INTERNATIONAL CYANIDE MANAGEMENT CODE

Orica Australia Pty Ltd, East Africa
Supply Chain Recertification - Summary Audit Report

Submitted to:
International Cyanide Management Institute
1400 I Street, NW - Suite 550
WASHINGTON, DC 20005
UNITED STATES OF AMERICA

Seth Ahene
Orica Australia Pty Ltd
Cyanide Operations & Solutions
Specialist - Africa
#5, Fifth Street, Off Sencsi Street,
Airport Residential Area, Accra, PMB
CT 472, Cantonment, Accra Ghana
seth.ahene@orica.com

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1 Copy – ICMI (+1 Electronic)
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1 Copy – Golder Associates Pty Ltd (Electronic)
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1.0 INTRODUCTION

1.1 Operational Information

Name of Transportation Facility: Orica Australia Pty Ltd – East Africa Supply Chain
Name of Facility Owner: Not Applicable
Name of Facility Operator: Orica Australia Pty Ltd
Name of Responsible Manager: Seth Ahene, Cyanide Operations and Solutions Specialist, Orica Australia
Address: #5, Fifth Street, Off Senchi Street, Airport Residential Area, Accra, PMB CT 472, Cantonment, Accra Ghana
State/Province: Airport Residential Area
Country: Ghana
Telephone: +233 (0)54 444 4343 or +233 (0)30 276 7728
Email: seth.ahene@orica.com

2.0 CYANIDE TRANSPORTATION

2.1 Orica Australia Pty Ltd

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 cyanide, which is manufactured at Orica's Yarwun cyanide production facility (Yarwun Facility) in Queensland, Australia. Orica Mining Chemicals is the world's second largest producer of cyanide.

2.2 Yarwun Production Facility

Orica's Yarwun Facility, which is located 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 cyanide is packaged in either sparge isoliners, which have a maximum gross weight of 26 tonnes, or IBCs, which in turn, are packed into shipping containers – Twenty-foot equivalent units (TEUs). A maximum of 20 Intermediate Bulk Containers (IBCs) can be packed into a single TEU with a maximum gross weight of 28 tonnes. Liquid cyanide is packaged into isoliners with a maximum gross weight of 26 tonnes.

Cyanide manufactured at the Yarwun Facility is used in gold mining operations.

Orica's Yarwun Facility was re-certified as being in full compliance with the Code on 22 February 2017. Orica's Yarwun Facility is not part of the scope of this audit.

2.3 Orica Australia Supply Chain

The Australian Supply Chain covers the transportation of solution cyanide and solid cyanide from the manufacturing facility in Yarwun, Australia, by road and rail direct to its end point users within Australia, to the ports of Brisbane and Melbourne and storage within the Toll Customised Solutions production facility.
Orica’s Australian Supply Chain was re-certified as being in full compliance with the Code on 26 January 2015. The Australian Supply Chain is not part of the scope of this audit.

2.4 East Africa Supply Chain

The East Africa Supply Chain covers the transportation of Orica’s solid cyanide by ship from the ports of Brisbane and Melbourne, Australia (Australian ports), to the port of Dar es Salaam, Tanzania, and to the port of Mombasa, Kenya. Within the East Africa Supply Chain, Freight Forwarders Tanzania (FFT) and Freight Forwarders Kenya (FFK) transport cyanide by road to end point users.

2.4.1 Audit scope

The scope of Orica’s East Africa Supply Chain covers the following:

**Carriers:**
- Mediterranean Shipping Company (MSC)
- Maersk.

**Ports:**
- Port of Mombasa, Kenya
- Port of Dar es Salaam, Tanzania.

**Road Transporters:**
- Freight Forwarders Kenya (FFK)
- Freight Forwarders Tanzania (FFT).

2.4.2 Carriers

2.4.2.1 *Mediterranean Shipping Company (MSC)*

MSC, headquartered in Geneva, Switzerland, is engaged in worldwide container transport via its fleet of 460 vessels, 200 shipping routes and 315 Ports of call. MSC operates in 150 countries with a network of over 480 offices and branches. The fleet has the capacity to handle more than 2.7 million TEUs annually.

MSC has Dangerous Goods Cargo Management Centres that manage the stowage of hazardous cargo worldwide through their computer system. MSC state they operate in accordance with the stringent requirements for stowage and segregation of dangerous goods as per the IMO DG Code.

MSC’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.

2.4.2.2 *Maersk*

Maersk, headquartered in Copenhagen, Denmark, operates a fleet of container vessels with worldwide shipping coverage. The fleet consists of approximately 590 vessels with the capacity to handle more than 3 million TEUs. Maersk operates a container booking and tracking system called the Global Customer Service System (GCSS). This system is the management tool for the proper stowage and handling of dangerous goods cargo.

Maersk require companies utilising their carrier services to provide evidence that their product packaging has been approved by government regulators and tested in accordance with International Maritime Organisation Dangerous Goods (IMO DG) Code. Maersk have the right to refuse cargo if the packaging, container and/or documentation are not satisfactory under the IMO DG Code standards.
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. Maersk also has current certificates for its vessels under the International Ship and Port Facility Security (ISPS) Code developed by the IMO.

2.4.3 Ports
The international sales and exports of cyanide, by Orica, take into consideration the ports and their extended infrastructure 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 point of origin to destination. Each port is selected on the basis that it is the closest port to the customer and that it meets all reasonable industry standards for safety, security and emergency response.

2.4.3.1 Port of Mombasa, Kenya
The port of Mombasa is the gateway to East and Central Africa and is one of the largest ports along the East African coastline. The port provides direct connectivity to over 80 ports worldwide and is well connected by road to a vast hinterland comprising Uganda, Rwanda, Burundi, Eastern Democratic Republic of Congo, Northern Kenya, Southern Sudan, Somalia and Ethiopia. A railway line also runs from the port into Uganda and Kenya. The port of Mombasa is managed by the Kenya Port Authority (KPA).

The port of Mombasa has two container terminals: the Mombasa Container Terminal and the Kipevu Container Terminal, with an annual total capacity of 1.65 million TEUs (2016 figures). Container operations at the port of Mombasa entail discharging and loading of vessels, stacking and unstacking of containers in the yard and delivery/receipt of import and export containers.

2.4.3.2 Port of Dar es Salaam, Tanzania
The port of Dar es Salaam is located on the East Coast of Africa and is the principle port of Tanzania. Dar es Salaam handles approximately 95% of the Tanzania international trade and serves landlocked countries such as Malawi, Zambia, Democratic Republic of Congo, Burundi, Rwanda and Uganda. The port serves as a freight linkage to and from East and Central Africa countries.

The port of Dar es Salaam has a total quay length of 2 km with 11 deep-water berths.

The Tanzania Ports Authority (TPA) operates the port of Dar es Salaam, however all containerised cargo is handled by the Tanzania International Container Terminal Services Ltd (TICTS). The container terminal has four berths totalling 725 m in length with a capacity to handle in excess of 500 000 TEUs per year which includes many classes of Dangerous Goods cargo.

2.4.4 Road Transportation
Orica contracts the road transportation of cyanide within the East Africa Supply Chain to FFT and FFK, where deliveries are effected on behalf of Orica Mining Chemicals.

Road transportation from the ports of Dar es Salaam and Mombasa are effected by end user arranged transportation.

2.4.4.1 Freight Forwarders Tanzania (FFT)
FFT is a freight forwarding and transportation organisation within Dar es Salaam and other areas of Tanzania.

FFT’s sister company, FFK is closely linked with FFT.
FFT provides the following services:

- Clearing and forwarding
- Maritime and port operations management
- Handling and warehousing
- Transport and delivery.

At the time of the audit, FFT transported Orica's solid cyanide to:

- North Mara Gold Mine, Tanzania
- Tulawaka Gold Mine, Tanzania
- Buzwagi Gold Mine, Tanzania
- Bulyanhulu Gold Mine, Tanzania
- Geita Gold Mine, Tanzania.

FFT was recertified as being fully compliant with the Code on 15 May 2015.

2.4.4.2 Freight Forwarders Kenya (FFK)

FFK was incorporated in 1973 following the amalgamation of three prominent Clearing and Forwarding Agents, namely Kenya General Agency Ltd, Reynolds and Co. Ltd and Wafco Ltd.

With 30 years of experience, FFK has developed a network of subsidiaries and agents enabling the organisation to offer a range of clearing, forwarding and logistics services:

- Customs clearance
- Marine services
- Warehousing
- Transportation
- Procurement services
- Communications.

At the time of the audit, FFK transported Orica's solid cyanide to:

- Kibali Gold Mine, Kenya.

FFK was recertified as being fully compliant with the Code on 26 May 2015.

2.5 Trans-shipping and interim storage

Depending on weather, cargo types, journey length and other operational matters, carriers may trans-ship 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 may occur within this Supply Chain. Orica has no control over when and where this happens, but through its due diligence assessments has satisfied itself that the carriers used (MSC and Maersk) undertake the shipping of the product in accordance with the IMO DG Code and in a professional and safe manner.

Orica East Africa Supply Chain

Name of Facility

Signature of Lead Auditor

December 2017

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Date
This satisfaction extends to the selection of port terminals made by the shipping companies and used for trans-shipping and interim storage purposes.

Within the scope of this audit, transit storage is also associated with port operations where containers of cyanide are removed from the vessels, temporarily stored and then placed on road vehicles for the next part of the journey. These transit storage depots are managed by the relevant port authorities and due consideration of relevant protocol requirements has been made through the due diligence process.

There is no interim storage undertaken during road transportation to the end user.
2.6 Auditors Findings and Attestation

☑ in full compliance with

Orica is:

☐ in substantial compliance with The International Cyanide Management Code

☐ not in compliance with

No significant cyanide exposures or releases were noted to have occurred during Orica’s East Africa Supply Chain recertification audit.

Audit Company: Golder Associates Pty Ltd
Audit Team Leader: Jaclyn Ennis-John, Exemplar Global (110895)
Email: jennisjohn@golder.com.au

2.7 Name and Signatures of Other Auditors:

<table>
<thead>
<tr>
<th>Name</th>
<th>Position</th>
<th>Signature</th>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jaclyn Ennis-John</td>
<td>Lead Auditor and Transport Technical Specialist</td>
<td></td>
<td>4 December 2017</td>
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2.8 Dates of Audit

The certification audit of Orica’s East Africa Supply Chain was undertaken between July and August of 2017, with the Detailed Audit Report being finalised in November.

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 Cyanide Transportation Verification Protocol for the International Cyanide Management Code and using standard and accepted practices for health, safety and environmental audits.
3.0 CONSIGNOR SUMMARY

3.1 Principle 1 – Transport
Transport Cyanide in a manner that minimises the potential for accidents and releases.

3.1.1 Transport Practice 1.1
Select cyanide transport routes to minimise the potential for accidents and releases.

☑ in full compliance with
☐ in substantial compliance with
☐ not in compliance with

Transport Practice 1.1

Summarise the basis for this Finding/Deficiencies Identified:

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

Orica has developed and implemented a management system for transportation and there are specific written procedures that detail the process and the parameters to be assessed when identifying, selecting and assessing potential transport routes. These procedures aim to minimise the risk associated with the transportation of cyanide while maintaining a safe, reliable and efficient and cost effective delivery system to customer sites.

Orica undertakes due diligence assessments on carriers, ports and service providers at regular intervals to ensure that standards are being maintained. Due diligence assessments are completed as a part of the initial route selection process; as well as on a triennial basis. The due diligence assessments state that:

The report is not a final acceptance of [the Carrier] OR [the Port] for future work and as with all service providers to Orica, Orica will continue to review and monitor the performance on a triennial basis.

Orica has requirements for the selection and management of contractors for the transport and storage of cyanide. Procedures cover all transport and storage providers and ensure that contractors working for and on behalf of Orica are aligned with the company’s Safety, Health and Environmental standards.

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 origin to the destination.

With regards to carriers, Orica has implemented a carrier assessment procedure. The purpose of this procedure is to assess carriers and their contractors at regular intervals against company standards and requirements. Carriers are assessed at a minimum on a biennial basis with additional assessments conducted following any changes to operational requirements or as a result of newly identified risks.

Orica utilises MSC and Maersk for the international shipping of cyanide. Containers are placed and secured on vessels at the port of loading by the stevedoring company or service provider, and removed at the destination by the stevedoring company or service provider at that port. As such, MSC and Maersk provide a marine carrier service and handling of containers (on and off vessels) is undertaken by stevedoring companies at each port.
Orica does not have control of over routes taken by the service providers, but has undertaken due diligence assessments of MSC and Maersk to verify that the shipments are transported in accordance with regulatory requirements.

The international sales and exports of cyanide by Orica take into consideration the ports and their extended infrastructure available to service the intended target area. The destination port is selected on the basis that it is the closest port to the customer and that it meets reasonable industry standards for safety, security and emergency response.

Due diligence assessments of the ports used in the Supply Chain concluded that the ports meet the requirements of the ICMC. Where issues were identified, it was established that they would be adequately mitigated by Orica reducing the time that product spends at that port.

Orica has implemented procedures to evaluate; and periodically re-evaluate cyanide routes and their associated risks and take the measures necessary to manage these risks.

Orica documents the measures taken to address risks identified with the selected routes. The route assessment, carrier assessment and due diligence documentation details the measures taken to address the identified risks for transportation components of Orica’s supply chains.

Orica seeks input from stakeholders and applicable governmental agencies as necessary in the selection of routes and development of risk management measures. Orica procedures ensure that relevant feedback from transportation agencies is provided through to Orica for the appropriate assessment and follow on actions.

Orica has assessed its routes for special safety or security concerns. Orica ensures the transport contractor uses convoys, escorts or other additional safety or security measures to address concerns where necessary.

The need for additional safety or security measures is identified during the route assessment and route risk assessment process. The due diligence assessments did not identify the requirement for additional safety or security measures.

Orica, through its transport contractors, has advised external responders, medical facilities and communities as necessary of their roles during an emergency response. Emergency responders identified along specific routes are issued with the applicable emergency response information.

Road transportation of cyanide is undertaken by ICMC-certified consignors FFT and FFK.

3.1.2 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

Orica is

☐ in substantial compliance with

☐ not in compliance with

Transport Practice 1.2

Summarise the basis for this Finding/Deficiencies Identified:

Orica is in FULL COMPLIANCE with Transport Practice 1.2 requiring personnel operating cyanide handling and transport equipment to perform their jobs with minimum risk to communities and the environment.
Orica does not directly operate transport vehicles within this Supply Chain. Orica assess the capability of its carriers via the carrier assessment process, assessments are conducted as a minimum on a biennial basis, with additional assessments conducted following any changes to operational requirements or as a result of newly identified risks.

Orica utilises MSC and Maersk for the international shipping of cyanide. Containers are placed and secured on their vessels at the port of loading by the stevedoring company or service provider, and removed at the destination by the stevedoring company or service provider at that port. As such, MSC and Maersk provide a marine carrier service and all actual handling of containers (on and off vessels) is predominately undertaken by stevedoring companies at each port.

Due diligence assessments of MSC and Maersk were undertaken to verify that the shipments are handled in accordance with the IMO DG Code. The due diligence assessments found that there were no issues of concern with regards to the management and shipping of cyanide product by either of the carriers.

Orica does not operate transport vehicles or equipment at port facilities used within this supply chain, operation is undertaken by the managing port authority or stevedoring service provider at the port.

The due diligence assessments found that the ports used by Orica are performing dangerous goods handling duties in accordance with international and local regulations. Ports selected in the Supply Chain are located in IMO member countries, member nations must ensure that ports comply with the requirements of the IMO DG Code 2014, and in particular the training requirements for shore-side personnel as described in section 1.3.1 of the IMO DG Code.

Orica conducts triennial due diligence assessments of port facilities used in the Supply Chain.

Road transportation of cyanide is undertaken by ICMC-certified consignors FFT and FFK.

3.1.3 Transport Practice 1.3
Ensure that transport equipment is suitable for the cyanide shipment.

☐ in full compliance with
Orica is □ in substantial compliance with Transport Practice 1.3
□ not in compliance with

Summarise the basis for this Finding/Deficiencies Identified:

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

Orica does not directly operate transport vehicles within this Supply Chain.

Carriers and ports used by Orica have equipment operation and maintenance capabilities and procedures that are not dependent on Orica. The ability of the carriers and port facilities to operate safely, and their capability to handle dangerous goods is assessed during the Carrier Assessment and due diligence process.

Orica conducts triennial due diligence assessments for carriers and ports; and biennial carrier assessments, for service providers used in the Supply Chain.

The completed due diligence assessments found that there were no issues of concern with regards to the management and shipping of cyanide product by either of the carriers; and that the ports used by Orica are performing dangerous goods handling duties in accordance with Orica’s requirements and relevant regulations.

Orica East Africa Supply Chain
Name of Facility

Signature of Lead Auditor
4 December 2017
Date

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Road transportation of cyanide is undertaken by ICMC-certified consignors FFT and FFK.
3.1.4 Transport Practice 1.4

Develop and implement a safety program for transport of cyanide.

- in full compliance with

Orica is

- in substantial compliance with
- not in compliance with

Transport Practice 1.4

Summarise the basis for this Finding/Deficiencies Identified:

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

There are procedures in place to ensure that cyanide is transported in a manner that maintains the integrity of the producer's packaging.

Product packaging is undertaken at the ICMC certified Yarwun Facility and cyanide is packaged and transported in accordance with international regulatory standards, thereby meeting the requirements of the political jurisdictions through which the loads will pass.

There are in-transit procedures that allow for checks of the packaging integrity and the reporting of any damage or spillage. There are single use seals placed on doors of shipping containers and checks are tracked and recorded alongside a package's unique serial number.

MSC and Maersk require from Orica, evidence that products booked for transport meet the packaging requirements of the IMO DG Code. Some carriers reserve the right to refuse acceptance of cargo that does not meet packaging, container and documentation standards as set out in the Code.

Due diligence assessments of MSC and Maersk were undertaken to verify that shipments of dangerous goods are handled in accordance with the IMO DG Code. The due diligence assessments found that there were no issues of concern with regards to the shipping of cyanide product by MSC and Maersk. Cyanide product remains sealed and packaged within locked shipping containers until it reaches the end use destination.

Orica has a process to ensure that placards or other signage are used to identify the shipment as cyanide, as required by local regulations or international standards.

Placards and signage used to identify the shipment as cyanide meet local and international standards. Diamonds placed at the front and rear of the vehicles identify the load as cyanide and the containers also have labelling that identifies the contents. Orica packaged cyanide remains sealed within its initial packaging and container until its arrival at the final destination.

Orica does implement a safety program for cyanide transport.

Orica does not directly operate transport vehicles within the Supply Chain however, the minimum safety requirements/programmes necessary to be in effect for all carriers/transporters effecting transportation of cyanide on behalf of Orica are detailed in Orica procedures.

Orica conducts biennial carrier assessments; and triennial due diligence assessments of carriers and port facilities used in the Supply Chain.

Road transportation of cyanide is undertaken by ICMC-certified consignors FFT and FFK.
3.1.5 Transport Practice 1.5
Follow international standards for transportation of cyanide by sea and air.

☒ in full compliance with
☐ in substantial compliance with
☐ not in compliance with

Transport Practice 1.5

Summarise the basis for this Finding/Deficiencies Identified:

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

Shipments of cyanide transported by sea are transported in compliance with the IMO DG Code.

All containers (i.e. freight containers of IBCs and sparge isolators) are packaged and placarded at the Yarwun Facility in accordance with the requirements of the IMO DG Code with UN numbers, the Class 6 dangerous goods label and the environmentally hazardous substance label.

A container intended for transport has documentation prepared in accordance with the IMO DG code, which is provided to the shipping agent. A copy of the marine documentation is retained at the Yarwun Facility.

MSC and Maersk transport Orica cyanide by sea to various destination ports. All packaging and transportation is carried out in accordance with the IMO DG Code.

Due diligence assessments of MSC and Maersk were undertaken on behalf of Orica to verify that the shipments are handled in accordance with the IMO DG Code. The due diligence assessments found that there were no issues of concern with regards to the conduct and shipping of cyanide product by the carriers.

No cyanide is transported by air within the scope of this Supply Chain.

3.1.6 Transport Practice 1.6
Track cyanide shipments to prevent losses during transport.

☒ in full compliance with
☐ in substantial compliance with
☐ not in compliance with

Transport Practice 1.6

Summarise the basis for this Finding/Deficiencies Identified:

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

Orica does not employ transport drivers or directly operate transport vehicles within this Supply Chain. 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.

The due diligence assessments for MSC and Maersk found that their vessels have continuous means of tracking and communication during voyages. Additionally, each service provider has systems in place to track individual containers from point of origin through to the destination port.
Chain of custody documentation is used by shipping companies to prevent the loss of cargo during shipment. This documentation includes the vessel manifest – which identifies the location and content of each container on the vessel along with packing certificates, Multimodal Dangerous Goods Forms and Safety Data Sheets (SDS).

MSC and Maersk onshore representatives and vessels have the software capability to track individual containers. This service is available from the time they are booked onto a vessel, right through the entirety of the journey, until they are received at the nominated destination port.

For ports of departure in Australia, the Australian Maritime Safety Authority (AMSA) develops and implements policies, statutes and regulations governing the carriage of dangerous goods and other goods by ships in accordance with relative national and international requirements. This includes supervising the safety of ships carrying dangerous goods and processing declarations made by ships carrying dangerous goods.

Carriers are required to declare dangerous cargo to AMSA before arriving/leaving at the port.

For destination ports the due diligences found that ports in the Supply Chain are IMO members and ISPS Signatories (ISPS excluding Tanzania).

As IMO members and to comply with the requirements of the IMO DG Code, vessels are required to declare dangerous cargo before arriving/leaving the port to Authorities or stevedoring service providers.

At each destination port stevedoring service providers or terminal managers operate their own choice of information management and cargo tracking systems. These systems include advanced terminal software programs capable of tracking individual containers that are unloaded from carriers and transferred to laydown areas or placed onto another means of transportation (trans-shipping, ground or rail).

Orica's shipping agent can provide updates on the status of shipments on an as needs basis. In each case this includes an estimate on arrival/departure times, where trans-shipping will occur and the time that discharge from the destination port occurs.

Inventory controls, marine transportation and chain of custody documentation processes are implemented to prevent the loss of cyanide during shipment.

Orica requires that their contractors carry records indicating the amount of cyanide in transit and Safety Data Sheets (SDSs) are available during transport. The amount of cyanide in transit, the packing certificates and the SDS are contained within the marine documentation, this includes the shipper's declaration, container packing certificate and quarantine (fumigation) certificate, which accompany the cargo throughout the journey.

Road transportation of cyanide is undertaken by ICMC-certified consignors FFT and FFK.
3.2 Principle 2 – Interim Storage

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

3.2.1 Transport Practice 2.1

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

☐ in full compliance with

☐ in substantial compliance with

☐ not in compliance with

Transport Practice 2.1

Summarise the basis for this Finding/Deficiencies Identified:

Orica is in FULL COMPLIANCE with Transport Practice 2.1 that requires transporters design, construct and operate cyanide trans-shipping depots and interim storage sites to prevent release and exposures.

Orica does not operate trans-shipping or interim storage facilities within this Supply Chain, but circumstances may arise where trans-shipping of cyanide product is required. This involves unloading the cargo at a terminal facility, temporary set down and loading onto another vessel for the continuation of the delivery.

Orica has no control over when and where this happens, but through the completion of due diligence assessments has satisfied itself that the carriers used (MSC and Maersk) undertake the trans-shipping of product in accordance with the IMO DG Code and regulations for the handling of dangerous goods pertinent to that port.

Depending on weather, cargo types and other operational matters, carriers may transship their cargo from one vessel to another.

Trans-shipping ports were not assessed as part of the due diligence assessments carried out on behalf of Orica. The due diligence assessments did not identify any issues of concern with regards to the management or transport of cyanide by MSC and Maersk – this extends to the carrier’s ability to select a suitable port for the purpose of trans-shipping when required.

The due diligence assessments of the ports identified that temporary storage or set down of product is conducted in accordance with the requirements of the IMO DG Code and other relevant international, and where developed, local dangerous goods handling regulations.

Orica East Africa Supply Chain

Name of Facility

Signature of Lead Auditor

4 December 2017

Date

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3.3 Principle 3 – Emergency Response

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

3.3.1 Transport Practice 3.1

Prepare detailed Emergency Response Plans for potential cyanide releases.

☒ in full compliance with
☐ in substantial compliance with
☐ not in compliance with

Transport Practice 3.1

Summarise the basis for this Finding/Deficiencies Identified:

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

Orica has developed a detailed Emergency Response Guide (ERG) document to provide emergency response guidance for specific mine site, storage facilities and transport incidents involving Orica's product.

The document has been developed by Orica to provide guidance for the management of incidents involving spillage of cyanide product.

Orica requires that transporters involved in the shipment of cyanide have plans that cover spill response procedures outside of the Yarwun gate, up to the end user destination. Orica provide assistance and support in this role.

Whilst Orica's product is embarked on MSC and Maersk vessels all emergency response is governed by the vessel's captain. Orica conducts due diligence and carrier assessments of its carriers to verify that the shipments occur in accordance with the IMO DG Code, thereby meeting emergency response requirements.

Orica require carriers to have appropriate emergency response plans and capabilities for handling any cyanide incident that falls within their contractual responsibility.

The due diligences found that MSC and Maersk carry out the shipping of dangerous goods in accordance with the requirements of the IMO DG Code.

Each operator implements their own system of safety and emergency response management that extends to emergency situations involving cyanide and other dangerous goods. Emergency responders, as well as dangerous goods technical experts, are available to respond and assist in emergency situations.

The due diligence assessments found that the ports used by Orica are performing dangerous goods handling duties in accordance with international and local regulations. Ports selected in the Supply Chain are located in IMO member countries, member nations must ensure that ports comply with the requirements of the IMO DG Code.

The due diligences also found that the ports are certified under the IMO's International Convention on Oil Pollution Preparedness, Response and Cooperation 1990 (OPRC 90). States that are party to OPRC 90 protocol are required to establish a national system for responding to oil and hazardous/noxious substances pollution incidents, including a designated national authority, a national operational contact point and a national contingency plan. This needs to be supported by a minimum level of response equipment, communications plans, regular training and exercises.
The ERG is appropriate for the selected transportation route or interim storage facility within the supply chain. The Guide provides 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 cyanide solid or liquid product and is considered applicable for product spillages at any location along the product supply chain.

The ERG details the hazards and controls of both solid and liquid cyanide. The emergency response actions detailed in the Guide are relevant to solid cyanide and its packaging in IBCs within freight containers. The Guide considers the design of the transport vehicle and method of packaging of the product, it contains procedures for different types of transport containers, freight containers with IBCs and isolators as well as descriptions of response actions for anticipated emergency situations.

Emergency responders identified along specific routes are issued with the applicable emergency response information.

Road transportation of cyanide is undertaken by ICMC-certified consignors FFT and FFK.

3.3.2 Transport Practice 3.2

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

☒ in full compliance with
☐ in substantial compliance with
☐ not in compliance with

Transport Practice 3.2

Summarise the basis for this Finding/Deficiencies Identified:

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

Whilst Orica's product is embarked on carriers, all emergency response is governed by the vessel's captain. Orica conducts due diligence and carrier assessments to verify that the shipments occur in accordance with the IMO DG Code. Due diligence assessments have found that there were no issues of concern in regard to the management and shipping of cyanide product by either of the carriers.

Orica retains a technical and advisory role in an emergency and can provide resources and personnel (depending on where an incident takes place) to assist emergency services in the response to an incident involving cyanide.

Orica require carriers to have appropriate emergency response plans and capabilities for handling any cyanide incident that falls within their contractual responsibility. The level of capability is assessed through the due diligence and Carrier Assessment process.

The due diligence assessments found that MSC and Maersk each carry out the shipping of dangerous goods in accordance with the requirements of the IMO DG Code. Each operator implements their own system of safety and emergency response management that extends to emergency situations involving cyanide and other dangerous goods at sea.

The due diligence assessments found that the ports used by Orica have appropriate emergency response capabilities to deal with potential dangerous goods releases.
Orica does not directly operate transport vehicles or storage facilities within this Supply Chain. The responsibilities for personnel following an emergency along the supply chain are covered in specific emergency response plans for FFT and FFK. Orica’s ERG outlines the response to incidents that it has been notified of.

The ERG provides guidance on the level of PPE outlined by the US Environmental Protection Agency and the Occupational Safety and Health Administration, but does not specify what should be provided during transport. The ERG is intended to be used by contractors and provides a point of reference for Orica’s contractors to develop and align their own emergency management plans.

Orica has developed and provided initial and periodic refresher training covering cyanide awareness and emergency response to its transport contractors. The level of emergency response capability is assessed through the due diligence and Carrier Assessment process.

Road transportation of cyanide is undertaken by ICMC-certified consignors FFT and FFK.

### 3.3.3 Transport Practice 3.3

Develop procedures for internal and external emergency notification and reporting.

- [ ] in full compliance with
- [ ] in substantial compliance with
- [ ] not in compliance with

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

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

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 Orica’s ERG the role of Orica Emergency Response Services (ERS) is detailed. The ERS operates 24 hours a day 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. Specific contact information for local stakeholders is maintained by the contracted transporters, FFT and FFK. Both of these entities are Code certified.

Whilst Orica’s product is embarked on MSC and Maersk vessels all emergency response is governed by the vessel’s captain. Orica conducts due diligence and carrier assessments of carriers used within this supply chain to verify that the shipments occur in accordance with the IMO DG Code, thereby meeting emergency response requirements.

Orica require transport companies to have appropriate emergency response plans, including current contact information, and capabilities for handling any cyanide incident that falls within their contractual responsibility.

The due diligences found that MSC and Maersk carry out the shipping of dangerous goods in accordance with the requirements of the IMO DG Code.
3.3.4 Transport Practice 3.4
Develop procedures for remediation of releases that recognise the additional hazards of cyanide treatment.

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

**Orica is**

**Transport Practice 3.4**

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

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

The ERG 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.

These procedures include descriptions on decontamination of soils or other contaminated media and require the responder to notify the relevant parties listed in the Guide. Orica ERS is listed as the prime contact and information concerning the management of spill clean-up debris is initiated through this service.

Whilst Orica’s product is embarked on MSC and Maersk vessels all emergency response is governed by the vessel’s captain. Orica conducts due diligence and carrier assessments of carriers used within this supply chain to verify that the shipments occur in accordance with the IMO DG Code, thereby meeting emergency response requirements.

Orica require transport companies to have appropriate emergency response plans and capabilities for handling any cyanide incident that falls within their contractual responsibility.

The due diligence found that MSC and Maersk carry out the shipping of dangerous goods in accordance with the requirements of the IMO DG Code.

Orica has procedures that prohibit the use of chemicals such as sodium hypochlorite, ferrous sulphate and hydrogen peroxide to treat cyanide that has been released into surface water, this information is contained within the ERG.

Road transportation of cyanide is undertaken by ICMC-certified consignors FFT and FFK.

3.3.5 Transport Practice 3.5
Periodically evaluate response procedures and capabilities and revise them as needed.

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

**Orica is**

**Transport Practice 3.5**

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

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

There are provisions for periodically reviewing and evaluating the ERG and its adequacy; they are being implemented. The ERG is a controlled document that is subject to an annual review.

**Orica East Africa Supply Chain**

Name of Facility

Signature of Lead Auditor

4 December 2017

Date

December 2017

Report No. 1776589-013-R-Rev0

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Whilst Orica's product is embarked on MSC and Maersk vessels all emergency response is governed by the vessel's captain. Orica conducts due diligence and carrier assessments of carriers used within this supply chain to verify that the shipments occur in accordance with the IMO DG Code, thereby meeting emergency response requirements.

Orica require transport companies to have appropriate emergency response plans and capabilities for handling any cyanide incident that falls within their contractual responsibility.

The due diligence assessments found that MSC and Maersk carry out the shipping of dangerous goods in accordance with the requirements of the IMO DG Code.

Road transportation of cyanide is undertaken by ICMC-certified consignors FFT and FFK.
4.0 DUE DILIGENCE

4.1 Marine transportation
Refer to Appendix A for the due diligence assessments for marine carriers.

4.2 Ports
Refer to Appendix B for the due diligence assessments for port facilities.

5.0 IMPORTANT INFORMATION

Your attention is drawn to the document "Important Information Relating to This Report", which is included as Appendix C 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.
APPENDIX A
Carrier Due Diligence Assessments
ICMC DUE DILIGENCE ASSESSMENT OF MEDITERRANEAN SHIPPING COMPANY

Dear Seth

EXECUTIVE SUMMARY

Golder Associates Pty Ltd (Golder) conducted a due diligence of Mediterranean Shipping Company (MSC) during June 2017 on behalf of Orica Australia Pty Ltd (Orica). The assessment was conducted by Jaclyn Ennis-John who meets the International Cyanide Management Institute’s (ICMI) requirements for a Transport Technical Specialist.

The following items, as detailed in the ICMI’s Auditor Guidance for Use of Cyanide Transportation Verification Protocol (December 2016), were addressed within the due diligence:

- Transport Practice 1.1 (Questions 1-4 and 6)
- Transport Practice 1.5 (Question 1, Items g-i)
- Transport Practice 1.6
- Transport Practice 2.1
- Transport Practice 3.1.

The ICMI’s Auditor Guidance for Use of Cyanide Transportation Verification Protocol (December 2016) was used to conduct the due diligence assessment. It was not possible during this due diligence to physically inspect the shipping company operations, as such the review was based on information obtained from previous due diligence reviews, ICMI audit reports and publicly available online information.

Based on the evidence reviewed, this due diligence did not find issues of concern in regards to MSC’s management of solid sodium cyanide product. This assessment should not be a final acceptance of MSC for future work; rather it is recommended that Orica continue to review and monitor MSC’s performance annually and implement an adaptive management process.
1.0 INTRODUCTION

This letter provides the results of a due diligence assessment against the shipping line MSC, in accordance with the International Cyanide Management Code for the Manufacture, Transport and Use of Cyanide in the Production of Gold (ICMC or the Code).

Golder conducted a desktop due diligence assessment of MSC during June 2017. The assessment was conducted by Jaclyn Ennis-John who meets the International Cyanide Management Institute’s (ICMI) requirements for a Transport Technical Specialist.

The following items, as detailed in the ICMI’s Auditor Guidance for Use of Cyanide Transportation Verification Protocol (December 2016), were addressed within the due diligence:

- Introduction
- ICMC Transport Verification Protocol Assessment
  - Transport Practice 1.1 (Questions 1-4 and 6)
  - Transport Practice 1.5 (Question 1, Items g-i)
  - Transport Practice 1.6
  - Transport Practice 2.1
  - Transport Practice 3.1.
- Conclusion
- References.

The ICMI’s Auditor Guidance for Use of Cyanide Transportation Verification Protocol (December 2016) was used to conduct the due diligence assessment. Due to access restrictions, it was not possible during this due diligence to physically inspect the shipping company operations. The due diligence assessment was completed based on information obtained from previous due diligences, ICMI audit reports and publicly available online information.

1.1 Overview of MSC

MSC is a privately owned global organisation operating a network of over 480 offices in 150 countries, employing over 60 000 individuals.

Headquartered in Geneva, Switzerland, MSC is engaged in worldwide container transport. MSC operates approximately 460 container vessels with the capacity to handle the equivalent capacity of 2.75 million Twenty-foot Equivalent Units (TEUs). MSC has global port coverage, operating on 200 different routes between 315 ports in 150 countries.

MSC has set up dangerous goods cargo management centres that manage the stowage of hazardous cargo worldwide through their MSC Link computer system headquartered in Antwerp. This hazardous cargo system is initiated when hazardous cargo is booked into the container booking MSC Link computer system. Specialist chemists are on-hand to ensure that chemical cargo is stowed and shipped in keeping with the necessary legal and safety requirements.

MSC’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.
2.0 ICMC TRANSPORT VERIFICATION PROTOCOL ASSESSMENT

The ICMC's Auditor Guidance for Use of Cyanide Transportation Verification Protocol, General Guidance states:

Except as specifically identified in this Guidance document, the Cyanide Transportation Protocol is not to be used to evaluate transport by rail and ship or management of cyanide at rail terminals and port facilities due to security issues, limited access, and the inability of consignors to affect changes in the operating practices of these transport facilities. Rather than conduct Code audits of these facilities, the consignor must conduct and document due diligence investigations of rail carriers, rail terminals, shipping companies and port facilities that are engaged to handle cyanide shipments, as further discussed below under Transport Practice 1.1. The consignor's due diligence investigation must either be conducted or reviewed by an auditor meeting ICMC requirements for a transport expert, and the auditor must conclude that the due diligence investigation has reasonably evaluated these facilities and that the consignor has, to the extent practical, implemented any necessary management measures.

Transport Practice 1.1: Select cyanide transport routes to minimise the potential for accidents and releases

The international sales and exports of sodium cyanide by Orica take into consideration the ports and their extended infrastructure 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 point of origin to destination.

Orica procedure "Selection of Transport Routes – Transportation of Sodium Cyanide to Customer Sites or Stock Points" (Orica ref: UP-GLO-PRO-001-017) aims to minimise the risk associated with the transportation of sodium cyanide while maintaining a safe, reliable, efficient and cost effective delivery system to customer sites and Orica stock points throughout the world. The procedure applies to the selection of delivery routes for Orica sodium cyanide and states that the "selection of route(s) is to be effected by the overall assessment of the risks associated with the utilisation of such route, taking into particular consideration likelihood of an incident occurring and the consequence of such an incident." This procedure is applicable to all routes used for the transportation of Orica sodium cyanide as well as to Orica’s contracted transportation agencies.

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 port by the stevedoring company and removed at the port of destination by the stevedoring company at that port.

Basically, 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).

In some instances, sodium cyanide shipments are unloaded at terminals en-route to its final destination. This is known as trans-shipping and involves a temporary set down within a port facility before loading onto another vessel for continuation of the delivery. It is at the discretion of MSC to determine when and where this occurs. MSC conducts itself in accordance with the International Maritime Organisation (IMO) Dangerous Goods (IMDG) Code and in a professional manner, this extends to the selection of terminals used by MSC for trans-shipping.
Transport Practice 1.5: Follow international standards for the transportation of cyanide by sea and air

Orica’s manufacturing facility and transfer stations are ICMC certified, sodium cyanide is packaged and transported in accordance with international regulatory standards, such as the United Nations Recommendation on the Transport of Dangerous Goods – Model Regulations, (2005) and National Codes of Practice such as the Australian Code for the Transport of Dangerous Goods by Road or Rail, (2015) thereby meeting the requirements of the political jurisdictions through which the loads will pass.

Orica only operates in export markets that are serviced by major international shipping companies with the ability to offer scheduled container services from point of origin to destination. Orica procedure “Carrier Assessment” (Orica ref: SUP-GLO-PRO-018-008) provides the framework for ensuring that carriers and their contractors are assessed at regular intervals to ensure that, amongst others, storage, safety, security, maintenance and emergency response standards are being maintained. Carriers are required to provide manifest documentation, to satisfy local customs regulations and the requirements of the IMDG Code, to the destination port. This documentation contains a list of the cargo types and in the case of sodium cyanide and any other hazardous cargo the quantity, unique packaging numbers, stowage reference and emergency response procedures.

g) Does the ship carrying the cyanide have a list or manifest identifying the presence and location of the cyanide or a detailed stowage plan including this information, as required under Section 5.4.3.1 of the DG Code?

MSC transports sodium cyanide by sea to various destination ports. All packaging and transportation is in accordance with the IMDG Code.

Orica prepares a dangerous goods transport document known as the Multimodal Dangerous Goods Form. This form meets the requirements of the SOLAS 74, Chapter VII, Regulation 5 and the MARPOL 73/78, Annex III, Regulation 4. This form also has a container packaging certificate included that meets the requirements of Section 5.4.2 of the IMDG Code, as well as emergency response information. Upon arrival at the Port, the ship’s master provides the port with a copy of the Multimodal Dangerous Goods Form.

Documentation provided including Dangerous Goods manifest (including stowage plan) and Packaging Certificates for each container ensure that adequate information is available in order to identify the correct stowage and separation of dangerous goods. This information then determines the placement and segregation of the container on the vessel and handling through trans-shipment ports, if applicable.

MSC operations personnel provide the vessel’s Master with copies of the Emergency Information, Dangerous Goods manifest (including stowage plan), Packaging Certificates and the Multimodal Dangerous Goods Form for each hazardous cargo transport units loaded onto the ship at the port.

MSC has multiple cross checking layers to verify that products arriving at the laydown areas match those provided on the booking and that containers being loaded onto the vessels match those stipulated on the loading (or stowage) plan.

h) Does the ship carrying the cyanide have cyanide emergency response information, as required under Section 5.4.3.2 of the DG Code?

The manifests that are provided to the vessel Master contain emergency response information. The Multimodal Dangerous Goods Form also includes emergency response information.

MSC operations personnel provide the vessel’s Master with copies of the Emergency Information, Dangerous Goods manifest (including stowage plan), Packaging Certificates and the Multimodal Dangerous Goods Form for each hazardous cargo transport units loaded onto the ship at the port.

Emergency response procedures for ships carrying dangerous goods, including the emergency schedules to be followed in case of incidents involving dangerous substances, materials or articles, or harmful substances (marine pollutants), is regulated under the IMDG Code. In accordance with the Code, all ships, and the companies responsible for their operation, are required to maintain a Safety Management System (SMS). Within the SMS, procedures for responding to potential shipboard emergencies are required.
i) Does the ship comply with the stowage and separation requirements of Part 7 of the DG Code?

MSC comply with the stowage and separation requirements of Chapter 7 of the IMDG Code through the following:

- The Multimodal Dangerous Goods Form used by Orica and MSC is the document referenced in the IMDG Code (Chapter 5.4) and meets the requirements of SOLAS 74, chapter VII, regulation 4, MAR POL 73/78, Annex III, Regulation 4 and the provisions of the Code.

- A copy of the Form is provided to MSC for assigning the container reference numbers and sending the HAZCHEM bookings for finalisation. From the Form, data is entered into the MSC tracking and monitoring system that allows for the determination of placement and segregation of the containers on the vessel and handling through shipment ports.

- All containers (stipulated by their reference number) must be finalised by the vessel loading cut-off time. This requires the Form to be provided between 48 and 24 hours prior to cut-off.

- Sodium cyanide is designated a "red line" cargo and is only loaded to the vessel when called in.

- Upon approval, the loading plan is passed onto the stevedore for loading of the vessel.

Documentation provided including Dangerous Goods manifest (including stowage plan) and Packaging Certificates for each container ensure that adequate information is available in order to identify the correct stowage and segregation of dangerous goods. This information then determines the placement and segregation of the container on the vessel and handling through trans-shipment ports, if applicable.

Transport Practice 1.6: Track cyanide shipments to prevent losses during transport

MSC vessels have continuous means of tracking and communication during their voyages. MSC has their own in-house tracking systems for tracking freight, which is linked by the container number and Bill of Lading (BOL) number. Communication equipment is tested through continuous use.

Chain of custody documentation is used by MSC to prevent the loss of cargo during shipment. This documentation includes the vessel manifest and Safety Data Sheets (SDS), which identifies the location and content of each container on the vessel.

MSC has set up dangerous goods cargo management centres that control the proper stowage of hazardous cargo worldwide through their MSC Link computer system headquartered in Antwerp. This hazardous cargo system is initiated when hazardous cargo is booked into the container booking MSC Link computer system.

Vessels are registered by the Lloyd's Register Group, which provides classification and certification of ships, and inspects and approves important components and accessories.

Transport Practice 2.1: Store cyanide in a manner that minimises the potential for accidental releases

All packaging and transportation of sodium cyanide is required to be in accordance with the IMDG Code.

MSC operations personnel provide the vessel's Master with copies of the Emergency Information, Dangerous Goods manifest (including stowage plan), Packaging Certificates and the Multimodal Dangerous Goods Form for each hazardous cargo transport units loaded onto the ship at the port.

Orica's product is packaged into purpose designed and built and product dedicated bulk sparge isolators or into composite intermediate bulk containers (IBCs) contained within Twenty-foot Equivalent Units (TEUs), a general purpose shipping container. Bulk sparge isolators are rated for sea transportation and inspected by Bureau Veritas under the 2.5 and 5 year inspection regime in accordance with IMDG Code requirements.

Composite IBCs consist of a 1300 kg bulk bag contained within a hermetically sealed plastic liner, placed in a wooden outer with an integral pallet base. As per the IMO DG Code this packaging is referenced as UN/11HD2/X/****/AUS/Orica-305967/020/1300 under the approval of the Competent Authority (where **** indicates the date the IBC was filled).
Orica's packaging is labelled as per the IMDG Code. Bulk sparge isotainers and shipping containers containing composite IBCs are placarded with and emergency information panel (EIP) detailing the proper shipping name, dangerous goods class number, UN number, HAZCHEM Code and emergency contact information. Containers are placarded with the environmentally hazardous substance markings. Product labels are provided on the side of the IBC that allows forklift access via the pallet base. IBCs are placed into shipping containers so that the label is facing outwards.

Transport Practice 3.1: Prepare detailed emergency response plans for potential cyanide releases

MSC operations personnel provide the vessel's Master with copies of the Emergency Information, Dangerous Goods manifest (including stowage plan), Packaging Certificates and the Multimodal Dangerous Goods Form for each hazardous cargo transport units loaded onto the ship at the port.

3.0 CONCLUSION

Based on the evidence reviewed, this due diligence did not find significant issues of concern in regards to MSC's management of solid sodium cyanide product. This assessment should not be a final acceptance of MSC for future work; rather it is recommended that Orica continue to review and monitor MSC's performance annually and implement an adaptive management process.

4.0 CLOSING

We trust this due diligence letter meets your requirements. If you have any questions, please do not hesitate to contact the undersigned.

GOLDER ASSOCIATES PTY LTD

Craig Currie  
Environmental Scientist

Jaclyn Ennis-John  
ICMC Lead Auditor and Technical Specialist

CC/UEJ/hsl
REFERENCES

Golder Associates (2016). ICMC Due Diligence Assessment of Mediterranean Shipping Company. Reference number 1050011-005-L-Rev0


ICMC DUE DILIGENCE ASSESSMENT OF MAERSK LINE

Dear Seth,

EXECUTIVE SUMMARY

Golder Associates Pty Ltd (Golder) conducted a due diligence of Maersk Line (Maersk) during April 2017 on behalf of Orica Australia Pty Ltd (Orica). The assessment was conducted by Jadyn Ennis-John who meets the International Cyanide Management Institute's (ICMI) requirements for a Transport Technical Specialist.

The following items, as detailed in the ICMI's Auditor Guidance for Use of Cyanide Transportation Verification Protocol (December 2016), were addressed within the due diligence:

- Transport Practice 1.1 (Questions 1-4 and 6)
- Transport Practice 1.5 (Question 1, Items g-i)
- Transport Practice 1.6
- Transport Practice 2.1
- Transport Practice 3.1.

The ICMI's Auditor Guidance for Use of Cyanide Transportation Verification Protocol (December 2016) was used to conduct the due diligence assessment. It was not possible during this due diligence to physically inspect the shipping company operations, as such the review was based on information obtained from previous due diligence reviews, ICMI audit reports and publicly available online information.

Based on the evidence reviewed, this due diligence did not find issues of concern in regards to Maersk's management of solid sodium cyanide product. This assessment should not be a final acceptance of Maersk for future work; rather it is recommended that Orica continue to review and monitor Maersk's performance annually and implement an adaptive management process.
1.0 INTRODUCTION

This letter provides the results of a due diligence assessment against the shipping line Maersk, in accordance with the International Cyanide Management Code for the Manufacture, Transport and Use of Cyanide in the Production of Gold (ICMC or the Code).

Golder conducted a due diligence of Maersk during April 2017. The assessment was conducted by Jaclyn Ennis-John who meets the ICMC requirements for a Transport Technical Specialist.

The following items, as detailed in the ICMI’s Auditor Guidance for Use of Cyanide Transportation Verification Protocol (December 2016), were addressed within the due diligence:

- Introduction
- ICMC Transport Verification Protocol Assessment
  - Transport Practice 1.1 (Questions 1-4 and 6)
  - Transport Practice 1.5 (Question 1, Items g-i)
  - Transport Practice 1.6
  - Transport Practice 2.1
  - Transport Practice 3.1.
- Conclusion
- References.

The ICMI’s Auditor Guidance for Use of Cyanide Transportation Verification Protocol (April 2016) was used to guide the due diligence assessment. Due to access restrictions, it was not possible during this due diligence to physically inspect the shipping company operations. The due diligence assessment was completed based on information obtained from previous due diligence, ICMI audit reports and publicly available online information.

1.1 Overview of Maersk Line

Maersk, headquartered in Copenhagen, Denmark, operates a fleet of container vessels with worldwide shipping coverage. The fleet consists of approximately 590 vessels with the capacity to handle more than three million Twenty-foot Equivalent Units (TEUs). Maersk operates a container booking and tracking system called the Global Customer Service System (GCSS). This system is the management tool for the proper stowage and handling of dangerous goods cargo.

Maersk require companies utilising their carrier services to provide evidence that their product packaging has been approved by government regulators and tested in accordance with International Maritime Organisation (IMO) Dangerous Goods (DG) Code. Maersk have the right to refuse cargo if the packaging, container and/or documentation are not satisfactory under the IMO DG Code standards.

As mentioned in the Auditor Guidance for Use of Cyanide Transportation Verification Protocol (April 2016), General Guidance notes, consigners are not able to conduct inspections and checks on shipping vessels due to port safety and security issues.

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. Maersk also has current certificates for its vessels under the International Ship and Port Facility Security (ISPS) Code developed by the IMO.
2.0 ICMC TRANSPORT VERIFICATION PROTOCOL ASSESSMENT

The ICMC's Auditor Guidance for Use of Cyanide Transportation Verification Protocol (April 2016), General Guidance states:

"Except as specifically identified in this Guidance document, the Cyanide Transportation Protocol is not to be used to evaluate transport by rail and ship or management of cyanide at rail terminals and port facilities due to security issues, limited access, and the inability of consignors to affect changes in the operating practices of these transport facilities. Rather than conduct Code audits of these facilities, the consignor must conduct and document due diligence investigations of rail carriers, rail terminals, shipping companies and port facilities that are engaged to handle cyanide shipments, as further discussed below under Transport Practice 1.1. The consignor's due diligence investigation must either be conducted or reviewed by an auditor meeting ICMC requirements for a transport expert, and the auditor must conclude that the due diligence investigation has reasonably evaluated these facilities and that the consignor has, to the extent practical, implemented any necessary management measures."

Transport Practice 1.1: Select cyanide transport routes to minimise the potential for accidents and releases.

The international sales and exports of sodium cyanide by Orica take into consideration the ports and their extended infrastructure 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 point of origin to destination.

Orica procedure "Selection of Transport Routes – Transportation of Sodium Cyanide to Customer Sites or Stock Points" (Orica ref: UP-GLC-PRO-001-017) aims to minimise the risk associated with the transportation of sodium cyanide while maintaining a safe, reliable, efficient and cost effective delivery system to customer sites and Orica stock points throughout the world. The procedure applies to the selection of delivery routes for Orica sodium cyanide and states that the "selection of route(s) is to be effected by the overall assessment of the risks associated with the utilisation of such route, taking into particular consideration likelihood of an incident occurring and the consequence of such an incident." This procedure is applicable to all routes used for the transportation of Orica sodium cyanide as well as to Orica's contracted transportation agencies.

Maersk is a carrier service providing international shipping of containers on a fleet of their container vessels. Containers holding sodium cyanide are placed and secured on their vessels at the loading port by the port stevedoring company or service provider. As such, Maersk provide a marine carrier service and all actual handling of containers (on and off vessels) is undertaken by stevedoring companies at each port. Where a port does not have equipment to lift containers on and off the vessel, Maersk service these ports with a 'self-ganged' vessel that has its own lifting devices.

Basically, 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).

In some instances, sodium cyanide shipments are unloaded at terminals en-route to its final destination. This is known as trans-shipping and involves a temporary set down within a port facility before loading onto another vessel for continuation of the delivery. It is at the discretion of Maersk to determine when and where this occurs. Maersk conducts itself in accordance with the International Maritime Organisation (IMO) Dangerous Goods (IMDG) Code and in a professional manner, this extends to the selection of terminals used by Maersk for trans-shipping.
Transport Practice 1.5: Follow international standards for the transportation of cyanide by sea and air.

Orica’s manufacturing facility and transfer stations are ICMC certified, sodium cyanide is packaged and transported in accordance with international regulatory standards, such as the United Nations Recommendation on the Transport of Dangerous Goods – Model Regulations, (2005) and National Codes of Practice such as the Australian Code for the Transport of Dangerous Goods by Road or Rail, (2015) thereby meeting the requirements of the political jurisdictions through which the loads will pass.

Orica only operates in export markets that are serviced by major international shipping companies with the ability to offer scheduled container services from point of origin to destination. Orica procedure “Carrier Assessment” (Orica ref: SUP-GLO-PRO-016-008) provides the framework for ensuring that carriers and their contractors are assessed at regular intervals to ensure that, amongst others, storage, safety, security, maintenance and emergency response standards are being maintained. Carriers are required to provide manifest documentation, to satisfy local customs regulations and the requirements of the IMDG Code, to the destination port. This documentation contains a list of the cargo types and in the case of sodium cyanide and any other hazardous cargo the quantity, unique packaging numbers, stowage reference and emergency response procedures.

\textit{g) Does the ship carrying the cyanide have a list or manifest identifying the presence and location of the cyanide or a detailed stowage plan including this information, as required under Section 5.4.3.1 of the DG Code?}

Maersk transports sodium cyanide by sea to various destination ports. All packaging and transportation is in accordance with the IMO DG Code.

Orica’s manufacturing facility and transfer stations are ICMC certified, sodium cyanide is packaged and transported in accordance with international regulatory standards, such as the United Nations Recommendation on the Transport of Dangerous Goods – Model Regulations, (2005) and National Codes of Practice such as the Australian Code for the Transport of Dangerous Goods by Road or Rail, (2015) thereby meeting the requirements of the political jurisdictions through which the loads will pass.

Maersk requires specific dangerous goods transport documentation to accompany a consignment. This documentation includes:

- A consignor’s declaration stating that the goods declared are classified and packed correctly and also a declaration from the person packing the container stating that it has been done so correctly, often combined together to as the Multimodal Dangerous Goods Form.
- 24 hr emergency telephone number and contact for shipments to/from the USA, Canada, Thailand, China and Australia, these are mandatory, however, where possible Maersk includes for other destinations.
- Maersk also highlights that there may be other documentation required at time of booking, and these will normally be documents as prescribed by the IMDG Code, but may also include specific documents required by a local authority, e.g. weathering certificate, Competent Authority Approval or Certificate of Analysis.

Maersk has multiple cross checking layers to verify that products arriving at the laydown areas match those provided on the booking and that containers being loaded onto the vessels match those stipulated on the loading (or stowage) plan.

Orica only operates in export markets that are serviced by major international shipping companies with the ability to offer scheduled container services from point of origin to destination. Orica procedure “Carrier Assessment” (Orica ref: SUP-GLO-PRO-016-008) provides the framework for ensuring that carriers and their contractors are assessed at regular intervals to ensure that, amongst others, storage, safety, security, maintenance and emergency response standards are being maintained. Carriers are required to provide manifest documentation, to satisfy local customs regulations and the requirements of the IMDG Code, to the destination port. This documentation contains a list of the cargo types and in the case of sodium cyanide and any other hazardous cargo the quantity, unique packaging numbers, stowage reference and emergency response procedures.
h) Does the ship carrying the cyanide have cyanide emergency response information, as required under Section 5.4.3.2 of the DG Code?

The manifests that are provided to the vessel Master contain emergency response information. The Multimodal Dangerous Goods Form also includes emergency response information.

Maersk operations personnel provide the vessel's Master with copies of the Emergency Information, Dangerous Goods manifest (including stowage plan), Packaging Certificates and the Multimodal Dangerous Goods Form for each hazardous cargo transport units loaded onto the ship at the port.

Emergency response procedures for ships carrying dangerous goods, including the emergency schedules to be followed in case of incidents involving dangerous substances, materials or articles, or harmful substances (marine pollutants), is regulated under the IMDG Code. In accordance with the Code, all ships, and the companies responsible for their operation, are required to maintain a Safety Management System (SMS). Within the SMS, procedures for responding to potential shipboard emergencies are required.

i) Does the ship comply with the stowage and separation requirements of Part 7 of the DG Code?

Documentation provided including the Dangerous Goods manifest (including stowage plan) and Packaging Certificates for each container and the Maersk's GCSS (which records the UN classification, Dangerous Goods Class and that the product is a marine pollutant) ensure that adequate information is available in order to identify the correct stowage and separation of dangerous goods. This information then determines the placement and segregation of the container on the vessel and handling through trans-shipment ports, if applicable.

Transport Practice 1.6: Track cyanide shipments to prevent losses during transport.

Maersk vessels have continuous means of tracking and communication during their voyages. Maersk operates a container booking and tracking system known as the GCSS. Maersk customers are able to access live tracking data via a website or mobile phone app. Communication equipment is tested through continuous use.

Chain of custody documentation is used by Maersk to prevent the loss of cargo during shipment. This documentation includes the vessel manifest and Safety Data Sheets (SDS), which identifies the location and content of each container on the vessel. In addition, Maersk operates the GCSS to allow them to identify at which phase of shipment each container is in.

All Maersk vessels are registered by the Lloyd's Register Group, which provides classification and certification of ships, and inspects and approves important components and accessories.

Transport Practice 2.1: Store cyanide in a manner that minimises the potential for accidental releases.

Maersk is required to have current certificates for its vessels under the ISPS Code developed by the IMO.

All packaging and transportation of sodium cyanide is required to be in accordance with the IMO DG Code.

Orica's product is packaged into purpose designed and built and product dedicated bulk sparge isolators or into composite intermediate bulk containers (IBCs) contained within Twenty-foot Equivalent Units (TEUs), a general purpose shipping container. Bulk sparge isolators are rated for sea transportation and inspected by Bureau Veritas under the 2.5 and 5 year inspection regime in accordance with IMDG Code requirements.

Composite IBCs consist of a 1300 kg bulk bag contained within a hermetically sealed plastic liner, placed in a wooden outer with an integral pallet base. As per the IMO DG Code this packaging is referenced as UN/11HD2/X//***/AUS/Orica-305967/7020/1300 under the approval of the Competent Authority (where *** indicates the date the IBC was filled).
Orica’s packaging is labelled as per the IMDG Code. Bulk sparge isotainers and shipping containers containing composite IBCs are placarded with and emergency information panel (EIP) detailing the proper shipping name, dangerous goods class number, UN number, HAZCHEM Code and emergency contact information. Containers are placarded with the environmentally hazardous substance markings. Product labels are provided on the side of the IBC that allows forklift access via the pallet base. IBCs are placed into shipping containers so that the label is facing outwards.

All sodium cyanide remains contained within its sealed containers at all times preventing contact with water and other incompatible materials.

**Transport Practice 3.1: Prepare detailed emergency response plans for potential cyanide releases.**

Maersk has current certificates for its vessels under the ISPS Code developed by the IMO, which includes the IMDG Code (Chapter 7) and the ISM Code (Chapter 9).

In the case of an incident, Maersk’s Casualty Committee, which consists of key stakeholders from dedicated technical and operational areas within the A.P. Moller – Maersk Group, is called into action to ensure measures are taken to minimise environmental impacts. Drills are carried out periodically to ensure emergency procedures are up-to-date and functioning efficiently.

### 3.0 CONCLUSION

Based on the evidence reviewed, this due diligence did not find issues of concern in regards to Maersk’s management of solid sodium cyanide product. This assessment should not be a final acceptance of Maersk for future work; rather it is recommended that Orica continue to review and monitor Maersk’s performance annually and implement an adaptive management process.

### 4.0 CLOSING

We trust this due diligence letter meets your requirements. If you have any questions, please do not hesitate to contact the undersigned.

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**GOLDER ASSOCIATES PTY LTD**

Craig Currie  
Environmental Scientist

Jaclyn Ennis-John  
ICMC Lead Auditor and Technical Specialist

CC:JEJ/hsl
REFERENCES


APPENDIX B
Port Due Diligence Assessments
ICMC DUE DILIGENCE ASSESSMENT FOR THE PORT OF MOMBASA

Dear Seth

EXECUTIVE SUMMARY

Golder Associates Pty Ltd (Golder) conducted a due diligence of the port of Mombasa, Kenya during April 2017 on behalf of Orica Australia Pty Ltd (Orica). The assessment was conducted by Jaclyn Ennis-John who meets the International Cyanide Management Institute’s (ICMI) requirements for a Transport Technical Specialist.

The following items, as detailed in the ICMI’s Auditor Guidance for Use of Cyanide Transportation Verification Protocol (December 2016), were addressed within the due diligence:

- Transport Practice 1.1 (Questions 1-4 and 6)
- Transport Practice 1.5 (Question 1, Items g-i)
- Transport Practice 1.6
- Transport Practice 2.1
- Transport Practice 3.1.

The ICMI’s Auditor Guidance for Use of Cyanide Transportation Verification Protocol (December 2016) was used to conduct the due diligence assessment. It was not possible during this due diligence to physically inspect the port, as such the review was based on information obtained from previous due diligence reviews, ICMI audit reports and publicly available online information.

Golder’s assessment of the port of Mombasa found no issues of concern in regards to the port’s management of solid sodium cyanide product.

This assessment should not be a final acceptance of the port of Mombasa for future work; rather it is recommended that Orica continue to review and monitor the port of Mombasa’s performance annually and implement an adaptive management process.
1.0 INTRODUCTION

This letter provides the results of a due diligence assessment against the port of Mombasa, Kenya, in accordance with the International Cyanide Management Code for the Manufacture, Transport and Use of Cyanide in the Production of Gold (ICMC or the Code).

Golder conducted a desktop due diligence assessment of the port of Mombasa, Kenya during April 2017. The assessment was conducted by Jaclyn Ennis-John who meets the International Cyanide Management Institute's (ICMI) requirements for a Transport Technical Specialist.

The following items, as detailed in the ICMI's Auditor Guidance for Use of Cyanide Transportation Verification Protocol (December 2016), were addressed within the due diligence:

- Introduction
- ICMC Transport Verification Protocol Assessment
  - Transport Practice 1.1 (Questions 1-4 and 6)
  - Transport Practice 1.5 (Question 1, Items g-i)
  - Transport Practice 1.6
  - Transport Practice 2.1
  - Transport Practice 3.1.
- Conclusion
- References.

The ICMI's Auditor Guidance for Use of Cyanide Transportation Verification Protocol (December 2016) was used to conduct the due diligence assessment. Due to access restrictions, it was not possible during this due diligence to physically inspect the port of Mombasa. The due diligence assessment was completed based on information obtained from previous due diligences, ICMI audit reports and publicly available online information.

1.1 Overview of Port of Mombasa, Kenya

The port of Mombasa is managed by the Kenya Port Authority (KPA). Established in January 1973 under an Act of Parliament, the KPA is authorised to manage and operate the port of Mombasa and all scheduled seaports along Kenya's coastline. In addition, the Authority manages inland waterways as well as inland container depots at Embakasi, Eldoret and Kisumu.

The port of Mombasa is the gateway to East and Central Africa, and is one of the busiest ports along the East African coastline. The port provides direct connectivity to over 80 ports worldwide and is well connected by road to a vast hinterland comprising Uganda, Rwanda, Burundi, Eastern Democratic Republic of Congo, Northern Kenya, Southern Sudan, Somalia and Ethiopia. A railway line also runs from the port into Uganda and Kenya.

The port of Mombasa has two container terminals namely the Mombasa Container Terminal and the newly built Kipevu Container Terminal with an annual total capacity of 1.65 million TEUs currently (2016 figures). Container operations at the port of Mombasa entail discharging and loading of vessels, stacking and unstacking of containers in the yard and delivery/receipt of import and export containers.

Overview of port operations:

A Harbour Master oversees the operation of the overall port operations. This includes:

- Port protocols exist for docking of vessels, e.g. use of Pilots; use of tug boats; different weather conditions, tides, currents; safety; and general port operations. This sees to the safe docking and turnaround of the vessels in and out of the port.
Entry into port is controlled by the port’s Pilot who understands the port protocols and any unique issues regarding the approach and docking of a vessel at the port. The Ship’s Captain works in conjunction with the Pilot as he understands his vessel and can implement and assist with the Pilot’s instructions.

The approach of the vessel to the port will take into any account any channels, special navigation points and as mentioned above the currents, tides and weather.

Once the vessel is secure alongside the wharf the shipping activities changeover to port activities. The vessels manifest of what containers are required to be unloaded from the vessel, including the manifest for containers for loading are handed over. This manifest will identify hazardous cargos and their UN number and classification and segregation requirements.

Stevedoring operations include:

- Handling of the containers whether full or empty on and off the vessels; container storage areas for general cargo, port security, control systems for companies and their vehicles collecting and or delivering containers.
- Software programs that control container placement and movement; these software packages identify each individual container placement area in designated stacks. The input information for the placement of containers comes from the vessel’s manifest.

Containers of dangerous goods discharged by vessels at the container terminal are moved to a dedicated dangerous goods storage area within the port confines for storage until customs clearance has been completed and transport is arranged. Containers of Cyanide are segregated from other classes of dangerous goods. This area has minimal traffic flow and is large enough to allow space for appropriate segregation of different classes of dangerous goods.

2.0 ICMC TRANSPORT VERIFICATION PROTOCOL ASSESSMENT

The ICMI's Auditor Guidance for Use of Cyanide Transportation Verification Protocol, General Guidance states:

*Except as specifically identified in this Guidance document, the Cyanide Transportation Protocol is not to be used to evaluate transport by rail and ship or management of cyanide at rail terminals and port facilities due to security issues, limited access, and the inability of consignors to affect changes in the operating practices of these transport facilities. Rather than conduct Code audits of these facilities, the consignor must conduct and document due diligence investigations of rail carriers, rail terminals, shipping companies and port facilities that are engaged to handle cyanide shipments, as further discussed below under Transport Practice 1.1.* The consignor’s due diligence investigation must either be conducted or reviewed by an auditor meeting ICMI requirements for a transport expert, and the auditor must conclude that the due diligence investigation has reasonably evaluated these facilities and that the consignor has, to the extent practical, implemented any necessary management measures.

Transport Practice 1.1: Select cyanide transport routes to minimise the potential for accidents and releases

The international sales and exports of sodium cyanide by Orica take into consideration the ports and their extended infrastructure 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 point of origin to destination.

Orica procedure “Selection of Transport Routes – Transportation of Sodium Cyanide to Customer Sites or Stock Points” (Orica ref: UP-GLO-PRO-001-017) aims to minimise the risk associated with the transportation of sodium cyanide while maintaining a safe, reliable, efficient and cost effective delivery system to customer sites and Orica stock points throughout the world. The procedure applies to the selection of delivery routes for Orica sodium cyanide and states that the “selection of route(s) is to be effected by the overall assessment of the risks associated with the utilisation of such route, taking into particular consideration likelihood of an incident occurring and the consequence of such an incident.” This procedure is applicable to all routes used for the transportation of Orica sodium cyanide as well as to Orica’s contracted transportation agencies.
The Mombasa port is the principal port of Kenya and serves landlocked countries such as Malawi, Zambia, Democratic Republic of Congo, Burundi, Rwanda and Uganda. The port is strategically placed to serve as a freight linkage to and from East and Central Africa countries.

**Transport Practice 1.5: Follow international standards for the transportation of cyanide by sea and air**

Orica's manufacturing facility and transfer stations are ICMC certified, sodium cyanide is packaged and transported in accordance with international regulatory standards, such as the United Nations Recommendation on the Transport of Dangerous Goods – Model Regulations, (2005) and National Codes of Practice such as the Australian Code for the Transport of Dangerous Goods by Road or Rail, (2015) thereby meeting the requirements of the political jurisdictions through which the loads will pass.

Orica only operates in export markets that are serviced by major international shipping companies with the ability to offer scheduled container services from point of origin to destination. Orica procedure “Carrier Assessment” (Orica ref: SUP-GLO-PRO-016-008) provides the framework for ensuring that carriers and their contractors are assessed at regular intervals to ensure that, amongst others, storage, safety, security, maintenance and emergency response standards are being maintained. Carriers are required to provide manifest documentation, to satisfy local customs regulations and the requirements of the IMDG Code, to the destination port. This documentation contains a list of the cargo types and in the case of sodium cyanide and any other hazardous cargo the quantity, unique packaging numbers, stowage reference and emergency response procedures.

Kenya is both an IMO Member State (1973) and SOLAS Signatory Nation (1999), thereby requiring the port of Mombasa to adhere to the international regulations for the transportation and handling of dangerous goods as set out in the IMDG Code (Parts 4, 5 and 7) and SOLAS Convention (1974) Chapter 7.

**g) Does the ship carrying the cyanide have a list or manifest identifying the presence and location of the cyanide or a detailed stowage plan including this information, as required under Section 5.4.3.1 of the DG Code?**

The KPA develops and implements policies, statutes and regulations governing the carriage of dangerous goods and other goods by ships in accordance with relative national and international requirements. This includes supervising the safety of ships carrying dangerous goods and other goods, processing declarations made by ships carrying dangerous goods, providing accreditation services for personnel involved in the declaration of dangerous goods and inspection of containers, and inspecting containers holding dangerous goods.

As an IMO Member State and to comply with the IMDG Code, vessels are required to declare dangerous cargo before arriving at or leaving the port, to the KPA.

As required by the KPA, the status of all containers must be declared in the carrier’s manifest, a copy of which will be submitted to the port Manager’s office for onward transmission to the Container Terminal. If the status of a container is not declared in the manifest, such a container will not be allowed removal from the vessel and may also attract storage charges as per the appropriate tariff.

The port of Mombasa operates under a suite of National regulations (Kenyan Standards [KS] 2324-1 through 2324-8 Identification and Classification of Dangerous Goods for Transport) that ensures its compliance with regards to the transportation, handling and storage of dangerous goods.

**h) Does the ship carrying the cyanide have cyanide emergency response information, as required under Section 5.4.3.2 of the DG Code?**

Dangerous goods delivered to or from the port are required to be appropriately manifested, packaged, labelled and placarded. Documentation that accompanies the cyanide throughout transportation by sea and delivery at ports includes emergency response information along with the dangerous goods manifest, packing certificates and Multimodal Dangerous Goods Form.

Emergency response procedures for ships carrying dangerous goods, including the emergency schedules to be followed in case of incidents involving dangerous substances, materials or articles, or harmful substances (marine pollutants), is regulated under the IMDG code. In accordance with the code, all ships, and the companies responsible for their operation, are required to maintain a Safety Management System (SMS). Within the SMS, procedures for responding to potential shipboard emergencies are required.
Port operations personnel provide the vessel's Master with copies of the Emergency Information, Dangerous Goods manifest (including stowage plan) and Packaging Certificates for each hazardous cargo transport units loaded onto the ship at the port of origin.

**i) Does the ship comply with the stowage and separation requirements of Part 7 of the DG Code?**

As a member of the IMO and to comply with the IMDG Code and the Kenya Ports Authority Act, 2012 vessels are required to declare dangerous cargo to the KPA before arriving at or leaving the port.

To comply with requirements of the IMDG Code, the port of Mombasa has dedicated Container Freight Station (CFS) areas for specialised products including dangerous goods; cyanide containers are segregated and stacked separately. All sodium cyanide remains contained within its sealed containers at all times.

**Transport Practice 1.6: Track cyanide shipments to prevent losses during transport**

The Dispatch Centre organises ship movements, tracks pilotage operations, and supervises terminal operations via real-time CCTV monitoring.

As a member of the IMO and to comply with the IMDG Code and the Kenya Ports Authority Act, 2012 vessels are required to declare dangerous cargo before arriving at or leaving the port.

Chain of custody documentation is used by shipping companies to prevent the loss of cargo during shipment. This documentation includes the vessel manifest – which identifies the location and content of each container on the vessel along with packing certificates, Multimodal Dangerous Goods Forms and Safety Data Sheets (SDS).

The Container Operations Department at Mombasa operates 24/7 and utilises a Terminal Operations System (TOS) to track both containers and their documentation.

**Transport Practice 2.1: Store cyanide in a manner that minimises the potential for accidental releases**

The KPA has responded positively to pressure from the international community by taking steps to increase the level of security checks and supervision in all sectors of its port operations. The Authority is determined to ensure that its ports comply with the security rules of the IMO.

Mombasa has introduced a number of measures to make the port a safer and more secure place. They include:

- New electronic surveillance equipment including CCTV
- Coastguard surveillance of waters
- New search and rescue centre, set up jointly with the IMO
- More plain-clothes and uniformed security officers on patrol in port areas
- Strict controls on port entry with all port users and visitors required to display passes at all times
- Restricted entry to container terminal and other key sections
- Continuously manned watch towers in car handling area and container terminal
- New rapid response team to deal with urgent security matters in or near the port area
- New centralised verification areas at the container terminal
- New cargo scanning system to allow containers to be checked without stripping.

Upon arrival, inbound containers are discharged from vessels and taken by truck or tractor to a designated CFS. Each CFS is a self-contained facility with government agencies on site, including Customs, police, the Standards Authority and a sanitary inspection department. Each container awaiting clearance for on-carryage resides securely within a given CFS until cleared.
Cyanide is placed in a segregated area whilst awaiting relevant clearances. This area is clearly signed providing appropriate warning to all port personnel. Collection of the cargo by the approved carrier is direct from this area. Vehicles collecting cargo from the port environs are subject to port checks to ensure that approvals for collection are in place and that documentation and container details match prior to egress from the port. Additionally, signage is displayed prohibiting smoking and the consumption of foodstuffs and liquids in the areas where hazardous goods are being stored.

The port of Mombasa is accredited under the International Ship and Port Security (ISPS) Code and is classed as a secure area. The port has a full time security presence which includes armed patrols. Access to and from the container terminal is well controlled and areas used for cyanide storage are may be subject to an additional security presence. The port security egress checkpoint checks a driver's documentation to ensure approval has been granted for the removal of the container, that the container number physically matches with the documentation and that the seal is intact on the shipping container.

The port has a minimum standard of personal protective equipment required which includes the wearing of relevant safety footwear, clearly visible clothing and protective headwear in specific areas. This personal protective equipment requirement is suitable for cyanide that remains contained within sealed containers at all times.

Sodium cyanide product remains sealed inside its container at all times. Containers are in a segregated area which is open to the air to prevent the build-up of hydrogen cyanide gas.

**Transport Practice 3.1: Prepare detailed emergency response plans for potential cyanide releases**

Kenya has been a Member State of the IMO Council since 1973, it complies with the requirements of the IMDG Code.

The port of Mombasa is certified under the IMO's International Convention on Oil Pollution Preparedness, Response and Cooperation 1990 (OPRC 90). States which are party to OPRC 90 protocol are required to establish a national system for responding to oil and hazardous/noxious substances pollution incidents, including a designated national authority, a national operational contact point and a national contingency plan. This needs to be supported by a minimum level of response equipment, communications plans, regular training and exercises.

The port of Mombasa maintains permanent onsite fire and emergency response personnel and equipment. The Port Fire Services (PFS) are well equipped and operate three fire engines with a water capacity of 10 000 L each and has a water reserve of 300 000 L. Working with external bodies, the PFS responds to rescues, hazardous materials incidents and possible emergency activities both within the port and across the greater region. They offer fire and rescue services to enhance community safety, quality of life and confidence in port operations by minimising the impact of hazards and emergency incidents on port users, the environment and the economy.

The PFS also offer 24/7 ambulance services and emergency response. Manured by firefighters, the ambulance is used as a first responder in serious medical emergencies.

**3.0 Conclusion**

Based on the evidence reviewed, this due diligence did not find significant issues of concern in regards to the port of Mombasa's management of solid sodium cyanide product. It was not possible during this due diligence to physically inspect the port, as such the review was based on information obtained from previous due diligence reviews, ICMI audit reports and publicly available online information. The Auditor recommends that Orica undertakes annual reviews at the port of Mombasa to monitor the management of dangerous goods.

This assessment should not be a final acceptance of the port of Mombasa for future work; rather it is recommended that Orica continue to review and monitor the port's performance annually and implement an adaptive management process.
4.0 CLOSING
We trust this due diligence letter meets your requirements. If you have any questions, please do not hesitate to contact the undersigned.

GOLDER ASSOCIATES PTY LTD

Craig Currie
Environmental Scientist

Jaclyn Ennis-John
ICMC Lead Auditor and Technical Specialist

CC:JEJ/hsl
REFERENCES


ICMC DUE DILIGENCE ASSESSMENT FOR THE PORT OF DAR ES SALAAM

Dear Seth

EXECUTIVE SUMMARY

Golder Associates Pty Ltd (Golder) conducted a due diligence of the port of Dar es Salaam, Tanzania during April 2017 on behalf of Orica Australia Pty Ltd (Orica). The assessment was conducted by Jaclyn Ennis-John who meets the International Cyanide Management Institute’s (ICMI) requirements for a Transport Technical Specialist.

The following items, as detailed in the ICMI’s Auditor Guidance for Use of Cyanide Transportation Verification Protocol (December 2016), were addressed within the due diligence:

- Transport Practice 1.1 (Questions 1-4 and 6)
- Transport Practice 1.5 (Question 1, Items g-i)
- Transport Practice 1.6
- Transport Practice 2.1
- Transport Practice 3.1.

The ICMI’s Auditor Guidance for Use of Cyanide Transportation Verification Protocol (December 2016) was used to conduct the due diligence assessment. It was not possible during this due diligence to physically inspect the port, as such the review was based on information obtained from previous due diligence reviews, ICMI audit reports and publicly available online information.

Golder’s assessment of the port of Dar es Salaam found no issues of concern in regards to the port’s management of solid sodium cyanide product.

This assessment should not be a final acceptance of the port of Dar es Salaam for future work; rather it is recommended that Orica continue to review and monitor the port’s performance annually and implement an adaptive management process.
1.0 INTRODUCTION

This letter provides the results of a due diligence assessment against the port of Dar es Salaam, Tanzania, in accordance with the International Cyanide Management Code for the Manufacture, Transport and Use of Cyanide in the Production of Gold (ICMC or the Code).

Golder conducted a desktop due diligence assessment of the port of Dar es Salaam, Tanzania during April 2017. The assessment was conducted by Jaclyn Ennis-John who meets the International Cyanide Management Institute’s (ICMI) requirements for a Transport Technical Specialist.

The following items, as detailed in the ICMI’s Auditor Guidance for Use of Cyanide Transportation Verification Protocol (December 2016), were addressed within the due diligence:

- Introduction
- ICMC Transport Verification Protocol Assessment
  - Transport Practice 1.1 (Questions 1-4 and 6)
  - Transport Practice 1.5 (Question 1, Items g-i)
  - Transport Practice 1.6
  - Transport Practice 2.1
  - Transport Practice 3.1.
- Conclusion
- References.

The ICMI’s Auditor Guidance for Use of Cyanide Transportation Verification Protocol (December 2016) was used to conduct the due diligence assessment. Due to access restrictions, it was not possible during this due diligence to physically inspect the port of Dar es Salaam. The due diligence assessment was completed based on information obtained from previous due diligences, ICMI audit reports and publicly available online information.

1.1 Overview of Port of Dar es Salaam, Tanzania

The port of Dar es Salaam is located on the East Coast of Africa and is the principle port of Tanzania. Dar es Salaam handles approximately 95% of the Tanzania international trade and serves landlocked countries such as Malawi, Zambia, Democratic Republic of Congo, Burundi, Rwanda and Uganda. The port is strategically placed to serve as a freight linkage to and from East and Central Africa countries.

The port of Dar es Salaam has a rated capacity of 4.1 million (dwt) dry cargo and 6.0 million (dwt) bulk liquid cargo. The port has a total quay length of 2000 metres with eleven deep-water berths.

The Tanzania Ports Authority (TPA) operates the port of Dar es Salaam, however all containerised cargo is handled by the Tanzania International Container Terminal Services Ltd (TICTS), which is located in the port of Dar es Salaam and is the largest container terminal in Tanzania. The terminal has four berths totalling 725 meters in length with a capacity to handle in excess of 500 000 twenty-foot equivalent units (TEUs) per year which includes many classes of Dangerous Goods cargo.

Overview of port operations:

A Harbour Master oversees the operation of the overall port operations. This includes:

- Port protocols exist for docking of vessels, e.g. use of Pilots; use of tug boats; different weather conditions, tides, currents; safety; and general Port operations. This sees to the safe docking and turnaround of the vessels in and out of the port.
- Entry into port is controlled by the port’s Pilot who understands the port protocols and any unique issues regarding the approach and docking of a vessel at the port. The Ship’s Captain works in conjunction with the Pilot as he understands his vessel and can implement and assist with the Pilot’s instructions.
The approach of the vessel to the port will take into any account any channels, special navigation points and as mentioned above the currents, tides and weather.

Once the vessel is secure alongside the wharf the shipping activities changeover to port activities. The vessels manifest of what containers are required to be unloaded from the vessel, including the manifest for containers for loading are handed over. This manifest will identify hazardous cargos and their UN number and classification, segregation requirements.

Stevedoring operations include:

The stevedoring company TICTS operate under a long term lease agreement with the port authorities and manage the on-shore (wharf) operations at the dedicated container terminal. This is the terminal currently used by the Mediterranean Shipping Company to facilitate the unloading of their vessels. The stevedoring operations include:

- Handling of the containers whether full or empty on and off the vessels; container storage areas for general cargo, port security, control systems for companies and their vehicles collecting and or delivering containers.

- Software programs that control container placement and movement; these software packages identify each individual container placement area in designated stacks. The input information for the placement of containers comes from the vessel’s manifest.

Containers of dangerous goods discharged by vessels at the container terminal are moved by TICTS to a dedicated dangerous goods storage area within the port confines for storage until customs clearance has been completed and transport is arranged. Containers of Cyanide are segregated from other classes of dangerous goods. This area has minimal traffic flow and is large enough to allow space for appropriate segregation of different classes of dangerous goods.

2.0 ICMC TRANSPORT VERIFICATION PROTOCOL ASSESSMENT

The ICMC’s Auditor Guidance for Use of Cyanide Transportation Verification Protocol, General Guidance states:

Except as specifically identified in this Guidance document, the Cyanide Transportation Protocol is not to be used to evaluate transport by rail and ship or management of cyanide at rail terminals and port facilities due to security issues, limited access, and the inability of consignors to affect changes in the operating practices of these transport facilities. Rather than conduct Code audits of these facilities, the consignor must conduct and document due diligence investigations of rail carriers, rail terminals, shipping companies and port facilities that are engaged to handle cyanide shipments, as further discussed below under Transport Practice 1.1. The consignor’s due diligence investigation must either be conducted or reviewed by an auditor meeting ICMC requirements for a transport expert, and the auditor must conclude that the due diligence investigation has reasonably evaluated these facilities and that the consignor has, to the extent practical, implemented any necessary management measures.

Transport Practice 1.1: Select cyanide transport routes to minimise the potential for accidents and releases

The international sales and exports of sodium cyanide by Orica take into consideration the ports and their extended infrastructure 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 point of origin to destination.

Orica procedure “Selection of Transport Routes – Transportation of Sodium Cyanide to Customer Sites or Stock Points” (Orica ref: UP-GLO-PRO-001-017) aims to minimize the risk associated with the transportation of sodium cyanide while maintaining a safe, reliable, efficient and cost effective delivery system to customer sites and Orica stock points throughout the world. The procedure applies to the selection of delivery routes for Orica sodium cyanide and states that the “selection of route(s) is to be effected by the overall assessment of the risks associated with the utilisation of such route, taking into particular consideration likelihood of an incident occurring and the consequence of such an incident.” This procedure is applicable to all routes used for the transportation of Orica sodium cyanide as well as to Orica’s contracted transportation agencies.
The Dar es Salaam port is the principal port of Tanzania and serves landlocked countries such as Malawi, Zambia, Democratic Republic of Congo, Burundi, Rwanda and Uganda. The port is strategically placed to serve as a freight linkage to and from East and Central Africa countries.

**Transport Practice 1.5: Follow international standards for the transportation of cyanide by sea and air**

Orica's manufacturing facility and transfer stations are ICMC certified, sodium cyanide is packaged and transported in accordance with international regulatory standards, such as the United Nations Recommendation on the Transport of Dangerous Goods – Model Regulations, (2005) and National Codes of Practice such as the Australian Code for the Transport of Dangerous Goods by Road or Rail, (2015) thereby meeting the requirements of the political jurisdictions through which the loads will pass.

Orica only operates in export markets that are serviced by major international shipping companies with the ability to offer scheduled container services from point of origin to destination. Orica procedure “Carrier Assessment” (Orica ref: SUP-GLO-PRO-016-008) provides the framework for ensuring that carriers and their contractors are assessed at regular intervals to ensure that, amongst others, storage, safety, security, maintenance and emergency response standards are being maintained. Carriers are required to provide manifest documentation, to satisfy local customs regulations and the requirements of the IMDG Code, to the destination port. This documentation contains a list of the cargo types and in the case of sodium cyanide and any other hazardous cargo the quantity, unique packaging numbers, stowage reference and emergency response procedures.

Tanzania is both an IMO Member State (1974) and SOLAS Signatory Nation (2001), thereby requiring the port of Dar es Salaam to adhere to the international regulations for the transportation and handling of dangerous goods as set out in the IMDG Code (Parts 4, 5 and 7) and SOLAS Convention ((1974) Chapter 7).

**g) Does the ship carrying the cyanide have a list or manifest identifying the presence and location of the cyanide or a detailed stowage plan including this information, as required under Section 5.4.3.1 of the DG Code?**

The TPA develops and implements policies, statutes and regulations governing the carriage of dangerous goods and other goods by ships in accordance with relative national and international requirements. This includes supervising the safety of ships carrying dangerous goods and other goods, processing declarations made by ships carrying dangerous goods, providing accreditation services for personnel involved in the declaration of dangerous goods and inspection of containers, and inspecting containers holding dangerous goods.

As an IMO Member State and to comply with the IMDG Code, vessels are required to declare dangerous cargo before arriving at or leaving the port, to the TPA.

As required by the Tanzania Harbours Authority Act (1977), the status of all containers must be declared in the carrier's manifest, a copy of which will be submitted to the port authority for onward transmission to the Container Terminal. If the status of a container is not declared in the manifest, such a container will attract storage charges as per the appropriate tariff as soon as the container is landed and until a declaration is received or it is cleared from the port.

Declaration and Disposal Orders (D&Ds) for containers must also show their status, which must align with the details in the manifest. In the case of difference in status between the Declaration and Disposal Order and the manifest, the Declaration and Disposal Order will be rejected until there has been an amendment to the manifest. Customs also require that all cargo manifests be submitted to them 48 hours prior to the ships arrival at outer anchorage.

The port of Dar es Salaam operates under a suite of National regulations (e.g. Harbours Authority Act, 1977 and Tanzania Harbour Regulations TZA-1991-R-31254, Dock Workers) that ensures its compliance with regards to the transportation, handling and storage of dangerous goods.
h) Does the ship carrying the cyanide have cyanide emergency response information, as required under Section 5.4.3.2 of the DG Code?

Dangerous goods delivered to or from the port are required to be appropriately manifested, packaged, labelled and placarded. Documentation that accompanies the cyanide throughout transportation by sea and delivery at ports includes emergency response information along with the dangerous goods manifest, packing certificates and Multimodal Dangerous Goods Form.

Emergency response procedures for ships carrying dangerous goods, including the emergency schedules to be followed in case of incidents involving dangerous substances, materials or articles, or harmful substances (marine pollutants), is regulated under the IMDG Code. In accordance with the Code, all ships, and the companies responsible for their operation, are required to maintain a Safety Management System (SMS). Within the SMS, procedures for responding to potential shipboard emergencies are required.

Port operations personnel provide the vessel's Master with copies of the Emergency Information, Dangerous Goods manifest (including stowage plan) and Packaging Certificates for each hazardous cargo transport units loaded onto the ship at the port of origin.

The port of Dar es Salaam also has an Emergency Response Procedure for the hazardous cargos that pass through the port.

i) Does the ship comply with the stowage and separation requirements of Part 7 of the DG Code?

As a member of the IMO and to comply with the IMDG Code and the Tanzania Harbours Authority Act, 1977 vessels are required to declare dangerous cargo to the TPA before arriving at or leaving the port.

Tanzania Harbour Regulation TZA-1991-R-31254, Dock Workers, details standards with respect to pilotage, ships reporting, movement berthing, dangerous goods and explosives, safety regulations, handling of cargo, storage, and warehousing and general harbour control.

To comply with requirements of the IMDG Code, the port of Dar es Salaam has dedicated storage areas for specialised products including dangerous goods; cyanide containers are segregated and stacked separately. All sodium cyanide product remains sealed within its container at all times.

Transport Practice 1.6: Track cyanide shipments to prevent losses during transport

The Dispatch Centre organises ship movements, tracks pilotage operations, and supervises terminal operations via real-time CCTV monitoring.

As a member of the IMO and to comply with the IMDG Code and the Tanzania Harbours Authority Act, 1977 vessels are required to declare dangerous cargo before arriving at or leaving the port.

Chain of custody documentation is used by shipping companies to prevent the loss of cargo during shipment. This documentation includes the vessel manifest – which identifies the location and content of each container on the vessel along with packing certificates, Multimodal Dangerous Goods Forms and Safety Data Sheets (SDS).

Transport Practice 2.1: Store cyanide in a manner that minimizes the potential for accidental releases

Cyanide on arrival is placed in a segregated area whilst awaiting relevant clearances. This area is clearly signed providing appropriate warning to all port personnel. Collection of the cargo by the approved carrier is direct from this area. Vehicles collecting cargo from the port environs are subject to port checks to ensure that approvals for collection are in place and that documentation and container details match prior to egress from the port. Additionally, signage is displayed prohibiting smoking and the consumption of foodstuffs and liquids in the areas where hazardous goods are being stored.

The port of Dar es Salaam is accredited under the International Ship and Port Security (ISPS) Code and is classed as a secure area. The port has a full time security presence which includes armed patrols. Access to and from the container terminal is well controlled and areas used for cyanide storage are may be subject to an additional security presence. The port security egress checkpoint checks a driver's documentation to ensure approval has been granted for the removal of the container, that the container number physically matches with the documentation and that the seal is intact on the shipping container.
The port has a minimum standard of personal protective equipment required which includes the wearing of relevant safety footwear, clearly visible clothing and protective headwear in specific areas. This personal protective equipment requirement is suitable for cyanide that remains contained within sealed containers at all times.

Sodium cyanide product remains sealed inside its container at all times. Containers are in a segregated area which is open to the air to prevent the build-up of hydrogen cyanide gas.

**Transport Practice 3.1: Prepare detailed emergency response plans for potential cyanide releases**

Tanzania has been a Member State of the IMO Council since 1974, it complies with the requirements of the IMDG Code.

Previously conducted due diligence assessments (Orica and CSBP, 2013) have shown that the port of Dar es Salaam has both fire and ambulance stations on site and that the port was well run and efficient in its emergency operations. Safety and security measures were evident throughout the port.

The port of Dar es Salaam is certified under the IMO's International Convention on Oil Pollution Preparedness, Response and Cooperation 1990 (OPRC 90). States which are party to OPRC 90 protocol are required to establish a national system for responding to oil and hazardous/noxious substances pollution incidents, including a designated national authority, a national operational contact point and a national contingency plan. This needs to be supported by a minimum level of response equipment, communications plans, regular training and exercises.

The Tanzanian Guidelines for Management of Environmental Emergencies (Section 4.0 Anthropogenic activities and natural sources contributing to environmental emergencies) also provides guidelines and procedures for the preparedness and response to emergency situations involving hazardous materials.

**3.0 CONCLUSION**

Based on the evidence reviewed, this due diligence did not find significant issues of concern in regards to the port of Dar es Salaam’s management of solid sodium cyanide product. It was not possible during this due diligence to physically inspect the port, as such the review was based on information obtained from previous due diligence reviews, ICMI audit reports and publicly available online information. The Auditor recommends that Orica undertakes annual reviews at the port of Dar es Salaam to monitor the management of dangerous goods.

This assessment should not be a final acceptance of the port of Dar es Salaam for future work; rather it is recommended that Orica continue to review and monitor the port’s performance annually and implement an adaptive management process.

**4.0 CLOSING**

We trust this due diligence letter meets your requirements. If you have any questions, please do not hesitate to contact the undersigned.

**GOLDER ASSOCIATES PTY LTD**

Craig Currie  
Environmental Scientist

Jaclyn Ennis-John  
ICMC Lead Auditor and Technical Specialist

CC:JEJ/hsI

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APPENDIX C
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Golder Associates Pty Ltd
Level 3, 1 Havelock Street
West Perth, Western Australia 6005
Australia
T: +61 8 9213 7600

Africa  +27 11 254 4800
Asia    +66 21 6258 5522
Australasia +61 3 8862 3300
Europe  +356 21 42 30 20
North America +1 800 275 3281
South America +55 21 3096 9500

solutions@golder.com
www.golder.com