



# ***INTERNATIONAL CYANIDE MANAGEMENT INSTITUTE***

## ***Cyanide Transportation***

## ***Verification Protocol***

### ***For The International Cyanide Management Code***

[www.cyanidecode.org](http://www.cyanidecode.org)

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## **Introduction**

All elements of the cyanide transportation and distribution system bringing cyanide from its point of manufacture to a gold mining operation are subject to this Protocol. This includes each individual transporter involved in a shipment, interim storage sites used during transport, and any distributors taking physical possession of cyanide from a producer or transporter and storing it for subsequent shipment to a gold mine. It also includes any subcontractors handling cyanide for a transporter, and the audit findings regarding a subcontractor's cyanide management practices are to be included in the findings of the transporter.

In order to be certified, a gold mining operation undergoing an International Cyanide Management Code audit must have its cyanide transported by transporters that are certified under the Code.

This Verification Protocol is not meant to limit the inquiries made by an auditor in the conduct of an audit or any transporter's safety, health or environmental activities or their efforts to implement the Principles of the Code.

It also is not intended to suggest, with respect to any of the Principles or Transport Practices or specific measures identified in the questions, that there is only one way for a transporter to meet the goals of the Code. While the questions posed in the Protocol are based on the measures typically appropriate to meet the Principles and Transport Practices, a cyanide transporter may have used alternative means to meet a particular Code expectation. Further, some of the approaches described in this Protocol may not apply in the specific situation being audited. Review of the Code's Implementation Guidance, (although developed specifically for gold mining operations) can help the auditor to understand the audit questions' intent and expectation of performance and aid in evaluating the measures taken by an operation to meet the Transport Practice. Local conditions and regulatory requirements may play a significant role in determining the approaches used by a transporter. The auditor's detailed descriptions of the evidence that supports a finding is particularly important to demonstrate how alternative methods have satisfied the objectives of the Code.

Each cyanide transporter is expected to develop and implement a number of management systems or written plans or procedures such as emergency response plans. The Code does not require any particular format for these plans and procedure nor does it require that it be specific to the transportation or management of cyanide. The plans, procedures and management systems may be stand-alone documents or they may be incorporated into other more generally applicable plans or procedures. Similarly, the Code prescribes no specific content or format for inspection and maintenance programs, worker training or operating practices. Evidence that these systems and procedures exist, are implemented and meet the objectives of the Code must be documented by the auditor.

The auditor should determine if an operation's plans, procedures and management systems may reasonably be expected to meet the performance goals of the Transport Practices based on available evidence. Disputes over specific procedures should be avoided unless the issue has a significant bearing on the operation's ability to comply with the Code.

The goal of this Protocol is to encourage and support a thorough and probing inquiry by the auditor. This Protocol is structured to require that an auditor provide detailed responses, sufficient to provide a clear justification for the findings. Full responses are necessary for each question; a “yes,” “no” or “not applicable” answer is not sufficient. The auditor must describe the specific evidence to support the finding that a cyanide transporter meets the Code’s expectations. Evidence to support findings may include but is not limited to reviews of documents and records, direct observations, interviews with appropriate personnel and results of inspections by applicable regulatory agencies. Information must be provided on documents reviewed, facilities inspected and personnel interviewed. The auditor must also identify the basis for any representative sampling of records, inspection reports or other documentation.

The Protocol requires the auditor to make a finding regarding whether the operation is in full compliance, substantial compliance or is not in compliance with each of the Transport Practices. Being in full compliance does not necessarily require an affirmative answer to all individual questions under a Transport Practice. An operation may have used alternative means to meet the Transport Practice, or the Transport Practice or one of its individual questions may have not been applicable for site-specific reasons. The auditor must find that an operation is in compliance with the Code if the operation is in full compliance with all Transport Practices.

This Protocol is used by cyanide transporters that are signatories to the Code and are seeking certification. If a cyanide transportation operation seeking Code certification is not fully compliant, the auditor must identify where compliance has not been fully achieved and where improvements are necessary. In order for the auditor to find that the operation is in substantial compliance with a Transport Practice, the operation must have made a good-faith effort to comply and any identified deficiencies must be readily correctable and must not present an immediate or substantial risk to health, safety or the environment. Operations that are in substantial compliance with a Transport Practice must develop a Corrective Action Plan to correct the deficiency and commit to fully implement the Corrective Action Plan within a time period mutually agreed to with the auditor but in no case longer than one year. An auditor must find that an operation is not in compliance with the Code if it is neither in compliance nor substantial compliance with any one of the Transport Practice.

## Verification Protocol

**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.*

1. Does the transporter implement a process or procedure for selecting transport routes that minimizes the potential for accidents and releases or the potential impacts of accidents and releases? If so, does the process or procedure consider:
  - a) Population density
  - b) Infrastructure (roadway, rail, port, runway, helipad) construction and condition
  - c) Pitch and grade
  - d) Prevalence and proximity of water bodies and fog
2. Does the transporter implement a procedure to evaluate the risks of selected cyanide transport routes and take the measures necessary to manage these risks?
3. Does the transporter implement a process or procedure to periodically reevaluate routes used for cyanide deliveries or does the transporter have a process for getting feedback on route condition from the transporter's operators?
4. Does the transporter document the measures taken to address risks identified with the selected routes?
5. Does the transporter seek input from communities, other stakeholders and applicable governmental agencies as necessary in the selection of routes and development of risk management measures?
6. Where routes present special safety or security concerns, does the transporter use convoys, escorts or other additional safety or security measures to address the concern?
7. Has the transporter advised external responders, medical facilities and communities of their roles and/or mutual aid during an emergency response?
8. If the transport company subcontracts any of the cyanide handling or transport, does the transport company implement a procedure to ensure its subcontractors meet elements 1, thru 7 of this Transport Practice 1.1?

Finding: Is the transporter in full compliance, substantial compliance, or non-compliance with Transport Practice 1.1? Explain the basis for the finding.

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.*

1. Does the transport company use only trained, qualified and licensed (where required) operators to operate its transport vehicles?
2. Have all personnel operating cyanide handling and transport equipment been trained to perform their jobs in a manner that minimizes the potential for cyanide releases and exposures?
3. If the transport company subcontracts any of the cyanide handling or transport, does the transport company have a procedure to ensure its subcontractors meet elements 1, 2 and 3 of this Transport Practice 1.2?

Finding: Is the transporter in full compliance, substantial compliance, or non-compliance with Transport Practice 1.2? Explain the basis for the finding.

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

1. Does the transport company only use equipment designed and maintained to operate within the loads it will be handling?
2. Are there procedures to verify the adequacy of the equipment for the load it must bear?
3. Are there procedures in place to prevent overloading of the transport vehicle being used for handling cyanide (i.e., overloading a truck, ferry, barge, etc.)?
4. If the transport company subcontracts any of the cyanide handling or transport, does the transport company have a procedure to ensure its subcontractors meet elements 1, 2 and 3 of this Transport Practice 1.3?

Finding: Is the transporter in full compliance, substantial compliance, or non-compliance with Transport Practice 1.3? Explain the basis for the finding.

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

1. Are there procedures to ensure that the cyanide is transported in a manner that maintains the integrity of the producer's packaging?
2. Are placards or other signage used to identify the shipment as cyanide, as required by local regulations or international standards?
3. Does the transporter implement a safety program for cyanide transport that includes (where appropriate or applicable):
  - a) Vehicle inspections prior to each departure/shipment?

- b) A preventive maintenance program?
  - c) Limitations on operator or drivers' hours?
  - d) Procedures to prevent loads from shifting?
  - e) Procedures by which transportation can be modified or suspended if conditions such as severe weather or civil unrest are encountered?
  - f) A drug abuse prevention program?
  - g) Retention of records documenting that the above activities have been conducted?
4. If the transport company subcontracts any of the cyanide handling or transport, does the transport company have a procedure to ensure its subcontractors meet elements 1, 2 and 3 of this Transport Practice 1.4?

Finding: Is the transporter in full compliance, substantial compliance, or non-compliance with Transport Practice 1.4? Explain the basis for the finding.

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

1. Are shipments of cyanide by sea transported in compliance with the Dangerous Goods Code of the International Maritime Organization?
2. Are shipments of cyanide by air transported in compliance with the Technical Instructions for the Transport of Dangerous Goods by Air of the International Civil Aviation Organization?

Finding: Is the transporter in full compliance, substantial compliance, or non-compliance with Transport Practice 1.5? Explain the basis for the finding.

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

1. Do transport vehicles have means to communicate with the transport company, the mining operation, the cyanide producer or distributor and/or emergency responders?
2. Is the communication equipment (GPS, mobile phone, radio, pager, etc.) periodically tested to ensure it functions properly?
3. Have communication blackout areas along transport routes been identified? Are special procedures implemented for the blackout areas?
4. Are there systems or procedures to track the progress of cyanide shipments?
5. Does the transporter implement inventory controls and/or chain of custody documentation to prevent loss of cyanide during shipment?
6. Are shipping records indicating the amount of cyanide in transit and Material Safety Data Sheets available during transport?

7. If the transport company subcontracts any of the cyanide handling or transport, does the transport company have a procedure to ensure its subcontractors meet elements 1 thru 6 of this Transport Practice 1.6?

Finding: Is the transporter in full compliance, substantial compliance, or non-compliance with Transport Practice 1.6? Explain the basis for the finding.

**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.*

1. Are warning signs posted alerting workers 1) that cyanide is present; 2) that smoking, open flames, eating and drinking are not allowed and 3) what personal protective equipment must be worn?
2. Are there security measures in place to prevent unauthorized access to cyanide, such as lockouts on valves and fenced and locked storage of solids?
3. Is cyanide separated from incompatible materials such as acids, strong oxidizers and explosives with berms, bunds, walls or other appropriate barriers to prevent mixing?
4. Is cyanide stored in a manner designed to minimize the potential for contact of solid cyanide with water (e.g., under a roof, off the ground, or in specially designed containers)?
5. Is cyanide stored with adequate ventilation to prevent build-up of hydrogen cyanide gas?
6. Are there systems in place with the capacity to contain any spilled cyanide materials and minimize the extent of a release?

Finding: Is the transporter in full compliance, substantial compliance, or non-compliance with Transport Practice 2.1? Explain the basis for the finding.

**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.*

1. Does the transporter have an Emergency Response Plan?
2. Is the plan appropriate for the selected transportation route or interim storage facility?

3. Does the plan consider the physical and chemical form of the cyanide?
4. Does the plan consider the method of transport (e.g., rail, truck) or storage?
5. Does the plan consider all aspects of the transport infrastructure (e.g., condition of the road, railway, port)?
6. Does the plan consider the design of the transport vehicle (e.g., single or double walled, top or bottom unloading) or storage facility?
7. Does the plan include descriptions of response actions, as appropriate for the anticipated emergency situation?
8. Does the plan identify the roles of outside responders, medical facilities or communities in emergency response procedures?

Finding: Is the transporter in full compliance, substantial compliance, or non-compliance with Transport Practice 3.1? Explain the basis for the finding.

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

1. Does the transporter provide emergency response training of appropriate personnel?
2. Are there descriptions of the specific emergency response duties and responsibilities of personnel?
3. Is there a list of all emergency response equipment that should be available during transport or along the transportation route?
4. Does the transporter have available the necessary emergency response and health and safety equipment, including personal protective equipment during transport?
5. Do transport vehicle operators receive initial and periodic refresher training in emergency response procedures including implementation of the Emergency Response Plan?
6. Are there procedures to inspect emergency response equipment and assure its availability when required?
7. If the transport company subcontracts any of the cyanide handling or transport, has the transporter clearly delineated its roles and the responsibilities of the subcontractor during an emergency response?

Finding: Is the transporter in full compliance, substantial compliance, or non-compliance with Transport Practice 3.2? Explain the basis for the finding.

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

1. Are there 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?
2. Are systems in place to ensure that internal and external emergency notification and reporting procedures are kept current?

Finding: Is the transporter in full compliance, substantial compliance, or non-compliance with Transport Practice 3.3? Explain the basis for the finding.

Transport Practice 3.4: *Develop procedures for remediation of releases that recognize the additional hazards of cyanide treatment chemicals.*

1. Are there procedures for remediation, such as recovery or neutralization of solutions or solids, decontamination of soils or other contaminated media and management and/or disposal of spill clean-up debris?
2. Does the procedure prohibit the use of chemicals such as sodium hypochlorite, ferrous sulfate and hydrogen peroxide to treat cyanide that has been released into surface water?

Finding: Is the transporter in full compliance, substantial compliance, or non-compliance with Transport Practice 3.4? Explain the basis for the finding.

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

1. Are there provisions for periodically reviewing and evaluating the Plan's adequacy and are they being implemented?
2. Are there provisions for periodically conducting mock emergency drills and are they being implemented?
3. Is there a procedure to evaluate the Plan's performance after its implementation and revise it as needed, and have they been implemented?

Finding: Is the transporter in full compliance, substantial compliance, or non-compliance with Transport Practice 3.5? Explain the basis for the finding.