Cyanide Pre-Operational Transportation

Summary Audit Report

For The
International Cyanide Management Institute and
Transportadora Moscato Transporte Rodoviário Ltda.

Prepared by: NCABrasil Expert Auditors Ltd.
www.globalsheq.com

www.cyanidecode.org

July 2018

The International Cyanide Management Code (hereinafter “the Code”), this document, and other documents or information sources referenced at www.cyanidecode.org are believed to be reliable and were prepared in good faith from information reasonably available to the drafters. However, no guarantee is made as to the accuracy or completeness of any of these other documents or information sources. No guarantee is made in connection with the application of the Code, the additional documents available or the referenced materials to prevent hazards, accidents, incidents, or injury to employees and/or members of the public at any specific site where gold is extracted from ore by the cyanidation process. Compliance with this Code is not intended to and does not replace, contravene or otherwise alter the requirements of any specific national, state or local governmental statutes, laws, regulations, ordinances, or other requirements regarding the matters included herein. Compliance with this Code is entirely voluntary and is neither intended nor does it create, establish, or recognize any legally enforceable obligations or rights on the part of its signatories, supporters or any other parties.
SUMMARY AUDIT REPORT
FOR CYANIDE TRANSPORTATION OPERATIONS

Instructions

1. The basis for the finding and/or statement of deficiencies for each Transport Practice should be summarized in this Summary Audit Report. This should be done in a few sentences or a paragraph.

2. The name of the cyanide transportation operation, lead auditor signature and date of the audit must be inserted on the bottom of each page of this Summary Audit Report.

3. An operation undergoing a Code Verification Audit that is in substantial compliance must submit a Corrective Action Plan with the Summary Audit Report.

4. The Summary Audit Report and Corrective Action Plan, if appropriate, for a cyanide transportation operation undergoing a Code Verification Audit with all required signatures must be submitted in hard copy to:

   International Cyanide Management Institute (ICMI)
   1400 I Street, NW, Suite 550.
   Washington, DC 20005, USA
   Tel: +1-202-495-4020

5. The submittal must be accompanied by 1) a letter from the owner or authorized representative which grants the ICMI permission to post the Summary Audit Report and Corrective Action Plan, if necessary, on the Code Website, and 2) a completed Auditor Credentials Form. The lead auditor’s signature on the Auditor Credentials Form must be certified by notarization or equivalent.

6. Action will not be taken on certification based on the Summary Audit Report until the application form for a Code signatory and the required fees are received by ICMI from the applicable cyanide transportation company.

7. The description of the cyanide transport company should include sufficient information to describe the scope and complexity of its operation.

[Signature]
Lead Auditor signature

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Name of Transporter: Transportadora Moscato Transporte Rodoviário Ltda.
Name of Facility Owner: Transportadora Moscato Transporte Rodoviário Ltda.
Name of Facility Operator: Transportadora Moscato Transporte Rodoviário Ltda.
Name of Responsible Manager: Antonio Moscato
Address: Rodovia BA-522, Km 1, 43.813-300, Candeias, BA, Brazil.
State/Province: Bahia/ Candeias.
Country: Brazil
Telephone: (55+71) 3602-3072
Fax: n.a
E-Mail: qualidade.sms@transmoscato.com.br

Location detail and description of operation:

The Transportes Moscato operation is focused on the road transportation of hazardous chemical products, without interim storage. The operation is located at Candeias/ Bahia/ Brazil and transports hazardous chemical products inside Brazil, including hazardous chemical products to gold mine operations. The operation has a documented SHEQ management system which is applied to the road transportation of hazardous chemical products. The operation’s trucks and flat platforms are specifically designed to transport chemical products, including cyanide containing effluents. They are remotely monitored (100% during the travel between the distributor and the final client) and equipped with a on board computer, where text messages can be sent or received. The operation drivers are qualified, based on the Brazilian legislation, to transport hazardous chemical products by road.

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Auditor's Finding

This operation is:

X in full compliance
☐ in substantial compliance *(see below)
☐ not in compliance

with the International Cyanide Management Code (Pre-Operational Transporter Protocol/ December 2016).

* For cyanide transportation operations seeking Code certification, the Corrective Action Plan to bring an operation in substantial compliance into full compliance must be enclosed with this Summary Audit Report. The plan must be fully implemented within one year of the date of this audit.

Auditing Company: NCABrasil Expert Auditors Ltd.
Audit Team Leader: Celso Sandt Pessoa (ICMI qualified lead auditor and transportation qualified TEA (technical expert auditor)).
E-mail: celsopessoa@ncabrasil.com.br and celso@globalsheq.com
Names and Signatures of Other Auditors: not applicable
Date(s) of Audit: 11–14/June/2018 (on-site) and 29/June/2018 (off-site).

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

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

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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.

X in full compliance with

The operation is:

□ in substantial compliance with Transport Practice 1.1
□ not in compliance with

Summarize the basis for this Finding/Deficiencies Identified:

The operation already designed, documented and implemented a management procedure to define the correct routes for the transportation of chemical hazardous products which consider the following aspects: population density, road infrastructure, road configuration (pitch and grade), environmental conditions (surface waters), road maintenance status, weight restrictions, support facilities (gas stations, hospitals, road police stations, weight control stations, firefighters).

Related to cyanide transportation, the transporter already developed two route diagrams for the transportation of liquid cyanide from PROQUIGEL (an ICMI certified cyanide producer) to two gold mines in the state of Bahia, both ICMI certified mining operations (Yamana Gold Mining/ Jacobina operation) and Brio Gold Mining/ Fazenda Brasileiro operation). Evidenced the rout diagrams between Candeias (Proquigel facility) and Jacobina operation and Candeias (Proquigel facility) to Fazenda Brasileiro, both route diagrams at revision 0, dated 11/06/2018. Six other route diagrams are in process of preparation. The route diagrams are preparing using high precision global positioning system, and were evidenced in hard copies and electronic copies (installed at the SASCAR system inside the truck. The electronic copy interacts with the driver all the time, alerting for the risks and the operational procedures to be followed, including speed control. Basically, the transporter uses state and federal roads.

All the real and potential risks of the selected routes are previously evaluated by the transporter, using the system previously mentioned. The transporter already transports other hazardous chemical products to the two previously mentioned mining operations.

The transporter already defined and implemented a system to obtain feedback on the route condition from the drivers returning for the transporter HQ. There is a travel report that is reviewed by the operational coordinator, which includes the driver feedback about the route condition.

All the necessary operational controls are addressed at the route diagrams (hard and electronic ones) as above mentioned, and includes speed control, driver qualification and training, truck and bug (flat platform) maintenance and emergency procedures.

The transporter already interacted with several stakeholders, including public authorities linked with municipalities, road police, army, environmental agencies, civil defense, firefighters, among others.

When necessary, the transporter has a contract with a security services supplier. Reviewed the contract between the two parts dated 09/09/2016. For the two selected routes, there is no necessity of security escorts.

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The transporter is already committed to advise external responders, medical facilities and communities of their roles and/or mutual aid during an emergency response, as previously mentioned. Transportes Moscato does not sub-contract any service related to the transportation of hazardous chemical products.

**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.**

- X in full compliance with
- The operation is: □ in substantial compliance with Transport Practice 1.2
- □ not in compliance with

**Summarize the basis for this Finding/Deficiencies Identified:**
It was evidenced that Transportes Moscato only employs trained and licensed drivers as required by the applicable Brazilian legislation for the road transportation of dangerous products including solid and liquid NaCN.
The driver must have a specific driving permit type “E”. Reviewed the driver permit for three drivers that were, initially, selected to transport cyanide in future travel. Also reviewed the following specific trainings, as required by the Brazilian legislation: MOPP course (Hazardous Chemical Products Transportation), NR-20 (Health & Safety when working with flammables and combustibles) and NR-35 (working at heights). According to internal procedures and the Brazilian labor legislation, all the drivers must pass a biannual alcohol and drug testing and also an annual occupational health examination (ASO).Reviewed the records for the three previously mentioned drivers (all approved in the drug & alcohol testing and in the occupational health examination). All training required by the Brazilian labor legislation for the road transportation of chemical hazardous products was already provided by the operation for the drivers. Transportes Moscato does not sub-contract any service related to the transportation of hazardous chemical products.

**Transport Practice 1.3: Ensure that transport equipment is suitable for the cyanide shipment.**

- X in full compliance with
- The operation is: □ in substantial compliance with Transport Practice 1.3
- □ not in compliance with

**Summarize the basis for this Finding/Deficiencies Identified:**
The operation already uses specifically designed trucks and bugs for road transportation of hazardous chemical products. The trucks are designed and produced by Scania Trucks Brazil Ltd (model R440/ A6x2) and the bug (flat platform specifically designed for iso-container transportation) are designed and produced by Randon Ltd Brazil. Reviewed the mandatory documentation required by the Brazilian legislation for the road transportation of chemical hazardous products. The operation already implemented procedures to verify the adequacy of the equipment for the load they must

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bear as previously mentioned. Both, the truck and the bug configuration, are adequate to transport the iso-container or a sea container. The operation already implemented procedures to prevent overloading of the transport vehicles. The cargo weight is checked and confirmed when the truck is leaving the product seller premises and along the road, at weight control stations, where the weight and the cargo documentation is checked by the public authorities, and finally checked by the final client, before entering its premises. Transportes Moscato does not sub-contract any service related to the transportation of hazardous chemical products.

**Transport Practice 1.4: Develop and implement a safety program for transport of cyanide.**

- X in full compliance with
- □ in substantial compliance with Transport Practice 1.4
- □ not in compliance with

**Summarize the basis for this Finding/Deficiencies Identified:**
The operation already implemented procedures to ensure that the cyanide will be transported in a manner that maintains the integrity of the producer's packaging (iso-container for liquid NaCN solution and sea containers for solid NaCN boxes). In both cases the product containers are sealed before leaving the seller premises. The operation already use placards required by the Brazilian legislation for road transportation of hazardous chemical products. The iso-container is already identified by the cyanide solution producer (Progugel, an ICMI certified cyanide producer). It was evidenced, during the field audit, that the operation uses the required placards required by the Brazilian legislation for road transportation of chemical hazardous products. Specifically for the cyanide transportation it was evidenced that the operation already has the required placards (UNO number and hazardous product class 6.1). The operation already designed, documented and implemented a pre-travel inspection procedure, based on a checklist addressing critical aspects to be inspected, which includes driver and truck documentation, safety and emergency hardware, general condition of truck and platform, personal protective equipment and emergency kit. This inspection is performed in conjunction by a safety technician and the driver. For the cyanide transportation, beyond the previously mentioned aspects, the pre-travel inspection checklist (RE-OPE-0013(0)), includes the inspection of the antidotes (provided by the cyanide producer), tracking and communication systems, load capacity, safety placards, fire extinguishers and earthing points. The fleet to be assigned for cyanide transportation is very new (one truck produced in 2017 and four trucks produced in 2018. All the five bugs were produced in 2018. Beyond that, the operation designed, documented and implemented a preventive maintenance program, which is applied for each truck/flat platform every 30.000Km (maximum/this maintenance program is controlled by a specific software, which issues preventive maintenance work orders). There is a checklist with all the critical aspects to be checked and maintained. Reviewed such checklist adequately maintained by the operation.

The operation defined a maximum driving time of 10 hours, including one hour for lunch.

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and a 30' rest every 5.5 hours of driving. The driver is not allowed to drive at night (after 6 PM). The working hours is controlled through the remote tracking station.
The truck/bug/flat platform are specifically designed to transport iso-containers sea containers and the bugs/flat platforms have pin/twist lockers, that are inspected by the driver before each journey, and prevent the containers from shifting. Evidenced during the field audit.
In accordance to the operation safety policies and the driver's operation manual, in the event of stormy or hard rain, fog, wind conditions, ice rain, the transport activity shall be stopped or even not allowed to begin. In some cases, the truck driver is oriented to stay in a safe place, previously defined in the approved route.
The operation designed and implement a drug & alcohol policy, accepted by all drivers, in which all the drivers before the beginning of a journey pass through an alcohol detection test and annually, during the occupational health-monitoring program, the drivers pass through a drug detection test.
It was evidenced that the operation defined and implemented a process to manage all records related to its activities. All requested records were promptly retrievable and are adequately maintained by the operation, as previously mentioned. The operation does not subcontract any handling or transport activities.

Transport Practice 1.5: Follow international standards for transportation of cyanide by sea and air.

The operation is:

- X in full compliance with
- □ in substantial compliance with Transport Practice 1.5
- □ not in compliance with

Summarize the basis for this Finding/Deficiencies Identified:

This transport practice is not applicable to the operation's scope. The operation scope is solid cyanide road transportation.

Transport Practice 1.6: Track cyanide shipments to prevent losses during transport.

The operation is:

- X in full compliance with
- □ in substantial compliance with Transport Practice 1.6
- □ not in compliance with

Summarize the basis for this Finding/Deficiencies Identified: (Due to the sensitivity of security issues regarding storage of cyanide, no descriptions of substantial or non-compliance with this aspect of the Transport Practice should be provided).
The transport vehicle is provided with tracking systems (on board computer, text messages and spoken route information, panic button), using GPS signal. The driver is also equipped with a mobile phone. Evidenced and tested during the field audit.

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The communication system (GPS, mobile phone, tracking system, spoken route system) is tested before each travel, and periodically checked during the trip. Evidenced during the field audit.

All potential or real blackout areas are previously identified during route identification and definition. Before entering such areas, the drivers contact the organization headquarters and the communication supplier headquarters. The drivers are contacted, at least, six times during the daily travel. As previously mentioned, the truck is monitored 100% of the time, by a remote control station, by the operation headquarters and the tracker provider. The transport vehicle is provided with tracking systems (on board computer), using GPS signal. The operation already defined and implemented a chain of custody records management, according to the Brazilian legislation law. The documentation (Seller DANFE, transporter DACTE, MSDS, travel plan) is verified prior the transportation and before the unloading at the client premises. All recorded and annexed at travel reports, that are retained at the organization central office. Reviewed specifically the mentioned custody records all addressing the chemical product being transported, producer, amount, seal number and final destination (client). As previously mentioned and according the Brazilian legislation, the transport documentation clearly identifies the amount of hazardous chemical product being transported and the product MSDS is part of this documentation. Evidenced during the field audit. The operation does not subcontract any handling or transport activities.

2. INTERIM STORAGE: Design, construct and operate cyanide trans-shipping depots and interim storage sites to prevent releases and exposures.

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

X in full compliance with

☐ in substantial compliance with Transport Practice 2.1
☐ not in compliance with

Summarize the basis for this Finding/Deficiencies Identified:

This principle is not applicable to the operation scope because the cargo is transported straight from the producer to its final destination. During the transport, the truck is monitored 100% of the time and stops, at night, only at pre-evaluated and approved stations along the route. The tracking system also blocks (remote turn-off) the truck engine if something different from the planned script (travel plan) occurs.


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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.

X in full compliance with

The operation is:

☐ in substantial compliance with Transport Practice 3.1
☐ not in compliance with

Summarize the basis for this Finding/Deficiencies Identified:

The operation already developed and documented an emergency response plan, PRO-SSE-001(7), which is a general cyanide related emergency response plan, addressing information provided by the cyanide producer and the cyanide MSDS, information from the ABIQUIM (Brazilian Chemical Industries Association) emergency manual, contact information and potential emergency scenarios. All the emergency response information is also addressed at the Driver’s Manual. The operation has a contract with an emergency responder, which also has a specific emergency response plan for the cyanide transportation.

The above mentioned plans are specific for the two routes mentioned at TP 1.1. It was evidenced that the plans are specific for the road transportation of solid or liquid cyanide. It was evidenced that the plans are specific for the road transportation of cyanide, by truck. (flatbed trailers/ platforms and bugs, with pin/ shift lockers, specifically designed to transport metallic sea containers or iso-containers). It was evidenced that the plans consider the specific conditions of the selected routes and the risk analysis performed for the selected routes. As previously mentioned, the risks associated to the selected routes were identified and evaluated. The emergency response plan is focused on the identified and evaluated risks, also considering the available infrastructure and resources available in the selected routes. It was evidenced that the emergency response plans are specific for the truck configuration that will be used to transport the cyanide (flatbed trailers/ platforms and bugs, with pin/ shift lockers, specifically designed to transport metallic sea containers and iso-containers). It was evidenced that the emergency response plans describe the specific response actions that shall be applied to each emergency situation/ scenario, such as accident with fire, fall into a river, cyanide leakage on a rainy day, cyanide intoxication, among other specific emergency scenarios. It was evidenced that the emergency response plans describe the roles of several stakeholders that should be involved in the emergency response, such as federal road policy, emergency responders and rescuers, first aid stations along the route, reference hospitals, and environmental authorities.
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Transport Practice 3.2: Designate appropriate response personnel and commit necessary resources for emergency response.

X in full compliance with
☐ in substantial compliance with Transport Practice 3.2
☐ not in compliance with

Summarize the basis for this Finding/Deficiencies Identified:
It was evidenced that the operation already provided emergency training for drivers, emergency coordinators, emergency response members on the PRO-SSE-001(1) emergency response plan. Reviewed training record dated 04/06/2018. All duties and responsibilities, for each identified scenario, are addressed in the emergency management plans. The required emergency response hardware master list is part of the traveling documentation and checked before each travel. Usual emergency hardware to be available at the travel are:

Full face mask, breather, safety glasses, helmets, nitrile gloves, PVC boots, ear protectors, overall type B (Tychem) and C (Tyvec), fire extinguishers and antidotes provided by the cyanide producer (actually amyl nitrite and will be replaced by sodium nitrate injection USP and sodium thiosulfate injection USP both approved antidotes for cyanide intoxication).

Before every trip, all required emergency response equipment is inspected in accordance with a specific checklist, that is part of the trip documentation, as previously mentioned. The inspection is performed by a safety technician and the driver. the operation does not subcontract any handling or transport activities.

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

X in full compliance with
☐ in substantial compliance with Transport Practice 3.3
☐ not in compliance with

Summarize the basis for this Finding/Deficiencies Identified:
The operation already maintains a documented contact master list containing the contact number of the mine operation, the cyanide producer, public authorities (municipalities, road police and state firefighters), health centers (hospitals) and the emergency responder. Evidenced at the Driver’s Manual INS-OPE-002 (1) and at the emergency plan PRO-SSE-001(7). The operation already implemented a system to maintain the contact information updated, including emergency notification and report. Emergency response plan was found at revision 7 and the Driver’s Manual at revision 1. The emergency responder emergency plan was found at revision 1.
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Transport Practice 3.4: Develop procedures for remediation of releases that recognize the additional hazards of cyanide treatment chemicals.

X in full compliance with

The operation is: □ in substantial compliance with Transport Practice 3.4
□ not in compliance with

Summarize the basis for this Finding/Deficiencies Identified:

It was evidenced that the previously mentioned emergency response plans describe the specific response actions, including neutralization procedures and recovery of impacted soil, that shall be applied to each emergency situation/ scenario, such as accident with fire, fall into a river, cyanide leakage on a rainy day and cyanide intoxication (reviewed Proquigel procedure # SOC-P-05(9), reviewed and approved by Dr. Alexandre Rodrigues (toxicologist), with is part of the traveling documentation also), among other emergency scenarios. It was as evidenced that the operation emergency response plan clearly defines that chemical products, such as sodium hypochlorite, ferrous sulfate and hydrogen peroxide, are prohibited to be used in the event of solid / liquid cyanide releases in surface waters along the defined route. The emergency responder emergency plan defines that any type of chemical product is allowed to be used in the event of surface waters contamination with cyanide.

Transport Practice 3.5: Periodically evaluate response procedures and capabilities and revise them as needed.

X in full compliance with

The operation is: □ in substantial compliance with Transport Practice 3.5
□ not in compliance with

Summarize the basis for this Finding/Deficiencies Identified:

The operation already implemented a system to review its emergency response plan which includes feedback from the driver, indicating any necessary challenge in the route map, in the risk analysis or in the emergency response plans, after emergency drills and after real or potential incidents. Feedback from the cyanide producer is also an input to maintain updated the emergency response plan. The operation already planned and implemented a system for emergency drills realization. Two emergency drills were performed in 2018. The first one, not involving cyanide, but another hazardous chemical product, was performed on 02/03/2018. The second one, involving cyanide, was performed on 06/06/2018. The cyanide producer was involved in this drill, providing two iso-containers of NaCN solution, simulating that was a leakage in one iso-container and the product was transferred to the other iso-container. The emergency responder also participated in this drill. The operation personnel (drivers, emergency coordinators, safety technicians), effectively participated in the drills. The operation already implemented a system to review the emergency drill results. Reviewed emergency responder report # 29368 (06/06/2018) and Moscato report dated 06/06/2018.

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emergency plans were updated after the last drill.