



November 2011

## INTERNATIONAL CYANIDE MANAGEMENT CODE

# Orica Australia Pty Ltd, Box to Sparge Ventanilla Transfer Facility, Lima Peru, Summary Audit Report

**Submitted to:**

International Cyanide Management Institute  
(ICMI)  
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REPORT

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## 1.0 INTRODUCTION

### 1.1 Operational Information

<b>Name of Transportation Facility:</b>	Box to Sparge Ventanilla Transfer Facility
<b>Name of Facility Owner:</b>	Orica Australia Pty Ltd
<b>Name of Facility Operator:</b>	Orica Chemicals Peru S.A.C
<b>Name of Responsible Manager:</b>	Joe Quagliata – Logistics Manager – Mining Chemicals
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### 1.2 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 QLD, Australia. Orica Mining Chemicals is the world's second largest producer of cyanide.

### 1.3 Yarwun Production Facility

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

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

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

### 1.4 Ventanilla Box to Sparge Transfer Facility

Orica's Transfer Facility in Lima, Peru was constructed to supply mine site customers in Peru with cyanide transported within sparge isotanks. The Transfer Facility is comprised of a purpose-built structure that houses material handling equipment and associated facilities (these include a partly open warehouse protecting sea containers containing boxed cyanide; change rooms; equipment storage; office, ablutions; guardhouse; and yard area) located within the Neptunia S.A. empty container warehouse at Callao.

Orica Australia Pty Ltd

Name of Facility

Signature of Lead Auditor

23 November 2011

Date



The Transfer Facility was constructed of 2007 and commissioned with the first isotank batch transfer completed on 6 June 2007.

1.5 Auditors Findings and Attestation

Orica is: [X] in full compliance with The International Cyanide Management Code
[in] in substantial compliance with
[ ] not in compliance with

No significant cyanide incidents or cyanide exposures and releases were noted as occurring during the audit period.

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

Name and Signatures of Other Auditors

Table with 4 columns: Name, Position, Signature, Date. Rows include Edward Clerk (Lead Auditor), David Haigh (Production Technical Specialist), and Bruno Pizzorni (Auditing Assistance).

Dates of Audit

The production audit and reporting was undertaken between July and October 2011. The field component of the audit was undertaken over nine person days between 11 and 14 July 2011.

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 Production Operations and using standard and accepted practices for health, safety and environmental audits.

Orica Australia Pty Ltd Name of Facility
[Signature] Signature of Lead Auditor
23 November 2011 Date



## 2.0 PRINCIPLE 1 – OPERATIONS

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

### 2.1.1 Production Practice 1.1

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

in full compliance with

The operation is

in substantial compliance with

**Production Practice 1.1**

not in compliance with

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

The operation is in FULL COMPLIANCE with Standard of Practice 1.1 requiring an operation design and construct cyanide production facilities consistent with sound, accepted engineering practices and quality control/quality assurance procedures.

The Transfer Facility has not been modified since the initial Certification Audit. The initial Certification Audit report documented that quality control and quality assurance programs were implemented for cyanide production and storage facilities.

This Certification Audit report noted that QA/QC programs have been implemented during construction of the Transfer Facility. QA/QC records have been retained for the structures that were assembled locally within Peru and appropriately qualified personnel have reviewed facility construction and provided documentation that the facility has been built as proposed and approved.

Full details of QA/QC programs implemented during off-site fabrication prior to on-site assembly of the Transfer Facility were not provided by Orica personnel during the audit. In light of this, Orica commissioned a Peruvian consulting engineering firm to undertake an assessment of the facility. The report concluded that the materials of construction were compatible with the handling of cyanide and the continued operation of the Transfer Facility within established parameters will protect against cyanide exposures and releases.

The operation implements a filling procedure that is designed to avoid overfilling of isotanks when transferring from 1.135 tonne bags to isotanks. The sound procedure in place overcomes the need for interlocks to operate on power failure. The powered systems associated with the materials handling systems are configured to “stay put” as a safe mode if power fails. Operators can readily see whether the transfer hopper has sufficient capacity to hold a bag of cyanoids before introducing it to the hopper for discharge.

The transfer operation is conducted entirely over an area that is sealed with concrete and which includes a pit that acts as secondary containment. This provides effective containment for pipelines as well, though deflection of leaks could be adopted at pipe joints to reduce the risk of personnel exposure. The major elements of the facility transferring cyanide from box to sparge at Ventanilla is owned and managed by Orica. It is located on property leased from Neptunia S.A and Orica uses contract labour provided by Neptunia. The risk of the two companies storing incompatible materials is managed by their respective obligations to comply with applicable regulations for the storage of dangerous goods.

Orica Australia Pty Ltd

Name of Facility

Signature of Lead Auditor

23 November 2011

Date



2.1.2 Production Practice 1.2

Develop and implement plans and procedures to operate cyanide production facilities in a manner that prevents accidental releases.

in full compliance with

The operation is

in substantial compliance with

Production Practice 1.2

not in compliance with

Summarise the basis for this Finding/Deficiencies Identified:

The operation is in FULL COMPLIANCE with Standard of Practice 1.2 requiring an operation develop and implement plans and procedures to operate cyanide production facilities in a manner that prevents accidental releases.

Orica has developed procedures in both English and Spanish that document the requirements for routine and abnormal operations as well as preventive maintenance programs. Change to physical facilities is controlled through Orica Mining Chemicals document management system (DMS) that is administered in Australia.

Process parameters are monitored with necessary instrumentation. The nature of the operation is such that process instrumentation does not play a critical role in managing the risk of potential exposures and releases.

The Transfer Facility has an environmentally sound procedure to prevent unauthorised/unregulated discharge to the environment of any cyanide solution or cyanide-contaminated water that is collected in a secondary containment area. All water collected in the Transfer Facility secondary containment is pumped into a one cubic metre tank where it is temporarily stored prior to being pumped into the sparge isotank as part of the filling process.

The Transfer Facility has entered into a contractual arrangement for the environmentally sound removal and disposal of packaging waste that is presumed to be contaminated with cyanide.

The arrangements for storage and handling of cyanide ensure that the material is kept securely in a dry location. Procedures and training ensure that storage spaces are ventilated before personnel enter them if there is a risk of HCN gas accumulating.

There are procedural arrangements to ensure that the cyanide supplied by Orica in Peru is packaged as required by the political jurisdictions through which loads will pass.

2.1.3 Production Practice 1.3

Inspect cyanide production facilities to ensure their integrity and prevent accidental releases.

in full compliance with

The operation is

in substantial compliance with

Production Practice 1.3

not in compliance with

Summarise the basis for this Finding/Deficiencies Identified:

The operation is in FULL COMPLIANCE with Standard of Practice 1.3 requiring the operation inspect cyanide production facilities to ensure their integrity and prevent accidental releases.

Orica Australia Pty Ltd

Name of Facility

Signature of Lead Auditor

23 November 2011

Date



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## ORICA VENTANILLA ICMC SUMMARY AUDIT REPORT

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Regular documented inspections are conducted on fortnightly, weekly and batch-wise schedules and these frequencies appear to be appropriate for the items covered. The scope of the inspections is quite comprehensive in relation to the major cyanide release and exposure risks associated with the facility. Inspection frequencies are sufficient to assure that equipment is functioning within design parameters.

Completed documentation identifies specific items observed and includes the date of the inspection, the name of the inspector, and observed deficiencies. The nature and date of corrective actions are documented on the inspection forms.

Orica Australia Pty Ltd

Name of Facility

Signature of Lead Auditor

23 November 2011

Date



PRINCIPLE 2 – WORKER SAFETY

Protect workers’ health and safety from exposure to cyanide.

2.1.4 Production Practice 2.1

Develop and implement procedures to protect plant personnel from exposure to cyanide.

in full compliance with

The operation is

in substantial compliance with

Production Practice 2.1

not in compliance with

Summarise the basis for this Finding/Deficiencies Identified:

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

The Transfer Facility has developed procedures that cover worker safety during product loading, maintenance, non-routine and emergency situations. The procedures have been fully developed and adopted at the Transfer Facility and include procedures that require review of proposed process or operational changes to provide assurance that appropriate worker protection measures are included when changes are adopted. The Transfer Facility involves workers in consideration of proposed changes at the plant that may affect worker safety, mostly during daily discussions about planned workloads, during emergency simulations, training and also when workers raise issues for discussion.

The facility uses two personal hydrogen cyanide monitors rather than fixed monitors to confirm that worker exposure to hydrogen cyanide is below limits. The personal monitoring equipment is maintained, tested and calibrated in accordance with manufacturers’ recommendations. Monitoring of dust and hydrogen cyanide gas is also performed by an external company on a quarterly basis.

Areas and activities have been identified where specific PPE requirements need to be applied. These involve box handling, preparation for loading, transfer and packaging waste handling.

The Transfer Facility plans its operations so that there are usually two to five employees involved in each loading operation. This ensures that a buddy system applies to all workers directly engaged in cyanide handling operations. This ensures that workers can request assistance through their buddy. In addition, all teams have radio links to their mobile phones for further communication.

All Transfer Facility employees are required to undergo an independent medical and physical to evaluate their fitness for complete site duties prior to employment and periodically; medicals are conducted by an external medical company.

The Transfer Facility has a formal clothing change policy for employees, contractors and visitors to all areas with the potential for cyanide contamination of clothing during operations. The Transfer Facility prohibits personnel from smoking, eating and drinking, and having an open flame in areas with the potential for cyanide exposure – communicating this requirement via its induction training and by the display of signage.

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2.1.5 Production Practice 2.2

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

in full compliance with

The operation is

in substantial compliance with

Production Practice 2.2

not in compliance with

Summarise the basis for this Finding/Deficiencies Identified:

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

The Transfer Facility has developed a specific written Emergency Response Plan (known as the Contingency Plan) and procedures to respond to cyanide exposures. The Contingency Plan include features such as summoning help, removal of the casualty from the source of cyanide, the administration of oxygen and other first aid, flushing the skin clear of cyanide and obtaining expert medical assistance.

Safety showers, low-pressure eye wash stations and non-acidic fire extinguishers are located at strategic locations in the Transfer Facility and these are inspected on a monthly basis. Incident response supplies are available including fresh water, oxygen, resuscitator, antidotes and radios for emergency notifications. These items are checked for their ready availability to be used effectively if required on a monthly basis.

The Transfer Facility inspects its first aid equipment monthly to assure that it is available when needed. The first aid and emergency response equipment is stored and tested as directed by their manufacturer and replaced on a schedule that assures they will be effective when used.

A current MSDS for sodium cyanide (in Spanish, the official language of Peru) is available in the area where operations are conducted. This is includes first aid advice and other important information on cyanide safety. PPE requirements are displayed in the workplace by the use of signs in prominent locations.

Storage tanks, containers, piping, hoses and other plant items that may contain or be contaminated with cyanide are labelled to alert workers of their contents or possible contamination.

The Transfer Facility has a decontamination procedure for employees, contractors and visitors leaving areas where they may become contaminated with cyanide, requiring them to change clothes and to wash hands and face before drinking, eating, toileting or smoking.

The Transfer Facility has an on-site first aid capability to provide first aid to workers exposed to cyanide. Medical assistance would be provided nearby hospitals that are aware of the potential need to treat patients for cyanide exposure.

Mock emergency drills are conducted periodically to test response procedures for various exposure scenarios, and the lessons learned from the drills are incorporated into response planning. 12 drills were performed in 2009, 12 in 2010 and 6 to date in 2011 with a further 6 planned for the remainder of 2011.

The Transfer Facility have procedures in place to investigate and evaluate cyanide exposure incidents to determine if the facility's programmes and procedures to protect worker health and safety and to respond to cyanide exposures are adequate or need to be revised. There have been no reported incidents of worker cyanide exposure at the Transfer Facility during the period 2009 to date.

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### PRINCIPLE 3 – MONITORING

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

#### 2.1.6 Production Practice 3.1

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

in full compliance with

The operation is

in substantial compliance with

Production Practice 3.1

not in compliance with

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

The operation is in FULL COMPLIANCE with Standard of Practice 3.1 requiring an operation conduct environmental monitoring to confirm that planned or unplanned releases of cyanide do not result in adverse impacts.

The Transfer Facility is located along the Callao coastal strip approximately 75 m from the Pacific Ocean. The transfer of solid cyanide from box IBCs to sparge isotanks is a dry process and does not directly generate waste process solution and does not have a direct or indirect discharge to the ocean.

Although the Peruvian Government has established groundwater limits for cyanide, WAD cyanide concentrations are not monitored in groundwater as no actual or designated beneficial use exists and the government has not established a point of compliance for the Transfer Facility.

The Transfer Facility limits atmospheric process emissions of HCN gas, such that the health of workers and the community are protected.

The Transfer Facility has adopted HCN exposure limits of 10 ppm instantaneously and 4.7 ppm continuously over eight hours. All employees working in areas with the potential for HCN generation are required to wear HCN monitors that are set to alarm at 4.7 ppm. Employees are required to leave the immediate area if the alarm sounds. The procedures surrounding the use of PPE are supported through the use of signage and training.

Monitoring is conducted at frequencies adequate to characterise the medium being monitored. Orica engages a consultant to undertake quarterly ambient air quality monitoring at four locations surrounding the Transfer Facility. The air quality monitoring program is documented and results are compiled and reported to the Municipal Government every three months.

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Name of Facility

Signature of Lead Auditor

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PRINCIPLE 4 – TRAINING

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

2.1.7 Production Practice 4.1

Train employees to operate the plant in a manner that minimises the potential for cyanide exposures and releases.

The operation is [X] in full compliance with [ ] in substantial compliance with [ ] not in compliance with Production Practice 4.1

Summarise the basis for this Finding/Deficiencies Identified:

The operation is in FULL COMPLIANCE with Standard of Practice 4.1 requiring an operation train employees to operate the plant in a manner that minimizes the potential for cyanide exposures and releases.

The Transfer Facility trains workers to understand the hazards of cyanide and refresher training is periodically conducted. Classroom training materials for cyanide awareness and box to sparge operations have been developed in English and Spanish by Orica. Practical training is provided in the use of the PPE required to conduct tasks safely. The work procedures in Spanish are used as the basis of training in the work methods required to carry out safely carry out the tasks required, though there is a mix of written, verbal and practical delivery of information. Appropriately qualified personnel provide the training.

Training is provided before workers are permitted to undertake their tasks. There is a progression of tasks requiring different levels of training and experience. Cyanide awareness training is evaluated by a written test in Spanish whereas competency in job tasks is evaluated based on the Facility Supervisor's observations.

2.1.8 Production Practice 4.2

Train employees to respond to cyanide exposures and releases.

The operation is [X] in full compliance with [ ] in substantial compliance with [ ] not in compliance with Production Practice 4.2

Summarise the basis for this Finding/Deficiencies Identified:

The operation is in FULL COMPLIANCE with Standard of Practice 4.2 requiring the operation train employees to respond to cyanide exposures and releases requiring an operation train employees to respond to cyanide exposures and releases.

Orica trains Transfer Facility workers in the procedures to be followed if a cyanide release is discovered. Inspections of training records and interviews noted that Cyanide Transfer Facility personnel trained to the OSHA levels specified within the Contingency Plan as well as being involved a number of simulations.

The emergency simulations have been formally evaluated with a list of corrective actions developed. The deficiencies identified to date have not required training procedures to be revised.

Orica Australia Pty Ltd Name of Facility Signature of Lead Auditor Date 23 November 2011





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## ORICA VENTANILLA ICMC SUMMARY AUDIT REPORT

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Training records are maintained by the Health and Safety Supervisor and a review of the training database and files showed information on the name of the trainer, the date of training, the topics covered, and how the employee demonstrated an understanding of the training materials was recorded.

Orica Australia Pty Ltd

Name of Facility



Signature of Lead Auditor

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## PRINCIPLE 5 – EMERGENCY RESPONSE

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

### 2.1.9 Production Practice 5.1

Prepare detailed emergency response plans for potential cyanide releases.

in full compliance with

The operation is

in substantial compliance with

**Production Practice 5.1**

not in compliance with

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

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

The Transfer Facility has developed a Contingency Plan for the management of cyanide related emergencies associated with the Transfer Facility and cyanide transportation. In addition, the Transfer Facility also refers to Orica’s Emergency Response Guide – Sodium Cyanide for technical guidance.

The Contingency Plan considers the potential failure scenarios appropriate for its site-specific environmental and operating circumstances. The emergency response procedure detailed within the Contingency Plan is flexible enough to accommodate and describe the response actions to be taken for the types of potential release scenarios identified by Orica. A risk assessment by Orica determined that the zone of influence of such a scenario was limited to the Transfer Facility building and this assessment is considered valid following the site inspection.

The Contingency Plan includes classification of two levels of emergency depending on scale. The highest level (Level II) considers a solid sodium cyanide spill of greater than 100 kg and a hydrogen cyanide gas release resulting in a concentration of 4.7 ppm HCN or greater.

The Contingency Plan describes specific response actions for persons involved in the management of the emergency, the use of cyanide antidotes and provision of first aid to exposure casualties, control of releases at the source and containment, assessment, mitigation and future prevention of releases. Examples include the requirement for rapid action, activation of the alarm, informing people in the area of the release, evacuating site personnel and potentially affected communities from the area of exposure.

The Contingency Plan also details the response actions required for individual persons involved in the management of the emergency. The response actions include those identified within this question.

The Contingency Plan notes the antidotes should only be used by physicians or paramedics.

The Contingency Plan considers minor and major cyanide spills and the emergency response procedures detail the procedure to limit the spread of releases and control the releases at their source.

The Contingency Plan describes procedures necessary for containment, assessment, mitigation and future prevention of releases.

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**2.1.10 Production Practice 5.2**

Involve site personnel and stakeholders in the planning process.

in full compliance with

The operation is

in substantial compliance with

**Production Practice 5.2**

not in compliance with

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

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

The facility has involved its workforce and stakeholders in the emergency response planning process. The Contingency Plan designates roles for employees and external agencies, which have participated in mock emergency drills (simulations).

The Transfer Facility has not made potentially affected communities aware of the nature of their risks associated with accidental cyanide releases, nor consulted with them regarding what communications and response actions are appropriate. The worst case scenario of an incident at the Transfer Facility would involve dropping an IBC during a transfer operation resulting in a maximum spillage of 1.1 tonnes of solid cyanide. The zone of influence of such a scenario is limited to the Warehouses and Transfer Facility. The nearest communities are located around 800 m from the Transfer Facility. As such, communities have not been consulted within regard to Transfer Facility specific emergencies.

The Transfer Facility has involved local response agencies such as outside responders and medical facilities in the emergency planning and response process. External responders include fire brigade, medical facilities, and the civil defence authority.

The fire brigade and hospitals have been advised of their responsibilities in writing. The roles and responsibilities of the civil defence authority are consistent with their normal duties associated with managing natural disasters.

The Transfer Facility has engaged in regular communication with stakeholders to assure that the Contingency Plan addresses current conditions and risks.

The Transfer Facility sent the latest Contingency Plan and an accompanying letter to the fire brigades and hospitals on 30 May 2011.

Orica Australia Pty Ltd

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2.1.11 Production Practice 5.3

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

in full compliance with

The operation is

in substantial compliance with

Production Practice 5.3

not in compliance with

Summarise the basis for this Finding/Deficiencies Identified:

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

The Transfer Facility Contingency Plan:

- Designates primary and alternate emergency response coordinators:

The Contingency Plan classifies emergencies in terms of the severity and the corresponding control and mitigation methods. The Emergency Coordinator is responsible for controlling and mitigating the emergency event and this person can be one of two people depending on the emergency classification level.

- Identifies Emergency Response Teams:

The Emergency Response Team consists of:

- First person on the scene (First Responder)
- Emergency Coordinator
- Incident Command System

The Contingency Plan identifies the Transfer Facility Supervisor as the head of the Incident Command System. The Incident Command System is based on five functions providing support in the areas of Command, Operations, Planning, Logistics and Administration and Finance.

- Requires appropriate training for emergency responders:

Two types of training are provided to Transfer Facility (and relevant Neptunia) personnel who might be involved in emergency response. These include courses and mock drills (simulations). Training is provided every year and includes Haz Mat Level III, First Aid Response and Fire Fighting, and Management of Cyanide.

- Includes call-out procedures and 24-hour contact information for the coordinators and response team members:

The Contingency Plan contains clear flow charts describing the call out procedures for Level I and Level II emergencies and details 24-hour contact information for all internal and external persons involved in the Emergency Response.

- Specifies the duties and responsibilities for all Emergency Response Team positions.

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- Provides a list of all the emergency response equipment that should be available:

The Contingency Plan includes a list of the emergency response equipment which is available at the Plant. The equipment is inspected on a monthly basis and the Transfer Facility holds records of inspections performed during 2009, 2010 and 2011.

- Includes procedures to inspect emergency response equipment and assure its availability when required:

A procedure is in place to inspect emergency response equipment and assure its availability when required as required in the Contingency Plan.

- Describes the role of outside responders and medical facilities:

The Contingency Plan clearly describes the role of outside responders (Civil Defence authorities, Callao Fire Department, Police and medical facilities). Apart from Neptunia S.A., the local community do not have a designated role within the emergency response procedures.

The Transfer Facility has advised external responders (fire brigade) and medical facilities via correspondence of their roles and/or mutual aid during an emergency response. However, the nature of the Transfer Facility operation, and limited local availability of qualified external responders means that emergency response is largely self-contained. Emergency drills involving the Transfer Facility have engaged external responders.

**2.1.12 Production Practice 5.4**

Develop procedures for internal and external emergency notification and reporting.

in full compliance with

The operation is

in substantial compliance with

**Production Practice 5.4**

not in compliance with

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

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

The emergency response plan includes contact information and procedures for notifying management, outside response providers, regulatory agencies and medical facilities, as appropriate.

Communities are unlikely to be impacted by an incident or required in emergency response measures as the worst case scenario at the Transfer Facility would involve a maximum spillage of 1.135 tonnes of solid cyanide. This is expected to be contained within the Transfer Facility itself. The nearest communities are also around 800m distant form the Transfer Facility. As such the communities have not been consulted.

The Contingency Plan notes that the Chief Financial Officer is to approve the information to be disclosed to media outlets and third parties.

Orica Australia Pty Ltd

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Signature of Lead Auditor

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**2.1.13 Production Practice 5.5**

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

in full compliance with

The operation is

in substantial compliance with

**Production Practice 5.5**

not in compliance with

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

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

The Contingency Plan describes specific, appropriate remediation measures, such as recovery or neutralisation of solutions or solids, decontamination of soils or other contaminated media and management and/or disposal of spill clean-up debris. This includes descriptions on decontamination of soils or other contaminated media. Specific information concerning the management of spill clean-up debris is not provided. The procedures require the responder to notify the relevant parties listed in the Guide. The Contingency Plan contains a warning not to use sodium hypochlorite or ferrous sulphate to treat cyanide that has been released into natural surface waters.

The Contingency Plan requires constant cyanide air monitoring during any release incidents using hydrogen cyanide detectors. The Transfer Facility holds two hydrogen cyanide detectors at all times and these are maintained and calibrated in accordance with the manufacturer's instructions.

The Contingency Plan addresses the need for environmental monitoring (in water and soil) to identify the extent and effects of a release.

**2.1.14 Production Practice 5.6**

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

in full compliance with

The operation is

in substantial compliance with

**Production Practice 5.6**

not in compliance with

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

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

The Contingency Plan includes provisions for reviewing and evaluating its adequacy on an ongoing basis. The Contingency Plan was last reviewed on 30 May 2011. The facility conducts mock drills and the operation has a process whereby the lessons learnt from mock drills are translated into an updated Contingency Plan.

Orica Australia Pty Ltd

Name of Facility

Signature of Lead Auditor

23 November 2011

Date



## Report Signature Page

### GOLDER ASSOCIATES PTY LTD

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# APPENDIX A

## Limitations



## LIMITATIONS

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