



June 2015

## INTERNATIONAL CYANIDE MANAGEMENT CODE

# Bolloré Africa Logistics Transportation Certification Audit, Ivory Coast, Summary Audit Report

**Submitted to:**

International Cyanide  
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REPORT

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**Distribution:**

- 1 Copy – International Cyanide Management Institute
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### APPENDICES

#### APPENDIX A

Limitations



## 1.0 INTRODUCTION

### 1.1 Operational Information

**Name of Transportation Facility:** Bolloré Africa Logistics – Cote d'Ivoire (AL Ivory Coast)  
**Name of Facility Owner:** Not Applicable  
**Name of Facility Operator:** Bolloré Africa Logistics  
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#### 1.1.1 Bolloré Africa Logistics

The Bolloré Group was founded in 1822 and the Group's principal activities include: transport and logistics (freight forwarding and stevedoring and railways); plastic films for capacitors and packaging; electric batteries, thin papers and energy distribution.

The African transportation arm of the Bolloré Group is managed by Bolloré Africa Logistics; which has been established for more than 50 years in 55 countries including 45 in Africa and plays a key role in port activity, terrestrial transport and tailor-made logistics solutions.

#### 1.1.2 Road Transportation

AL Ivory Coast transports cyanide that is imported to Ivory Coast through the Port of Abidjan. AL Ivory Coast currently transports cyanide between the Port of Abidjan and Agbaou Gold Mine in the Ivory Coast.

AL Ivory Coast transports solid sodium cyanide as a >95% pure white briquette. The cyanide briquettes are packaged in Intermediate Bulk Containers (IBCs) of between 1000 to 1200 kg capacities. The briquettes are stored within a woven polypropylene bag, sealed with a polyethylene plastic liner, within a wooden crate. Consignments of stock are transported in standard shipping containers (sea containers) of up to a maximum of 24.5 tonnes. Transport of cyanide is carried out in convoy at a rate of one container per truck.

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### **1.1.3 Trans-Shipping Depots or Interim Storage Sites**

Within the scope of this audit, there are no trans-shipping depots or interim storage sites, as defined in the audit protocol. Temporary storage in transit does occur at the Port of Abidjan while formalities such as customs clearance and carrier releases are performed. Once formalities are complete, the cyanide containers are collected from the Port of Abidjan and taken to the AL Ivory Coast transport storage yard where they are stored on the truck overnight in preparation for convoy departure at 0500 hrs the following morning. At no stage is the cyanide removed from the trucks or containers prior to unloading at the customer (Agbaou Gold Mine) in the Ivory Coast.

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## 1.2 Auditors Findings and Attestation

AL Ivory Coast 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:** Edward Clerk, CEnvP (112), Exemplar Global (020778)  
**Email:** eclerk@golder.com.au

## 1.3 Name and Signatures of Other Auditors:

Name	Position	Signature	Date
Edward Clerk	Lead Auditor and Transport Technical Specialist		8 June 2015

## 1.4 Dates of Audit

The Certification Transport Audit of AL Ivory Coast was undertaken over two (2) days over the period Monday 9 to Tuesday 10 February 2015.

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

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

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## 2.0 CONSIGNOR SUMMARY

### 2.1 Principle 1 – Transport

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

#### 2.1.1 Transport Practice 1.1

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

AL Ivory Coast is  in full compliance with **Transport Practice 1.1**  
 in substantial compliance with  
 not in compliance with

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

AL Ivory Coast is in FULL COMPLIANCE with Transport Practice 1.1 requiring cyanide transport routes to be selected to minimise the potential for accidents and releases.

AL Ivory Coast, through its parent company Bolloré has developed and implemented a procedure to guide the selection of transport routes to minimise the potential for accidents and releases or the potential impacts of accidents and releases. AL Ivory Coast has conducted road surveys for the selected routes.

AL Ivory Coast has selected a main transport route that is utilised to transport cyanide from the Port of Abidjan to the Agbaou Gold Mine. A secondary route has been assessed, but this has been deemed not suitable for trucks due to a number of established villages present along the route.

Hazards identified during the Road Survey are risk assessed using either the *Bolloré Risk Evaluation Matrix* or client risk assessment tools depending on customer requirements. Once risk assessed, prevention and/or protective measures are identified to make the resulting risks more acceptable.

AL Ivory Coast has implemented a procedure requiring annual route surveys and has a process of obtaining feedback on route conditions after each convoy.

AL Ivory Coast has developed a *Road Survey Report* for the route from the Port of Abidjan to the Mine of Agbaou which contains photographs and details specific hazards identified for each section of the transport route that have been risk assessed. The appropriate mitigation measures have been identified, agreed upon by relevant stakeholders and recorded.

AL Ivory Coast has consulted as necessary with stakeholders including applicable government agencies in the selection of routes and development of cyanide management measures.

Convoys with escorts are used as a means of managing the risks of the road conditions and responding to emergencies. In the event of an incident, primary emergency response is coordinated by AL Ivory Coast personnel present with the convoy.

Copies of survey sheets supplied to medical facilities detailing their capabilities along the route have been retained confirming that AL Ivory Coast has liaised with medical facilities regarding their feedback.

Copies of escort request letters have been retained, confirming that AL Ivory Coast has liaised with government agencies.

AL Ivory Coast does not subcontract any of its cyanide transport operations within the scope of this audit.

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### 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

AL Ivory Coast is

in substantial compliance with

**Transport Practice 1.2**

not in compliance with

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

AL Ivory Coast 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.

AL Ivory Coast uses only trained, qualified and licensed operators to operate its transport vehicles.

All personnel operating cyanide handling and transport equipment have been trained to perform their jobs in a manner that minimises the potential for cyanide releases and exposures. The *Cyanide Transport Management Plan* and *Training Matrix* detail training requirements for drivers and escort personnel listing the following mandatory transportation training. A review of training records and interviews with escort and transport drivers confirmed that training has been completed in accordance with the operations commitments.

AL Ivory Coast does not subcontract its cyanide transport operations.

### 2.1.3 Transport Practice 1.3

Ensure that transport equipment is suitable for the cyanide shipment.

in full compliance with

AL Ivory Coast is

in substantial compliance with

**Transport Practice 1.3**

not in compliance with

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

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

AL Ivory Coast only uses equipment designed and maintained to operate within the cyanide loads it will be handling. Equipment consists of road vehicles (tractor, semi-trailers) that were purchased to a design specification appropriate for the cyanide transport task. Vehicle power, axel loading and other parameters are set by the manufacturer and the loads are within the legal capacities of Ivory Coast public roads.

All trucks and trailers dedicated to the cyanide delivery task are capable of carrying the one fully loaded cyanide container. No other load bearing equipment is used by AL Ivory Coast.

Maintenance of equipment is conducted by the workshop in Abidjan. Upon completion of a transport mission each truck and trailer are required to pass through the maintenance workshop for assessment. The assessment corrects deficiencies identified during the convoy as well as allows scheduled services to be completed.

The Chief of Escort inspects prime movers and trailers for overloading and sign of stress prior to departure.

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The *Cyanide Transport Management Plan* requires that the Chief of Escort ensure that loading is in conformity with the laws of the West African Economic and Monetary Union (UEMOA), with the authorizations acquired where necessary.

AL Ivory Coast does not subcontract any of its cyanide transport operations within the scope of this audit.

**2.1.4 Transport Practice 1.4**

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

in full compliance with

**AL Ivory Coast is**

in substantial compliance with

**Transport Practice 1.4**

not in compliance with

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

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

AL Ivory Coast has procedures to ensure that the cyanide is transported in a manner that maintains the integrity of the producer’s packaging. These comprise of checks at the port, on route and at the mine site prior to unloading.

AL Ivory Coast transports cyanide for Code certified cyanide producer, who have systems in place to ensure their containers are labelled in accordance with the International Maritime Dangerous Goods Code (IMDG) and as required by local regulations or international standards. The Ivory Coast does not have any dangerous goods legislation. As a control measure, the cyanide is trucked in convoy under the escort of persons who have received training in cyanide emergency response and dangerous goods training.

AL Ivory Coast has implemented a safety program for cyanide transport that includes:

- Vehicle inspections. The *Cyanide Transport Management Plan* requires that the Chief of Escort conduct a truck and trailer inspection utilising prior to each departure of a cyanide convoy to ensure that the trucks transporting the cyanide consignment will be roadworthy; therefore reducing the risks of incidents/accidents due to mechanical faults. Any defects identified are addressed prior to departure.
- Preventative maintenance - Upon completion of a transport mission each truck and trailer are required to pass through the maintenance workshop for assessment. The assessment corrects deficiencies identified during the convoy as well as allows scheduled services to be completed. Maintenance scheduling and records are managed through a maintenance database (GESPAR) and used to schedule maintenance activities.
- Limitations on operator or drivers’ hours - The *Cyanide Transport Management Plan* states that transport of cyanide is prohibited during the night, the allowed convoy hours are from 05:00 in the morning to 18:30 in the evening. Authorised exceptions allow the convoy to depart at 04:30 in the morning to avoid traffic congestion. The journey is approximately five (5) hours from the port to the mine site. The Chief of Escort ensures that required rest stops at every three (3) hours are respected throughout the transportation journey.
- Procedures to prevent loads from shifting - At the Port, containers must be fastened immediately after being loaded onto trailers. Containers are secured using twist-locks, which are designed and constructed to international transport standards. Additional to the twist-locks straps may be utilised to reinforce the loads.

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- Procedures to modify or suspend transport if conditions such as severe weather or civil unrest are encountered - The *Cyanide Transport Management Plan* notes that the Chief of Escort will manage the convoy suitably in adverse conditions. This will include the convoy stopping and only continuing the journey after evaluation and assessment of the situation by the Chief of Escort.
- Drug abuse prevention - Bolloré has a Zero Tolerance Drugs and Alcohol Policy. The Policy advises that abuse of alcohol and drugs will be prevented by education of workers, refusing to admit personnel under the influence of alcohol or drugs onto the work site, ensuring that personnel dismissed for drug and alcohol abuse are not eligible to any of the company's sites.
- Retention of records documenting that the above activities have been conducted - Records are retained confirming the above activities have been conducted.

AL Ivory Coast does not subcontract any of its cyanide transport operations within the scope of this audit.

### 2.1.5 Transport Practice 1.5

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

in full compliance with

**AL Ivory Coast 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 AL Ivory Coast.

AL Ivory Coast does not 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

**AL Ivory Coast is**

in substantial compliance with

**Transport Practice 1.6**

not in compliance with

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

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

All vehicles have communication systems, each vehicle in the convoy (including the escort team) are equipped with walkie-talkies, cell phones and a Bolloré number pertaining to the fleet, which allows them to communicate for free.

Communication equipment is tested prior to departure for each cyanide convoy, the material of communication is tested and batteries are charged and reloaded. The chargers are also carried with the convoys.

Communication blackout areas are checked during the road survey process and the *Road Survey Report* details the available mobile phone coverage and network along the entire transport route.

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Escort personnel must call the logistics person in charge of Transport and Lifting Management in Abidjan at designated Call Points daily along the route. The logistics person in charge of Transport and Lifting Management will then contact the Mine (via email); all communications are logged in the communication log sheet. In addition, all vehicles in the convoy have global positioning system (GPS) tracking. The GPS tracking system continuously transmits position and other data from the convoy throughout the trip. Data collected includes speed, position/movements and duration of pauses/stop overs.

AL Ivory Coast implements chain of custody procedures to prevent loss of cyanide during shipment. The Escort Leader conducts a visual inspection of the containers once they are loaded onto the trucks at the Port to ensure they are intact and prior to departure at the port, on route and at the mine site prior to unloading. Once delivered, the mine site representative signs a form acknowledging that the consignment was received in good condition and unopened.

Shipping papers and Material Safety Data Sheets accompany each cyanide convoy.

AL Ivory Coast does not subcontract any of its cyanide transport operations within the scope of this audit.

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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

AL Ivory Coast 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 Bolloré.

Within the scope of this audit, there are no trans-shipping depots or interim storage sites, as defined in the audit protocol. Temporary storage in transit does occur at the Port of Abidjan while formalities such as customs clearance and carrier releases are performed. Once formalities are complete, the cyanide containers are collected from the Port of Abidjan and taken to the Bolloré transport storage yard where they are stored on the truck overnight in preparation for convoy departure at 0500 hrs the following morning. At no stage is the cyanide removed from the trucks or containers prior to unloading at the customer (Agbaou Gold Mine) in the Ivory Coast.

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## 2.3 Principle 3 – Emergency Response

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

### 2.3.1 Transport Practice 3.1

**Prepare detailed Emergency Response Plans for potential cyanide releases.**

in full compliance with

**AL Ivory Coast is**

in substantial compliance with

**Transport Practice 3.1**

not in compliance with

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

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

AL Ivory Coast has developed detailed emergency response documents to cover emergency response for potential cyanide emergencies specific to the design of the vehicles and transportation routes used by AL Ivory Coast. The information is contained within the *Plan of Emergency Intervention – Transport of Sodium Cyanide - Emergency Response Plan (ERP)* and the route specific *Cyanide Transport Management Plan*.

The *ERP* and *Cyanide Transport Management Plan* are based on road transportation between to the Port of Abidjan and the Agbaou Gold Mine in the Ivory Coast.

The plans are appropriate for the selected transportation route and they consider relevant aspects of the transport infrastructure through route risk assessments. The route evaluation process, route hazard/risk assessment process and operational experience was used by AL Ivory Coast to identify the following five (5) examples of possible emergency scenarios detailing the appropriate response actions required for each:

1. Incident without discharge/without impact on the integrity of the container/without any injuries to personnel (e.g. breakdown)
2. An incident without discharge/without impact on the integrity of the container/with injury(ies) to a single personnel (e.g. vehicle-pedestrian interaction)
3. Incident without discharge/with impact on the integrity of the container/without victim (e.g. damage to container/container has fallen off trailer)
4. Incident with discharge/with injury(ies) to person(s) (e.g. container is punctured and cyanide briquettes are released to the ground)
5. Incident with discharge to a waterway/with injury(ies) to person(s) (e.g. container is punctured and cyanide briquettes are released to a waterway).

The *ERP* details both internal and external (outside responders) responsibilities in the event of an emergency. Section 2 outlines the role and responsibilities of the following outside responders in the event of an emergency:

- Escort Assistant(s)
- Fire Service

In the event of an emergency, the Chief of Escort will maintain overall responsibility and coordination.

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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

**AL Ivory Coast is**

in substantial compliance with

**Transport Practice 3.2**

not in compliance with

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

AL Ivory Coast is in FULL COMPLIANCE with Transport Practice 3.2 requiring it designates appropriate response personnel and commit necessary resources for emergency response.

AL Ivory Coast provides emergency response training of appropriate personnel. AL Ivory Coast has developed and implemented a training scheme for its drivers and escort personnel. The minimum training requirements with their associated frequencies are:

- Cyanide awareness (including appropriate use of PPE) (annual)
- First aid (once every two years)
- Fire extinguisher use (once every two years)
- HAZMAT (once every two years)
- Emergency response exercises (at least once a year)

A review of on-site driver and escort personnel training records against the *Training Matrix* assessed that AL Ivory Coast has an adequate number of suitably trained personnel to provide emergency response capabilities during cyanide transportation.

The ERP identifies the specific emergency response duties and responsibilities of personnel for the five (5) scenarios. Descriptions of the specific emergency response duties and responsibilities for both internal and external responders are detailed within section 2 of the *ERP* for all response scenarios. These personnel include:

- Chief of Escort
- Escort Assistant(s)
- Truck driver(s)
- Assistant driver(s)
- Fire Service

In the event of an emergency, the Chief of Escort will maintain overall responsibility and coordination.

All drivers and escort team personnel are taken through emergency response drills on how to handle cyanide road accidents and spills.

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AL Ivory Coast maintains a list of all of its emergency response and health and safety equipment (including PPE) that should be available during transport. The quantity and condition of the equipment is checked as part of the *Safety and Communication Pre-Departure Checklist* and *First Aid Box Checklist*.

Records are retained showing that checks of emergency equipment are being undertaken correctly prior to convoy departure.

AL Ivory Coast does not subcontract any of its cyanide transport operations within the scope of this audit.

**2.3.3 Transport Practice 3.3**

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

in full compliance with

**AL Ivory Coast is**

in substantial compliance with

**Transport Practice 3.3**

not in compliance with

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

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

The ERP contains 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.

AL Ivory Coast has procedures that include current contact information for notifying outside response providers, and medical facilities of an emergency. Section 1.3 of the ERP states that the Chief of Escort is responsible for contacting external entities in cases of emergency.

A list of emergency contact details for authorities, emergency responders and medical facilities are provided in procedures.

AL Ivory Coast has systems in place to ensure that internal and external emergency notification and reporting procedures are kept current. The *Cyanide Transport Management Plan* also notes that checking of the emergency contact numbers for hospitals must be carried out every year.

**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

**AL Ivory Coast is**

in substantial compliance with

**Transport Practice 3.4**

not in compliance with

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

AL Ivory Coast is in FULL COMPLIANCE with Transport Practice 3.4 requiring that they develop procedures for remediation of releases that recognise the additional hazards of cyanide treatment.

AL Ivory Coast has a 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.

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The *ERP* includes descriptions of the response actions for an anticipated emergency situation. The *ERP* includes the following sections covering clean-up and decontamination:

- Procedure for neutralising cyanide briquettes
- Procedure for cleaning Personal Protective Equipment (PPE) and associated equipment

The *Instruction in the Event of an Incident – Cyanide Transport Procedure* contains further detailed information regarding spill response requirements and states that in the event of a spill absorbent material and sodium hypochlorite are used to absorb and neutralise the spill. The absorbent material is then collected with a shovel and placed in suitable plastic bags. All bags containing the neutralised product shall be transferred to the mine site for appropriate treatment and disposal.

AL Ivory Coast prohibits the use of chemicals such as sodium hypochlorite, ferrous sulfate and hydrogen peroxide to treat cyanide that has been released into surface water.

The *Cyanide Transport Management Plan* states:

*“In the event of discharge in a water current or a river, it is necessary to avoid any use of neutralizing! No chemical product (hypochlorite of sodium, ferrous sulfate and hydrogen peroxide) can be used there in these cases.”*

### 2.3.5 Transport Practice 3.5

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

in full compliance with

**AL Ivory Coast is**

in substantial compliance with

**Transport Practice 3.5**

not in compliance with

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

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

The *Cyanide Transport Management Plan* (Section 2 ‘Management and Revision of the Documents’) contains provisions for periodically reviewing and evaluating the documentation for adequacy and ensuring their implementation. A review of all provided documentation assessed that listed review frequencies are being adhered to, therefore indicating that they are kept current.

The *Cyanide Transport Management Plan* states that practical exercises for emergency response shall be conducted annually at a minimum. A Training Plan for 2015 has been provided indicating three (3) planned drill dates for the year.

Evidence was provided in the form of drill reports that mock drill exercises are being undertaken by AL Ivory Coast.

AL Ivory Coast also has a procedure (*Incident – Accident Management Procedure*) requiring the emergency documents to be updated after an incident. AL Ivory coast has not had any incidents triggering the implementation of the *ERP*.

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### **3.0 LIMITATIONS**

Your attention is drawn to the document – “Limitations”, which is included as Appendix A to this report. This document is intended to assist you in ensuring that your expectations of this report are realistic, and that you understand the inherent limitations of a report of this nature. If you are uncertain as to whether this report is appropriate for any particular purpose please discuss this issue with us.

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## Report Signature Page

**GOLDER ASSOCIATES PTY LTD**

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

Edward Clerk  
Associate, ICMC Lead Auditor and ICMC Transportation Expert

LS/EWC/eh

A.B.N. 64 006 107 857

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# **APPENDIX A**

## **Limitations**



## LIMITATIONS

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