International Cyanide Management Code

Supply Chain Recertification Audit

Corrective Action Plan

Name of Cyanide Transportation Facility: Orica Australia Pty Ltd
Papua New Guinea Supply Chain

Name of Facility Owner: Not applicable

Name of Facility Operator: Orica Australia Pty Ltd
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Lead – Distribution Pacific APA Supply Chain
Unit 4, 165 Boundary Street,
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Telephone:
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Date of audit: 22-24 October 2019

Submitted to International Cyanide Management Institute
1400 I Street, NW, Suite 550, Washington, DC, 20005, USA

Copy to Orica Australia Pty Ltd
Introduction
This Corrective Action Plan has been developed following an audit of Orica’s management of the road transport part of their supply chain, between the Port of Lae and the Hidden Valley Mine, Papua New Guinea (PNG). The audit was carried out during 22-24 October 2019.

Background
Orica’s supply chain, including the section from the port of Lae to Hidden Valley Mine has been audited previously and has been found to be fully compliant with the requirements of the ICMIA Transport Code. Hidden Valley Transport (HVT) was certified as fully compliant with the International Cyanide Management Code (the Code) for the route from the port of Lae to Hidden Valley Mine on 4 December 2019.

Location Detail and Description of Operations
Orica Australia Pty Ltd (Orica) is an Australian owned publicly listed company with a cyanide production facility at Yarwun in Queensland, Australia. Orica is one of the world’s largest producers of sodium cyanide for the mining industry and it supplies cyanide to Asia, Africa, South America and the Australasian market.

Orica’s Australia Supply Chain was certified fully compliant on 20 August 2018. The Australia Supply Chain includes transport of liquid and solid sodium cyanide from Orica's manufacturing facility in Yarwun, Australia, by road and rail direct to its end point users within Australia and the Port of Brisbane and Melbourne and storage within the Toll Customised Solutions production facility in Laverton.

Orica’s Global Marine Supply Chain was certified 16 January 2018 as including the shipping lines Maersk, Hamburg Sud, Mediterranean Shipping Company, Orient Overseas Container Line, Swire Shipping, Australia National Line, Pacific Asia Express, Naviera Ultranav Transmares, K Line, Mitsui OSK Lines, and Toll Shipping. It also includes the destination ports of Abidjan, Alma, Auckland, Brisbane, Buenos Aires, Burnie, Busan, Callao, Chalmers, Conacry, Dakar, Dar Es Salaam, Jakarta, Lae, Laem Chabang, Mombasa, Nouakchott, Puerto Angamos, Puerto Deseado, Punta Arenas, Santos, Shanghai, Surabaya, Takoradi, Tauranga, Tema, and Veracruz. The Supply Chain was amended 5 February 2019 to also include the ports of Gladstone, Klang, Cartagena, and Buenaventura, and was amended 26 August 2019 to also include the ports of Izmir and Walvis Bay.

Hidden Valley Transport (HVT) is a transport and logistics company that works in the Morobe Province of Papua New Guinea. HVT has been engaged by Orica to transport cyanide from the Port of Lae to the Hidden Valley Mine, Papua New Guinea. HVT was certified as fully compliant with the International Cyanide Management Code (the Code) for the route from the port of Lae to Hidden Valley Mine on 4 December 2019.

Auditor’s Comments
Orica has been compliant in the past and appears to have good relations with HVT as the transport company has effective systems in place and is compliant with the Code. The deficiencies in Orica’s operations that are identified in the audit report, though very high in number, should be easily correctable within six months given Orica’s experience with cyanide transport. There is no immediate of substantial risk to health, safety or environment from Orica’s position of substantial-compliance. HVT has recently been certified as compliant with the code. Furthermore, while auditing Orica’s operations in October 2019, it was apparent that HVT was operating safely and its operations provided an appropriate level of safety and security as required by the Code.

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1. TRANSPORT: Transport cyanide in a manner that minimizes the potential for accidents and releases.

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

This operation is  □ in substantial compliance with Transport Practice 1.1

This assessment addressed: route selection; risks along the route; the carrier’s technology (GPS, vehicle monitoring); on-going route assessment; convoy management; emergency response exercises however no evidence could be produced to support these claims. Orica personnel claim to drive the route periodically, usually in company with HVT, to assess key places where the road is deteriorating and may present future problems exercises however no evidence could be produced to support these claims.

Orica advised that Hidden Valley Mine requires all cyanide be delivered in convoys, with escorts, however no evidence could be produced to support this claim.

Orica claims to provide a technical support resource for any cyanide emergency and the carrier (HVT) is responsible for recovery operations however no evidence could be produced to support these claims.

Orica advised that HVT does not subcontract any of the cyanide transport operation and HVT confirmed that statement, however no evidence could be produced to bind HVT to this obligation.

Deficiencies
Orica’s carrier assessment procedure appears to have lapsed and no evidence could be produced to show compliance with this Transport Practice.

The deficiencies in Orica’s obligations under Transport Practice 1.1 are described above.

Action Required:
Develop and implement a comprehensive carrier assessment procedure to monitor all elements of the performance of its contracted carriers. This procedure shall address the carrier’s performance in the following areas:

- Route selection;
- risks along the route;
- the carrier’s technology (GPS, vehicle monitoring);
- on-going route assessment;
- convoy management;
- emergency response exercises.

Orica personnel shall drive the route periodically to assess key places where the road is deteriorating and may present future problems.

Orica shall review the requirement that all cyanide be delivered in convoys, with escorts, and monitor the operations to ensure that it is being done.

Orica shall provide contractual or other evidence that the carrier (HVT) is responsible for recovery operations and that they (Orica) provide a technical support resource for any cyanide emergency.

Orica shall provide contractual or other evidence that the carrier (HVT) may not subcontract any of the cyanide transport operation

Evidence Required is as described above. By the completion date Orica should be able to produce several examples of actions described above.

Completion Date  by 30 September 2020.
*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.*

Orica is in **SUBSTANTIAL COMPLIANCE** with Transport Practice 1.2

Orica does not directly operate transport vehicles in PNG; it claims to contract the transport to HVT and facilitate and monitor the training and competence of HVT’s operators however no recent evidence could be provided that this was being done.

Orica has a web link for cyanide awareness and advises that they have conducted on-site training for sparging however no recent evidence could be provided that this was being done.

Several records of meetings between Orica and HVT were produced which made oblique references to road conditions, the intention to assess the road route, cyanide tank reports and training, however the latest such report was April 2019 and there was no supporting evidence of any subsequent action

**Deficiencies**

The deficiencies in Orica’s obligations under Transport Practice 1.2 are described above.

**Description of corrective action required**

Ensure that a contract is in place with HVT to transport cyanide.

Provide evidence that Orica is ensuring HVT drivers and operators are trained and competent.

**Evidence required by auditor**

Training records showing Orica’s involvement.

Contractual obligation between Orica and HVT.

**Completion Date** by 30 September 2020.
Transport Practice 1.3: Ensure that transport equipment is suitable for the cyanide shipment.

Orica is in SUBSTANTIAL COMPLIANCE with Transport Practice 1.3

There was no evidence that Orica has policies and inspection procedures in place to:

- ensure that their preferred standard (the Australian Dangerous Goods Code) is legally acceptable in PNG as a standard for equipment for cyanide transport;
- monitor HVT’s fleet of vehicles;
- ensure that HVT operate within the legal requirements for the loads they will be carrying;
- to ensure that HVT implements procedures to verify the adequacy of equipment for each load;
- check that all HVT trucks are subject to a scheduled vehicle maintenance program;
- ensure that records are maintained to verify compliance and to prevent overloading.

Orica has systems to ensure that containers used for cyanide transport are certified in accordance with the requirements for international and intermodal transport. (IMDG Code, RID/ADR, current Container Safety Convention certification). The tanks are periodically certified by Bureau Veritas.

Deficiencies
The deficiencies in Orica’s obligations under Transport Practice 1.3 are described above.

Description of corrective action required
Develop or reintroduce and apply policies and inspection procedures to:

- monitor HVT’s fleet of vehicles in such a way that ensures adherence to Orica’s stated standard (the Australian Dangerous Goods Code);
- ensure that HVT operate within the legal requirements for the loads they will be carrying;
- to ensure that HVT implements procedures to verify the adequacy of equipment for each load;
- check that all HVT trucks are subject to a scheduled vehicle maintenance program;
- ensure that records are maintained to verify compliance and to prevent overloading.

Evidence required by auditor
Either formal advice from PNG Government that the ADG code is acceptable in PNG as a standard for equipment for transporting cyanide or other evidence such as evidence of a review of the PNG statutes to confirm that there are no statutes applicable to Transport of Dangerous Goods.

Evidence that Orica has regularly and routinely checked:
- That HVT is operating in accordance with the ADG Code;
- That HVT knows and is working within the load limits of the PNG heavy vehicle laws;
- that HVT implements procedures to verify the adequacy of equipment for each load;
- check that all HVT trucks are subject to a scheduled vehicle maintenance program;

Completion Date: by 30 September 2020.
Transport Practice 1.4: Develop and implement a safety program for transport of cyanide.

Orica is in SUBSTANTIAL COMPLIANCE with Transport Practice 1.4.

Orica claims that it periodically reviews and audits HVT’s vehicles, equipment, maintenance systems to ensure an appropriate level of compliance and safety and that the audits include review of: tank handling; placarding; vehicle inspections (pre-start and convoy briefings); maintenance; fatigue management; load securing; general and emergency management; drug abuse management; and documentation.

No evidence other than personal communication could be produced to support this claim.

Deficiencies
There was no documented evidence that Orica periodically reviews and audits HVT’s vehicles, equipment, maintenance systems to ensure an appropriate level of compliance and safety.

Description of corrective action required
Develop or reintroduce and apply policies and inspection procedures to monitor HVT’s safety program.

Evidence required by auditor
Evidence of regular reviews of HVT’s safety program, that include checks of:
- tank handling;
- placarding;
- vehicle inspections (pre-start and convoy briefings);
- maintenance systems;
- fatigue management;
- load securing;
- general and emergency management;
- drug abuse management; and
- documentation.

Completion Date by 30 September 2020.
Transport Practice 1.5: Follow international standards for transportation of cyanide by sea and air

This Transport Practice is not applicable to this audit as there is no transport by sea or air within the scope of the audit.
**Transport Practice 1.6: Track cyanide shipments to prevent losses during transport.**

Orica is in SUBSTANTIAL COMPLIANCE with Transport Practice 1.6.

There was no evidence that Orica periodically reviews and audits HVT’s vehicles, equipment, maintenance systems to ensure an appropriate level of compliance and safety or that Orica audits or review HVT’s communications, particularly between HVT and Orica, emergency responders and the Harmony mine or to check for communication blackout areas. Similarly, there was no evidence that Orica routinely cross checks receivals at the port against dispatches to and receivals from the mine or that there is any documented chain of custody. Safety Data Sheets for Orica Cyanide were observed on HVT vehicles, however there was no evidence that Orica checked that they were routinely carried.

**Deficiencies**
The deficiencies in Orica’s obligations under Transport Practice 1.6 are described above.

**Description of corrective action required**
Develop or reintroduce and apply policies and inspection procedures to track cyanide shipments to prevent losses during transport

**Evidence required by auditor**
Evidence that Orica has appropriate policies and procedures that are implemented.

This includes:
- periodical reviews and audits of HVT’s vehicles, equipment, maintenance systems to ensure an appropriate level of compliance and safety; and that
- Orica audits or reviews HVT’s communications, particularly between HVT and Orica, emergency responders and the Harmony mine and checks for communication blackout areas; and that
- Orica routinely cross checks receivals at the port against dispatches to and receivals from the mine; and that
- there is a documented chain of custody of the cyanide from collection at the port through HVT’s yards to the mine; and that
- Orica has checked HVT’s systems to ensure that Safety Data Sheets for Orica Cyanide are routinely carried.

**Completion Date**
by 30 September 2020.
2. INTERIM STORAGE: Design, construct and operate cyanide trans-shipping depots and interim storage sites to prevent releases and exposures.

There is no storage (as defined in the ICMI Transport Principles) on this transport route. HVT operates a transport yard (“11-mile”) at which Portable Tanks are placed pending delivery to the mine. Cyanide is not stored by HVT in any other form. There is no change of carriers or transport mode so the depot does not meet the definition of a trans-shipping depot or interim storage site contained in the ICMI transport principles. Despite this, the cyanide may be stored in this depot for days or weeks, so periodic inspections of the site to check signage, PPE, security, segregation from incompatibles, container integrity would be good practice.

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

Orica is in SUBSTANTIAL COMPLIANCE with Transport Practice 2.1

There was no evidence that any checks or periodic inspections of the site to check signage, PPE, security, segregation from incompatibles, or container integrity are carried out by Orica on the storage depot operated by HVT.

**Deficiencies**

There was no evidence that Orica carries out any checks or periodic inspections of the transport yard operated by HVT where Portable Tanks may be temporarily stored.

**Description of corrective action required**

Develop or reintroduce and apply policies and inspection procedures to check signage, PPE, security, segregation from incompatibles, and container integrity at the HVT transport depot.

**Evidence required by auditor**

A documented policy requiring appropriate action. Evidence that the policy is being implemented in the form of completed assessments on the standard of signage, PPE, security, segregation from incompatibles, and container integrity at the HVT transport depot.

**Completion Date** by 30 September 2020.
3. EMERGENCY RESPONSE: Protect communities and the environment through the development of emergency response strategies and capabilities.

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

Orica is in SUBSTANTIAL COMPLIANCE with Transport Practice 3.1

Orica does not directly operate transport vehicles in PNG; this is undertaken by HVT who are responsible for preparing appropriate emergency response plans. Orica claims to have delegated responsibility for implementing the emergency response plan to its carrier, HVT.

HVT was certified as fully compliant with the Code for the route from the port of Lae to Hidden Valley Mine on 4 December 2019

There is no evidence that Orica has delegated responsibility for implementing the plan to its carrier, HVT

Orica has a detailed emergency response guide (ERG) to provide guidance for all cyanide related activities including storage and transport emergencies that involve Orica products.

Orica’s Emergency Response Guide is appropriate for all forms of cyanide consigned by Orica, including solid cyanide in sparge tanks as transported by HVT. The Guide is appropriate for all forms of transport of cyanide consigned by Orica from Yarwun to Harmony mine. Although the Guide does not specifically consider all aspects of the transport route, the emergency response approach is flexible to deal with any variations.

Orica’s Emergency Response Guide includes descriptions of response actions for all credible accidents and other emergency situations for all forms of transport of cyanide consigned by Orica from Yarwun to Harmony mine, including solid cyanide in sparge tanks as transported by HVT. The Guide includes initial actions to be taken including liaison with emergency services, prevention and management of contamination etc.

The Guide generically identifies the roles of outside responders, including control agencies, combat authorities, medical facilities, environmental authorities and local communities

Deficiencies

There is no evidence that Orica has delegated responsibility for implementing the plan to its carrier, HVT

Description of corrective action required

Formally document the delegated responsibility for implementing the emergency response plan to HVT.

Evidence required by auditor

A contract or similar written agreement setting out the responsibilities of Orica and HVT with respect to emergency response.

Completion Date by 30 September 2020.

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Transport Practice 3.2: Designate appropriate response personnel and commit necessary resources for emergency response.

Orica is in SUBSTANTIAL COMPLIANCE with Transport Practice 3.2.

Orica’s Emergency Response Guide includes descriptions of response actions for all credible accidents and other emergency situations for all forms of transport of cyanide consigned by Orica from Yarwun to Harmony mine, including solid cyanide in sparge tanks as transported by HVT. The Guide includes initial actions to be taken including liaison with emergency services, prevention and management of contamination etc. The Guide generically identifies the roles of outside responders, including control agencies, combat authorities, medical facilities, environmental authorities and local communities

The guide also includes reference to expert advice from Orica’s emergency response call centre, however there was no evidence to show that Orica personnel receive emergency response training for this task.

There was no evidence to show that Orica personnel receive emergency response training for the task of providing a technical and advisory role in cyanide emergencies.

There was no evidence that Orica has delegated responsibility for implementing the plan to its carrier, HVT

There was no evidence that Orica carries out periodic checks to ensure that the equipment required by HVT is listed and available and fit for purpose nor that the equipment includes health and safety equipment and PPE (full protective PVC overalls, helmet, face shields, gloves, eye bath bottle, breathing apparatus etc.)

There was no evidence that Orica ensure that HVT provides emergency response training and that it remains current.

Deficiencies

The deficiencies are described above.

Description of corrective action required

Formally document the delegated responsibility for implementing the emergency response plan to HVT.

Provide evidence to show that Orica has designated appropriate response personnel and committed necessary resources for emergency response.

Evidence required by auditor

Evidence that Orica’s emergency response centre staff have appropriate training to fulfill a technical and advisory role in cyanide emergencies.

evidence that Orica carries out periodic checks to ensure that the equipment required by HVT is listed and available and fit for purpose.

A contract or similar written agreement setting out the responsibilities of Orica and HVT with respect to emergency response.

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Transport Practice 3.3: Develop procedures for internal and external emergency notification and reporting.

Orica is in SUBSTANTIAL COMPLIANCE with transport practice 3.3.

Orica has a detailed emergency response guide (ERG) to provide guidance for all cyanide related activities including storage and transport emergencies that involve Orica products. The ERG includes contact information to access emergency response information.

No evidence was produced to show that there are systems in place to ensure that internal and external emergency notification and reporting procedures are kept current.

**Deficiencies**
There was no evidence produced to show that there are systems in place to ensure that Orica’s internal and external emergency notification and reporting procedures are kept current.

**Description of corrective action required**
Develop and implement a policy to ensure that Orica’s internal and external emergency notification and reporting procedures are kept current.

**Evidence required by auditor**
A policy document requiring that Orica’s internal and external emergency notification and reporting procedures are kept current.
Documents showing that the policy is being implemented.

**Completion Date** by 30 September 2020.
Transport Practice 3.4: Develop procedures for remediation of releases that recognize the additional hazards of cyanide treatment chemicals.

Orica is in SUBSTANTIAL COMPLIANCE with Transport Practice 3.4.

Orica has a detailed emergency response guide (ERG) to provide guidance for all cyanide related activities including storage and transport emergencies that involve Orica products. The ERG includes contact clear advice on remediation, including recovery and neutralization of solutions or solids, decontamination of soils or other contaminated media and management and/or disposal of spill clean-up debris. The Guide specifically warns against using any chemicals, specifically sodium hypochlorite, ferrous sulfate and hydrogen peroxide to treat cyanide that has been released into surface water.

Orica claims to have delegated responsibility for implementing the emergency response plan to its carrier, HVT. No evidence was produced to support this claim.

Deficiencies
No formal delegated responsibility for implementing the emergency response plan to Orica’s carrier, HVT.

Description of corrective action required
Formally document the delegated responsibility for implementing the emergency response plan to HVT.

Evidence required by auditor
A contract or similar written agreement setting out the responsibilities of Orica and HVT with respect to emergency response.

Completion Date by 30 September 2020.
Transport Practice 3.5: Periodically evaluate response procedures and capabilities and revise them as needed.

Orica is in SUBSTANTIAL COMPLIANCE with Transport Practice 3.5.

Orica claims to have delegated responsibility for implementing the emergency response plan to its carrier, HVT. No evidence was produced to support this claim.

Although HVT was certified as fully compliant with the Code for the route from the port of Lae to Hidden Valley Mine on 4 December 2019, including its emergency response capability, no evidence could be produced to show that Orica has delegated emergency response implementation to HVT or that Orica has systems in place:

• for periodically reviewing and evaluating Orica’s emergency response guide’s adequacy or how it is being implemented;
• for periodically conducting mock emergency drills to test the Emergency Response Guide;
• to evaluate the Guide’s performance after its implementation and revise it as needed.

Deficiencies
No evidence could be produced to show that Orica has delegated emergency response implementation to HVT, or that Orica systems in place for periodically reviewing and evaluating the Guide’s adequacy or how it is being implemented.

Description of corrective action required
Formally document the delegated responsibility for implementing the emergency response plan to HVT.

Prepare a written policy and put systems in place:

• for periodically reviewing and evaluating Orica’s emergency response guide’s adequacy or how it is being implemented;
• for periodically conducting mock emergency drills to test the Emergency Response Guide;
• to evaluate the Guide’s performance after its implementation and revise it as needed.

Evidence required by auditor
A contract or similar written agreement setting out the responsibilities of Orica and HVT with respect to emergency response.

A policy document setting out the obligation to periodically evaluate response procedures and capabilities and revise them as needed.
Documents showing that the policy is being implemented.

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