

INTERNATIONAL CYANIDE MANAGEMENT CODE

Mapai Transport, **Pre-Operational Transport Certification Audit,** Papua New Guinea, **Summary Audit Report**

Submitted to:

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

Mapai Transport P.O. Box 4021 Lae, Morobe Province

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Distribution:

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APPENDIX A
Important Information





1.0 INTRODUCTION

1.1 Operational Information

Name of Transportation Facility: Mapai Transport Ltd

Name of Facility Owner: Not Applicable

Name of Facility Operator: Mapai Transport Ltd

Name of Responsible Manager: Grant Wakerley, General Manager

Address: Rigel Street, East Taraka

PO Box 4021

Lae

State/Province: Morobe Province

Country: Papua New Guinea

Telephone: +675 475 5505

Fax: None

Email: gwakerley@mapai.com.pg

1.2 Mapai Transport

Mapai Transport Ltd (Mapai) is a transportation and logistics company engaged in the transportation of goods within the Morobe Province of Papua New Guinea. Mapai is an ICMC signatory.

The scope of the Mapai Pre-Operational Certification Audit is the road transportation of cyanide from the Port of Lae, PNG to customer mine sites within PNG. The Port of Lae is not included. At the time of the Transport Certification Audit, Mapai had not commenced transportation of cyanide.

1.3 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 the mines depot in Lae 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.

Mapai Transport

Name of Facility

Signature of Lead Auditor

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5 April 2016





1.4 Auditors Findings and Attestation

in full compliance with

Mapai Transport is:
in substantial compliance with Cyanide Management Code

not in compliance with

Audit Company: Golder Associates Pty Ltd

Audit Team Leader: Mike Woods, Exemplar Global (113792)

Email: mwoods@golder.com.au

1.5 Name and Signatures of Other Auditors:

Name	Position	Signature	Date
Mike Woods	Lead Auditor and Technical Specialist	Mades	5 April 2016

1.6 Dates of Audit

The ICMC Certification Audit was conducted over two days between 16 and 18 February 2016.

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.

Mapai Transport

Name of Facility

Signature of Lead Auditor

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5 April 2016

Date



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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.		
	$oxed{\boxtimes}$ in full compliance with	
Mapai is	in substantial compliance with	Transport Practice 1.1
	not in compliance with	

Summarise the basis for this Finding/Deficiencies Identified:

Mapai Transport 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.

Mapai Transport 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. Mapai Transport has developed a management system and is in the process of implementing the system.

The draft *Cyanide Transport Management Plan* (CTMP) provides the guidance to the management of cyanide transport at Mapai Transport supported by specific procedures for route selection and assessment. Section 3.0 of the draft CTMP outlines the risk assessment process, the personnel to be involved and the factors to be considered in the assessment. The factors to be included in the assessment include those detailed in the Code.

Mapai Transport has developed a draft CTMP that details the process to be followed and is in the process of implementing the plan. The draft CTMP describes the control measures to be implemented via a Journey Management Plan that will be used to guide the convoys. The Journey Management Plan (JMP) will be used to communicate the controls for individual convoys and the draft CTMP details the standard convoy arrangements.

The draft CTMP includes provisions for collecting feedback from previous convoys and reviewing this in the JMP development. The draft CTMP notes that a full route assessment will be completed every two years.

The draft CTMP details the route assessment process and how it is to be documented and also provided details on standard controls. The measures taken to control risks are to be documented in the JMP. Mapai Transport has developed draft plans, checklists and templates for this purpose.

The draft CTMP details the process and includes meeting with stakeholders in the route assessment process. Mapai Transport's process is to utilise the knowledge and network of the mine client to facilitate the consultation process together with Mapai Transport Community Liaison officer.

Where routes present special safety or security concerns, Mapai Transport has committed to use convoys, escorts and other additional safety and security measures to address the concern. These are outlined in the draft CTMP.

Mapai Transport has committed to advise external responders and medical facilities of their roles and/or mutual aid during an emergency response. The draft Emergency Response Plan has identified external resources that may be involved in an emergency response situation.

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The draft Plan details the interface with the mine customer and supplier and the General Manager advised that meetings are held with identified stakeholders as part of the development process.

Mapai Transport does not currently subcontract handling or transportation of cyanide.

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			
Mapai is	in substantial compliance with Transport Practice 1.2			
	not in compliance with			
Summaris	se the basis for this Finding/Deficiencies Identified:			
•	nsport is in FULL COMPLIANCE with Transport Practice 1.2 requiring personnel operating cyanide nd transport equipment can perform their jobs with minimum risk to communities and the ent.			
vehicles. and opera	nsport has committed to only use trained, qualified and licensed operators to operate its transport Section 4.5 of the draft CTMP details the training and qualifications that are required of drivers tors to perform their jobs in a manner that minimises the potential for cyanide release or . Training requirements and qualifications detailed include:			
Curre	ent driver license for class of vehicle			
Cyan	ide Awareness Training			
Fatig	ue management			
Drive	r competency			
Cyan	ide transport emergency procedures			
Mapai Tra	nsport does not currently subcontract handling or transportation of cyanide.			
2.1.3	Transport Practice 1.3			
Ensure th	at transport equipment is suitable for the cyanide shipment.			
	in full compliance with			
Mapai is	in substantial compliance with Transport Practice 1.3			
	not in compliance with			
Summaris	se the basis for this Finding/Deficiencies Identified:			
•	nsport is in FULL COMPLIANCE with Transport Practice 1.3 requiring that transport equipment is r the cyanide shipment.			
	Marco			
Mapai Trans	<u>5 April 2016</u>			

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Date

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Mapai Transport has committed to only use equipment designed and maintained to operate within the loads it will be handling.

The General Manager advised that the prime movers that will be used are Kenworth 658/659 models. These have been used by Mapai Transport for 20+ years and have been Mapai Transport's vehicle of choice for the Porgera Mine site cartage. They have proven to be the most reliable and cost effective vehicle to handle the work load, road conditions in all weather conditions.

The three axle Step deck trailers that are used were designed initially for the cartage of heavy single containers to the mine site. The General Manager advised that they provide enough weight over the drive axles for traction whilst being engineered to have a load carrying capacity of 26 tons in a single 20ft FCL. Mapai Transport has over 70 tri axle step deck trailers.

Mapai Transport has a preventative maintenance process in place and also pre and post departure checks. The *Convoy Checklists* are included as appendices to the draft CTMP and detail the visual inspections to be completed for truck, trailer and escort vehicles. The trailer inspection includes an assessment of tyres, lights, twist locks, GPS system and general condition.

Mapai Transport uses the software "FleetMate" to control and capture all of the repairs and maintenance of the fleet (heavy and light vehicles). The four depots are linked and the workshop in each depot have access so that all of the work is captured.

Each vehicle/trailer unit goes across a pit for an inspection, including a brake shoe inspection following a trip up the highway - any faults identified are then repaired prior to being released by Workshop for loading. There is a tiered "A" and "B" servicing regime.

The draft CTMP details the general requirements for convoys and the basis of transport is one container of cyanide will be loaded onto each truck.

Mapai Transport does not currently subcontract handling or transportation of cyanide.

Develop and implement a safety program for transport of cyanide.

2.1.4 Transport Practice 1.4

	oxtimes in full compliance with	
Mapai is	in substantial compliance with	Transport Practice 1.4
	not in compliance with	
Summarise the basis fo	r this Finding/Deficiencies Identified:	
Mapai Transport is in FULL COMPLIANCE with Transport Practice 1.4 requiring the operation develop and implement a safety programme for transport of cyanide.		

Mapai Transport 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 draft CTMP includes a *Chain of Custody* checklist that details the seal number and condition on each container within the convoy prior to departure and then checked and signed off once delivered to the site, checking the seals are intact and consistent with consignment documentation.

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The draft CTMP details the signage and placarding requirements. The draft CTMP notes that transport will be conducted in accordance with Australian Standards with Dangerous Goods diamond placed on the front and rear or the vehicles.

Mapai Transport has committed to complete vehicle inspections. Mapai Transport has developed a number of checklists to cover vehicle, trailer and escort vehicles by operators prior to shipment. In addition to these checks. Mechanical inspections are preformed following each trip prior to be release to transport again.

The operation has implemented a tiered preventative maintenance program with an "A" and "B" service 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.

Mapai Transport has committed to limit driver hours. The draft CTMP details the fatigue management training to be provided and the JMP is used to set journey timeframes and the journey is controlled by the escort commander. Transport is during daylight hours.

Mapai Transport has developed a number of checklists that include checks on twist locks for the containers and regular checks through the trip to the mine site.

The draft CTMP details the process for modifying or suspending transportation. The escort commander is to liaise with the DG Manager and Mapai Transport has a fully manned 24/7 control centre to facilitate communication and tracking of transport.

The company has developed a substance abuse policy covering alcohol and drugs that includes provisions for random and for cause testing. The draft CTMP also provides rules for convoys including prohibiting alcohol consumption. Training is provided through the induction process on company standards

The draft CTMP details the records to retained including convoy documentation, training records, maintenance records, incidents and corrective actions.

2.1.5 Transport Practice 1.5

Follow international s	standards for transportation of cyanide by	sea and air.
	igtimes in full compliance with	
Mapai is	in substantial compliance with	Transport Practice 1.5
	not in compliance with	
Summarise the basis	for this Finding/Deficiencies Identified:	
	.5 requiring the operation to follow internations APPLICABLE to Mapai Transport.	al standards for transportation of cyanide
Mapai Transport does audit.	not intend to transport consignments of cyanic	de by sea or air within the scope of this

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Signature of Lead Auditor

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2.1.6 Transport Practice 1.6

Track cyanide shipments t	o prevent losses during transport.	
	$oxed{\boxtimes}$ in full compliance with	
Mapai is	in substantial compliance with	Transport Practice 1.6
	not in compliance with	

Summarise the basis for this Finding/Deficiencies Identified:

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

Mapai Transport 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 draft CTMP confirms that these checks are to be completed prior to departure and trucks will not be loaded until repairs are completed.

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 Mapai Transport is committing to having continuous contact during transportation.

There are systems and procedures developed and implemented to track the progress of cyanide shipments. Mapai Transport utilises an online vehicle tracking system that tracks the location of its fleet through a GPS. This system is monitored by the operators in the 24/7 control centre. Additionally the escort commander is to check in at designate locations along the route. This is detailed in the draft CTMP.

Mapai Transport utilises an online vehicle tracking system that tracks the location of its fleet through a GPS. Additionally, the JMP documentation records the containers and trucks carrying the cyanide and the seal numbers are cross checked at the mine and signed off. Additionally the escort commander calls in a designated check points on the route to the mine. Completed documentation is retained.

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 the safety data sheets are available during transport.

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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.

release and expos	sures.	
2.2.1 Tran	sport Practice 2.1	
Store cyanide in a	a manner that minimises the potential for accide	ntal releases.
	in full compliance with	
Mapai is	in substantial compliance with	Transport Practice 2.1
	not in compliance with	
Summarise the ba	asis for this Finding/Deficiencies Identified:	
•	2.1 requiring transporters design, construct and open sites to prevent release and exposures is NOT AP	, , , , , ,
Within the scope of audit protocol.	f this audit, there are no trans-shipping depots or int	erim storage sites, as defined in the
	nay occur at the mines depot in Lae the event that re will not be removed from the trailers and the vehicles	
2.3 Princ	iple 3 - Emergency Response	
Protect communi- strategies and ca	ties and the environment through the developme pabilities.	ent of emergency response
2.3.1 Tran	sport Practice 3.1	
Prepare detailed I	Emergency Response Plans for potential cyanid	e releases.
Mapai is	in substantial compliance with	Transport Practice 3.1
	not in compliance with	
Summarise the ba	asis for this Finding/Deficiencies Identified:	
	in FULL COMPLIANCE with Transport Practice 3.1 by Response Plans for potential cyanide releases.	requiring the operation prepare
Mapai Transport ha	as committed to develop and implement an Emerge	ncy Response Plan.
A draft cyanide transport emergency management plan (CTEMP) has been developed and is being implemented. The draft CTEMP details Mapai Transport approach and processes for managing cyanide transport emergencies.		
	s based on the outcomes of the route assessment a raft CTEMP is for the transport of solid sodium cyan	

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Date

mine. There are no interim storage facilities are within the scope of this audit.





The draft CTEMP discusses the transport of solid cyanide by road. The general emergency response is suitable for the solid cyanide. Specific emergency response actions are then provided for specific scenarios plausible for transporting sodium cyanide by road. The emergency plan is to be informed by the route risk assessment process.

The draft CTMP and provides the process for Selecting, Risk Assessing and Re-Evaluating Cyanide Transport Routes does consider all transport infrastructure. This draft CTEMP discusses the route and links with the draft CTMP and route risk assessment documentation.

Mapai Transport only transports cyanide via prime mover and trailer. Cyanide is transported in IBCs within shipping containers and confirms that only one sea container of cyanide will be loaded onto each truck.

The draft CTEMP does include descriptions of response actions for anticipated emergency situations, including the requirement to seek advice from technical specialists. The draft CTMP contains emergency response situations relevant to transporting cyanide briquettes in IBCs in sea containers by road.

- Loss of containment dry conditions
- Loss of containment wet conditions
- Loss of container to deep gully or ravine
- Loss of container to waterway
- Response to a fire involving sodium cyanide.

The draft CTEMP does identify roles for outside responders and medical facilities.

The draft CTEMP provides details of roles and responsibilities during an emergency. Those listed include the mine and medical facilities and contact details are provided within the plan. Communities do not have a designated role in emergency response.

Mapai Transport commits to providing a copy of the draft CTMP to the stakeholders.

2.3.2 Transport Practice 3.2

Designate appropriate res response.	ponse personnel and commit necessary r	esources for emergency
	in full compliance with	
Mapai is	in substantial compliance with	Transport Practice 3.2
	not in compliance with	

Summarise the basis for this Finding/Deficiencies Identified:

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

Mapai Transport has committee to provide emergency response training of appropriate personnel.

Section 5 of the draft CTMP lists the training modules to be completed by personnel involved with cyanide transport and details that drivers and escort personnel will be trained in emergency response activities and will participate in mock emergency exercises.

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This is further detailed in Section 2.4 of the draft CTEMP and the training needs matrix appendix of the draft CTEMP. The draft CTMP outlines overall responsibilities for managing cyanide transport including emergencies. The draft CTEMP provides roles and responsibilities including those of the:

- Escort Commander
- Escort Response Team
- Site Communications Officer
- Emergency Response Team Leader
- Drivers
- Group Operations Manager.

Mapai Transport 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 C of the draft CTMP includes a list of all the emergency equipment that the convoy vehicles must carry.

Appendix C of the draft CTMP includes a list of all the emergency equipment that the convoy vehicles must carry. This equipment includes personnel protective equipment and the draft CTEMP outlines the training and frequency of training for use of the equipment.

Section 3.4 of the draft CTEMP lists the training modules to be completed and the validity of the training. Frequencies vary between annual and 2 yearly for operational aspects.

2.3.3 Transport Practice 3.3

r internal and external emergency notifica	ation and reporting.
oxtimes in full compliance with	
in substantial compliance with	Transport Practice 3.3
not in compliance with	
	 ☑ in full compliance with ☐ in substantial compliance with

Summarise the basis for this Finding/Deficiencies Identified:

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

Mapai Transport 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.

The draft CTEMP provides an escalation process that involves escalation through Mapai Transport and then to the mine customer. Contact details are provided for the potential stakeholders including the supplier, police, hospital and mine. Community notification is managed through the relationship with the mine.

The draft CTEMP includes a commitments to review:

- at twelve monthly intervals, or:
- after every incident which requires implementation of any element of response or recovery elements of the draft CTEMP;

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- after every exercise to test the arrangements contained within the plan;
- whenever there is a new, or a change to an existing, related procedure;
- when a risk assessment has identified a need for review;
- when there is a relevant organisational change.

The draft CTMP also includes commitments to provide stakeholders with copies of plans after every major update.

2.3.4 Transport Practice 3.4

Develop procedur treatment.	es for remediation of releases that recognise t	the additional hazards of cyanide
	☑ in full compliance with	
Mapai is	in substantial compliance with	Transport Practice 3.4
	not in compliance with	

Summarise the basis for this Finding/Deficiencies Identified:

Mapai Transport 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.

Mapai Transport 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 *Pre-incident Plans* (PIPs) in the draft CTEMP detail the required neutralization process based on the scenarios. 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.

PIP T7 states "hypochlorite and ferrous sulphate MUST NOT be allowed to enter any natural body of surface or ground water".

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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	
Mapai is	in substantial compliance with	Transport Practice 3.5
	not in compliance with	
Summarise the basi	s for this Finding/Deficiencies Identified:	

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

Mapai Transport has committed to include in the plan provisions for periodically reviewing and evaluating the Plan's adequacy and are they being implemented

The draft CTEMP includes a commitments to review:

- at twelve monthly intervals, or:
- after every incident which requires implementation of any element of Response or Recovery elements of the draft CTEMP
- after every exercise to test the arrangements contained within the plan
- whenever there is a new, or a change to an existing, related procedure
- when a risk assessment has identified a need for review
- when there is a relevant organisational change.

The draft CTMP also includes commitments to provide stakeholders with copies of plans after every major update.

The draft CTEMP details the training to be undertaken including exercises and mock drills. The draft CTEMP contains a commitment to undertake exercise annually based on scenarios identified through the risk assessment process. There are provisions for reviewing the plan after its implementation. It also includes provisions for review following exercises or where a risk assessment identifies the need for review.

IMPORTANT INFORMATION 3.0

Your attention is drawn to the document titled - "Important Information Relating to this Report", which is included in Appendix A of this report. The statements presented in that document are intended to inform a reader of the report about its proper use. There are important limitations as to who can use the report and how it can be used. It is important that a reader of the report understands and has realistic expectations about those matters. The Important Information document does not alter the obligations Golder Associates has under the contract between it and its client.

Mapai Transport Name of Facility

Signature of Lead Auditor

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Report Signature Page

GOLDER ASSOCIATES PTY LTD

Maderal

Mike Woods

EHS Specialist, ICMC Lead Auditor and ICMC Transportation Expert

MCW/EWC/asu

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APPENDIX A

Important Information





IMPORTANT INFORMATION RELATING TO THIS REPORT

The document ("Report") to which this page is attached and which this page forms a part of, has been issued by Golder Associates Pty Ltd ("Golder") subject to the important limitations and other qualifications set out below.

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