with Transport Practice 2.1 requiring transporters design, construct and operate cyanide trans-shipping depots and interim storage sites to prevent release and exposures.

Storage in transit does occur at the following Ports while formalities such as customs clearance and carrier releases are performed:

- Port of Shanghai, China
- Port of Busan, South Korea
- Port of Callao, Peru
- Port of Buenos Aires, Argentina
- Port of Puerto Deseado, Argentina
- Port of Santos, Brazil
- Port of Puerto Angamos, Chile
- Port of Punta Arenas, Chile
- Port of Veracruz, Mexico.


Storage in transit also occurs at the transshipping Port of Singapore and Port of San Antonio.

Depending on weather, cargo types and other operational matters, shipping lines may tranship their cargo from one vessel to another. This involves unloading the cargo at a terminal facility, temporary set down and loading onto another vessel for the continuation of the delivery. Such trans-shipping does occur with Orica's sodium cyanide. Orica has no control over when and where this happens, but through its due diligence investigations has satisfied itself that the shipping lines used (Hamburg SUD, Maersk, MSC and Transmares) undertake the shipping of the product in accordance with the IMO DG Code and in a professional manner. This extends to the selection of terminals for trans-shipping.

Maersk, Hamburg SUD, MSC and Transmares

Trans-shipping does occur with Orica's sodium cyanide. Orica has no control over when and where this happens, but through its due diligence investigations has satisfied itself that the shipping lines used (Maersk,

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Hamburg SUD, MSC and Transmares) undertake the shipping of the product in accordance with the IMO DG Code and in a professional manner.

Ports of Shanghai, Callao, Buenos Aires, Puerto Deseado, Santos, Puerto Angamos, Punta Arenas and Veracruz

Due diligences of the Ports, except the Port of Busan, were conducted by Orica between September 2013 and July 2014. An assessment of the Port of Busan was conducted by Golder in December 2014.

The due diligences assessed interim storage requirements at these facilities and Orica ascertained that the ports are operating in a safe and responsible manner and is suitable for the transit of sodium cyanide.

Port of Busan

The cyanide product manufactured by Tongsuh is packed initially into wooden intermediate bulk containers and then into sealed shipping containers for transport to the Port of Busan's Korail Interim Storage Facility where it is stored in a dedicated Dangerous Goods storage facility pending shipment. The area in which the containers are stored whilst transiting the port is suitable to effectively contain any spillage of solid sodium cyanide that may occur. This facility is certified to handle and store all categories of dangerous goods, including Class 6.1.

Containers from this facility are transported by truck to Pier 2 of North Port where it is loaded directly onto the ship. Pier 2 at the Port of Busan is for the loading of all dangerous goods at the port.

Golder's assessment of the Port of Busan, including interim storage facilities, concluded that the port operates in compliance with requirements of the ICMC and the IMO DG Code.

Transaltisa

Transaltisa was recertified as being fully compliant with the Code on 3 July 2013.


Stiglich

Stiglich was recertified as being fully compliant with the Code on 25 November 2013.

Cruz del Sur

Cruz del Sur was recertified as being fully compliant with the Code on 28 February 2014.

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2.3 Principle 3 – Emergency Response

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

2.3.1 Transport Practice 3.1

Prepare detailed Emergency Response Plans for potential cyanide releases.

The operation is in full compliance with **Transport Practice 3.1**
 in substantial compliance with
 not in compliance with

Summarise the basis for this Finding/Deficiencies Identified:


The Orica Latin America Supply Chain is in FULL COMPLIANCE with Transport Practice 3.1 requiring the operation prepare detailed Emergency Response Plans for potential cyanide releases.

Orica

Orica has developed detailed emergency response document (*Emergency Response Guide Sodium Cyanide*) to provide emergency response guidance for specific mine site, storage facilities and transport incidents involving spillage of Orica product. The guide covers:

- Incident management objectives and strategies
- Responsibilities
- Decontamination of soil
- Use of hypochlorite for decontamination purposes
- Specific Emergency Response Guides:
 - Dry sodium cyanide spill – inside building/storage facility
 - Dry sodium cyanide spill – outside building/storage facility
 - Dry sodium cyanide spill – inside shipping container
 - Shipping container decontamination
 - Sodium cyanide spill to water way
 - Handling wet sodium cyanide
 - Response to fire in vicinity of stored cyanide
 - Roll over of shipping container.
- Hazard Information – Transport
- Hazard Information – Product Spill Management and Clean Up
- Communications

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■ Emergency Scenarios and Roles and Responsibilities.

The *Emergency Response Guide Sodium Cyanide* is appropriate for the selected transportation route or interim storage facility within the supply chain. The objective of the *Emergency Response Guide Sodium Cyanide* is to provide information in a suitable format, which can be used to minimise the adverse effects of a cyanide emergency on people, property and the environment. It is applicable to the management of an emergency involving Orica-supplied sodium cyanide solid or liquid product. It is considered applicable for product spillages at any location along the product supply chain from the Yarwun Facility gate to the mine site end user.

The Orica *Emergency Response Guide Sodium Cyanide* details the hazards and controls of both solid and liquid sodium cyanide. The emergency response actions detailed in the *Emergency Response Guide Sodium Cyanide* are relevant to solid cyanide and its packaging in IBCs within freight containers and sparge isotainers, and liquid cyanide in liquid isotainers.

The *Emergency Response Guide Sodium Cyanide* details the hazards and controls for different forms of transport and facilities, which is relevant to road transportation within the Latin America Supply Chain. Orica does not directly operate transport vehicles or storage facilities along its Latin America Supply Chain. Despite this Orica has developed an *Emergency Response Guide*. The objective of the *Emergency Response Guide Sodium Cyanide* is to provide information in a suitable format, which can be used to minimise the adverse effects.

The *Emergency Response Guide Sodium Cyanide* does include descriptions of response actions for anticipated emergency situations. The critical component of the emergency response process is the dedicated Orica ERS based in Melbourne. The *Emergency Response Guide Sodium Cyanide* requires Orica ERS to be contacted in the event of an emergency involving cyanide. Orica ERS operates 24 hours a day, seven days a week providing telephone advice and assistance to the public, emergency services and others on incidents relating to the transport, storage and use of chemical products and raw materials in emergency situations. Advice and assistance will include the contact and mobilisation of specialist Orica personnel or contractors who have access to relevant information and understand the specific issues presented by a particular transport route, transport practices and/or interim storage facility.

Appendix 6 (Orica Response to a Report of a Cyanide Incident) of the *Emergency Response Guide Sodium Cyanide* details the initial actions to be undertaken, including the interactions with emergency service providers such as police and fire brigade, determining if the leak is cyanide and preventing the spread of contamination. Orica's Supply Chain Compliance Coordinator advised that all emergency responders identified along specific routes, during the route assessment process, are issued with Orica's *Emergency Response Guide* or the contracted transporters emergency response documentation.

Maersk, Hamburg SUD, MSC and Transmares

Due diligences of the shipping companies were conducted by Orica in July 2014.


Although not specifically addressed in the due diligences each shipping company has a basic emergency response by following the IMO DG requirements as addressed in 1.5.1.

Ports of Shanghai, Callao, Buenos Aires, Puerto Deseado, Santos, Puerto Angamos, Punta Arenas and Veracruz

Due diligences of the Ports, except the Port of Busan, were conducted by Orica between September 2013 and July 2014. An assessment of the Port of Busan was conducted by Golder in December 2014.

Although not specifically addressed in the due diligences each port has a basic emergency response by following the IMO DG requirements as addressed in 1.5.1.

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Additionally, the Ports of Shanghai, Buenos Aires, San Antonio and Puerto Angamos have facility specific emergency response plans. Indicating that the port has an internal emergency response capability that can provide basic response to incidents involving dangerous goods.

Port of Busan

The Busan Port Authority is responsible for all port operations including emergency response. Although Golder’s desktop assessment did not feature a review of the BPA’s specific emergency response plan the BPA has emergency response capabilities in accordance with IMO DG Code requirements as addressed in 1.5.1.

Transaltisa

Transaltisa was recertified as being fully compliant with the Code on 3 July 2013.

Stiglich

Stiglich was recertified as being fully compliant with the Code on 25 November 2013.

Cruz del Sur

Cruz del Sur was recertified as being fully compliant with the Code on 28 February 2014.

2.3.2 Transport Practice 3.2

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

in full compliance with

The operation is

in substantial compliance with

Transport Practice 3.2

not in compliance with

Summarise the basis for this Finding/Deficiencies Identified:

The Orica Latin America Supply Chain is in FULL COMPLIANCE with Transport Practice 3.2 requiring the operation designate appropriate response personnel and commit necessary resources for emergency response.


Orica

Orica does not directly operate transport vehicles or storage facilities along its Latin America Supply Chain.

Orica provides emergency response training of appropriate personnel. Orica retain technical and advisor roles in an emergency and can provide physical resources and personnel to assist emergency services in the response to an incident involving cyanide. To maintain this capacity, it has been advised that Senior Orica ERS personnel or their delegates conduct training of new Orica ERS coordinators, with input from other Orica ERS coordinators and other Orica personnel as required. Initial coordinator training is conducted in accordance with training schedules, with each competency/component in the training programme only being signed off by the trainer and trainee once the content is covered thoroughly and adequately to the satisfaction of both parties.

Orica’s *Emergency Response Guide* outlines Orica’s response to incidents that they have been notified of. The responsibilities for personnel following an emergency along the supply chain are covered in transporter specific emergency response plans. These entities are Code certified.

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The *Emergency Response Guide* does not detail emergency response equipment that may be required during an emergency. Appendix 7 of the *Orica Emergency Response Guide* provides guidance on the level of PPE outline by the US Environmental Protection Agency and the Occupational Safety and Health Administration, but does not specify what should be provided during transport. Section 3.8 of the guide lists the PPE to be provided in the event of a roll-over of a shipping container. The Guide is intended to be used by contractors and provides a point of reference for Orica's contractors to develop and align their emergency management plans.

Orica has implemented processes to check that contractors transporting the material have necessary equipment including during transport. Section 10 Emergency Management of the *Carrier Assessment Questionnaire*.

Orica has developed and provided initial and periodic refresher training covering cyanide awareness and emergency response to its transport contractors.

Additionally, Sections 10 and 12 of the *Carrier Assessment Questionnaire* have questions regarding the training of contractor personnel regarding their roles in emergency response.

Orica's *Management of Contracted Operations* procedure that defines the requirements for the management of contractors who conduct product-related operations on behalf of Orica. Such operations include the transport of sodium cyanide. The procedure guides the contractor selection process, preparation of contracts/agreements, monitoring and measurement and management of change of contractors.

Orica's contracts with their road transporters have conditions stating that said contractor is responsible for the implementation of the Code within its business. Orica's *Carrier Assessment Questionnaire* is used to assess the compliance of contracted entities against contract/agreement requirements. Completed assessments the transporters were available for review.

Transaltisa

Transaltisa was recertified as being fully compliant with the Code on 3 July 2013.


Stiglich

Stiglich was recertified as being fully compliant with the Code on 25 November 2013.

Cruz del Sur

Cruz del Sur was recertified as being fully compliant with the Code on 28 February 2014.

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2.3.3 Transport Practice 3.3

Develop procedures for internal and external emergency notification and reporting.

in full compliance with

The operation is

in substantial compliance with

Transport Practice 3.3

not in compliance with

Summarise the basis for this Finding/Deficiencies Identified:

The Orica Latin America Supply Chain is in FULL COMPLIANCE with Transport Practice 3.3 requiring the operating develop procedures for internal and external emergency notification and reporting.

Orica

There are procedures and contact information for notifying the shipper, the receiver/consignee, regulatory agencies, outside response providers, medical facilities and potentially affected communities of an emergency. Within the *Emergency Response Guide Sodium Cyanide* the role of Orica ERS is one of communication. ERS operates 24 hours a day providing telephone advice and assistance to the public, emergency services and others on incidents relating to the transport, storage and use of chemical products and raw materials in emergency situations. The emergency contact number for Orica is on the front cover of the Guide.

There are provisions to ensure that internal and external emergency notification and reporting procedures are kept current. Lists of emergency contact information for Orica chemical specialist and relevant subcontractors, including transport subcontractors, are detailed in Orica’s *Emergency Contact List* which is managed within Orica’s document control system.

Specific contact information for local stakeholders is maintained by the contracted transporters. These entities are Code certified.

Transaltisa

Transaltisa was recertified as being fully compliant with the Code on 3 July 2013.


Stiglich

Stiglich was recertified as being fully compliant with the Code on 25 November 2013.

Cruz del Sur

Cruz del Sur was recertified as being fully compliant with the Code on 28 February 2014.

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2.3.4 Transport Practice 3.4

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

in full compliance with

The operation is

in substantial compliance with

Transport Practice 3.4

not in compliance with

Summarise the basis for this Finding/Deficiencies Identified:

The Orica Latin America Supply Chain is in FULL COMPLIANCE with Transport Practice 3.4 requiring the operation develop procedures for remediation of releases that recognise the additional hazards of cyanide treatment.

Orica

The *Emergency Response Guide Sodium Cyanide* includes procedures for remediation, such as recovery or neutralisation of solutions or solids, decontamination of soils or other contaminated media and management of spill clean-up debris.

Section 2.4.3 (Decontamination of a Spill of Solid or Liquid Cyanide into Soil) and Section 2.5 (Use of Sodium Hypochlorite for Decontamination Purposes) of the *Emergency Response Guide Sodium Cyanide* provides information on the hazards associated with the recovery and neutralisation.

Section 3.0 (Specific Emergency Response Guides) of the *Emergency Response Guide Sodium Cyanide* details specific response procedures for a variety of scenarios.

Orica has procedures that prohibit the use of chemicals such as sodium hypochlorite, ferrous sulfate and hydrogen peroxide to treat cyanide that has been released into surface water.

The Orica *Emergency Response Guide Sodium Cyanide* provides the following warning in Section 3.6 (Sodium Cyanide Spill in a Waterway):

Orica Mining Chemicals subscribes to the recommendations of the International Cyanide Management Code in that no chemicals are to be added to a flowing waterway in the event of a cyanide spill as these may only exacerbate the situation with their own toxicity characteristics.

Transaltisa

Transaltisa was recertified as being fully compliant with the Code on 3 July 2013.


Stiglich

Stiglich was recertified as being fully compliant with the Code on 25 November 2013.

Cruz del Sur

Cruz del Sur was recertified as being fully compliant with the Code on 28 February 2014.

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2.3.5 Transport Practice 3.5

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

in full compliance with

The operation is

in substantial compliance with

Transport Practice 3.5

not in compliance with

Summarise the basis for this Finding/Deficiencies Identified:

The Orica Latin America Supply Chain is in FULL COMPLIANCE with Transport Practice 3.5 requiring the operation periodically evaluate response procedures and capabilities and revise them as needed.

Orica

Orica does not directly operate transport vehicles or storage facilities along its Latin America Supply Chain.

There are provisions for periodically reviewing and evaluating the plan’s adequacy and they are being implemented. The *Emergency Response Guide Sodium Cyanide* is a controlled document that is subject to an annual review with the last review in December 2013.

Orica does not directly operate transport vehicles or storage facilities along its Latin America Supply Chain. Orica’s *Emergency Response Exercise and Drills – Schedule* procedure indicates that domestically (i.e. Australia) Orica is to undertake desktop exercises quarterly and one field exercise annually. With regards to export markets, the procedure indicates that:

Code signatory transporters have their own exercise programs in place which Orica will review outcomes of.

There is a procedure to evaluate the Plan’s performance after its implementation and revise it as needed. The procedure has been implemented. Orica’s *SHEC* [Safety, Health, Environment and Community] *Incident Management* procedure requires that appropriate corrective actions be implemented following an incident investigation and that management relay lessons learnt to relevant personnel within the business.

Transaltisa

Transaltisa was recertified as being fully compliant with the Code on 3 July 2013.


Stiglich

Stiglich was recertified as being fully compliant with the Code on 25 November 2013.

Cruz del Sur

Cruz del Sur was recertified as being fully compliant with the Code on 28 February 2014.

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3.0 DUE DILIGENCE

Orica's due diligence process and findings for the shipping carriers and ports is summarised in the following sections. These have been reviewed by Ed Clerk. Ed is pre-certified by the ICMI as a Transport Technical Specialist.

3.1 Ports

Orica conducted the following due diligence assessments of Ports utilised as part of their Latin America Supply Chain:

- Port of Shanghai, China
- Port of Busan, South Korea (desktop assessment conducted by Golder on behalf of Orica)
- Port of Callao, Peru
- Port of Buenos Aires, Argentina
- Port of Puerto Deseado, Argentina
- Port of Santos, Brazil
- Port of Puerto Angamos, Chile
- Punta Arenas, Chile
- Port of Veracruz, Mexico.

The outcomes of these due diligences are outlined below.

3.1.1 Port of Shanghai, China

Orica conducted a due diligence assessment of the Port of Shanghai on 29 July 2014, performed by David Ellison, Supply Chain Compliance Coordinator for Orica. The following items were specifically addressed within the due diligence:


- Transport Practice 1.1
- Transport Practice 1.5
- Transport Practice 1.6
- Transport Practice 2.1
- Transport Practice 3.1.

3.1.1.1 Transport Practice 1.1

Orica uses three major shipping lines (Hamburg SUD, Maersk and MSC) to transport its shipments to the Port of Shanghai in China.

The international sales and exports of solid sodium cyanide take into consideration the shipping services available to service the intended target market. Orica only operates in export markets that are serviced by major international shipping companies with the ability to offer scheduled container services from the Ports of Brisbane, Melbourne and Shanghai to the destination port for the country or continent. These shipping companies also provide the correct manifest documentation to the destination port which provides them with

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a list of the cargo types and in the case of sodium cyanide and any other hazardous cargo the number and reference of the containers.

3.1.1.2 Transport Practice 1.5

The international standards for the shipment of cyanide by sea, as described in 1.5, are followed by the port.

3.1.1.3 Transport Practice 1.6

Port stevedores manage the loading of containers onto ships. Information regarding each container is maintained via the stevedores management systems which assists with the location of each container during loading. Transport from the interim storage facility to the loading berth is controlled by documentary checks detailing the container details and the containers contents.

3.1.1.4 Transport Practice 2.1

Shipping containers containing composite intermediate bulk containers (IBCs) are placarded in accordance with the IMO DG Code labelling requirements displaying relevant warning and safety information including the environmentally hazardous substance label. Signage prohibiting smoking, open flames and eating and drinking are in place, as well as PPE requirements.

The Port of Shanghai has a dedicated dangerous goods transit area for dangerous goods awaiting loading to arriving vessels. Appropriate signage, as outline in 1.5, is displayed in this area. The port operations for dangerous goods are registered and licensed by the government. The port has in place minimum requirements for personal protective equipment that includes the requirements for suitable protective footwear, safety helmet where required and readily visible clothing.

The port is listed on the International Ship and Port Facility Security (ISPS) site as accredited. An electronic card access system is in place to enable only authorised access to the port area. Containers departing the port are checked against documentation for matching container numbers and product detail.

All sodium cyanide transited through the Port of Shanghai remains contained within its sealed containers at all times and are placed in an area that is well ventilated to prevent the build-up of hydrogen cyanide gas. The area where the containers are placed is considered suitable to contain effectively any spillage that may happen.

3.1.1.5 Transport Practice 3.1

Although not specifically addressed in the due diligence the Port of Shanghai has a basic emergency response by following the IMO DG requirements. Additionally, the Port of Shanghai has facility specific emergency response plans indicating that the port has an internal emergency response capability that can provide basic response to incidents involving dangerous goods.


3.1.1.6 Conclusion

The due diligence review found no issues of concern in regards to the management of solid sodium cyanide product. The review is not a final acceptance of the Port of Shanghai for future work and as with all service providers to Orica, Orica will continue to review and monitor their performance via its China Team affiliates.

The due diligence review concluded:

The ongoing review as a service provider and this due diligence assessment has found no issues of concern in regards to the Port of Shanghai.

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3.1.2 Port of Busan, South Korea

Golder conducted a desktop assessment of the Port of Busan on 18 December 2014, on behalf of Orica. The following items were specifically addressed within the assessment:

- Transport Practice 1.1
- Transport Practice 1.5
- Transport Practice 1.6
- Transport Practice 2.1
- Transport Practice 3.1.

3.1.2.1 Transport Practice 1.1

Orica takes into consideration the ports available to service the intended target area. Orica only operates in export markets that are serviced by major international shipping companies with the ability to offer scheduled container services from the Port of Busan to the selected destination port. These shipping companies also provide the correct manifest documentation to the destination port which provides them with a list of the cargo types and in the case of sodium cyanide and any other hazardous cargo the number and reference of the containers.

3.1.2.2 Transport Practice 1.5

The international standards for the shipment of cyanide by sea, as described in 1.5, are followed by the port.

3.1.2.3 Transport Practice 1.6

Port stevedores manage the loading of containers onto ships. Information regarding each container is maintained via the stevedores management systems which assists with the location of each container during loading. Transport from the interim storage facility to the loading berth is controlled by documentary checks detailing the container details and the containers contents.

3.1.2.4 Transport Practice 2.1

The cyanide product manufactured by Tongsuh is packed initially into wooden intermediate bulk containers and then into sealed shipping containers for transport to the Port of Busan's Korail Interim Storage Facility where it is stored in a dedicated Dangerous Goods storage facility pending shipment. The area in which the containers are stored whilst transiting the port is suitable to effectively contain any spillage of solid sodium cyanide that may occur. This facility is certified to handle and store all categories of dangerous goods, including Class 6.1.


Containers from this facility are transported by truck to Pier 2 of North Port where it is loaded directly onto the ship. Pier 2 at the Port of Busan is for the loading of all dangerous goods at the port.

Golder's assessment of the Port of Busan, including interim storage facilities, concluded that the port operates in compliance with requirements of the ICMC and the IMO DG Code.

3.1.2.5 Transport Practice 3.1

The Busan Port Authority is responsible for all port operations including emergency response. Although Golder's desktop assessment did not feature a review of the BPA's specific emergency response plan the BPA has emergency response capabilities in accordance with IMO DG Code requirements.

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3.1.2.6 Conclusion

The assessment found no issues of concern in regards to the Port of Busan's management of solid sodium cyanide product. The assessment is not a final acceptance of the Port of Busan for future work and as with all service providers to Orica, Orica will continue to review and monitor their performance.

3.1.3 Port of Callao, Peru

Orica conducted a due diligence assessment of the Port of Callao on 17 March 2014, performed by the Cyanide Operations Team Lead and Safety, Health, Environment and Community (SHEC) Chemical and Supply Chain Supervisor for Orica Mining Services Peru. The following items were specifically addressed within the due diligence:

- Transport Practice 1.1
- Transport Practice 1.5
- Transport Practice 1.6
- Transport Practice 2.1
- Transport Practice 3.1.

3.1.3.1 Transport Practice 1.1

Orica uses three major shipping lines (Hamburg SUD, Maersk and MSC) to transport its shipments to the Port of Callao in Peru.

The international sales and exports of solid sodium cyanide take into consideration the shipping services available to service the intended target market. Orica only operates in export markets that are serviced by major international shipping companies with the ability to offer scheduled container services from the Ports of Brisbane, Melbourne and Shanghai to the destination port for the country or continent. These shipping companies also provide the correct manifest documentation to the destination port which provides them with a list of the cargo types and in the case of sodium cyanide and any other hazardous cargo the number and reference of the containers.

3.1.3.2 Transport Practice 1.5

The international standards for the shipment of cyanide by sea, as described in 1.5, are followed by the port.


3.1.3.3 Transport Practice 1.6

Port stevedores receive the vessels manifest on arrival which includes the containers for unloading and handling by them. This information is then captured in the stevedores management systems which assist with the location where each container from the vessel is to be placed after unloading. Transport from the unloading berth to the interim storage facility is controlled by documentary checks detailing the container details and the containers contents.

3.1.3.4 Transport Practice 2.1

Warning signage is in place. Containers are placarded in accordance with IMO DG Code labelling requirements displaying relevant warning and safety information. Signage prohibiting smoking, open flames and eating and drinking are in place, as well as PPE requirements.

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The terminal has its own security procedures in place which include the ports International Ship and Port Security (ISPS) Code status. With respect to cyanide these procedures include the requirement for an Orica Supervisor and Warehouse Supervisor to be in attendance for cross checking, container inspection and verification prior to any movement being initiated.

All cyanide remains within its sealed containers at the port in an area that is well ventilated to prevent the build-up of hydrogen cyanide gas. The product remains in its sealed containers at all times and the storage area is suitable to effectively contain any spillage that may occur. Personnel with hazardous materials response training are available in the event of an incident.

3.1.3.5 Transport Practice 3.1

Although not specifically addressed in the due diligence the Port of Callao has a basic emergency response by following the IMO DG requirements.

3.1.3.6 Conclusion

The due diligence review found no issues of concern in regards to the management of solid sodium cyanide product. The review is not a final acceptance of the Port of Callao for future work and as with all service providers to Orica, Orica will continue to review and monitor their performance.

The due diligence review concluded:

The Due Diligence assessment conducted of the Port of Callao ascertained that the port is operating in a safe and responsible manner and is suitable for the transit of sodium cyanide.

3.1.4 Port of Buenos Aires, Argentina

Orica conducted a due diligence assessment of the Port of Buenos Aires on 24 March 2014, performed by the Cyanide Operations Team Lead and SHEC Chemical and Supply Chain Supervisor for Orica Mining Services Peru. The following items were specifically addressed within the due diligence:

- Transport Practice 1.1
- Transport Practice 1.5
- Transport Practice 1.6
- Transport Practice 2.1
- Transport Practice 3.1.


3.1.4.1 Transport Practice 1.1

Orica uses three major shipping lines (Hamburg SUD, Maersk and MSC) to transport its shipments to the Port of Buenos Aires in Argentina.

3.1.4.2 Transport Practice 1.5

The international standards for the shipment of cyanide by sea, as described in 1.5, are followed by the port.

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3.1.4.3 Transport Practice 1.6

Port stevedores receive the vessels manifest on arrival which includes the containers for unloading and handling by them. This information is then captured in the stevedores management system which assists with the location where each container from the vessel is to be placed after unloading. Transport from the unloading berth to the interim storage facility is controlled by documentary checks detailing the container details and the containers contents.

3.1.4.4 Transport Practice 2.1

Containers are placarded in accordance with the labelling requirements of the IMO DG Code and display the relevant warning and safety information including the Dangerous Goods class, the United Nations (UN) Number and the HAZCHEM Code.

The port has in place warning signage detailing dangerous goods classes held in transit. Class 6 signage is provided when Class 6 products, including sodium cyanide are transited through the port. When Class 6 products are transited via the port, additional warning signage is placed out warning of the prohibition of smoking, the prohibited use of open flames and ignition sources and the prohibition of the consuming of foodstuffs in the immediate area.

The port is accredited under the ISPS Code. The port has in place a continual security presence which includes random patrols of the port environs and random checks of personnel's port access allowances. Checks against documentation and containers for match of container number and seal number are performed prior to egress from the port by on-site security personnel. On-site security also check driver documentation and authorisation to collect containers on arrival at the port.

Sodium cyanide which is packaged into composite intermediate bulk containers remains at all times within sealed containers whilst transiting through the Port of Buenos Aires to prevent the possible build-up of hydrogen cyanide gas.

Sodium cyanide remains within its sealed containers at all times. Emergency response is via external emergency services that have been briefed and provided with relevant information with regards to the nature of the product and response requirements and methodologies.

3.1.4.5 Transport Practice 3.1

Although not specifically addressed in the due diligence the Port of Buenos Aires has a basic emergency response by following the IMO DG requirements. Additionally, the Port of Buenos Aires has facility specific emergency response plans indicating that the port has an internal emergency response capability that can provide basic response to incidents involving dangerous goods.


3.1.4.6 Conclusion

The due diligence review found no issues of concern in regards to the management of solid sodium cyanide product. The review is not a final acceptance of the Port of Buenos Aires for future work and as with all service providers to Orica, Orica will continue to review and monitor their performance.

The due diligence review concluded:

Orica's due diligence concluded that the Port of Buenos Aires is operating as safely as reasonably practicable and in accordance with Orica requirements.

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3.1.5 Port of Puerto Deseado, Argentina

Orica conducted a due diligence assessment of the Port of Deseado on 27 March 2014, performed by the Cyanide Operations Team Lead and SHEC Chemical and Supply Chain Supervisor for Orica Mining Services Peru. The following items were specifically addressed within the due diligence:

- Transport Practice 1.1
- Transport Practice 1.5
- Transport Practice 1.6
- Transport Practice 2.1
- Transport Practice 3.1.

3.1.5.1 Transport Practice 1.1

Orica uses three major shipping lines (Hamburg SUD, Maersk and MSC) to transport its shipments to the Port of Puerto Deseado in Argentina.

The international sales and exports of solid sodium cyanide take into consideration the shipping services available to service the intended target market. Orica only operates in export markets that are serviced by major international shipping companies with the ability to offer scheduled container services from the Ports of Brisbane, Melbourne and Shanghai to the destination port for the country or continent. These shipping companies also provide the correct manifest documentation to the destination port which provides them with a list of the cargo types and in the case of sodium cyanide and any other hazardous cargo the number and reference of the containers.

3.1.5.2 Transport Practice 1.5

The international standards for the shipment of cyanide by sea, as described in 1.5, are followed by the port.

3.1.5.3 Transport Practice 1.6

Port stevedores receive the vessels manifest on arrival which includes the containers for unloading and handling by them. This information is then captured in the stevedore's management systems which assists with the location where each container from the vessel is to be placed after unloading. Transport from the unloading berth to the interim storage facility is controlled by documentary checks detailing the container details and the containers contents.


3.1.5.4 Transport Practice 2.1

All containers arriving at the port are placarded in accordance with the IMO DG Code labelling requirements and display the relevant warning and safety information including HAZCHEM Code, UN Number, specific dangerous goods class and emergency information contacts.

As sodium cyanide is transited through the Port of Deseado on an irregular basis, permanent warning signage is not in place. However, on arrival of sodium cyanide and other Class 6 products, appropriate signage is displayed prohibiting smoking, open flames, ignition sources and the consumption of foodstuffs in the area where Class 6 products are held.

The port has in place minimum requirements for personal protective equipment that includes the requirements for suitable protective footwear, safety helmet where required and readily visible clothing.

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The port is ISPS Code accredited. Also, the port has recently implanted additional security measures including a presence at the inwards and outwards access at the port, additional security lighting in particular in areas of a sensitive nature (e.g. where dangerous goods are transited and random security patrols throughout the port area). Night security patrols are armed.

Containers departing the port are checked against documentation for matching container numbers and product detail.

All sodium cyanide transited through the Port of Puerto Deseado remains contained within its sealed containers at all times and are placed in an area that is well ventilated to prevent the build-up of hydrogen cyanide gas. Sodium cyanide remains in its sealed containers at all times. The area where the containers are placed is considered suitable to contain effectively any spillage that may happen.

The port's internal emergency response capability has been provided with the relevant information should a spillage occur.

3.1.5.5 Transport Practice 3.1

Although not specifically addressed in the due diligence the Port of Puerto Deseado has a basic emergency response by following the IMO DG requirements.

3.1.5.6 Conclusion

The due diligence review found no issues of concern in regards to the management of solid sodium cyanide product. The review is not a final acceptance of the Port of Puerto Deseado for future work and as with all service providers to Orica, Orica will continue to review and monitor their performance.

The due diligence review concluded:

The ongoing review as a service provider and this due diligence assessment has found no issues of concern in regards to the Port of Puerto Deseado. Orica via its South American affiliates will continue to review and monitor the port's performance and this will include ongoing and regular contact to maintain awareness and preparedness.

3.1.6 Port of Santos, Brazil


A due diligence review of the Port of Santos was conducted by Orica on the 18 September 2013, performed by David Ellison, Supply Chain Compliance Coordinator for Orica. The following items were specifically addressed within the due diligence:

- Transport Practice 1.1
- Transport Practice 1.5
- Transport Practice 1.6
- Transport Practice 2.1
- Transport Practice 3.1.

3.1.6.1 Transport Practice 1.1

Orica uses three major shipping lines (Hamburg SUD, Maersk and MSC) to transport its shipments to the Port of Santos in Brazil.

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The international sales and exports of solid sodium cyanide take into consideration the shipping services available to service the intended target market. Orica only operates in export markets that are serviced by major international shipping companies with the ability to offer scheduled container services from the Ports of Brisbane, Melbourne and Shanghai to the destination port for the country or continent. These shipping companies also provide the correct manifest documentation to the destination port which provides them with a list of the cargo types and in the case of sodium cyanide and any other hazardous cargo the number and reference of the containers.

3.1.6.2 Transport Practice 1.5

The international standards for the shipment of cyanide by sea, as described in 1.5, are followed by the port.

3.1.6.3 Transport Practice 1.6

Port stevedores receive the vessels manifest on arrival which includes the containers for unloading and handling by them. This information is then captured in the stevedore's management systems, which assists with the location where each container from the vessel is to be placed after unloading. Transport from the unloading berth to the interim storage facility is controlled by documentary checks detailing the container details and the containers contents.

3.1.6.4 Transport Practice 2.1

Relevant warning signage is provided at the Port of Santos. Containers are placarded in accordance with the requirements of the IMO DG Code labelling requirements, displaying the relevant warning and safety detail.

Sodium cyanide is not stored at the Port of Santos. Containers on arrival, after appropriate customs and country relevant quarantine clearances, are collected by the transport organisation operating on behalf of the end destination user and transported under suitable convoy conditions. Whilst containers of sodium cyanide are in the port environs, temporary signage is provided warning that smoking, open flames and eating or drinking in the vicinity are prohibited.

Mandatory personal protective equipment requirements are in place at the Port of Santos, which require the wearing of protective footwear, appropriate clothing with high visibility capability and safety helmet in specific areas. Personal protective equipment requirements are covered under the port's basic induction processes. Port management regularly conduct spot checks on ports areas for compliance of personal protective equipment standards.


The port is ISPS Code rated and has its own security procedures in place with a 24 hour, 7-day security presence. On collection of shipping containers from the port after clearances have been completed, drivers are required to produce their documentation at the port security checkpoint for cross checking by security personnel prior to leaving the port.

Containers on arrival and awaiting clearances are held in the open with relevant segregation to prevent the possible build-up of hydrogen cyanide gas. A wind sock is located in the area to indicate the wind direction.

All sodium cyanide arriving at the Port of Santos remains at all times in its sealed containers. Containers are only held on an in-transit basis awaiting relevant clearances by customs and internal quarantine requirements.

The port has an internal emergency response capability that can provide basic response to incidents involving dangerous goods. Spill kits are located at strategic locations throughout the port.

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3.1.6.5 Transport Practice 3.1

Although not specifically addressed in the due diligence the Port of Santos has a basic emergency response by following the IMO DG requirements.

3.1.6.6 Conclusion

The due diligence concluded:

The Due Diligence assessment conducted of the Port of Santos determined that the port was operating in a responsible and safe manner as far as practicable and is suitable for the transit of sodium cyanide through to end user destinations in Brazil.

3.1.7 Port of Puerto Angamos, Chile

Orica conducted a due diligence assessment of the Port of Puerto Angamos on 17 January 2014, performed by David Ellison, Supply Chain Compliance Coordinator for Orica. The following items were specifically addressed within the due diligence:

- Transport Practice 1.1
- Transport Practice 1.5
- Transport Practice 1.6
- Transport Practice 2.1
- Transport Practice 3.1.

3.1.7.1 Transport Practice 1.1

Orica uses three major shipping lines (Hamburg SUD, Maersk and MSC) to transport its shipments to the Port of Puerto Angamos in Chile.

The international sales and exports of solid sodium cyanide take into consideration the shipping services available to service the intended target market. Orica only operates in export markets that are serviced by major international shipping companies with the ability to offer scheduled container services from the Ports of Brisbane, Melbourne and Shanghai to the destination port for the country or continent. These shipping companies also provide the correct manifest documentation to the destination port which provides them with a list of the cargo types and in the case of sodium cyanide and any other hazardous cargo the number and reference of the containers.


3.1.7.2 Transport Practice 1.5

The international standards for the shipment of cyanide by sea, as described in 1.5, are followed by the port.

3.1.7.3 Transport Practice 1.6

Port stevedores receive the vessels manifest on arrival which includes the containers for unloading and handling by them. This information is then captured in the stevedore's management systems, which assists with the location where each container from the vessel is to be placed after unloading. Transport from the unloading berth to the interim storage facility is controlled by documentary checks detailing the container details and the containers contents.

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3.1.7.4 Transport Practice 2.1

All containers arriving at the port are placarded in accordance with the IMO DG Code labelling requirements and display the relevant warning and safety information including HAZCHEM Code, UN Number, specific dangerous goods class and emergency information contacts.

The port has a separate dangerous goods storage area (Chacaya Warehouse), which is the dedicated dangerous goods storage area and also where all dangerous goods initially arrive for subsequent shipment out of the port. Appropriate signage is displayed in this area. Dangerous goods are only permitted to be stored at the port for a maximum of 96 hours.

The port has in place minimum requirements for personal protective equipment that includes the requirements for suitable protective footwear, safety helmet where required and readily visible clothing.

The port is ISPS Code accredited and has ISO 9001, ISO 14001 and OHSAS 18001 certification. Closed circuit television, infrared perimeter fencing, electronic card access, guardhouses and regular patrols are in place.

Containers departing the port are checked against documentation for matching container numbers and product detail.

All sodium cyanide transited through the Port of Puerto Angamos remains contained within its sealed containers at all times and are placed in an area that is well ventilated to prevent the build-up of hydrogen cyanide gas. Sodium cyanide remains in its sealed containers at all times. The area where the containers are placed is considered suitable to contain effectively any spillage that may happen.

Puerto Angamos has an emergency response plan in place which is maintained by the Port Emergency Response Manager with close consultation with emergency services. In house emergency response training against the emergency response plan is provided at regular intervals.

3.1.7.5 Transport Practice 3.1

Although not specifically addressed in the due diligence the Port of Puerto Angamos has a basic emergency response by following the IMO DG requirements. Additionally, the Port of Puerto Angamos has facility specific emergency response plans indicating that the port has an internal emergency response capability that can provide basic response to incidents involving dangerous goods.

3.1.7.6 Conclusion

The due diligence report provided to the Auditor stated that:


The ongoing review as a service provider and this due diligence assessment has found no issues of concern in regards to the Port of Puerto Angamos. Orica via its South American affiliates will continue to review and monitor the port's performance and this will include ongoing and regular contact to maintain awareness and preparedness.

3.1.8 Port of Punta Arenas, Chile

Orica conducted a due diligence assessment of the Port of Punta Arenas (Mardones Terminal and Magallanes Terminal) in November 2014, performed by the ICMC Compliance Coordinator for Orica Mining Services South America. The following items were specifically addressed within the due diligence:

- Transport Practice 1.1
- Transport Practice 1.5
- Transport Practice 1.6

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- Transport Practice 2.1
- Transport Practice 3.1.

3.1.8.1 Transport Practice 1.1

Orica uses four major shipping lines (MSC, Maersk and Hamburg SUD, Trasmare) to transport its shipments to the Port of Punta Arenas in Chile.

The international sales and exports of solid sodium cyanide take into consideration the shipping services available to service the intended target market. Shipping companies provide the correct manifest documentation to the destination port which provides them with a list of the cargo types and in the case of sodium cyanide and any other hazardous cargo the number and reference of the containers.

3.1.8.2 Transport Practice 1.5

The international standards for the shipment of cyanide by sea, as described in 1.5, are followed by the port.

3.1.8.3 Transport Practice 1.6

Port stevedores receive the vessels manifest on arrival which includes the containers for unloading and handling by them. This information is then captured in the stevedores management systems which assists with the location where each container from the vessel is to be placed after unloading. Transport from the unloading berth to the interim storage facility is controlled by documentary checks detailing the container details and the containers contents.

3.1.8.4 Transport Practice 2.1

Shipping containers containing composite intermediate bulk containers (IBCs) are placarded in accordance with the GHS. Containers are placarded with the environmentally hazardous substance label.

The two terminals that receive Orica shipments at the Port of Punta Arenas do not have separate dangerous goods areas; instead, dangerous goods are stored in small amounts all along the terminals in order to avoid large accidents. This means that in the event of an emergency, only a small area of the port is affected. Dangerous goods storage is managed through the use of special software that applies an IMG code which establishes secure distances between different DGs. Appropriate signage is displayed in these areas.

The Port operations for dangerous goods are registered and licensed by the government and is listed on the ISPS site as accredited.


The port has in place minimum requirements for personal protective equipment that includes the requirements for suitable protective footwear, safety helmet where required and readily visible clothing.

The Port of Punta Arenas has restricted entrance and circulation with an electronic card access system in place to enable only authorised access to the port area. Specific procedures are in place for contractors within the port area.

Containers departing the port are checked against documentation for matching container numbers and product detail. All sodium cyanide transited through the Port of Punta Arenas remain contained within their sealed containers at all times and are placed in an area that is well ventilated to prevent the build-up of hydrogen cyanide gas. The area where the containers are placed is considered suitable to contain effectively any spillage that may happen.

The Port of Punta Arenas has an appropriate emergency response plan in place.

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3.1.8.5 Transport Practice 3.1

Although not specifically addressed in the due diligence the Port of Punta Arenas has a basic emergency response by following the IMO DG requirements. Additionally, the Port of Punta Arenas has an emergency response plan in place indicating that the port has an internal emergency response capability that can provide basic response to incidents involving dangerous goods.

3.1.8.6 Conclusion

The due diligence report provided to the Auditor stated that:

The ongoing review as a service provider and this due diligence assessment has found no issues of concern in regards to the Port of Punta Arenas. Orica via its South American affiliates will continue to review and monitor the port's performance and this will include ongoing and regular contact to maintain awareness and preparedness.


3.1.9 Port of Veracruz, Mexico

Orica conducted a due diligence assessment of the Port of Veracruz on 11 March 2014, performed by Orlando Rodriguez, Logistics Demand Lead for Orica Mining Services Mexico. The due diligence consisted of posing and seeking information to address specific questions associated with Transport Practices 1.1, 1.5, 1.6, 2.1 and 3.1. These questions were:

- 1) What is the Port's name?
- 2) What Orica products are transported through this facility?
- 3) What shipping lines are utilised through this Port by Orica Mining Chemicals?
- 4) Does the port have an emergency response plan?
- 5) When was the plan last exercised?
- 6) Does the port have a separate dangerous goods storage area?
- 7) Is the DG storage area compliant with the International Cyanide Management Code Transportation protocols?
- 8) Is DG stored on the wharf at this port?
- 9) Are there emergency services located nearby?
- 10) How is Orica Mining Chemicals product moved to this port?
- 11) Does this Port effect International Ship and Port Facility Security Code requirements?
- 12) Contacts
- 13) Does this port operate a sustainability programme?
- 14) Are there any dangerous goods limitations imposed at this port?
- 15) Is training conducted as regards dangerous goods at this port?
- 16) Are there any sensitive areas in the area where the port exists?

The due diligence report provided to the Auditor stated that:

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From the assessment it is determined that the Port of Veracruz is operating in a safe manner and meets Orica's requirements for the transit of sodium cyanide.

3.2 Shipping

Orica conducted the following due diligence assessments of shipping operations utilised as part of their Latin America Supply Chain:

- Maersk Australia Pty Ltd Due Diligence Review, Orica Mining Chemicals, 27 July 2014
- Hamburg SUD Group Due Diligence Review, Orica Mining Chemicals, 26 July 2014
- MSC Shipping Due Diligence Review, Orica Mining Chemicals, 29 July 2014
- Naviera Ultrana Ltd Transmares Division Due Diligence Review, Orica Mining Chemicals, 24 November 2014.

The reviews were conducted by David Ellison, SH&E Distribution Risk Manager of Orica Australia Pty Ltd, and Felipe Chamas of Orica Mining Services.

The following items were addressed within the due diligences:

- Compliance with ICMC
 - Transport Practice 1.1
 - Transport Practice 1.5
 - Transport Practice 1.6.
- Australian Shipping Regulatory Framework
 - Australian Maritime Safety Authority (AMSA)
 - Cargoes
 - Port State Control
 - Power of Inspection and Detention of a Ship
 - Australian Department of Defence.

The due diligence assessments were compiled through physical visits, interviews and discussions with appropriate personnel and review of applicable documentation.


The due diligence assessments were found to sufficiently evaluate the shipping operations (discussed below), and additional management measures by the consigner were not considered necessary.

3.2.1 Maersk Australia Pty Ltd

3.2.1.1 Transport Practice 1.1

Maersk Shipping is a carrier service providing international shipping of containers on a fleet of their container vessels. Containers containing solid sodium cyanide are placed and secured on their vessels at the loading ports (Ports of Brisbane, Melbourne, Busan and Shanghai) by the stevedoring company and removed at the port of destination by the stevedoring company at that port.

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The international sales and export of solid sodium cyanide takes into consideration the shipping services available to service the intended target area. Orica only operates in export markets that are serviced by major international shipping companies with the ability to offer scheduled container services from the Ports of Brisbane, Melbourne, Busan and Shanghai to the destination country or continent. Orica uses Maersk Shipping for its international shipping to South America due to its selection of services available from the Ports of Brisbane, Melbourne, Busan and Shanghai.

The routes from the Ports of Brisbane, Melbourne, Busan and Shanghai to South American ports are not definitive as ships can take carrying routes to arrive at the same destination as they take into account tides, currents, wind and storms.

3.2.1.2 Transport Practice 1.5

The international standards for the shipment of cyanide by sea, as described in 1.5, are followed by Maersk.

3.2.1.3 Transport Practice 1.6

Maersk Shipping vessels have continuous means of tracking and communication during their voyages.

Maersk Shipping has their own in-house tracking systems for tracking freight which is linked by the specific container number and Bill of Lading (BOL) number. Orica has access to this tracking system via its contracted Freight Forwarder.

3.2.1.4 Conclusion

Orica conducted a due diligence review of Maersk on 27 July 2014.

Maersk Shipping is a carrier service providing international shipping of containers. Containers of solid sodium cyanide are placed and secured on the vessels at the loading port (Port of Brisbane, Melbourne and Shanghai) by a stevedoring company and removed at the port of destination by the stevedoring company at that port.

The due diligence review concluded:

Orica through its dealings with Maersk Shipping has found them to be a professional shipping organisation.


The ongoing review as a service provider and this due diligence review has found no issues of concern in regards to Maersk Shipping's management and the shipping of solid sodium cyanide product. The review is not a final acceptance of Maersk Shipping for future work and as with all service providers to Orica, Orica will continue to review and monitor their performance.

Any changes in state, national or international regulations, standards or laws can result in a total review of the international shipping requirements.

The due diligence also noted that:

... Orica is no able to conduct inspections and checks on shipping vessels readily due to port safety and security issues. The Australian Government through the Australian Maritime Safety Authority (AMSA) and State Government through the Port State Control (PSC) do however inspect and monitor cargo vessels that frequent Australian ports. These inspections ensure vessels are seaworthy, do not pose a pollution risk, provide healthy and safe work environments and comply with relevant international regulations. These inspections are not only carried out at Australian ports but internationally and set the operating standards for the international shipping companies (sic).

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3.2.2 Hamburg SUD Group

3.2.2.1 Transport Practice 1.1

Hamburg SUD is a carrier service providing international shipping of containers on a fleet of their container vessels. Containers containing solid sodium cyanide are placed and secured on their vessels at the loading port (Brisbane, Melbourne, Busan and Shanghai) by the stevedoring company and removed at the port of destination by the stevedoring company at that port.

The international sales and export of solid sodium cyanide takes into consideration the shipping services available to service the intended target area. Orica only operates in export markets that are serviced by major international shipping companies with the ability to offer scheduled container services from the Port of Brisbane, Melbourne, Busan and Shanghai to the destination country or continent. Orica mainly uses Hamburg SUD for its international shipping to South American ports due to its selection of services available and its regular shipping schedule from Brisbane, Melbourne, Busan and Shanghai.

The routes from the Ports of Brisbane, Melbourne, Busan and Shanghai are not definitive as ships can take varying routes to arrive at the same destination as they take into account tides, currents, wind and storms.

3.2.2.2 Transport Practice 1.5

The international standards for the shipment of cyanide by sea, as described in 1.5, are followed by Hamburg SUD.

3.2.2.3 Transport Practice 1.6

Hamburg SUD vessels have continuous means of tracking and communication during their voyages.

Hamburg SUD has their own in-house tracking systems for tracking freight which is linked by the container number and BOL number.

3.2.2.4 Conclusion

Orica conducted a due diligence review of Hamburg SUD on 26 July 2014.


The due diligence review concluded:

Orica through its dealings with Hamburg SUD has found them to be a professional organisation.

The ongoing review as a service provider and this due diligence review has found no issues of concern in regards to Hamburg SUD management and shipping of the solid sodium product. The review is not a final acceptance of Hamburg SUD for future work and as with all service providers to Orica, Orica will continue to review and monitor their performance.

Any changes in state, national or international regulations, standards or laws can result in a total review of the international shipping requirements.

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The due diligence also noted that:

...Orica is not able to conduct inspections and checks on shipping vessels readily due to port safety and security issues. The Australian Government through the Australian Maritime Safety Authority (AMSA) and State Government through the Port State Control do however inspect and monitor cargo vessels that frequent Australian ports. These inspections ensure vessels are seaworthy, do not pose a pollution risk, provide healthy and safe work environments and comply with relevant international regulations. These inspections are not only carried out at Australian ports but internationally and set the operating standards for the international shipping companies.

3.2.3 MSC Shipping

3.2.3.1 Transport Practice 1.1

MSC Shipping is a carrier service providing international shipping of containers on a fleet of their container vessels. Containers containing solid sodium cyanide are placed and secured on their vessels at the loading ports (Ports of Brisbane, Melbourne, Busan and Shanghai) by the stevedoring company and removed at the port of destination by the stevedoring company at that port.

The international sales and export of solid sodium cyanide takes into consideration the shipping services available to service the intended target area. Orica only operates in export markets that are serviced by major international shipping companies with the ability to offer scheduled container services from the Ports of Brisbane, Melbourne, Busan and Shanghai to the destination country or continent. Orica mainly uses MSC Shipping for its international shipping due to its selection of services available from the Ports of Brisbane, Melbourne, Busan and Shanghai.

The routes from the Ports of Brisbane, Melbourne, Busan and Shanghai to destination ports is not definitive as ships can take varying routes to arrive at the same destination as they take into account tides, currents, wind and storms.

3.2.3.2 Transport Practice 1.5


The international standards for the shipment of cyanide by sea, as described in 1.5, are followed by MSC.

3.2.3.3 Transport Practice 1.6

MSC Shipping vessels have continuous means of tracking and communication during their voyages.

MSC Shipping has their own in-house tracking systems for tracking freight which is linked by the specific container number and BOL number. Orica has access to this tracking system via its contracted Freight Forwarder.

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3.2.3.4 Conclusion

Orica conducted a due diligence review of MSC on 29 July 2014.

The due diligence review concluded:

Orica through its dealings with MSC Shipping has found them to be a highly professional shipping organisation.

The ongoing review as a service provider and this due diligence review has found no issues of concern in regards to MSC Shipping's management and the shipping of solid sodium cyanide product. The review is not a final acceptance of MSC Shipping for future work and as with all service providers to Orica, Orica will continue to review and monitor their performance.

Any changes in state, national or international regulations, standards or laws can result in a total review of the international shipping requirements.

The due diligence also noted that:

...Orica is not able to conduct inspections and checks on shipping vessels readily due to port safety and security issues. The Australian Government through the Australian Maritime Safety Authority (AMSA) and State Government through the Port State Control (PSC) do however inspect and monitor cargo vessels that frequent Australian ports. These inspections ensure vessels are seaworthy, do not pose a pollution risk, provide healthy and safe work environments and comply with relevant international regulations. These inspections are not only carried out at Australian ports but internationally and set the operating standards for the international shipping companies.

3.2.4 Naviera Ultrana Ltd Transmares Division

Transmares is a carrier service providing international shipping of containers on a fleet of their container vessels. Containers containing solid sodium cyanide are placed and secured on their vessels at the loading port (Port of San Antonio) by the stevedoring company and removed at the port of destination by the stevedoring company at that port.

The international sales and export of solid sodium cyanide takes into consideration the shipping services available to service the intended target area. Orica mainly uses Transmares for its shipping due to its selection of services available from ports within South America.

The route from the Port of San Antonio to destination ports is not definitive as ships can take varying routes to arrive at the same destination as they take into account tides, currents, wind and storms.

3.2.4.1 Transport Practice 1.5


The international standards for the shipment of cyanide by sea, as described in 1.5, are followed by Transmares.

3.2.4.2 Transport Practice 1.6

Transmares vessels have continuous means of tracking and communication during their voyages.

Transmares has their own in-house tracking systems for tracking freight which is linked by the specific container number and BOL number.

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3.2.4.3 Conclusion

Orica conducted a due diligence review of Transmares on 24 November 2014.

The due diligence review concluded:

Orica through its dealings with Transmares has found them to be a professional organisation.

Transmares, via its technical administrator Humboldt Ship Management is accredited under ISO 9001 and ISO 14001.

The ongoing review as a service provider and this due diligence review has found no issues of concern in regards to Transmares' management and shipping of the solid sodium product. The review is not a final acceptance of Transmares for future work and as with all service providers to Orica, Orica will continue to review and monitor their performance.

Any changes in state, national or international regulations, standards or laws can result in a total review of the international shipping requirements.

3.2.5 Australian Shipping Regulatory Framework

3.2.5.1 Australian Maritime Safety Authority

AMSA represents Australia at the International Maritime Organisation (IMO) and other international forums in the development, implementation and enforcement of international standards governing ship safety, navigation, marine environment protection, ship operations, maritime security, crew competence, training and fatigue management.

Australia's maritime regulatory framework is based on policies and guidelines relating to ship construction standards, ship survey and safety, crewing, seafarer's qualifications and welfare, carriage and handling of cargoes, passengers and marine pollution prevention.

3.2.5.2 Cargoes

AMSA is responsible for implementing IMO regulations for all safety related aspects of marine carriage of all types including bulk liquid and solid cargoes, dangerous goods, general cargoes, containers, as well as standards and operations concerning cargo lifting gear.

Under provisions of the International Convention for the Safety of Life at Sea (SOLAS), 1974 Chapter 1 and Chapter VII, ships are subject to port state control inspections during which compliance with cargo requirements including stowage, segregation, packaging and documentation is verified.

AMSA represents Australia at the following related IMO sub-committees:


- Sub-Committee on Dangerous Goods, Solid Cargoes and Containers (DSC)
- Sub-Committee on bulk Liquids and Gases (BLG).

3.2.5.3 Port State Control

Port State Control (PSC) is one of the governmental strategies in place to ensure the above objectives are achieved; however, responsibility for the safety and operation of the vessel lies with the ship owners and flag states.

PSC inspections are conducted to ensure that foreign ships visiting Australian ports are seaworthy, do not pose a pollution risk, provide healthy and safe work environments and comply with relevant international regulations.

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3.2.5.4 Power of Inspection and Detention

AMSA marine surveyors may board a ship at any time to inspect and detail un-seaworthy or sub-standard ships.

For information purposes, these inspections include ensuring all dangerous goods cargoes are correctly documented on the manifest list, correctly stowed, segregated and especially for container vessels, all containers are correctly lashed onto the vessel and all fixtures and lashings are in suitable and working condition.

Cargo ships become eligible for a PSC inspection every six months. Selection of a ship for inspection depends on a number of factors, including risk to the environment, specific complaints and an AMSA targeting scheme. Surveyors are guided by a set of "Instructions to Surveyors" and "Ship Inspection Manual" which is based on resolutions of the IMO.

3.2.5.5 Australian Department of Defence

The Australian Department of Defence manages on behalf of the Government Australia's commitments to the United Nations Chemicals Weapons Convention. All Orica's export customers are required to complete a Permit Application and have its application approved before Orica is permitted to export product. Orica assists with the collection of the Permit from its customers and then together with its own documentation applies for the permit. Each customer's Permit reference number is required on the export documentation. Orica cannot export without this approval.


3.3 Auditor Review of Due Diligence

Orica has concluded from the due diligence assessments that no major issues of concern were identified with respect to the transportation of sodium cyanide throughout the domestic supply chain by the shipping operators, road transportation operators and port utilised. Based on a review of the due diligence reports, the auditor accepts this conclusion.

4.0 LIMITATIONS

Your attention is drawn to the document – "Limitations", which is included as Appendix A to this report. This document is intended to assist you in ensuring that your expectations of this report are realistic, and that you understand the inherent limitations of a report of this nature. If you are uncertain as to whether this report is appropriate for any particular purpose please discuss this issue with us.

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Report Signature Page

GOLDER ASSOCIATES PTY LTD

A handwritten signature in black ink, appearing to read 'E. Clerk'.

Ed Clerk
Principal/ICMC Lead Auditor

DCR/EWC/eh

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APPENDIX A

Limitations

At Golder Associates we strive to be the most respected global company providing consulting, design, and construction services in earth, environment, and related areas of energy. Employee owned since our formation in 1960, our focus, unique culture and operating environment offer opportunities and the freedom to excel, which attracts the leading specialists in our fields. Golder professionals take the time to build an understanding of client needs and of the specific environments in which they operate. We continue to expand our technical capabilities and have experienced steady growth with employees who operate from offices located throughout Africa, Asia, Australasia, Europe, North America, and South America.

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