



September 2010

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## INTERNATIONAL CYANIDE MANAGEMENT CODE - CYANIDE SUPPLY CHAIN AUDIT

# Orica Australia Pty Ltd, Australia Supply Chain, Summary Audit Report

**Submitted to:**

International Cyanide Management Institute  
(ICMI)  
888 16th Street, NW-Suite 303  
Washington, DC 20006  
UNITED STATES OF AMERICA

Orica Australia Pty Ltd  
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Melbourne, Victoria 3000  
AUSTRALIA

REPORT



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### APPENDIX A

Limitations



## 1.0 INTRODUCTION

### 1.1 Operational Information

<b>Name of Transportation Facility:</b>	Orica Australia Supply Chain
<b>Name of Facility Owner:</b>	Not Applicable
<b>Name of Facility Operator:</b>	Orica Australia Pty Ltd
<b>Name of Responsible Manager:</b>	Matthew Hawkins, Supply Chain Manager – Mining Chemicals
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### 1.2 Description of Operation

#### 1.2.1 Orica Australia Pty Ltd

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. This unit's main product is sodium cyanide (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.

#### 1.2.2 Yarwun Production Facility

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

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

#### 1.2.3 Sodium Cyanide Transportation

The Australia Supply Chain covers the transportation of cyanide from the manufacturing facility in Yarwun, Australia, by road and rail direct to its end point user. Product is also sent utilising these methods to the Port of Brisbane for subsequent distribution into other regions.

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**1.2.3.1 Road Transportation**

**1.2.3.1.1 Toll Global Resources**

Orica contracts all road transportation within Australia to Toll Global Resources, which is a part of the Toll Group. The Toll Group, with its head offices in the Royal Domain Centre, St Kilda Road, Melbourne, is one of the Asian region's leading providers of integrated logistics services with an operating network of over 670 sites throughout 17 countries across the Asian region. Toll Resources' transport and infrastructure assets include ports, warehousing, road fleets, ships, rail rolling stock and air freight capacity.

Toll Global Resources provides total logistics solutions to the Oil & Gas, Mining and Dangerous Goods Industries throughout Australia. The Mining Services part of Toll Global Resources provides specialist mining logistics services throughout the mining states of Queensland (QLD), New South Wales (NSW), the northern Territory (NT) and Western Australia (WA). Services include: container and wharf transport; bulk commodity haulage; bulk and packaged dangerous goods transport and storage; contract distribution; contract warehousing; and industry focused supply chain solutions. Toll Global Resources' Mining Services has permanent operations in Townsville, Mt Isa, Mackay (Nebo), Gladstone, Brisbane, Newcastle, Sydney, Perth and Kalgoorlie, with their head office located at Kerry Road, Archerfield, Brisbane.

**1.2.3.1.2 IFE Bulk Solutions**

IFE Bulk Solutions is the trading name of Parkside Caravans Pty Ltd based in Mt Isa, north-west QLD. IFE Bulk Solutions is subcontracted by Toll Global Resources to transport cyanide from Mt Isa to various mine sites within QLD and the NT.

**1.2.3.1.3 Patrick Port Logistics**

Patrick Port Logistics provides integrated transport and logistics solutions and services to the chemical industry. Principal business operations include: rail yards; general stevedoring; port services and PortLink; Patrick Shipping; Patrick Autocare; Patrick Intermodal; defence logistics and international freight.

In July 2006, the Toll Group acquired 100% of Patrick Logistics' Intermodal element and the company is subcontracted by Toll Global Resources for the movement and storage of Orica's cyanide within NSW.

Patrick Port Logistics transports cyanide from the Pacific National rail head at Chullora, through to the Cowal Gold Mine, located outside West Wyalong in western NSW, via its depot in Dubbo. Containers are dispatched from Chullora Rail Yard by road to either the Arndell Park Transport Yard for interim storage, or to the Camellia Rail Yard for dispatch to Dubbo. Arndell Park Transport Yard is managed by Toll Chemical Logistics and Camellia is managed by Patrick Port Logistics.

**1.2.3.1.4 Toll Chemical Logistics**

Toll Chemical Logistics, as part of the Toll Group, provides customised logistics services to dangerous goods industries and has 320 people at sites in Perth, Adelaide, Melbourne, Sydney and Brisbane. Toll Chemical Logistics is subcontracted by Toll Global Resources to transport product between rail yards in NSW. Toll Chemical Logistics also provides interim storage of product at a dangerous goods facility in Welshpool, WA (Section 1.2.3.3.1).

**1.2.3.1.5 Canoca Pty Ltd**

Canoca Pty Ltd is an owner operator transporter that is an authorised subcontractor to Toll Global Resources' Perth Branch. It transports product between the Kewdale Rail Yard and the interim storage facility at Toll Chemical Logistics, Welshpool, WA.

**1.2.3.1.6 Malone Trucking**

Malone Trucking is an owner operator transporter that is an authorised subcontractor to Toll Global Resources' Kalgoorlie Branch. It transports product from the ARG Kalgoorlie Rail Yard to customers in the Goldfields region of WA.

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**1.2.3.1.7 Skynight Transport**

Skynight Transport is an authorised subcontractor to Toll Global Resources' Kalgoorlie Branch. It provides drivers and prime movers for the transport of product from the ARG Kalgoorlie Rail Yard to customers in the Goldfields region of Western Australia. In addition, Skynight also undertakes maintenance services for all transportation cyanide vehicle and transportation equipment for Toll Global Resources Kalgoorlie (including that of Malone Trucking).

**1.2.3.2 Rail Transportation**

**1.2.3.2.1 QR National**

With its headquarters located at QR House, Edward Street, Brisbane, QR National provides a broad range of freight transport and logistics solutions to a wide range of customers in many industries throughout Australia. QR National offers a comprehensive network for the national distribution of containerised freight. With over 50 terminals throughout QLD, Sydney, Melbourne and agents in other major centres, QR National provides services including logistics, supply chain management, line haul and terminal operations.

Toll Global Resources utilises QR National as a subcontractor for the transportation of cyanide within QLD, specifically from Gladstone to the Port of Brisbane and Cloncurry, and Mt Isa via Townsville.

**1.2.3.2.2 Pacific National**

Pacific National is Australia's leading rail freight operator in Australia. Pacific National operates in every Australian state and territory. The company specialises in the transport of bulk commodities and containerised goods in 85 locations. Pacific National operates approximately 1000 freight train services per week, utilising a fleet of approximately 600 locomotives and 13,000 wagons over 20,000 km of track.

Pacific National is a wholly owned subsidiary of the Toll Group. Toll Global Resources utilises Pacific National for the movement of cyanide from the QR National/Pacific National hub at Acacia Ridge in Brisbane to the Pacific National hub at Chullora in NSW. Product is transported from the Chullora hub to the Kewdale and Kalgoorlie Rail Yards by Pacific National. Whilst Pacific National and Toll Global Resources are part of the Toll Group, Toll Global Resources utilises Pacific National as a subcontractor.

**1.2.3.2.3 Patrick Port Logistics**

Patrick Port Logistics is utilised for the movement of cyanide from the Camellia Rail Yard for dispatch to Dubbo in NSW.

**1.2.3.3 Cyanide Storage**

**1.2.3.3.1 Interim Storage**

Orica's Yarwun Facility produces and packages cyanide for distribution. Cyanide is packaged into the appropriate containers on an order-by-order basis. Excess cyanide is stored at the Yarwun Facility within a dedicated storage area awaiting allocation to an order and subsequent dispatch.

Cyanide, as back-up product, is stored at Toll Chemical Logistics in Welshpool, WA. This facility is licensed for the storage of Class 6.1 products in accordance with WA legislative requirements.

There are no other interim storages, as defined in the audit protocol, along any of the transport routes. At no stage is cyanide removed from its original packaging prior to unloading at customer mine destinations.

**1.2.3.3.2 Transit Storage**

Within the scope of this audit, there are numerous transit storages or trans-shipping depots located along the transport routes where containers of cyanide are removed from road and rail vehicles, temporarily stored and then placed on another vehicle for the next part of the journey. These transit storages or trans-shipping depots are managed by the relevant transport companies and due consideration of relevant protocol requirements has been made through the due diligence process.

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**1.2.3.3.2.1 Arndell Park Transport Yard**

The Arndell Park Transport Yard, managed by Patrick Port Logistics, is used as road freight depot. It is a Major Hazards Facility, as defined in NSW legislation, and thus must be managed to a more rigorous level than other dangerous goods stores. Cyanide containers are delivered to the Arndell Park Transport Yard for temporary storage (less than 24 hours) pending the arrival of trains at Camellia for dispatch to Dubbo. The storage is required due to misaligned arrival and departure times of Pacific National and Patrick Port Logistics operated rail systems. At no stage is cyanide removed from the trucks or freight containers prior to unloading at customer mine sites.

**1.2.3.3.2.2 Mt Miller Rail Yard**

The Mt Miller Rail Yard, located approximately two km by road from the Yarwun Facility, is managed by QR National. The rail yard receives empty containers from Townsville or Gladstone and dispatches full containers to Gladstone where they are attached to trains heading north or south. Cyanide may be transported as a solid in freight containers (i.e. IBCs) or sparge isocontainers. Trucks delivering cyanide from the Yarwun Facility to Mt Miller are scheduled to limit the transit time of cyanide within the rail yard to less than four hours. Cyanide is dispatched to Gladstone approximately once every day, except Sundays. The Mt Miller Rail Yard also handles numerous other dangerous goods, including flammable liquids and solids, ammonium nitrate and ammonium nitrate emulsion, acids and alkalis, as well as general freight, such as lime and cement.

**1.2.3.3.2.3 Townsville Rail Yard**

The Townsville Rail Yard is managed by QR National as a transfer point for freight containers and sparge isocontainers heading west to Cloncurry and Mt Isa.

**1.2.3.3.2.4 Mt Isa Rail Yard**

The Mt Isa Rail Yard is managed by QR National as a transfer point servicing the Mt Isa mining community and mines located to the west in the NT. The rail line westwards terminates at the Mt Isa Rail Yard, which is located approximately three km out of Mt Isa town. The yard is approximately 500 m long and contains two tracks running the length of the yard, separated by a container storage area. The northern track is used for general freight and back-loading empty cyanide containers. The southern track is used for mining chemicals and receives the cyanide containers destined for mines in the NT.

The rail yard receives full containers by rail from Mt Miller, via Townsville, at least twice each week. The containers may be standard freight containers packed with IBCs, or sparge isocontainers of solid cyanide. Given the extended length of time required to deliver the product to the mines located in the NT, product arriving at Mt Isa by train may be stored up to a maximum of one week.

Containers that arrive by train are unloaded into designated storage areas between the two lines prior to being dispatched by road. The storage areas are laid out according to the principles of train loading, with appropriate segregation between different classes of dangerous goods. Cyanide is stored in a designated area located at the southern end of the facility.

**1.2.3.3.2.5 Brisbane Multimodal Terminal**

The BMT, managed by the Port of Brisbane Corporation, is used as a transit storage area for containers of cyanide intended for export. The terminal is located at the Port of Brisbane approximately 500 m inland from the ship berths.

The BMT receives full standard freight containers packed with IBCs or sparge isocontainers of solid cyanide by rail from the Mt Miller Rail Yard, via the Gladstone Rail Yard. Trains depart from Mt Miller to BMT twice per week and there is a need for temporary, interim storage of containers at BMT. The terminal handles numerous other dangerous goods including flammable liquids and solids, ammonium nitrate and ammonium nitrate emulsion, acids and alkalis, as well as a wide variety of general freight.

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Containers arriving by train are unloaded into designated interim storage areas and then dispatched to the wharf for loading onto ships. The designated storage areas are laid out according to the principles of train loading, with appropriate segregation between different classes of dangerous goods.

When required for loading onto the ship, containers are loaded onto semitrailers and transported by road to the wharf area where they are stacked for loading aboard the ship. As is the case for all Australian ports, ship loading is in accordance with Australian Maritime Safety Authority (AMSA) rules, which reflect the International Maritime Dangerous Goods Code (IMDG Code), as Australia is a signatory to the International Maritime Organisation International Convention for the Safety of Life at Sea convention.

**1.2.3.3.2.6 Acacia Ridge Rail Yard**

The Acacia Ridge Rail Yard is managed by P&O Transport Australia (P&O Transport) as a transfer point between the QLD's narrow gauge rail system and the standard gauge rail system that connects the other mainland states of Australia. P&O Transport does not operate any of the rail systems; they are operated by QR National and Pacific National Rail.

All cyanide from the Yarwun Facility destined for users in Australia outside of QLD or the NT, passes through Acacia Ridge Rail Yard.

The terminal comprises four lines of track that are used for transfer operations, and one through track that passes through the terminal but is not used by P&O Transport. Three transfer tracks are dual gauge, i.e. narrow and standard, and one only standard gauge.

Of the four lines of track, two tracks (viz., NC2 and NC3) are used solely for interim transit storage of rail trucks (loaded and empty). Two other tracks (viz., NC1 and A Track) are used for transfer operations. Tracks NC2 and NC3 were utilised for transfer operations but the gantry crane used in that operation is unfit for service and the tracks are inaccessible to fork lift vehicles. Consequently, NC2 and NC3 are now used only to hold runs of trucks pending their movement to NC1 for unloading.

Transfer operations are carried out using top lifter fork trucks, which pick up containers and transfer them to either a container stack, a terminal transfer vehicle or to another train. Containers may be kept in stacks for up to five hours before being loaded onto an outgoing train.

Full cyanide containers (freight containers packed with IBCs or sparge isocontainers of solids) will arrive from Mt Miller on track NC1. The containers will be transferred to a standard gauge train on NC2 or A Track, and then the train will depart. Empty cyanide containers and sparge isocontainers follow the reverse process.

If cyanide containers are to be stacked awaiting loading onto a train, they are segregated according to a schedule based on the Australian Dangerous Goods segregation recommendations for rail, in the same manner as done by BMT at the Port of Brisbane.

**1.2.3.3.2.7 Chullora Rail Yard**

The Chullora Rail Yard is managed by Pacific National as a transfer point between Sydney and other destinations serviced by Pacific National; e.g. Melbourne, Adelaide, Broken Hill etc. All cyanide heading south of Acacia Ridge passes through the Chullora Rail Yard. Transfer operations are performed using top lifter fork trucks, which pick up containers and transfer them, if applicable, to a suitable heavy vehicle for the road transfer between the Chullora Rail Yard and the Camellia Rail Yard (there is currently no rail transfer capability between Chullora and Camellia).

**1.2.3.3.2.8 Camellia Rail Yard**

The Camellia Rail Yard is managed by Patrick Port Logistics. Cyanide is delivered by Pacific National trains from Acacia Ridge in QLD to the Chullora Rail Yard. Patrick Port Logistics transport containers by road from the Chullora Rail Yard to either Arndell Park Transport Yard for temporary storage, or to the Camellia Rail terminal for dispatch to Dubbo.

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The Camellia Rail Yard is not a storage area. Full containers that arrive by rail from QLD will be held at the Arndell Park Transport Yard on occasions when a train is not scheduled to take them from Camellia within 48 hours.

**1.2.3.3.2.9 Arndell Park Transport Yard**

Arndell Park Transport Yard is a road freight depot managed by Patrick Port Logistics. It is a Major Hazards Facility, as defined in NSW legislation, and thus must be managed to a more rigorous level than other dangerous goods stores. Cyanide containers are delivered to the Arndell Park Transport Yard for temporary storage pending the arrival of trains at Camellia for dispatch to Dubbo.

**1.2.3.3.2.10 Dubbo Rail Yard**

The Dubbo Rail Yard is managed by Patrick Port Logistics and receives containers transported by train from the Camellia Rail Yard. The Dubbo Rail Yard is on the Main Western Line and this service is operated by Patrick Port Logistics. Containers arriving at the Dubbo Rail Yard are removed from the rail wagon by side loader and transported to Patrick Port Logistics' Dubbo Transport Yard for subsequent movement to customer sites, or transit storage, as required.

**1.2.3.3.2.11 Kewdale Rail Yard**

The Kewdale Rail Yard is managed by Pacific National and receives containers transported by train from the Chullora Rail Yard. Containers arriving at the Kewdale Rail Yard are removed from the rail wagon by side loader and transported to Toll Chemical Logistics storage facility for interim storage, before being transported back to the Kewdale Rail Yard for rail transport to Kalgoorlie.

**1.2.3.3.2.12 Kalgoorlie Rail Yard**

The Kalgoorlie Rail Yard is managed by ARG and receives containers transported by train from the Kewdale Rail Yard. Containers arriving at the Kalgoorlie Rail Yard are removed from the rail wagon by side loader and transported by Toll Global Resources' subcontractors to customer sites.

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## 1.3 Auditors Findings and Attestation

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

**Audit Company:** Golder Associates  
**Audit Team Leader:** Edward Clerk, CEnvP (112), RABQSA (020778)  
**Email:** eclerk@golder.com.au


### Name and Signatures of Other Auditors:

Name	Position	Signature	Date
Edward Clerk	Lead Auditor and Technical Specialist		14 September 2010
Mike Woods	Auditing Support		14 September 2010

### Dates of Audit:

This Orica Australia Supply Chain Certification Audit was assessed based on the following audit and due diligence reports:

- Orica Australia Limited, Supply Chain Certification Audit, Detailed Audit Report. The audit was undertaken by Golder Associates Pty Ltd on 28 August 2009
- Orica Australia Limited, Australia Supply Chain Certification Audit, Detailed Audit Report for Toll Global Resources, Queensland. This audit was undertaken by Golder Associates Pty Ltd on 29 August 2009
- Orica Australia Limited Australian Supply Chain Certification Audit, Detailed Audit Report for IFE Bulk Solutions, Northern Territory. The audit was undertaken by Golder Associates Pty Ltd on 24 September 2009
- Orica Australia Limited, Australian Supply Chain Certification Audit, Detailed Audit Report for Toll Chemical Logistics, New South Wales. The audit was undertaken by Golder Associates Pty Ltd on 28 October 2009
- Orica Australia Limited, Australia Supply Chain Certification Audit, Detailed Audit Report for Patrick Port Logistics, New South Wales. The audit was undertaken by Golder Associates Pty Ltd on 29 October 2009
- Orica Australia Limited, Australian Supply Chain Certification Audit, Detailed Audit Report for Toll Global Resources, Kalgoorlie. The audit was undertaken by Golder Associates Pty Ltd from 20 to 21 May 2010

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## ORICA AUSTRALIA SUPPLY CHAIN, SUMMARY AUDIT REPORT

- Orica Australia Limited, Australian Supply Chain Certification Audit, Detailed Audit Report for Toll Global Resources, Perth. The audit was undertaken by Golder Associates Pty Ltd from 18 to 19 May 2010
- Due diligence of QR National. The due diligence was undertaken by Orica in July 2009 and was reviewed by Golder in July 2010
- Due diligence of Pacific National. The due diligence was undertaken by Orica in July 2009 and was reviewed by Golder in July 2010
- Due diligence of Patrick Port Logistics. The due diligence was undertaken by Orica in July 2009 and was reviewed by Golder in July 2010
- Due diligence of Australian Railway Group. The due diligence was undertaken by Orica in February 2010 and was reviewed by Golder in July 2010
- Due diligence of QR National Mt Miller Rail Yard, Qld. The due diligence was undertaken by Orica in August 2009 and was reviewed by Golder in July 2010
- Due diligence of QR National Townsville Rail Yard, Qld. The due diligence was undertaken by Orica in July 2009 and was reviewed by Golder in July 2010
- Due diligence of QR National Mt Isa Rail Yard, Qld. The due diligence was undertaken by Orica in July 2009 and was reviewed by Golder in July 2010
- Due diligence of QR National/Pacific National Acacia Ridge Rail Yard, Qld. The due diligence was undertaken by Orica in July 2009 and was reviewed by Golder in July 2010
- Due diligence of Patrick Port Logistics Dubbo Rail Yard, NSW. The due diligence was undertaken by Orica in July 2009 and was reviewed by Golder in July 2010
- Due diligence of Patrick Port Logistics Camellia Rail Yard, NSW. The due diligence was undertaken by Orica in July 2009 and was reviewed by Golder in July 2010
- Due diligence of Pacific National Chullora Rail Yard, NSW. The due diligence was undertaken by Orica in July 2009 and was reviewed by Golder in July 2010
- Due diligence of Pacific National Kewdale Rail Yard, WA. The due diligence was undertaken by Orica in February 2010 and was reviewed by Golder in July 2010
- Due diligence of AGR Kalgoorlie Rail Yard, WA. The due diligence was undertaken by Orica in February 2010 and was reviewed by Golder in July 2010
- Due diligence of Port of Brisbane, WA. The due diligence was undertaken by Orica in July 2009 and was reviewed by Golder in July 2010

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

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

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2.0 CONSIGNOR SUMMARY

2.1 Principle 1 – Transport

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

2.1.1 Transport Practice 1.1

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

in full compliance with

The operation is

in substantial compliance with

Transport Practice 1.1

not in compliance with

Summarise the basis for this Finding/Deficiencies Identified:

The Orica Australia Supply Chain is in FULL COMPLIANCE with Transport Practice 1.1 requiring cyanide transport routes are selected to minimise the potential for accidents and releases.

Orica

Orica has developed and implemented procedures to guide the selection of transport routes to minimise the potential for accidents and releases, or the potential impacts of accidents and releases. The evaluation and selection of the route/s is undertaken through a risk assessment process conducted in accordance with Australian Standard AS 4360: 2004 Risk Management. The risk assessments examined showed evidence of a detailed assessment process. Mitigation measures used to reduce risks to acceptable levels were detailed in the risk assessment documentation for the specific routes.

Orica has implemented a procedure to periodically re-evaluate routes used for cyanide deliveries. The SH&E Manager advised that the re-evaluation of routes used for cyanide deliveries is undertaken by Orica staff approximately every 18 to 24 months. This was not observed to be formalised in a procedure but supported by the route assessments reviewed during the audit. In addition, a feedback procedure was developed by Orica to ensure that relevant feedback from transportation agencies relating to routes utilised for the movement of cyanide is provided to Orica for assessment and follow up on actions, as appropriate.

Orica seeks input from stakeholders and applicable governmental agencies as necessary in the selection of routes and development of risk management measures. The community is indirectly consulted through the dangerous goods route designation process which is coordinated by the government.

Where routes present special safety or security concerns, Orica ensures the transport contractor uses convoys, escorts or other additional safety or security measures to address the concern. Through an operational area risk assessment, Orica has determined that the convoy risk in Australasia (Australia and New Zealand) does not warrant the need for cyanide to be transported in convoy. Despite this, security measures implemented by Orica for transportation of cyanide within Australia include the use of locked and sealed containers, and constant monitoring of the progress of the convoy along the route using a GPS tracking system.

Orica has advised external responders, medical facilities and communities as necessary of their roles during an emergency response. Orica’s SH&E Distribution Risk Manager advised that all emergency responders identified along specific routes during the route assessment process are issued with Orica’s Emergency Response Guide. Correspondence was sighted confirming this.

A Transport Management Plan developed by Orica details an emergency response drill schedule for each State. Orica’s SH&E Distribution Risk Manager advised that emergency responders and the primary contractor are invited to participate within the practical exercises. Evidence was sited to support this statement.

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Orica contracts all transport and the loading of cyanide solution to Toll Global Resources. A national Service Level Agreement is maintained with Toll Global Resources and is signed off by the Managing Director of Orica. Included in the contract is the requirement for, amongst other regulatory requirements, compliance with the Code. All the elements of this Transport Practice are managed as a partnership between Orica and Toll Global Resources. Toll Global Resources has a Cyanide Transport Division based at Orica's Yarwun Facility that coordinates cyanide transport logistics in consultation with Orica's Yarwun SH&E Distribution Risk Manager and Warehouse Supervisor.

Where subcontractors are utilised by contracted carriers, the Orica Sodium Cyanide Transport Management Plan notes no subcontractors are to be engaged by any prime contractor (Toll Global Resources) without the prior approval of Orica and an appropriate assessment of the proposed subcontractor's capabilities having been performed.

Orica has conducted comprehensive due diligence assessments of the Rail Carriers, Rail Yards and Ports utilised as part of their cyanide supply chain in Australia. The due diligence assessment consisted of a questionnaire that was completed with the operator by a methodology of physical visits, interviews and discussions with appropriate personnel and review of applicable documentation. The assessment was conducted by posing and seeking information to address specific questions to cover the relevant Transport Practices:

- Rail Carriers/Yards - 1.1.1, 1.1.2, 1.1.3, 1.1.4, 1.1.6 and 1.5.1.
- Ports – 1.1, 1.5 and 1.6.

The entities/facilities that underwent due diligence assessment were:

- Rail Carriers
  - QR National, Qld and NT (July 2009)
  - Pacific National Rail, Qld, NSW, Vic, SA and WA (July 2009)
  - Patrick Port Logistics, NSW (July 2009)
  - Australian Railway Group (ARG), WA (February 2010)
- Rail Yards
  - QR National Mt Miller Rail Yard, Qld (August 2009)
  - QR National Townsville Rail Yard, Qld (July 2009)
  - QR National Mt Isa Rail Yard, Qld (July 2009)
  - QR National/Pacific National Acacia Ridge Rail Yard, Qld (July 2009)
  - Patrick Port Logistics, Dubbo, NSW (July 2009)
  - Patrick Port Logistics Camellia Rail Yard, NSW (July 2009)
  - Pacific National Chullora Rail Yard, NSW (July 2009)
  - Pacific National Kewdale Rail Yard, WA (February 2010)
  - ARG Kalgoorlie Rail Yard, WA (February 2010)

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■ Ports

- Port of Brisbane, Queensland (July 2009)

Orica concluded from the due diligence assessments that no major issues of concern were identified with respect to the transportation of sodium cyanide throughout the domestic supply chain by the rail operators, rail yards and port utilised.

**Toll Global Resources**

Toll Global Resources transports cyanide on routes evaluated and designated by Orica. Toll Global Resources undertake a route assessment for each cyanide transport route, which denote the distances along the routes, specific hazards or issues, a corresponding picture and control measures to manage the hazard or issue. Condensed versions of these assessments are issued to the drivers during their delivery brief.

Toll Global Resources has implemented a procedure and process to periodically re-evaluate routes used for cyanide deliveries. An Orica route feedback procedure requires Toll Global Resources and its subcontractors to obtain feedback from transportation activities and provide it to Orica for the appropriate assessment and follow up on actions, as appropriate. In addition, Toll Global Resources procedure for route assessment notes that route assessments will be reviewed when there is a route change, an incident, or biannually. Feedbacks on route conditions are also provided by drivers to Toll Global Resources through submittal of the Cyanide Drivers Trip Log.

Toll Global Resources subcontracts sections of the road transport portion of the Orica Australia Supply Chain to other transport entities. Contracts between Toll Global Resources and these subcontractors include requirements that are consistent with the Code. All subcontractors undergo assessment by Orica and Toll Global Resources to ensure they meet their transport requirements prior to commencing transport activities.

**Subcontractors**

All subcontractors follow the transport routes as indicated in the route assessments undertaken by Orica and Toll Global Resources. Feedback on these routes is provided to Toll Global Resources by subcontractor drivers through the Cyanide Drivers Trip Log.

**2.1.2 Transport Practice 1.2**

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

in full compliance with

**The operation is**

in substantial compliance with

**Transport Practice 1.2**

not in compliance with

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

The Orica Australia Supply Chain is in FULL COMPLIANCE with Transport Practice 1.2 requiring that personnel operating cyanide handling and transport equipment can perform their jobs with minimum risk to communities and the environment.

**Orica**

Orica does not employ transport drivers or directly operate transport vehicles; this is undertaken by its prime contractor. Despite this, Orica does ensure its transport contractors and subcontractors use only trained, qualified and licensed operators to operate its transport vehicles.

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Orica's Sodium Cyanide Transport Management Plan states that agents, distributors, transport companies and other parties contracted to Orica shall be responsible for implementing the Code and contracts between Orica and these parties shall incorporate the obligations of each party in meeting the Code's requirements. Orica has a Service Level Agreement with Toll Global Resources which conforms to this requirement.

All Orica personnel operating cyanide handling equipment are being trained to perform their jobs in a manner that minimises the potential for cyanide releases and exposures.

Section 21 to 23 of Orica's Sodium Cyanide Transport Management Plan clearly describes the minimum training standards expected by Orica in the transportation of cyanide. The document also notes that where subcontractors are utilised by prime contracted agencies, the prime contractor is to have an appropriate procedure to ensure that all relevant subcontractor personnel meet the above detailed training requirements.

Orica ensures compliance by its contractor with the above through the Service Level Agreement referred to in Transport Practice 1.1.

**Toll Global Resources**

Toll Global Resources uses only trained, qualified and licensed operators (including subcontractors) to operate its transport vehicles. The company operates a central database, which monitors licence renewals, health checks, training courses, refresher courses, etc, for drivers. Alerts are issued to managers one month in advance of a licence expiring.

All drivers used by Toll Global Resources sit Orica's Sodium Cyanide Safety Awareness induction and are trained in emergency response procedures, the transport route and sparge unloading (where appropriate) prior to undertaking cyanide deliveries.

Toll Global Resources subcontracts sections of the road transport portion of the Orica Australia Supply Chain to other transport entities. Contracts between Toll Global Resources and these subcontractors include requirements that are consistent with the Code. All subcontractors undergo assessment by Orica and Toll Global Resources to ensure they meet their transport requirements prior to commencing transport activities.

**Subcontractors**

All subcontractors make their personnel available for the mandated training and obtain appropriate qualifications prior to the commencement of transport activities.

**2.1.3 Transport Practice 1.3**

**Ensure that transport equipment is suitable for the cyanide shipment.**

in full compliance with

**The operation is**  in substantial compliance with **Transport Practice 1.3**


not in compliance with

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

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

**Orica**

Orica only uses equipment designed and maintained to operate within the loads it will be handling when transporting cyanide. The loading of cyanide isocontainers and all cyanide transport outside the Yarwun Facility is subcontracted to Toll Global Resources.

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The Yarwun Facility cyanide warehouse only uses equipment designed and maintained to operate within the loads it will be handling. The warehouse utilises one dedicated mobile container lifter (Isoloder) to load containers and isocontainers.

The Cyanide Warehouse has procedures in place to verify the adequacy of the equipment for the load it must bear. Daily and weekly pre-start checklists are completed for the Isoloder any checklist indicating faults is faxed to the equipment Leasing Agent. Engine hours are noted on the checklists and these are used by the Leasing Agent to schedule services in accordance with the requirements of the machines.

Orica has developed a Transport of Sodium Cyanide – Carrier Safety Program (SOP TMP 05) that details the minimum safety requirements and programmes that Orica requires its prime contractor and associated subcontractors to implement.

Procedures are in place to prevent overloading of the transport vehicle being used for handling cyanide. An integral part of the development of a new account involves a review of the delivery process. This includes determining the capacity for the customer's site to store product, and availability of transportation equipment in the area (e.g. the availability of side loaders, regulatory compliance with regards to vehicular weight restrictions, etc). These have been compiled in a schedule by Orica's SH&E Distribution Risk Manager and circulated to the Warehouse Facilitator, Toll Global Resources Cyanide Coordinator and the Orica Distribution Officer to ensure compliance with identified weight restrictions.

Orica ensures compliance by its contractor with the above through the Service Level Agreement referred to in Transport Practice 1.1.

### Toll Global Resources

Toll Global Resources and its subcontractors only use equipment designed and maintained to operate within the loads it will be handling when transporting cyanide.

Toll Global Resources and its subcontractors have procedures in place to verify the adequacy of the equipment for the load it must bear. Checks are completed as part of the scheduled servicing, daily checks and Plant and Equipment Defect Advice system. The scheduled servicing includes checks on equipment to identify signs of stress or overloading.

Toll Global Resources maintains a dedicated fleet of prime movers and trailers to transport Orica containers, liquid isocontainers and sparge isocontainers. Equipment specifications are provided by Toll Global Resources to Orica for approval and then recorded on an approved equipment list maintained by Toll Global Resources. The spreadsheet records the load and design information for prime movers and trailing equipment for all depots within Australia, enabling carrying capabilities to be determined.

Toll Global Resources subcontracts sections of the road transport portion of the Orica Australia Supply Chain to other transport entities. Contracts between Toll Global Resources and these subcontractors include requirements that are consistent with the Code. All subcontractors undergo assessment by Orica and Toll Global Resources to ensure they meet their transport requirements prior to commencing transport activities.

### Subcontractors

All subcontractors provide, operate and maintain equipment for the transportation activities associated with sodium cyanide as per Orica and Toll Global Resources requirements.

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**2.1.4 Transport Practice 1.4**

**Develop and implement a safety program for transport of cyanide.**

**in full compliance with**

**The operation is**

in substantial compliance with

**Transport Practice 1.4**

not in compliance with

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

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

**Orica**

Orica has handling and inspection procedures to ensure that the integrity of cyanide packaging within freight containers and sparge tank containers are maintained during loading activities. Containers and cyanide boxes are handled and inspected in accordance with the Cyanide Warehouse Normal Operations procedure. Returned freight containers are aired for approximately five minutes prior to empty cyanide IBCs being unloaded. The Warehouse Technician inspects new and returned cyanide IBCs to ascertain whether the IBCs are to be filled, repaired or removed from service. Filled IBCs are only placed in freight containers fit for loading. IBCs are placed in freight containers by forklift two at a time (two high and two wide). The IBC numbers are noted on the Container Load Sheet by the Forklift Operator as they are loaded. A visual inspection of strapping is also undertaken as each box is placed in the freight container and any broken strapping is replaced. Once the freight container is full (maximum of 20 IBCs) the doors are closed, locked and a yellow tag is fitted. The transport driver verifies the freight container is locked and fit for dispatch on the Container Inspection Checklist and returns the yellow tag to the Cyanide Warehouse office along with the completed Container Load Sheet.

In addition, Orica has introduced an inspection of the isocontainer by maintenance personnel. This includes inspection for damage and the integrity of the isocontainer upon its return from the customer and prior to the release of the isocontainer to the Cyanide Warehouse personnel for filling.

Placards or other signage are used to identify the shipment as cyanide, as required by local regulations or international standards. Standard placards for bulk loads as prescribed in the ADG Code are used on all shipments of cyanide and all shipments qualify as bulk transport. These provisions and the application of the IMO marine pollutant label ensure that all consignments from the Yarwun Facility comply with the local regulations and international standards.

Orica does not employ transport drivers or directly operate transport vehicles; this is undertaken by its prime contractor Toll Global Resources. Despite this, Orica does ensure its transport contractors and subcontractors implement safety programmes for cyanide transport.

Sodium Cyanide Transport Management Plan states that agents, distributors and transportation agencies have a responsibility to ensure that a safe workplace is provided for its personnel and that of the contractors utilised.

Orica ensures compliance by its contractor with the above through the Service Level Agreement referred to in Transport Practice 1.1.

**Toll Global Resources**

Drivers are required to check the integrity of the isocontainers and seals when the isocontainer is loaded onto the vehicle. Drivers must sign the Deliver Docket indicating that the isocontainer was received in appropriate condition, and record the isocontainers and seal numbers. These numbers are cross checked

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by the end customer through the delivery dockets. If any discrepancy in seal numbers or seal integrity is observed, the driver immediately contacts Toll Global Resources, who in turn contact Orica and initiate the emergency response process.

Toll Global Resources, in conjunction with its subcontractors, uses placards or other signage to identify the shipment as cyanide, as required by local regulations and international standards. Vehicle placarding consists of Emergency Information Panels on the sides of the container and the rear of the vehicle, and a Class 6 Dangerous Goods placard on the front and back of the vehicle.

Toll Global Resources and its implement a safety program for cyanide transport that includes:

- A documented daily vehicle checklist that covers the prime mover and trailer that includes checks of vehicle roadworthiness, dangerous goods requirements, PPE, communication equipment, etc
- A preventive maintenance programme for prime movers and transport equipment (e.g. ABC servicing). Regular servicing is also carried out by Toll Fleet, the Toll Group's contracted agency
- The limitation on driver hours via fatigue management requirements under the requirements of each State's Road Traffic Authority's requirements. All hours are tracked through the maintenance of a daily run sheet or logbook
- Cyanide is stowed into sparge isotainers by Orica. Isocontainers are secured using twist locks, which are designed and constructed to international transport standards. This twist locks are checked by the driver prior to departure from the loading area
- Procedures by which transportation can be modified or suspended, as outlined in the communication protocol within the Transport Emergency Response Plan
- Drug and alcohol policies and testing regimes
- The retention of records documenting that the above activities have been conducted.

Toll Global Resources subcontracts sections of the road transport portion of the Orica Australia Supply Chain to other transport entities. Contracts between Toll Global Resources and these subcontractors include requirements that are consistent with the Code. All subcontractors undergo assessment by Orica and Toll Global Resources to ensure they meet their transport requirements prior to commencing transport activities.

### Subcontractors

All subcontractors implement and follow the safety plans and procedures required by Orica and Toll Global Resources.

The subcontractor drivers ensure that the appropriate signage is displayed on their vehicles prior to the commencement of sodium cyanide transport.

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2.1.5 Transport Practice 1.5

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

in full compliance with

The operation is

in substantial compliance with

Transport Practice 1.5

not in compliance with

Summarise the basis for this Finding/Deficiencies Identified:

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

Orica does transport consignments of cyanide by sea within the scope of this audit. All containers (i.e. freight containers of IBCs, sparge isocontainers or liquid isocontainers) are placarded at the Yarwun Facility in accordance with the requirements of the IMDG Code with UN numbers; the Class 6 dangerous goods class label and the severe marine pollutant label (i.e. fish with St Andrews Cross). This level of placarding is consistent with the requirements of the ADG Code.

A container intended for sea transport has documentation prepared in accordance with the IMDG code, which is faxed to the shipping agent. The normal road documentation prepared in accordance with the ADG Code accompanies the load on its road/rail voyage to the Port of Brisbane.

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

2.1.6 Transport Practice 1.6

Track cyanide shipments to prevent losses during transport.

in full compliance with

The operation is

in substantial compliance with

Transport Practice 1.6

not in compliance with

Summarise the basis for this Finding/Deficiencies Identified:

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

Orica

Orica does not employ transport drivers or directly operate transport vehicles; this is undertaken by its prime contractor Toll Global Resources. Despite this, Orica does ensure its transport contractor vehicles have means to communicate with the transport company, the mining operation, the cyanide producer or distributor and/or emergency responders. Orica's Transportation of Cyanide – Tracking of Shipments (SOP TMP 10) procedure requires Orica and its contracted transportation agencies to maintain a vehicle tracking system that shall provide:

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

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Orica does ensure Toll Global Resources communication equipment (GPS, mobile phone, radio, pager, etc) is periodically tested to ensure it functions properly.

Orica does ensure its communication blackout areas along transport routes have been identified and ensure special procedures are implemented for the blackout areas. This process is undertaken during the route assessment process. Orica's Remote Area Communications procedure details the requirements for communication when transporting cyanide in areas that are recognised as a communications risk, including the communication process that shall be followed to maintain the required level of security and assistance.

Orica does ensure its transport contractor implements systems or procedures to track the progress of cyanide shipments (as mentioned above). In addition, Orica also has a GPS tracking system installed on its sparge units to enable Orica to keep track of journey progress and location on mine sites independently of its transporter.

Orica does ensure Toll Global Resources implements inventory controls and/or chain of custody documentation to prevent loss of cyanide during shipment. Section 43 of Orica's Sodium Cyanide Transport Management Plan requires:

- All packaging to be secured in such a manner so as to prevent ready access to the product contained within, or as a minimum, provide the capability to readily identify that packaging has been tampered with
- In the event that vehicles are required to be left unattended, the requirements of SOP TMP 07 are to be applied
- As an integral facet of security during transport, tracking methodologies should be employed. SOP TMP 10 refers to these methodologies
- In the event that scheduling alterations are required within the domestic supply chain, the requirements of SOP TMP 12 are to be applied

Orica does ensure Toll Global Resources carries records indicating the amount of cyanide in transit and Material Safety Data Sheets are available during transport.

Orica ensures compliance by its contractor with the above through the Service Level Agreement referred to in Transport Practice 1.1.

## Toll Global Resources

Toll Global Resources and its contractors have communications systems that include mobile telephones (hands free), GPS satellite tracking, and UHF radios to maintain contact throughout the delivery. Communication with consignees is by telephone and fax through Toll Global Resources. Consignees are advised of dispatch time, estimated arrival time and extensive information on the sparge isocontainer that was dispatched (i.e. number, safety equipment on board, security seal numbers for outgoing and return loads, etc.).

Toll Global Resources and its subcontractors periodically test the communication equipment through continuous use to ensure it functions properly.

Communication blackout areas do exist along the various transport routes used by Toll Global Resources and its subcontractors.

In addition to Orica's GPS tracking system on the isocontainers, Toll Global Resources has procedures to track the progress of cyanide shipments. Toll Global Resources are advised by its subcontractors by fax or email of the dispatch time and estimated arrival time for each cyanide shipment. For long haul deliveries, vehicles fitted with a GPS tracking system are used.

Toll Global Resources and its subcontractors, with assistance from Orica; implement the following inventory controls to prevent loss of cyanide during shipment:

- All products are weighed by Orica when placed into isocontainers and IBCs

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- Liquid cyanide and solid sparge cyanide is dyed so any loss will be rapidly identified
- Consignments are rigorously identified and documented (individual boxes are identified by number, and each freight container and each isocontainer number is recorded)
- All containers are locked with seals and the seal numbers are recorded and checked by the consignee. Seals are also checked at transfer locations and en route
- The shipments are weighed when leaving the Yarwun Facility and again when arriving at the mine site
- The identifying container numbers are transmitted to the consignee and are checked off by the Orica representative (driver) at each point and the consignee at the point of delivery

Shipping documents (detailing container numbers, quantities and weights) and MSDS' are carried by each driver during the transporting of cyanide.

Toll Global Resources subcontracts sections of the road transport portion of the Orica Australia Supply Chain to other transport entities. Contracts between Toll Global Resources and these subcontractors include requirements that are consistent with the Code. All subcontractors undergo assessment by Orica and Toll Global Resources to ensure they meet their transport requirements prior to commencing transport activities.

### Subcontractors

All subcontractors, as appropriate, have the required communication equipment (e.g. mobile phones, satellite tracking, UHF radio etc) present during transport activities.

Where communication blackout areas exist, all subcontractor drivers follow the mandated communication procedure.

Shipping documents (detailing container numbers, quantities and weights) and MSDS' are carried by each subcontractor driver during the transporting of cyanide.

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## 2.2 Principle 2 – Interim Storage

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

### 2.2.1 Transport Practice 2.1

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

in full compliance with

The operation is

in substantial compliance with

**Transport Practice 2.1**

not in compliance with

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

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

#### Orica

Orica stores cyanide at the Yarwun Facility prior to loading on transport and shipping to customers. The Yarwun Facility is secured to prevent unauthorised access to cyanide, has appropriate warning signs (identification of cyanide containing areas, prohibition of smoking, open flames, eating and drinking in areas, and PPE requirements) and workers attend an induction programme at the commencement of employment. The inductions cover dangerous goods handling and emergency response procedures.

The Yarwun Facility had procedures in place to ensure cyanide is separated from incompatible materials such as acids, strong oxidisers and explosives. All cyanide at the site is packed into IBCs or into isocontainers for transport. Once correctly packed, at no stage is cyanide removed from the IBCs or isocontainers prior to unloading at customer mine sites.

Systems and resources are in place on the site to contain and remediate any spilled cyanide materials and minimise the extent of a release.

#### Toll Global Resources

Interim storage of cyanide occurs at Toll Chemical Logistics Welshpool Facility following the arrival of product at the Kewdale Rail Yard. Toll Chemical Logistics is part of the Toll Group and is subcontracted by Toll Global Resources.

There are clear warning signs at the entrance warning that dangerous goods are stored at the interim storage facility. There are also signs indicating PPE requirements and the prohibition of fire, naked flame and smoking. No signs restricting eating and drinking are present. However, these restrictions, as well as further detail on hazards, PPE and designated smoking areas are contained within the site induction material. In addition, all containers of cyanide are clearly placarded with Emergency Information Panels (EIPs) as prescribed by Australian dangerous goods laws.

The interim storage facility is fully fenced and has lockable gates at the entrance of the property that are locked outside of normal operating hours at the depot. The property is also included in regular security patrol undertaken by a security provider.

The sparge isocontainers have lock out cables isolating the valves of the sparge isocontainer. The cables are used for both full and empty containers to prevent unauthorised access.

The interim storage facility is a licensed facility under the Western Australia dangerous goods licensing requirements for the storage of Class 6.1 products. Cyanide is segregated from incompatible materials to

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prevent mixing in accordance with dangerous goods segregations requirements and as identified by a site inspection.

Solid cyanide product is stored in Orica maintained sparge isocontainers with lock out devices fitted to the valves. The design of the isocontainer prevents unwanted contact with water during storage and transport. The isocontainers are subject to regular inspection and testing to ensure structure of the isocontainer is sound and that containment is not compromised.

Solid cyanide product is stored in sparge isocontainers in an open yard with suitable separation distances for buildings and other containers, which allows natural ventilation to prevent the build up of hydrogen cyanide gas.

Only solid cyanide is stored at Toll Chemical Logistics, contained with isocontainers constructed with 6 mm carbon steel and located on bitumen hardstand. There is no bunding or secondary containment; however the isocontainer construction material used minimises the risk of puncture and loss of containment. There are also runoff collection points situated around the facility and spill procedures in place to contain containment losses.

Temporary transit storage occurs at several rail yards along the supply chain. The management of cyanide in these locations are covered under due diligence assessments outlined in Section 3.0.

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2.3 Principle 3 – Emergency Response

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

2.3.1 Transport Practice 3.1

Prepare detailed Emergency Response Plans for potential cyanide releases.

in full compliance with

The operation is

in substantial compliance with

Transport Practice 3.1

not in compliance with

Summarise the basis for this Finding/Deficiencies Identified:

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

Orica

Orica has developed detailed documents to cover emergency response for potential cyanide releases for cyanide transportation along the supply chain route. The information is contained within an Emergency Response Guide Sodium Cyanide (ERG) and route specific assessments of risks.

The ERG has been developed to be appropriate for the selected transportation routes and in conjunction with the route risk assessments and route assessments they consider relevant aspects of the transport infrastructure. The route evaluation process, route hazard/risk assessment process, and operational experience were used by Orica to identify likely emergency scenarios.

The plans consider the physical and chemical form of cyanide and design of the transport vehicle and transport containers. Storage facility emergency response is addressed in the Yarwun Site Emergency Plan and comprehensive arrangements are in place for the response and management of a cyanide incident in the temporary storage areas.

The Yarwun Site Emergency Plan and ERG include descriptions of response actions, as appropriate for the anticipated emergency situations. External responders identified in the documents are aware of their role in an emergency.

Toll Global Resources

The management of cyanide related emergencies is an integrated approach between Toll Global Resources and its subcontractors, with the assistance of Orica.

The Toll Emergency Response Plan (TERP) details the required emergency response for vehicle incidents. A summarised version of this, the Subcontractor and Driver’s TERP, is provided to the transport subcontractors.

The TERPs refer to the Orica’s ERG for the specific emergency response actions for a cyanide incident.

The TERP is designed for the transport of the solid cyanide product and does not specifically address storage at interim storage facilities. However, the ERG does provide measures for a detailed response to a solid cyanide spill within a building or storage facility. In addition, an Orica route risk assessment outlines the mitigation measures in place to reduce the risk of an emergency during transport and interim storage.

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The TERP is appropriate for the selected transportation route to all delivery locations. The incidents covered include:

- Vehicle Breakdown
- Minor Vehicle Incidents
- Major Vehicle Incident, Product Loss of Containment, Fire or Injury

The TERP does not consider the physical or chemical form of cyanide and does not detail specific remediation scenarios related to road transport, however the additional requirements for the management of cyanide are detailed in Appendix 1. This appendix directs the reader to contact Orica and refers to the ERG.

The plans consider all aspects of the transport infrastructure. Toll Global Resources, with Orica, has developed a route plans (route assessment) for the delivery of cyanide from Yarwun to the delivery sites and has considered the design of transport vehicles during this assessment though the use of the ERG. The assessments were evaluated for:

- Load security
- Potential for vehicular accidents
- Residential areas
- Waterways
- Possible impact of road blockages/diversions, etc
- Quality and general conditions of the roads

Additionally, Appendix 2 of the ERG considers the design and storage of the transport container.

Various sections within the TERP and the Subcontractor and Driver's TERP detail the emergency response actions for vehicles, including breakdown, minor vehicle incident and major vehicle incident (which include Product Loss of Containment, Fire or Injury). Appendix 1 of the TERP provides additional specific actions for response to cyanide incidents. The appendix states that when an incident occurs Toll Global Resources must ensure that the Orica ERS and the Toll Cyanide Supervisor has been notified.

The TERP and the Subcontractor and Driver's TERP details the roles of outside responders. The primary outside responder in the TERP is the emergency services who are involved through the use of '000' in an emergency. The only other outside responder is Orica and the Orica ERS service.

### **Subcontractors**

The response action for Toll Global Resources subcontractor drivers are clearly outlined within individual company emergency response procedures and the Toll Global Resources Subcontractor and Drivers TERP.

The Environmental Plan (EP) for the Toll Chemical Logistics interim storage facility in Welshpool details responsibilities and procedures for responding to an emergency at the facility.

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2.3.2 Transport Practice 3.2

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

in full compliance with

The operation is

in substantial compliance with

Transport Practice 3.2

not in compliance with

Summarise the basis for this Finding/Deficiencies Identified:

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

Orica

Orica provides emergency response training of appropriate personnel for on-site response at Yarwun and the Orica Emergency Response Service (ERS) who are a pivotal component of the emergency response plan. Orica has implemented an audit programme of its transport contractor to ensure compliance with Orica requirements and the requirements of the Code. All contractor drivers complete cyanide awareness and emergency response training.

The Yarwun Site Emergency Plan does identify the specific emergency response duties and responsibilities of personnel for the scenarios. Descriptions of the specific emergency response duties and responsibilities of the response personnel are detailed in Orica’s Emergency Response Guide Sodium Cyanide. The cyanide training provides additional detail of the responsibilities for each of the specific roles.

Lists of all emergency response equipment are contained within the Yarwun Site Emergency Plan, Occupational Health Centre and Emergency Response Shed. All lists are readily available and were viewed during the audit. In the event of an off-site incident, the Yarwun Facility has an Emergency Response Trailer to be used for emergencies onsite and within the immediate vicinity of the site (up to 500 km) as directed by Orica ERS. A shed adjacent the Occupational Health Centre is used to store the trailer and response equipment and a list of the equipment is detailed on the trailer.

Appendix 15 of the ERG provides guidance on the level of PPE outline by the US EPA but does not specify what should be provided during transport. Section 3.8 of the guide lists the PPE that should be provided in the event of a roll-over of a shipping container. The Guide is intended to be used by contractors and provides a point of reference for Orica’s contractors to develop and align their emergency management plans.

Orica does not physically undertake the transport of cyanide but has implemented processes to check that contractors transporting the material have necessary equipment including during transport. Section 2.3 PPE and Section 2.5 Emergency Response of the SF-016 questionnaire addresses PPE selection, maintenance and supply and emergency response procedures and capabilities.

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

Procedures are in place to inspect the emergency response equipment at the Yarwun Facility and assure its availability when required.

Orica ensures compliance by its contractor with the above through the Service Level Agreement referred to in Transport Practice 1.1.

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## Toll Global Resources

Toll Global Resources does provide training to appropriate personnel (including subcontractors) to fulfil the duties outlined in the TERP. This includes:

- Cyanide awareness and emergency response training
- Driver Transport Emergency Response Plan
- Equipment Use & Maintenance (toolbox presentations)
- Sparge unloading

The plans include descriptions of the specific emergency response duties and responsibilities of personnel. The TERP provides a description of the responsibilities for Drivers, Subcontractors, Operations Supervisor, Incident Responder, Incident Coordinator, Managers, General Manager and the National HSE Manager.

The Subcontractor and Driver's TERP contains the responsibilities specifically for the driver. The driver is directed to undertake specific actions related to the moving to a safe position, and contacting the relevant parties.

Lists of emergency response equipment can be found in the TERP, pre-departure checklists, and PPE audit checklists.

Toll Global Resources has available the necessary emergency response and health and safety equipment, including personal protective equipment during transport.

Toll Global Resources provide initial induction training on cyanide awareness and emergency response procedures for all relevant personnel. Refresher training is provided regularly and whenever a new revision of the TERP is developed. Any changes in the revised TERP are communicated to the drivers via a toolbox session.

Procedures are in place at the various Toll Global Resources branches to inspect emergency response equipment to ensure availability. This ranges from pre-departure checks by the drivers to periodic equipment audits by Supervisors or Branch Managers.

Toll Global Resources subcontracts sections of the road transport portion of the Orica Australia Supply Chain to other transport entities. Contracts between Toll Global Resources and these subcontractors include requirements that are consistent with the Code. All subcontractors undergo assessment by Orica and Toll Global Resources to ensure they meet their transport requirements prior to commencing transport activities.

## Subcontractors

Subcontractors undergo appropriate training from Toll Global Resources, adequate to their level of responsibility within the TERP.

At the Toll Chemical Logistics interim storage facility, emergency response team members have been given appropriate training to respond to cyanide emergencies on-site.

Appropriate emergency response equipment is provided and maintained.

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2.3.3 Transport Practice 3.3

Develop procedures for internal and external emergency notification and reporting.

in full compliance with

The operation is

in substantial compliance with

Transport Practice 3.3

not in compliance with

Summarise the basis for this Finding/Deficiencies Identified:

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

Orica

The Yarwun Site Emergency Plan contains procedures and current contact information for notifying the shipper, the receiver/consignee, outside response providers, and medical facilities of an emergency.

The Yarwun Site Emergency Plan details a communication flow chart and contact numbers. Contact numbers are provided to Orica’s transport contractor and Orica operate a 24 hour ERS call centre to coordinate communications and response in the event of an emergency.

Orica has a procedure detailing the requirement for the development of an effective emergency response system at either a site or business level. Within the procedure, it is the responsibility of the Site Manager to ensure the Emergency Plan is maintained under document control and the scope of the emergency response programme and arrangements for responding to emergencies should be reviewed and audited annually.

Lists of emergency contact information for Orica chemical specialist and relevant subcontractors, including transport subcontractors, are detailed in Orica’s Emergency Contact list, which is managed within Orica’s document control system.

Toll Global Resources

Toll Global Resources’ TERP requires notification of Emergency Services and the Orica ERS service in the event of a cyanide emergency during transport. Within the Orica ERG, the role of Orica ERS services is one of communication. ERS operates 24 hours a day providing telephone advice and assistance to the public, emergency services and others on incidents relating to the transport, storage and use of chemical products and raw materials in emergency situations.

There are systems in place to ensure that internal and external emergency notification and reporting procedures are kept current. The TERP details the Currency of Emergency Contact Numbers. It states that the National Health Safety and Environmental Manager is responsible to confirm the contact numbers six monthly or upon changes of personnel.

The Subcontractor and Driver’s TERP is updated regularly, normally after a mock drill or if relevant changes are made to the TERP. This will include checking all the contact numbers.

Subcontractors

The TERP provided to subcontractors and Toll Chemical Logistics’ EP has the procedures and contact information necessary for emergency response.

Updates of the TERP are provided to subcontractors by Toll Global Resources. Updates of the EP are provided to Toll Chemical Logistics personnel as appropriate.

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2.3.4 Transport Practice 3.4

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

in full compliance with

The operation is

in substantial compliance with

Transport Practice 3.4

not in compliance with

Summarise the basis for this Finding/Deficiencies Identified:

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

Orica

The 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.

The Yarwun Site Emergency Plan explicitly prohibits the use of sodium hypochlorite, ferrous sulphate and hydrogen peroxide to treat cyanide in emergencies. The scope of this plan is largely limited to the Yarwun Cyanide Production Facility and Cyanide Warehouse.

The Orica ERG provides the following warning in Section 3.6 (Sodium Cyanide Spill in a Waterway):

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

Toll Global Resources

Toll Global Resources does not undertake the remediation or recovery of cyanide as this is managed through their relationship with Orica. In the event of a cyanide emergency, Toll Global Resources will contact Orica and Orica’s product specialists will assist emergency services as needed.

Subcontractors

Subcontractor drivers do not undertake the remediation or recovery of cyanide as this is managed through Toll Global Resources relationship with Orica.

The emergency response team at Toll Chemical Logistics’ interim storage facility remediates or recovers small spills of cyanide, as per their EP. This guide details the appropriate procedures. All major spills are handled by a contracted emergency responder.

The Toll Chemical Logistics EP does not prohibit the use of chemicals such as sodium hypochlorite, ferrous sulphate and hydrogen peroxide to treat cyanide that has been released into surface water as all cyanide is stored on hardstand, away from any potential waterways.

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2.3.5 Transport Practice 3.5

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

in full compliance with

The operation is

in substantial compliance with

Transport Practice 3.5

not in compliance with

Summarise the basis for this Finding/Deficiencies Identified:

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

Orica

Orica has a procedure detailing the requirement for the development of an effective emergency response system at either a site or business level. Within the procedure, it is the responsibility of the Site Manager to ensure the Emergency Plan is maintained under document control and the scope of the emergency response programme and arrangements for responding to emergencies should be reviewed and audited annually. The procedure also requires the Yarwun Site Emergency Plan to be tested to enable deficiencies to be identified and corrected. Non-conformances are to be documented and the Site Manager should ensure appropriate corrective action is taken to eliminate these, including updating the appropriate elements of the Emergency Response System and Plan as necessary.

Mock emergency drills are conducted periodically as part of the Emergency Plan evaluation process. A procedure is in place requiring the Emergency Plans to be tested to enable deficiencies to be identified and corrected. It is a requirement that at least one of the tests should involve relevant emergency service organisations. Toll Global Resources personnel are included in mock drills relevant to their transportation role and all Branch Managers receive a copy of the exercise resultant report.

Toll Global Resources

The Toll Global Resources TERP states that it should be reviewed and updated:

- At least annually
- After any deficiencies are identified during exercises or incidents
- Whenever a significant change is made to the operations (e.g. change to key personnel, suppliers, equipment, products, routes, etc.)

The TERP requires that small scale mock drills are conducted 6 monthly and a full scale desktop exercise every 12 months. Toll Global Resources personnel are included Orica in mock drills relevant to their transportation role and all Branch Managers receive a copy of the resultant exercise report.

Subcontractors

As appropriate, subcontractor drivers participate in mock drills with Toll Global Resources and other interested parties. Subcontractor drivers receive updated TERPs from Toll Global Recourses each time a change is made to the document.

Toll Chemical Logistics conducts mock drills at its interim storage facility on an annual basis and includes participation from employees, their contracted emergency responder, Orica and Toll Global Resources.

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### **3.0 RAIL TRANSPORTER DUE DILLIGENCE SUMMARY**

Orica conducts due diligence assessments of the rail carriers utilised for the transport of cyanide within Australia. The following Transport Practices are assessed as part of the due diligence process:

- Transport Practice Element 1.1.1
- Transport Practice Element 1.1.2
- Transport Practice Element 1.1.3
- Transport Practice Element 1.1.4
- Transport Practice Element 1.1.6
- Transport Practice Element 1.5.1.

The due diligence assessment consists of a questionnaire that is completed with the operator by a methodology of physical visits, interviews and discussions with appropriate personnel and review of applicable documentation. The assessment is conducted by posing and seeking information to address specific questions to cover the Transport Practice Elements mentioned above.

The due diligence assessments were found to reasonably evaluate the rail carriers (discussed below), and additional management measures by the consigner were not considered necessary. The due diligence assessment review for the rail carriers also found that the management of cyanide was in conformance with the Code,

#### **3.1 QR National**

Orica undertook a due diligence assessment of QR National in July 2009. QR National has provided Orica with rail services in Queensland for almost 20 years.

All containers (i.e. freight containers of solid sodium cyanide is IBCs and tank containers of solid sodium cyanide for sparging are placarded at Orica's cyanide production facility at Yarwun in accordance with the Australian Code for the Transport of Dangerous Goods by Road and Rail, 7th Edition, including UN Numbers, the Class 6 dangerous goods label and the environmentally hazardous material label.

Containers transported on the QR National network must have a current CSC plate and plates are inspected by the operators as part of the requirement to move the containers.

Additionally, containers destined for the Port of Brisbane, are supplied to Orica under the ACEP (Safety Approval Plates and Approved Continuous Examination Programme) programme from container parks located near the Port of Brisbane. The ACEP programme meets the requirements of Marine Orders Part 44 in relation to the International Convention for Safe Containers, 1942.

The design of the purpose built bulk sparge isotainers is approved for use on road and rail transport by the Competent Authority under the auspices of the ADG Code. QR National provides regular services from Gladstone to the BMT, Acacia Ridge, Townsville and Mt Isa.

All containers for transport by QR National are loaded at the dedicated dangerous goods facility at Mt Miller, located approximately 2 km from the Orica Yarwun Facility.

#### **3.2 Pacific National**

A due diligence assessment of Pacific National was undertaken by Orica in July 2009. Pacific National provides Orica with rail services throughout the southern and western states of Australia.

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All containers (i.e. freight containers of solid sodium cyanide is IBCs and tank containers of solid sodium cyanide for sparging are placarded at Orica's cyanide production facility at Yarwun in accordance with the Australian Code for the Transport of Dangerous Goods by Road and Rail, 7th Edition, including UN Numbers, the Class 6 dangerous goods label and the environmentally hazardous material label.

Containers transported on the Pacific National network must have a current CSC plate and plates are inspected by the operators as part of the requirement to move the containers.

The design of the purpose built bulk sparge isotainers is approved for use on road and rail transport by the Competent Authority under the auspices of the ADG Code.

Pacific National provides regular services from Acacia Ridge through to southern and western rail heads. All containers for transportation by Pacific National are loaded to Pacific National assets at the shared facility at Acacia Ridge from QR National assets.

### 3.3 Patrick Port Logistics

Orica undertook a due diligence assessment of QR National in July 2009. Patrick Port Logistics provides rail services into western New South Wales from the Sydney region through to Dubbo.

All containers (i.e. freight containers of solid sodium cyanide is IBCs and tank containers of solid sodium cyanide for sparging are placarded at Orica's cyanide production facility at Yarwun in accordance with the Australian Code for the Transport of Dangerous Goods by Road and Rail, 7th Edition, including UN Numbers, the Class 6 dangerous goods label and the environmentally hazardous material label.

Containers transported on the Pacific National network must have a current CSC (plate and plates are inspected by the operators as part of the requirement to move the containers.

The design of the purpose built bulk sparge isotainers is approved for use on road and rail transport by the Competent Authority under the auspices of the ADG Code.

### 3.4 Australian Railway Group

A due diligence of ARG was undertaken by Orica in February 2010. ARG is a wholly owned subsidiary of QR National and prescribes to their systems and procedures.

ARG provides rail yard services at its Kalgoorlie rail yard for ARG and Pacific National trains arriving and departing the Kalgoorlie area.

## 4.0 RAIL YARD DUE DILLIGENCE SUMMARY

Orica conducts due diligence assessments of the rail yards utilised for the transport of cyanide within Australia. The following Transport Practices are assessed as part of the due diligence process:

- Transport Practice Element 1.1.1
- Transport Practice Element 1.1.2
- Transport Practice Element 1.1.3
- Transport Practice Element 1.1.4
- Transport Practice Element 1.1.5
- Transport Practice Element 1.1.6.

The due diligence assessment consists of a questionnaire that is completed with the operator by a methodology of physical visits, interviews and discussions with appropriate personnel and review of

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applicable documentation. The assessment is conducted by posing and seeking information to address specific questions to cover the Transport Practice Elements mentioned above.

The due diligence assessments were found to reasonably evaluate the rail yards (discussed below), and additional management measures by the consigner were not considered necessary. The due diligence assessment review for the rail yards also found that the management of cyanide was in conformance with the Code,

#### **4.1 QR National Mt Miller Rail Yard, Qld**

A due diligence assessment of the QR National Mt Miller rail yard was undertaken by Orica in August 2009. The Mt Miller facility is situated in its current location for loading of dangerous goods and other industrial products to keep loading activities of these products away from residential areas.

The facility is located approximately 2 km from the main highway and approximately 1.8 km from the Yarwun manufacturing facility.

All containers (i.e. freight containers of solid sodium cyanide in IBCs and tank containers of solid sodium cyanide for sparging) are placarded at Orica's cyanide production facility at Yarwun in accordance with the Australian Code for the Transport of Dangerous Goods by Road and Rail, 7th Edition, including UN Numbers, the Class 6 dangerous goods label and the environmentally hazardous material label.

Containers transported on the QR National network must have a current CSC plate and plates are inspected by the operators as part of the requirement to move the containers.

Additionally, containers destined for the Port of Brisbane, are supplied to Orica under the ACEP programme from container parks located near the Port of Brisbane. The ACEP programme meets the requirements of Marine Orders Part 44 in relation to the International Convention for Safe Containers, 1942.

The design of the purpose built bulk sparge isotainers is approved for use on road and rail transport by the Competent Authority under the auspices of the ADG Code.

#### **4.2 QR National Townsville Rail Yard, Qld**

Orica conducted a due diligence assessment of the QR National Townsville rail yard in July 2009. The terminal acts as an input centre for the local mining industry which is forwarded to Charters Towers, Cloncurry, Mount Isa and Brisbane. The main commodities which are handled at this terminal include ammonium nitrate, sulphuric acid, copper cathode, lead and cement. It also handles large furniture volumes. The facility operates Monday to Friday from 0530–1800 hours and Saturday from 0600–1300 hours. There is an empty container storage facility; however there are no other ancillary services.

All containers (i.e. freight containers of solid sodium cyanide in IBCs and tank containers of solid sodium cyanide for sparging) are placarded at Orica's cyanide production facility at Yarwun in accordance with the Australian Code for the Transport of Dangerous Goods by Road and Rail, 7th Edition, including UN Numbers, the Class 6 dangerous goods label and the environmentally hazardous material label.

Containers transported on the QR National network must have a current CSC plate and plates are inspected by the operators as part of the requirement to move the containers.

The design of the purpose built bulk sparge isotainers is approved for use on road and rail transport by the Competent Authority under the auspices of the ADG Code.

#### **4.3 QR National Mt Isa Rail Yard, Qld**

A due diligence assessment of the QR National Mt Isa rail yard was undertaken by Orica in July 2009. The Mt Isa rail terminal receives Orica sodium cyanide where it is forwarded by road to Granites Gold Mine.

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The terminal is fully fenced facility with lockable gates at vehicle entrances and train access points, with 24 hour security.

All containers (i.e. freight containers of solid sodium cyanide is IBCs and tank containers of solid sodium cyanide for sparging are placarded at Orica's cyanide production facility at Yarwun in accordance with the Australian Code for the Transport of Dangerous Goods by Road and Rail, 7th Edition, including UN Numbers, the Class 6 dangerous goods label and the environmentally hazardous material label.

Containers transported on the QR National network must have a current CSC plate and plates are inspected by the operators as part of the requirement to move the containers.

The design of the purpose built bulk sparge isotainers is approved for use on road and rail transport by the Competent Authority under the auspices of the ADG Code.

#### **4.4 QR National/Pacific National Acacia Ridge Rail Yard, Qld**

Orica conducted a due diligence assessment of the QR National/Pacific National Acacia Ridge rail yard in July 2009. The Acacia Ridge, a shared facility between Pacific National and QR National, is known as the Brisbane Multi-User Terminal. The facility is shared by QR National and Pacific National and managed by P & O who physically effect the transfer of containers between QR National and Pacific National rolling stock using specialist transfer equipment. Transfer between QR National and Pacific National rolling stock occurs at the Acacia Ridge multi-user terminal.

All containers (i.e. freight containers of solid sodium cyanide is IBCs and tank containers of solid sodium cyanide for sparging are placarded at Orica's cyanide production facility at Yarwun in accordance with the Australian Code for the Transport of Dangerous Goods by Road and Rail, 7th Edition, including UN Numbers, the Class 6 dangerous goods label and the environmentally hazardous material label.

Containers transported on the QR National network must have a current CSC plate and plates are inspected by the operators as part of the requirement to move the containers.

Additionally, containers destined for the Port of Brisbane, are supplied to Orica under the ACEP programme from container parks located near the Port of Brisbane. The ACEP programme meets the requirements of Marine Orders Part 44 in relation to the International Convention for Safe Containers, 1942.

The design of the purpose built bulk sparge isotainers is approved for use on road and rail transport by the Competent Authority under the auspices of the ADG Code.

#### **4.5 Patrick Port Logistics Dubbo Rail Yard, NSW**

Orica conducted a due diligence assessment of the Patrick Port Logistics Dubbo rail yard in July 2009. The Dubbo rail head with regards to sodium cyanide is at the end of the rail element in the supply chain to stock point N324, where product is thence dispatched to Orica customers in western NSW. The Dubbo rail head is shared by Pacific National and Patrick Port Logistics, who operate the rail service from/to Camellia and Dubbo and other western rail heads (e.g. Bathurst).

All containers (i.e. freight containers of solid sodium cyanide is IBCs and tank containers of solid sodium cyanide for sparging are placarded at Orica's cyanide production facility at Yarwun in accordance with the Australian Code for the Transport of Dangerous Goods by Road and Rail, 7th Edition, including UN Numbers, the Class 6 dangerous goods label and the environmentally hazardous material label.

Containers transported on the Patrick Port Logistics network must have a current CSC plate and plates are inspected by the operators as part of the requirement to move the containers.

The design of the purpose built bulk sparge isotainers is approved for use on road and rail transport by the Competent Authority under the auspices of the ADG Code.

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#### **4.6 Patrick Port Logistics Camellia Rail Yard, NSW**

A due diligence assessment of the Patrick Port Logistics Camellia was undertaken by Orica in July 2009. The Camellia Facility is an intermodal transit facility. Sodium cyanide containers are received for subsequent despatch west to Dubbo and received from the west for subsequent on forwarding to the Pacific National rail head at Chullora for movement north to Brisbane.

All containers (i.e. freight containers of solid sodium cyanide is IBCs and tank containers of solid sodium cyanide for sparging are placarded at Orica's cyanide production facility at Yarwun in accordance with the Australian Code for the Transport of Dangerous Goods by Road and Rail, 7th Edition, including UN Numbers, the Class 6 dangerous goods label and the environmentally hazardous material label.

Containers transported on the Patrick Port Logistics network must have a current CSC plate and plates are inspected by the operators as part of the requirement to move the containers.

The design of the purpose built bulk sparge isotainers is approved for use on road and rail transport by the Competent Authority under the auspices of the ADG Code.

#### **4.7 Pacific National Chullora Rail Yard, NSW**

Orica conducted a due diligence assessment of the Pacific National Chullora rail yard in July 2009. The Pacific National facility is an intermodal facility where containers arrive for subsequent movement south or north on rail, and by road from the Patrick Port Logistics Camellia facility or the Toll Chemical Logistics (TCL) Arndell Park Major Hazard Facility.

All containers (i.e. freight containers of solid sodium cyanide is IBCs and tank containers of solid sodium cyanide for sparging are placarded at Orica's cyanide production facility at Yarwun in accordance with the Australian Code for the Transport of Dangerous Goods by Road and Rail, 7th Edition, including UN Numbers, the Class 6 dangerous goods label and the environmentally hazardous material label.

Containers transported on the Pacific National network must have a current CSC plate and plates are inspected by the operators as part of the requirement to move the containers.

The design of the purpose built bulk sparge isotainers is approved for use on road and rail transport by the Competent Authority under the auspices of the ADG Code.

#### **4.8 Pacific National Kewdale Rail Yard, WA**

A due diligence assessment of the Patrick Port Logistics Camellia was undertaken by Orica in February 2010. The Pacific National rail head is an intermodal facility where containers arrive for subsequent movement to transit storage by road to the Toll Chemical Logistics in Welshpool.

All containers (i.e. freight containers of solid sodium cyanide is IBCs and tank containers of solid sodium cyanide for sparging are placarded at Orica's cyanide production facility at Yarwun in accordance with the Australian Code for the Transport of Dangerous Goods by Road and Rail, 7th Edition, including UN Numbers, the Class 6 dangerous goods label and the environmentally hazardous material label.

Containers transported on the Pacific National network must have a current CSC plate and plates are inspected by the operators as part of the requirement to move the containers.

The design of the purpose built bulk sparge isotainers is approved for use on road and rail transport by the Competent Authority under the auspices of the ADG Code.

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## 4.9 ARG Kalgoorlie Rail Yard, WA

Orica conducted a due diligence assessment of the ARG Kalgoorlie rail yard in February 2010. The ARG Kalgoorlie rail head is the major rail head operated by ARG (a QR National subsidiary) in Kalgoorlie. ARG also represents Pacific National in Kalgoorlie.

Bulk sparge isotanks and composite intermediate bulk containers contained within standard end door 20' GP shipping containers for Orica are transited through the Kalgoorlie rail head.

All containers (i.e. freight containers of solid sodium cyanide is IBCs and tank containers of solid sodium cyanide for sparging are placarded at Orica's cyanide production facility at Yarwun in accordance with the Australian Code for the Transport of Dangerous Goods by Road and Rail, 7th Edition, including UN Numbers, the Class 6 dangerous goods label and the environmentally hazardous material label.

Containers transported on the Pacific National network must have a current CSC plate and plates are inspected by the operators as part of the requirement to move the containers.

The design of the purpose built bulk sparge isotainers is approved for use on road and rail transport by the Competent Authority under the auspices of the ADG Code.

## 5.0 PORT DUE DILLIGENCE SUMMARY

Orica conducts due diligence assessments of Ports utilised as part of their cyanide supply chain in Australia. The following Transport Practices are assessed as part of the due diligence process:

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

The due diligence assessment consists of a questionnaire that is completed with the operator by a methodology of physical visits, interviews and discussions with appropriate personnel and review of applicable documentation. The assessment is conducted by posing and seeking information to address specific questions to cover the Transport Practice Elements mentioned above.

The due diligence assessments were found to reasonably evaluate the ports (discussed below), and additional management measures by the consigner were not considered necessary. The due diligence assessment review for the ports also found that the management of cyanide was in conformance with the Code.

## 5.1 Port of Brisbane

A due diligence assessment of the Port of Brisbane was undertaken by Orica in July 2009. The Port of Brisbane is the major port in Queensland and the major egress port for sodium cyanide manufactured at the Orica Yarwun plant in central Queensland. It is Queensland largest general cargo port and Australia's fastest growing container port.

Managed by the Port of Brisbane Corporation, the main port complex is located at the mouth of the Brisbane River. The limits extend geographically from Caloundra to the southern tip of Moreton Island, including the 90 km shipping channel, which is dredged to a minimum of 15 m Lowest Astronomical Tide (LAT).

Port facilities extend upriver for approx. 15 km and include bulk commodity and general cargo wharves, a cruise terminal, and a dockyard facility.

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## ORICA AUSTRALIA SUPPLY CHAIN, SUMMARY AUDIT REPORT

All containers (i.e. freight containers of solid sodium cyanide is IBCs and tank containers of solid sodium cyanide for sparging) are placarded at Orica's cyanide production facility at Yarwun in accordance with the Australian Code for the Transport of Dangerous Goods by Road and Rail, 7th Edition, including UN Numbers, the Class 6 dangerous goods label and the environmentally hazardous material label.

Containers transported on the QR National network must have a current CSC plate and plates are inspected by the operators as part of the requirement to move the containers.

Additionally, containers destined for the Port of Brisbane, are supplied to Orica under the ACEP programme from container parks located near the Port of Brisbane. The ACEP programme meets the requirements of Marine Orders Part 44 in relation to the International Convention for Safe Containers, 1942.

The design of the purpose built bulk sparge isotainers is approved for use on road and rail transport by the Competent Authority under the auspices of the ADG Code.

The sparge isotainer was designed in accordance with the requirements of Section 13 of the IMDG Code.

### 6.0 SEA TRANSPORT DUE DILLIGENCE SUMMARY

Transportation of cyanide within the Orica Australia Supply Chain does not occur.

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## Report Signature Page

**GOLDER ASSOCIATES PTY LTD**

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

Edward Clerk  
ICMI Lead Auditor, Associate and Manager Mining Environmental Services

EWC/ML/lgs

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# **APPENDIX A**

## **Limitations**





## LIMITATIONS

This Document has been provided by Golder Associates Pty Ltd ("Golder") subject to the following limitations:

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