



May 2014

## INTERNATIONAL CYANIDE MANAGEMENT CODE TRANSPORT CERTIFICATION AUDIT

# Alistair Group, Pre-Operational Transportation Certification Audit, Tanzania, Summary Audit Report

**Submitted to:**

International Cyanide Management Institute  
1400 I Street, NW, Suite 550  
Washington, DC 20005  
UNITED STATES OF AMERICA

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REPORT



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### APPENDICES

#### APPENDIX A

Limitations



## **1.0 INTRODUCTION**

### **1.1 Operational Information**

<b>Name of Transportation Facility:</b>	Alistair Group
<b>Name of Facility Owner:</b>	Not Applicable
<b>Name of Facility Operator:</b>	Alistair Group
<b>Name of Responsible Manager:</b>	Roger Crawford, Head of Mining Services
<b>Address:</b>	Alistair Group PO Box 4546
<b>State/Province:</b>	Dar es Salaam
<b>Country:</b>	Tanzania
<b>Telephone:</b>	+255 762 745 590
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### **1.2 Description of Operation**

#### **1.2.1 Alistair Group**

Alistair Group is a transportation and logistics company engaged in the transportation of goods within Africa. It is headquartered in Dar es Salaam, Tanzania, and has offices in Mtwara, Tanzania, and Pemba, Mozambique. Alistair Group is an ICMC signatory. .

#### **1.2.2 Transit Storage**

Within the scope of this audit, there are no trans-shipping depots or interim storage sites, as defined in the audit protocol.

Storage in transit may occur at Alistair Group's Dar es Salaam Depot in the event that receipt at the port is delayed. In this event containers will not be removed from the trailers and the vehicles will only be parked for a maximum of 24 hours.



### 1.3 Auditors Findings and Attestation

**Alistair Group is:**  in full compliance with **Cyanide Management Code**  
 in substantial compliance with  
 not in compliance with

**Audit Company:** Golder Associates Pty Ltd  
**Audit Team Leader:** Mike Woods, Exemplar Global (113792)  
**Email:** mwoods@golder.com.au

### 1.4 Name and Signatures of Other Auditors:

Name	Position	Signature	Date
Mike Woods	Lead Auditor and Technical Specialist		21 February 2014

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

### 1.5 Dates of Audit

The Certification Transport Audit of Alistair Group was undertaken over two days between 10 and 11 December 2013.

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 Pre-Operational Verification Protocol for Cyanide Transportation Operations* and using standard and accepted practices for health, safety and environmental audits.

Alistair Group  24 February 2014  
Name of Facility Signature of Lead Auditor Date



## 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

Alistair Group is

in substantial compliance with

**Transport Practice 1.1**

not in compliance with

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

Alistair Group is in FULL COMPLIANCE with Transport Practice 1.1 requiring the transport of cyanide in a manner that minimises the potential for accidents and releases.

Alistair Group has committed to implement a process or procedure for selecting transport routes that minimises the potential for accidents and releases or the potential impacts of accidents and releases. Alistair Group has developed a management system and is in the process of implementing the system. The *Cyanide Transport Management Plan (CTMP)* provides the guidance to the management of cyanide transport at Alistair Group supported by specific procedures for route selection and assessment.

Section 3.0 of the CTMP provides that:

*Each cyanide transportation route is subject to a comprehensive route assessment from the port of entry to the designated mine site. The requirements for route assessments are laid out in the procedure for selecting and assessing routes for the transport of cyanide (Appendix A). Subsequently the route assessment forms the basis of the route risk categorization form (Appendix B).*

*Route assessments provide the opportunity to collate contact data for key stakeholders along the route and this data provides the foundation for the emergency contact list (Appendix C).*

The procedures state that during the route assessment between port and the Mine site, the following was taken into account:

- Population density infrastructure constructions and their condition
- Pitch and grade of roads
- Prevalence and proximity of water to the intended route
- Weather conditions, including fog and light conditions
- Communications black spots.

Alistair Group has committed to implement a procedure to evaluate the risks of selected cyanide transport routes and has taken the measures necessary to manage these risks. Alistair Group has developed the *Route Selection, Risk Assessment & Re-evaluation Procedure*. This procedure covers categorisation of route risks using the Simple Risk Matrix, example consequences and example control measures.

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Alistair Group has committed to implement process and procedure to periodically re-evaluate routes used for cyanide deliveries. The *Route Selection, Risk Assessment & Re-evaluation Procedure* has been written to detail the process to assess the route initially and then the process to be undertaken by the Convoy Leader to note any significant changes to the route. Transport operators are able to provide feedback on routes via the *Route Conditions Feedback Form* as detailed in the *Route Selection, Risk Assessment & Re-evaluation Procedure*. During the audit there was a commitment from the Head of Mining Division to review the route regularly and the procedure discusses re-evaluation but not the process to take.

**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

**Alistair Group is**

in substantial compliance with

**Transport Practice 1.2**

not in compliance with

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

Alistair Group is in FULL COMPLIANCE with Transport Practice 1.2 requiring personnel operating cyanide handling and transport equipment can perform their jobs with minimum risk to communities and the environment. Alistair Group has committed to only use trained, qualified and licensed operators to operate its transport vehicles. Section 6 of the CTMP states that training that will be provided to cyanide convoy personnel. Additionally, under "Approved Drivers" the CTMP states that:

*Cyanide transport is only undertaken by drivers trained in cyanide awareness and emergency response.*

A review of the prepared Driver Cyanide Training material identified that it covered:

- Cyanide properties and hazards including:
- Convoy Rules Including
- Emergency Response
- Assessment.

Convoy Leaders and Operations personnel complete Advanced Cyanide Training. This training covers:

- Intro to International Cyanide Management Code
- Cyanide Awareness and Hazard Information
- Convoy Rules
- Emergency Response
- Cyanide Accidents
- Assessment.

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Training records observed identified that the Alistair Group has provided both Drivers Cyanide Awareness Training and Advanced Cyanide Awareness Training. Alistair Group does not currently subcontract handling or transportation of cyanide.

**2.1.3 Transport Practice 1.3**

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

in full compliance with

**Alistair Group is**

in substantial compliance with

**Transport Practice 1.3**

not in compliance with

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

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

Alistair Group has committed to only use equipment designed and maintained to operate within the loads it will be handling and to implement procedures prevent overloading of the transport vehicle being used for handling cyanide (i.e. overloading a truck, ferry, barge, etc.).

The operation has a fleet of seven prime movers, four side loaders and one trailer that are used for cyanide transport.

The CTMP details the general requirements for convoys. This includes the following requirements:

- One container of cyanide will be loaded onto each truck.
- Each container will have a sliding container lock affixed.

Alistair Group has committed to implement procedures to verify the adequacy of the equipment for the load it must bear.

The *Truck/Trailer Inspection Checklist* includes a visual inspection of the truck and trailer. The trailer inspection includes an assessment of the condition of floor and chassis, lights, legs, jacking, springs, brake booster, axels, roller joinings, wheels, locking lugs.

The *Container Tracking Slip 001*, includes a requirement to list the weight, ISO number, C.A.Z number and DG or UN Number. It also includes an inspection of container integrity.

The *Container Checking Slip 002*, includes a visual inspection of container condition.

Alistair Group does not currently subcontract handling or transportation of cyanide.

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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

**Alistair Group is**

in substantial compliance with

**Transport Practice 1.4**

not in compliance with

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

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

Alistair Group has committed to implement procedures to ensure that the cyanide is transported in a manner that maintains the integrity of the producer’s packaging.

- The *Truck/Trailer Inspection Checklist* includes a visual inspection of the truck and trailer. The trailer inspection includes an assessment of the condition of floor and chassis, lights, legs, jacking, springs, brake booster, axels, roller joinings, wheels, locking lugs.
- The *Container Tracking Slip 001*, includes a requirement to list the weight, ISO number, C.A.Z number and DG or UN Number. It also includes an inspection of container integrity.
- The *Container Checking Slip 002*, includes a visual inspection of container condition.

The requirement to complete the checklist and who is responsible is detailed in the CTMP.

Alistair Group has committed to using placards or other signage identify the shipment as cyanide, as required by local regulations and international standards. The CTMP general requirements for convoys details the signage requirement “*All convoy vehicles display “HATARI SUMU” signage, red flags, placarding as standard on shipping containers.*” The Truck / Trailer Inspection Checklist include a HSE section which includes checking for Hazmat and DG signage.

The operation has implemented a tiered preventative maintenance program which is run from an electronic database that maintains records and scheduling of preventative maintenance activities. The operation has on site mechanics and fitters that inspect and maintain the vehicles on a regular basis and in response to breakdowns and repairs. The majority of the fleet were new (less than two years old).

The CTMP details the “*basic cyanide convoy rules for truck drivers.*” This includes limiting driving to “*13 hours or as directed by the convoy leader, though only in daylight.*”

The *Container Checking Slip 002* includes checking the seals and the container on route at least three times a day (before departure, midday and nightly park up). The CTMP also requires the Convoy Leader to:

- Review each truck/trailer inspection checklist to ensure roadworthiness before the truck is allowed to load.
- Ensure that any seals are intact and the numbers recorded.
- Fit the sliding container locks to each container.

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The CTMP delegates responsibility to the convoy leader to modify the route. The CTMP states

*The convoy leader is responsible for the convoy as is empowered to modify or suspend the convoy if conditions such as severe weather or civil unrest are encountered.*

The company has developed a substance abuse policy covering alcohol and drugs that includes provisions for random and for cause testing. The CTMP also provides rules for convoys including prohibiting alcohol consumption.

Training is provided through the induction process on company standards and a breathalyser for alcohol is being installed at the company depot.

The CTMP delegates record keeping responsibilities to the Head of Mining. The CTMP states that their responsibilities include:

- Ensure that records of all cyanide activities are stored and available for auditing.
- Ensure all escort personnel are trained in ER procedures and records are maintained.
- Collate and retain documentation for each convoy.

Alistair Group does not currently subcontract handling or transportation of cyanide.

**2.1.5 Transport Practice 1.5**

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

in full compliance with

**Alistair Group is**

in substantial compliance with

**Transport Practice 1.5**

not in compliance with

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

Standard of Practice 1.5 requiring the operation to follow international standards for transportation of cyanide by sea and air is NOT APPLICABLE to Alistair Group.

Alistair Group does not intend to transport consignments of cyanide by sea or 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

**Alistair Group is**

in substantial compliance with

**Transport Practice 1.6**

not in compliance with

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

Alistair Group is in FULL COMPLIANCE with Transport Practice 1.6 requiring the tracking of cyanide shipments to prevent losses during transport.

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## ALISTAIR GROUP PRE-OPERATIONAL CERTIFICATION AUDIT SUMMARY AUDIT REPORT

Alistair Group has committed to equip vehicles with means to communicate with the transport company, the mining operation, the cyanide producer or distributor and/or emergency responders. Transport vehicles have:

- Radios which are fitted and installed to all vehicles.
- Mobile phones which are used to received and send information to all stakeholders.
- Satellite phones in emergency situations where there is no mobile coverage.

All of this equipment is checked as part of the prestart check and reported repair if needed prior to departure. The CTMP confirms that these checks are to be completed prior to departure and trucks will not be loaded until repairs are completed.

Alistair Group has committed to periodically test their communication equipment (GPS, mobile phone, radio, pager, etc.) to ensure it functions properly. The CTMP requires that Convoy Leader test the satellite phone prior to each convoy departing to ensure it is charged and operational. Checks are completed as part of the Truck/Trailer Inspection Checklist and issues are reported prior to departure.

Alistair Group has committed to identify communication blackout areas along transport routes and implement special procedures for these areas.

During transport all vehicles have constant communication through the use of radios, mobile phones and satellite phones for use when there is no mobile coverage. Through the use of satellite phones Alistair Group is committing to having continuous contact during transportation.

Alistair Group has committed to implement systems or procedures to track the progress of cyanide shipments and implement inventory controls and/or chain of custody documentation to prevent loss of cyanide during shipment.

Alistair Group utilise an online vehicle tracking system that tracks the location of their fleet through a GPS. This system is monitored by the Fleet Managers. As part of this system alerts are issued when vehicles are stopped, speeding or deviate from general route area.

Additionally, the Container Checking Slip and Container Tracking Checklist provide a hard copy process to track the cyanide on its route to the mine site.

The transporter has committed to provide shipping records indicating the amount of cyanide in transit and Material Safety Data Sheets with cyanide shipments.

A delivery docket related to the chemical travels with the product in the vehicle. It includes information related to: delivery date, delivery instructions, customer order number, item code, item description and quantity (including weight). Pre-departure checks include checking that MSDSs are available during transport.

Alistair Group does not currently subcontract handling or transportation 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**

**Alistair Group is**

in substantial compliance with

**Transport Practice 2.1**

not in compliance with

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

Transport Practice 2.1 requiring transporters design, construct and operate cyanide trans-shipping depots and interim storage sites to prevent release and exposures is NOT APPLICABLE to Alistair Group.

Within the scope of this audit, there are no trans-shipping depots or interim storage sites, as defined in the audit protocol.

Storage in transit may occur at Alistair Group's Dar es Salaam Depot in the event that receipt at the port is delayed. In this event, containers will not be removed from the trailers and the vehicles will only be parked for a maximum of 24 hours

## 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**

**Alistair Group is**

in substantial compliance with

**Transport Practice 3.1**

not in compliance with

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

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

Alistair Group has committed to develop and implement an Emergency Response Plan. The CTMP covers General Emergency Response (Cyanide Briquettes) and Spillage Emergency Response.

Alistair Group has committed to develop a plan appropriate for the selected transportation route or interim storage facility that also considers the physical and chemical forms of cyanide. The scope of the CTMP is for the transport of solid cyanide throughout the African continent by road.

The general emergency response is suitable for solid. Specific emergency response actions are then provided for specific scenarios determined to be plausible for transporting solid cyanide by road.

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The CTMP plan does consider the method of transport. The CTMP is only applicable to road transport. The key emergency scenarios are road and vehicle related.

Alistair Group has committed that the plan will consider all aspects of the transport infrastructure (e.g. condition of the road, railway, and port). The CTMP and the *Procedure for Selecting, Risk Assessing and Re-Evaluating Cyanide Transport Routes* does consider all transport infrastructure.

The consideration of transport infrastructure has also been undertaken through route risk assessments. Route risk assessments detail the condition of the road, traffic hazards, intersections and issues to be managed. Alistair Group has committed that the plan will consider the design of the transport vehicle (e.g. single or double walled, top or bottom unloading) or storage facility

Alistair Group has committed that the plan will consider the design of the transport vehicle (e.g. single or double walled, top or bottom unloading) or storage facility. Alistair Group only transports cyanide truck. The CTMP broadly covers the type of vehicle and how the cyanide is transported. It confirms that only one container of cyanide will be loaded onto each truck.

The emergency response actions relate to incidents involving isotainers. Alistair Group has committed that the plan will include descriptions of response actions, as appropriate for the anticipated emergency situation. The CTMP does include descriptions of response actions for anticipated emergency situations. The CTMP contains emergency response situations relevant to transporting cyanide briquettes by truck:

- Dry sodium cyanide spill - inside interim storage facility
- Dry sodium cyanide spill - outside interim storage facility
- Dry sodium cyanide spill - inside shipping container
- Sea container decontamination
- Handling wet sodium cyanide IBC's
- Dry sodium cyanide spill to waterway
- Decontamination of a spill of solid and/or liquid cyanide to soil
- Response to a fire involving sodium cyanide.

Alistair Group has committed that the plan will identify the roles of outside responders, medical facilities or communities in emergency response procedures

The CTMP does identify roles for outside responders and medical facilities.

The CTMP provides details of roles and responsibilities during an emergency. Those listed include outside responders and medical facilities. The stakeholders are identified during the route assessment and listed in the CTMP.

Communities do not have a role in emergency response.

The CTMP includes a distribution list that identifies the key stakeholders. The CTMP commits to providing a copy of the CTMP to the stakeholders.

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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**

**Alistair Group is**

in substantial compliance with

**Transport Practice 3.2**

not in compliance with

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

Alistair Group is in FULL COMPLIANCE with Transport Practice 3.2 requiring the operation designate appropriate response personnel and commit necessary resources for emergency response.

Alistair Group has committed to include in the plan descriptions of the specific emergency response duties and responsibilities of personnel. The CTMP provides descriptions of the specific emergency response duties and responsibilities of personnel.

Alistair Group has committed to include in the plan a list of all emergency response equipment that should be available during transport or along the transportation route. Appendix H of the CTMP includes a list of all the emergency equipment that the convoy vehicles must carry.

Alistair Group has committed to have available the necessary emergency response and health and safety equipment, including personal protective equipment during transport. The Auditor observed the response equipment packaged appropriately for transport with cyanide.

Alistair Group has committed to ensure that transport vehicle operators receive initial and periodic refresher training in emergency response procedures including implementation of the Emergency Response Plan.

Section 6 of the CTMP lists the training modules to be completed by all cyanide convoy personnel. Both the Drivers Cyanide Awareness Training and the Advanced Cyanide Awareness Training include a section on emergency response tailored to the expected roles and responsibilities of the trainees. Alistair Group has committed to implement procedures to inspect emergency response equipment and assure its availability when required.

Alistair Group has developed the Truck and Trailer Inspection Checklist that includes HSE equipment.

Alistair Group does not currently subcontract handling or transportation of cyanide.

**2.3.3 Transport Practice 3.3**

**Develop procedures for internal and external emergency notification and reporting.**

**in full compliance with**

**Alistair Group is**

in substantial compliance with

**Transport Practice 3.3**

not in compliance with

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

Alistair Group is in FULL COMPLIANCE with Transport Practice 3.3 requiring the operating develop procedures for internal and external emergency notification and reporting.

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Alistair Group has committed to develop procedures and current contact information for notifying the shipper, the receiver/consignee, regulatory agencies, outside response providers, medical facilities and potentially affected communities of an emergency and to implement systems to ensure that internal and external emergency notification and reporting procedures are kept current.

The Cyanide Transport Emergency Contact list provides the required response to notify the required parties. This requires the Convoy Leader to contact "Contact 1" (key person at Alistair Group). They are then required to contact the supplier and others as per the procedure. This list includes numbers for suppliers, client contacts and supporting services, police and hospitals for Tanzania, Rwanda, Burundi and Kenya.

Section 7 of CTMP also details the Emergency Plan Activation:

- *In the event of an accident/incident taking place during the transport of sodium cyanide the Convoy Leader will call CONTACT 1 to notify them of the incident.*
- *CONTACT 1 takes charge to determine additional details from the caller at the incident scene using the Situation Appraisal Form (Next Page) to provide information of the incident for anyone who may be involved in the emergency.*

The Cyanide Transport Emergency Contact List commits to regular reviews.

**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**

**Alistair Group is**

in substantial compliance with

**Transport Practice 3.4**

not in compliance with

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

Alistair Group 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.

Alistair Group has committed to implement procedures for remediation, 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.

The *Response Guide Scenarios* in Section 9 of the CTMP detail the required neutralization process based on the scenario.

Alistair Group has committed that its procedures will prohibit the use of chemicals such as sodium hypochlorite, ferrous sulphate and hydrogen peroxide to treat cyanide that has been released into surface water

The plans do prohibit the use of chemicals such as sodium hypochlorite, ferrous sulphate and hydrogen peroxide to treat cyanide that has been released into surface water.

SERG 6 Dry Sodium Cyanide Spill to Waterway states that:

*Sodium hypochlorite, hydrogen peroxide and ferrous sulphate **must never be used** to treat cyanide that has been released into natural surface water bodies.*

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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

**Alistair Group is**

in substantial compliance with

**Transport Practice 3.5**

not in compliance with

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

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

Alistair Group has committed to include in the plan provisions for periodically conducting mock emergency drills and are they being implemented. The CTMP details the exercises and drills that are to be carried out. These include:

- Tabletop exercises carried out at least every twelve months.
- Emergency response simulation drills at least at least annually.
- Full scale incident scenario every three years. These will include interactions with external agencies.

Alistair Group has committed to include in the plan a procedure to evaluate the Plan’s performance after its implementation and revise it as needed, and have they been implemented. The CTMP states that:

*After a both exercises and real time incidents, the overall response will be evaluated to determine the effectiveness of the plan. The plan will then be updated and modified as necessary*

- *Procedures are correct and are known*
- *Identify any shortcomings*
- *Identify where procedural changes are required*
- *Identify where additional or upgrade training or equipment is required.*

**3.0 LIMITATIONS**

Your attention is drawn to the document - “Limitations”, which is included as Appendix A to this report. The statements presented in this document are intended to advise you of what your realistic expectations of this report should be. The document is not intended to reduce the level of responsibility accepted by Golder, but rather to ensure that all parties who may rely on this report are aware of the responsibilities each assumes in so doing.

Alistair Group  
Name of Facility

  
Signature of Lead Auditor

24 February 2014  
Date



## Report Signature Page

**GOLDER ASSOCIATES PTY LTD**

A handwritten signature in black ink, appearing to read "Mike Woods", written over a light blue horizontal line.

Mike Woods  
ICMC Lead Auditor and ICMC Transportation Expert

RJB/EWC/vb

A.B.N. 64 006 107 857

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# **APPENDIX A**

## **Limitations**



## LIMITATIONS

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