Summary Audit Report

ICMI Cyanide Code Transportation
TRALEX
SOLUCIONES INTEGRALES DE TRANSPORTE SAC
Arequipa, PERÚ
Pre-Operacional Audit

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A- GENERAL SUMMARY

A.1 Information of the Audited Operation

Name of Cyanide Transportation Facility: TRALEX Soluciones Integrales de Transporte, SAC
Name of Facility Owner: Corrales Ramos Alejandro Marcos
Name of Facility Operator: TRALEX Soluciones Integrales de Transporte, SAC
Name of Responsible Manager: Corrales Ramos Alejandro Marcos
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(CERTIFICATION AUDIT)

Location detail and description of operation:

“TRALEX Soluciones Integrales de Transporte, SAC” (TRALEX), located at "P.J. Semi Rural Pachacutec Grupo Zonal 3, MZ. 4, Lote 8, Cerro Colorado, Arequipa - Perú”, is a company dedicated to land freight transport with more than 9 years of experience in transportation. It has been associated since its beginnings to the mining sector. Its philosophy is based on commitment, efficiency, and quality of its human resources.

This company develops ground transportation services of hazardous materials and products based on certified and internationally audited experience, for mining and industrial companies aligned to national regulations. It follows national, international and innovation standards, promoting the success of their clients with comprehensive solutions tailored to their needs, facilitating the development of employees, generating sustained profitability for their shareholders, and all-around giving a positive contribution to society.

TRALEX has established inspection programs for their trailers and chassis units. Their weight-bearing capacity and drag through is submitted to a visual inspection performed by a mechanical engineer. Similarly, the Government of Peru issues an authorization to move on the country's roads.

As of the audit date, no cyanide transport has been performed. The company has planned to start with two routes: Cerro Óxidos and Pucamarca. Letters have been issued to police stations, health centers, firefighters, and municipal authorities on the routes to be traveled. In the two routes, the risks have been identified based on the route selection procedure.

Preventive maintenance and repairs of transport vehicles will be carried out in workshops of
the company DCR Minería y Construcción, SAC, following the equipment manufacturer's recommendations.

TRALEX has acquired 9 trailers and 7 container trailers. The trailers were manufactured between the years 2017 and 2019. They comply with the EURO 5 emission standard.

Trailers specially designed by a certified manufacturer in Peru have a design that allows a lower center of gravity. Alternatively, standard 40-foot and 20-foot containers are used, where only 20 tons of cyanide are placed for added stability, none on top of each other.

The scope of this audit includes the operation of ground transportation from Port Authority in Callao, and occasionally from the warehouse of "MERCANTIL" (Almacenera El Pacífico S.A.C., certified company where cyanide is released.

Cyanide is received from the Port or occasionally from the warehouse of MERCANTIL in the following packaging presentation: - Interior Poly-propylene super-sack filled up to 1 ton and placed inside a Polyethylene bag and wooden box.

The units will be tracked in real-time. Additionally, the transport units have two filming cameras. One of the cameras faces the road where the transport vehicle circulates and the other one is directed at the driver. Both cameras record and transmit in real-time.

All drivers have proven experience, in addition to valid licenses for the transport of hazardous materials. They have been provided with documented training on risk issues associated with cyanide-related emergency care. The training matrix comprises sixteen (16) topics, five (5) of which are dictated by external training companies.

TRALEX has prepared and trained its personnel in accordance with the Emergency Plan, which considers various scenarios that may arise, said plan can be found in each transport unit.
A.2 Overall Auditor’s Finding

This operation is

- [✓] in full compliance
- [ ] in substantial compliance
- [ ] not in compliance

with the International Cyanide Management Code.

Audit Company: Geosoluciones Panamá, S.A.
Audit Team Leader: Jorge Efrén Chong Pérez
Email: geosoluciones@cwpanama.net

Dates of Audit: March 12-13th, 2020

I attest that I meet the criteria for knowledge, experience and conflict of interest for Code Verification Audit Team Leader, established by the International Cyanided 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.
B- ROLE AS CYANIDE TRANSPORTATION

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.

This operation is

- ✓ In full compliance  
  - □ In substantial compliance  Transport Practice 1.1  
  - □ Not in compliance

Summarize the basis for this Finding/Deficiencies Identified:

**TRALEX SOLUCIONES INTEGRALES DE TRANSPORTE SAC** (TRALEX) has prepared a route evaluation procedure, on June 10th, 2019, which incorporates a route risk assessment. The assessment includes two route sections with independent features, according to the route evaluation procedure “TRL-SEGpro006 Procedimiento para la Selección de Rutas en el Transporte de Materiales Peligrosos”. This is all part of the transportation procedure, with no exceptions and at all times. TRALEX personnel escort the convoy loaded with cyanide to the mine. There are two escorts for every six transport vehicles.

The procedure considers in section F, page 6: making a list of the main cities and/or towns through which the route passes, in order to have a more accurate knowledge of the location of the units. In addition to being extremely important to know which cities are close in case of an incident, this facilitates communication with the control center, the provision of accessories for emergency response and finally the accommodation of the brigades.

- List of main cities  
- Escort Supervisor  
- Tract operators (drivers)

Section H, page 6 presents the procedure to establish a description and identification of hazards and a detailed risk assessment of the route to be taken considering the following aspects:  
- Dangerous Curves - Steep climbs - Steep descents - Population density - Presence of water bodies  
- Rest areas and the location where the units will spend the night
- Main cities
- Significant bridges especially where a water source runs
- Railroad crossings
- Frequent landslide areas
- Areas with adverse weather conditions (snow, rains, etc.)
- Foggy areas
- Areas environmentally protected by Peruvian laws and/or at-risk areas
- High theft risk areas
- Any additional conditions that are pertinent according to the best risk/consequence judgment.
- Emergency stop locations.

TRALEX has implemented the procedure for hazard identification, risk assessment, and en-route control measures.

Per this procedure guidelines, the elaboration of the routes was carried out. Each evaluation has been documented and can be found in section 4.1 of each Emergency Plan for both Cerro Óxidos Mine and Pucamarca Mine.

The procedure TRL-SEGpro006 section 6.1 L, page 9 establishes that, periodically, the selected “Active Routes” will be reevaluated to confirm that no new hazards, risks and/or route modifications have arisen that could alter the degree of safety of the selected route. In case there are any changes in the active routes, the dangers and risks will be identified, if any, and will be considered in the Route IPERC “Procedimiento de Identificación de Peligros Evaluación de Riesgos y Medidas de Control en Ruta” (IPERC) Hazard Identification, Risk Assessment, and en-route Control Measures.

This process is carried out every time the supervisor identifies any change in the route. He/she will inform operations management in the Hazardous Materials Travel Report “Informe de Viaje de Materiales Peligrosos” (form TRL-Fope001) that can be found in the periodic reports from the route supervisor or drivers on the state of the roads.

It is declared as "Inactive Routes" those in which shipments have not been made for over a year. To "Activate" these routes, they must be updated per this procedure before shipping or carrying out the transportation service.

Section 6.1.2 c of the TRL-SEGpro005 procedure, “Procedimiento de Identificación de Peligros Evaluación de Riesgos y Medidas de Control en Ruta,” establishes that the Acceptable Residual
Risk condition is maintained over time, only if the controls identified and implemented in the initial formal evaluation process are also maintained. Specific evaluations must be maintained. The evaluations will be carried out by the person or group of people in charge of a task. If any deviation is found, the task cannot be started until the correct implementation is ensured. The measures adopted are documented in a Risk Analysis register whose methodology is indicated in the same procedure.

The procedure TRL-SEGpro006 section 6.1 page 7 establishes that the opinions of the communities about the dangers and risks of the route to be selected will be sought. With these comments, supervisors will proceed to select and/or evaluate routes with greater precision, identifying the hazards and analyzing the risks that exist along the route and determining the necessary measures to deal with said risk.

It is important to investigate and/or seek information on the dangers and risks existing during different seasons of the year, especially in areas where climatic conditions are variable.

TRALEX sent: twenty-one (21) communications to the police, twenty-five (25) communications to municipal authorities, thirty-three (33) communications to health centers, fifteen (15) communications to firefighters. The purpose of this was to establish an initial communication regarding the risks on the routes, provide information about cyanide as well as phone numbers in case of emergency or queries.

TRALEX escort vehicle used were observed under acceptable operating conditions. During the transportation process, these vehicles carry tools and fundamental parts.

In TRL-SEGpro007, “procedimiento operacional en el transporte de cianuro” (cyanide transport operational procedure) section 6.5 page 8, escort settings are established, depending on the number of transport vehicles.

The configuration of the escort vehicles is two (2) for every 6 transport vehicles. They transport oxygen, materials, tools, personal protective equipment, and substances for neutralization in case of emergencies.

The escort units are equipped with winches at the rear and front in case that another vehicle has a malfunction to be able to tow it and avoid interrupting of the convoy's trip.

The procedure TRL-SEGpro006 section 6.1 K, establishes that it is necessary to maintain communication to the external responders, medical facilities and/or communities (community
authorities) along the route, which fulfill a function during an emergency. They must be informed that the hazardous material will be transported through the area so that they can prepare to respond if necessary.

The Chief of Safety or his/her designee must report on the Company's Emergency Plan and deliver the MSDS, along with the route IPERC and keep records of delivery of this information and these communications.

This activity must be carried out prior to the first transport on the selected route and annually on the routes already used by the company.

“TRALEX does not subcontract any cyanide handling or transporting company.

**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.*

*This operation is*

- [x] In full compliance
- [ ] In substantial compliance Transport Practice 1.2
- [ ] Not in compliance

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

The TRL-SEGpro007 procedure, “Procedimiento de Seguridad Operacional en el Transporte de Cianuro” (Operational Safety Procedure in the Transport of Cyanide) section 6.4.2 page 8, establishes that operators must have A3C and A4 driver's licenses, which are required by the Peruvian State.

The licenses of the seven drivers were verified. They were valid and of the appropriate category. TRALEX has prepared an annual training program of sixteen (16) topics. Records of first training sessions of the year 2020 were reviewed.

All personnel handling cyanide and operating the transport equipment have been trained on how to avoid accidental spills, as well as on measures to be taken in case of exposure. This in addition to the required annual training plan.

“TRALEX”, does not subcontract any cyanide handling or transport company.
Transport Practice 1.3:
Ensure that transport equipment is suitable for the cyanide shipment.

This operation is

✓ In full compliance
☐ In substantial compliance  Transport Practice 1.3
☐ Not in compliance

Summarize the basis for this Finding/Deficiencies Identified:

The nominal load capacity of each flatbed trailer is 30 tons and the capacity of the low-bed platform is 34.5 tons. The gross weight of the sea containers that TRALEX expects to transport is 22.7 tons, and the gross weight of the iso-tanks that are expected to be transported is 20 tons: 17 tons of cargo and 3 tons in weight of the structure.

TRALEX in the TRL-SEGpro007 procedure section 6.2.1 page 4, establishes the requirements of the trailer specifications. They must be regulated by the T3S3 vehicle configuration which makes them compliant with D.S. 058-2003 of the Ministerio de Transporte y Comunicaciones (Ministry of Transport and Communications).

The trucks will be (up to) 5 years old by TRALEX's quality policy.

Each truck has a 6 x 4 traction trailer, a 3.7 m wheelbase, a 6-cylinder engine, hydraulic steering, a 24 V electronic system and an electronic tachometer. They must comply with the Euro 5 emission standards.

Container requirements
a. TRALEX Soluciones Integrales de Transporte S.A.C will have 20-foot and 40-foot containers for the transport of Sodium Cyanide with their respective labeling.

b. The client will provide 20-foot and 40-foot containers.

c. The containers are made of corrugated steel without refrigeration and hermetically sealed.

d. The container will be permanently fixed on the platform and/or low bed and will be fixed by a system of chains and safety pins to secure the semi-trailer containers, which will be recorded in the
Form TRL-Fope001: “Informe de Viaje de Materiales Peligrosos” (Hazardous Materials Travel Report). Any observation is placed in this format.

e. The tract with the container is classified within the T3S3 vehicle configuration, which complies with the D.S. 058-2003 MTC.

Suspension: Rocker arm model with spring package with 33-ton capacity. With mechanical lifter on the first axis.
Axles: Three tubular axes.
Coupling: For 6x4 and 4x2 truck tract with king pin.
Support Jack: Mechanic.
Pneumatic Installation: One outlet to fast discharge valve with 3/8 air pipe.
Electrical Installation: 12 V and 24 V. With direction, position, reverse and brake lights, 7-way electric grounding.
Brakes: Compressed air, with brake shoes for parking, service and emergency brakes. Manual brake regulators. Safety brake system.

The maintenance of the equipment will be carried out following the manufacturer's manual indications, according to the inspection reports made by the drivers and the preventive maintenance program.

Transportation equipment inspections will be regulated by form TRL-Fope009.
The procedure TRL-SEG007 “Procedimiento de seguridad operacional en el transporte de cianuro” (Operational safety procedure in the transport of cyanide) indicates.

6.2.1. Truck Requirements
TRALEX will permanently have adequate transport units prepared for the transport of Sodium Cyanide. The tract with the container is classified within the T3S3 vehicle configuration, which complies with the D.S. 058-2003 MTC.

The suitable mechanical engineer Christopher Vargas Basurco is in charge of scheduling and leading the maintenance of the equipment.

TRALEX will deliver Cyanide Containers to two mines. All documentation required for the container’s extraction from Customs (cargo customs declaration, commercial invoices and guides) will be verified through this procedure. This documentation including the shipper's referral guides, must match the number of containers discharged from the ship, in order to avoid any legal
inconveniences when picking up the containers from the port premises. The previous documentation indicates the number of cyanide boxes and weight to be transported.

The TRL-SEGpro007 procedure establishes that the configuration of transport vehicles and their axle load capacity must be regulated by the T3S3 vehicle configuration, thereby complying with the Supreme Decree. 058-2003 of the Ministry of Transport and Communications.

“TRALEX” does not subcontract any cyanide handling or transport company.

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

*This operation is*

- ✓ In full compliance
- □ In substantial compliance
  - Transport Practice 1.4
- □ Not in compliance

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

Drivers must ensure that each container number matches the one indicated in the documentation issued by the customs agency, following the chain of custody in accordance with the sender and recipient referral guidelines.

The container will be permanently fixed on the platform or a low bed (whose center of gravity is favorable to stability) and will be fixed by a system of chains and safety pins to secure the semi-trailer containers, which will be recorded in the Form TRL-Fope001: “Informe de Viaje de Materiales Peligrosos” (Hazardous Materials Travel Report). Any observation is placed in this format.

The TRL-SEGpro007 procedure establishes the labeling requirements in section 6.2.3:

a. Cyanide transport units must have adequate signage complying with the Peruvian Technical Standard NTP399.015-2001.

b. The containers will have the code UN - 1689 code of the United Nations orange book

c. NFPA 704 is the Standard that explains the "diamond of hazardous materials" established by the National Fire Protection Association, used to communicate the risks of hazardous materials

d. All containers must have a clear and visible identification.
e. Cargo containers should have on each side: 1 NFPA Rhombus sign, a UN code sign, a United Nations classification of hazardous materials sign and a marine pollutant sign. And at each end of the unit, he must have: 1 NFPA Rhombus sign, a UN code sign, and a United Nations classification of hazardous materials sign.

f. According to these rules, the units will be marked.

TRALEX has established in procedure TRL-SEGpro007 section 7.1 b and c that inspections of transport and escort vehicles must be carried out by the drivers and the supervisor of each escort vehicle, both in the front of the convoy as in the back.

To document these inspections, forms TRL-Fope009 and TRL-Fope008 will be used.

TRALEX has established the procedure TRL-MANpro001 “Procedimiento para Mantenimiento Preventivo y Correctivo” (Procedure for Preventive and Corrective Maintenance).

TRALEX has established in procedure TRL-SEGpro007 section 6.3 d and e:

d. Trips will be scheduled only during the daytime hours (in daylight), except for modifications due to force majeure events or direct coordination with clients.

e. The maximum daily worktime will be of 12 hours, including a 01-hour breakfast break and a 01-hour lunch break (02 hours break in total). After that time the staff will proceed to rest for 8 hours.

The operation will transport cyanide both in iso-tanks and in sea containers.

To prevent load from shifting, the TRL-SEGpro007 procedure section 6.1 b, c and d has been developed:

b. In bulk mode, iso-tanks are used to transport an amount of approximately 20 tons of solid sodium cyanide, fixed by safety pins and chains in the semitrailer.

c. In the 20-foot mode, fixed by safety pins and chains, each 20-foot container will carry 20 boxes stacked on two levels to occupy the entire volume of the container to prevent cargo from shifting. Each box includes a 1-ton big bag of solid sodium cyanide.

d. In the 40-foot container mode, fixed by safety pins and chains, each 40-foot container will carry 20 boxes located at floor level (not stacked) for added stability that occupies the entire area of the container to prevent cargo from shifting. Each box includes a 1-ton big bag of solid sodium cyanide.
TRALEX has established in procedure TRL-SEGpro007 7.5 d that the Escort Supervisor is empowered to stop the convoy of units if the safety standards established in this procedure are not met and/or the conditions for the trip are not adequate (adverse conditions, social conflicts).

TRALEX has established an alcohol and drug policy TRL-SIG-pl002.

The operation is committed to maintaining records documenting the maintenance aspects of the vehicles; limitation in driving hours, meals and breaks; and alcohol and drug tests performed.

In the form Registration of Controls- TRL-Fope001: “Informe de Viaje de Materiales Peligrosos” (Hazardous Materials Travel Report), stops for rest, meals will be recorded; as well as any anomaly or observation on the route.

In the forms: For the records of maintenance of tracts the formats will apply: QHSE-DCR-Fman006, QHSE, DCR-Fman007, QHSE-DCR-Fman008, QHSE-DCR-Fman009.

And for the maintenance records of the trailers, semi-trailers and low beds, the formats will be used. For maintenance, the following formats apply: QHSE-DCR-Fman080, QHSE-DCR-Fman081, QHSE-DCR-Fman082.

The company DCR Minería y Construcción, SAC, will be in charge of maintaining the TRALEX transport units.

All drivers and members of the convoy, before leaving for the trip, will pass an alcohol test. The results will be documented on form TRL-Fseg-018 v00.

a) The escort supervisor delivers the route sheet, the check list, the control record, “Guía de Remisión del Remitente” (GRR) Sender Remission Waybill, “Guía de Remisión del Transportista” (GRT) carrier Remission Waybill, along with the trip report in which any modification in the route is registered, which will be presented to the client upon request.

b) The operator of the tract (driver) upon returning to the base will deliver to the Operations Coordinator the sender and carrier referral guides.

c) The tractor operator (driver) makes the maintenance request, which will be referred to the maintenance area to monitor the operation of the Unit.

“TRALEX” does not subcontract any cyanide handling or transport company.
Transport Practice 1.5:
Follow international standards for transportation of cyanide by sea and air.

The scope of this audit is only for ground transportation operations performed by TRALEX from Port and certified warehouse to client’s site.

This operation is

✓ In full compliance
☐ In substantial compliance  Transport Practice 1.5
☐ Not in compliance

Summarize the basis for this Finding/Deficiencies Identified:

“TRALEX” does not transport by sea or air and sea.
Transport Practice 1.6:
Track cyanide shipments to prevent losses during transport.

This operation is

- In full compliance
- In substantial compliance
- Not in compliance

Summarize the basis for this Finding/Deficiencies Identified:

TRALEX has established in procedure TRL-SEGpro007 section 6.5 h that the convoy has base radios in its units for communication. The supervisor has a cell phone and a satellite phone.

Any situation encountered is communicated to the base immediately and recorded in the trip report.

Additionally, the network manager maintains GPS communication with all units on routes.

According to the procedure TRL-SEG-pro007 section 7.1 a) iv, the monitoring control supervisor will verify that the GPS of the units is active.

TRALEX is committed to periodically testing radio and telephone equipment. TRALEX is also committed to test them daily during all transport processes, to ensure their functionality, in the forms TRL-Fope009: “Check List unidad de cianuro” (Check List cyanide unit) made by the operator of the tract (driver). The Check List of the escort van is also carried out, which is documented in form TRL-Fope008: Escort Van Check List.

Intermittent blind areas have been identified on both routes considered, in which the use of cell phones will cover this need.

In the procedure TRL-SEGpro006, “Procedimiento para la Selección de Rutas en el Transporte de Materiales Peligrosos” (Procedure for the selection of routes in the transport of dangerous materials) section 6.1 G p. 6 establishes that it will proceed to carry out an identification of the areas where it is impossible to establish communications.

On the TRL-Fope004 “Reporte de Selección de Ruta de Transporte” (Transportation Route Selection Report), these blind areas must be recorded.
In TRL-SEGpro007 “Procedimiento de Seguridad Operacional en el Transporte de Cianuro” (Operational safety procedure in the transport of cyanide) item 7.5.i p. 12, it is requested that in case of an emergency the Escort Supervisor activates the Emergency Plan. He must follow step by step what the Emergency Preparedness and Response Plan “Plan de Preparación y Respuesta ante Emergencias” (PPRE) indicates and communicate by phone. In case there is no phone service in the area, the satellite phone will be used.

In TRL-SEGpro007 “Procedimiento de Seguridad Operacional en el Transporte de Cianuro” (Operational safety procedure in the transport of cyanide) established in section 7.1 a establishes the requirement to track by GPS.

The GPS supervisor Marco Huahuacondori was interviewed. He gave the lead auditor a demonstration of how the transportation process monitoring will be carried out.

TRALEX will implement the chain of custody system, since departure with the cargo, including a security seal placement. In TRL-SEGpro007 “Procedimiento de Seguridad Operacional en el Transporte de Cianuro” (Operational Safety Procedure in the Transport of Cyanide), section 7.4 c states:

c) The operator of the tract (Driver) verifies that all the data included in the “Guías de Remisión Remitente y de Transportista” (sender's and carrier's Remission Waybill) are correct. He must verify the gross weight in the record of weights and measures and the MSDS issued by the provider. He will carry this throughout the course of the service to its destination

The driver will only load the maximum amount of 20 boxes of sodium cyanide per container, each of which includes a bag (Big-Bag) of 1 ton each, according to the configuration and design of the unit.

On forms TRL-Fope001 - “Informe de Viaje de Materiales Peligrosos” (Dangerous Materials Travel Report) and TRL-Fope002 - “Recepcion y Entrega de Cianuro de Sodio” (Receipt and Delivery of Sodium Cyanide), the control of the cyanide charge will be carried out from reception to delivery in the mines.

TRALEX has established in TRL-SEGpro007 “Procedimiento de seguridad operacional en el transporte de cianuro” (Operational safety procedure in the transport of cyanide), section 7.4 c:
c) The operator of the tract (Driver) verifies that all the data included in the “Guías de Remisión Remitente y del Transportista” (Sender's and Carrier's Remission Waybill) are correct. He must verify the gross weight in the record of weights and measures and the MSDS issued by the provider. He will carry this throughout the course of the service to its destination.

The MSDS of the products that will be transported have the MSDS safety sheets.

“TRALEX”, does not subcontract any cyanide handling or transport company.

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.

This operation is:

- ✓ In full compliance
- □ In substantial compliance Transport Practice 2.1
- □ Not in compliance

Summarize the basis for this Finding/Deficiencies Identified:

The operation is in NOT APPLICABLE with Standard of Practice 2.1 requiring an operation Store cyanide in a manner that minimizes the potential for accidental releases.

TRALEX has no stores or warehouses in territory of Peru.
3. **EMERGENCY RESPONSE**: Protect communities and the environment through the development of emergency response strategies and capabilities.

**Transport Practice 3.1**:  
Prepared detailed emergency response plans for potential cyanide releases.

This operation is

- [✓] In full compliance  
- [ ] In substantial compliance 
- [ ] Not in compliance

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

TRALEX has the procedures: TRL-ppre001.01 and TRL-ppre001.02

TRL-ppre001.01 – “Plan de Preparación y Respuesta Para Emergencias en el Transporte de Cianuro de Sodio (PPRE)– Cerro Óxidos” (Emergency Preparedness and Response Plan for the Transport of Sodium Cyanide - Cerro Óxidos), prepared on June 10, 2019.


These plans have been designed to facilitate the general guidelines, functions, responsibilities and strategic planning aimed at responding appropriately to emergency situations that may occur on the route to Cerro Óxidos, as well as on the route of Pucamarca and the Interior mentioned. The purpose is to have adequate coordination with the Cerro Óxidos (and Pucamarca) Emergency Response System area.

The Emergency Plan has considered different scenarios to comply with the legal requirements in matters related to emergency response.

The potential emergency situations to which the company's operations are exposed are identified. This minimizes the probability of an emergency through an adequate inventory and risk assessment.
It establishes the communication procedures with the Cerro Óxidos Emergency Response System area when an emergency occurs or is imminent.

It establishes communication quickly and efficiently to deal with any emergency, coordinating and supporting the Emergency Response System area.

It has a structured, planned organization and distribution of responsibilities to effectively face an emergency to minimize post-emergency losses.

It shows how to apply preparedness measures to respond to eventual emergencies, to reduce the impact on people, property, the environment and the community.

It has contingency measures that allow, once an emergency has occurred, to restore operations in the shortest time.

In Procedures TRL-ppre001.01 - section 4.2 “Características del Cianuro de Sodio Sólido” (Characteristics of Solid Sodium Cyanide), p. 4 and procedure TRL-ppre001.02 - section 4.2 “Características del Cianuro de Sodio Sólido” (Characteristics of Solid Sodium Cyanide), p. 5 of the Emergency Response Plan the physical and chemical characteristics of cyanide, the general aspects associated with levels of intoxication, lethal dose, the risks of cyanide in different states are listed.

The limits of exposure to cyanide and its characteristics are detailed according to the humidity and type of presentation.

Section 8.1 of the Emergency Response Plan establishes the flow chart of actions before the occurrence of an incident, which follows these steps:

- Securing the convoy units
- Accident notification
- Initial assessment of scene safety
- Conformation of the incident command
- Identification of the problem, isolation of the area
- Response planning
- Implementation of the action plan
- Verification of compliance with the action plan
- Decontamination and end of incident
Each action describes details of the implementation associated with transport on platforms and isotherm tanks, including meeting points.

Section 8.2 of the Plan divides emergency procedures into three areas: procedures related to the transport vehicle itself, those related to the surroundings and the environment, and those related to the product. Although the procedures are divided, they are framed within the trucking process.

Section 8.6 addresses the procedure for lifting the state of emergency, which can only be lifted by the incident commander.

This event of lifting the state of emergency must be carried out in close coordination with the GENERAL DIRECTORATE OF ENVIRONMENTAL HEALTH OF THE MINISTRY OF HEALTH. This applies in the case of large events that involve the integrity of the population and the environment near the emergency area.

TRALEX in Annex 6 of the Emergency Plan contains a quick reference chart for emergencies, in which a summary of the measures applicable in the different scenarios to avoid poisoning and contamination is presented. This considers the application of antidote and the coordination with paramedics and doctors of the attention centers and the client.

In the procedures TRL-ppre001.01 - ANNEX 7 “Metodología de Transporte - Requisitos” (Transport Methodology – Requirements), page 64 and in the TRL-ppre001.02 - ANNEX 7 “Metodología de Transporte - Requisitos” (Transport Methodology – Requirements) Pag 65, it is specified that:

a) The transport of cyanide is carried out by land from the beginning and the end of the service.  
b) Trips will be scheduled only during the daytime hours (in daylight), except for modifications due to force majeure events or direct coordination with clients.  
c) The maximum daily work time will be 12 hours, including a 01-hour breakfast break and a 01-hour lunch break (02 hours break in total).  
d) After that time the staff will proceed to rest for 8 hours.  
e) Operators must have the A-4 license that enables it to transport cargo of dangerous materials.

In the TRL-ppre001.01 procedures - section 4.1. “Identificación de Peligros y Evaluación de Riesgos de las Rutas de Transporte” (Hazard Identification and Risk Assessment of Transport Routes) p. 3 and TRL-ppre001.02 - section 4.1. “Identificación de Peligros y Evaluación de Riesgos de las Rutas de Transporte” (Identification of Hazards and Risk Assessment of the Transport Routes) p. 3.
Routes), p. 3, aspects related to the road are considered, including watercourses and communities on the routes.

Transport vehicles such as trailers, tracts and iso-tanks are considered in the Emergency Plan. Procedures have been established in section 8.2.1 to 8.2.16 in different vehicle-related scenarios on dry, wet, rural, urban areas, spills from a broken box, spills from several broken boxes (large spills).

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The use of 40-foot trailers and containers, containing 20 tons of cyanide, has been adopted in order to obtain a lower center of gravity, achieve more stability, and streamline the handling of an emergency and the clearance of the way in case it is obstructed by an incident.

The flatbeds are 20 feet long. They have the same objective of maintaining a lower center of gravity, which transport 20-foot long shipping containers with 20 tons of cyanide. The iso-tanks are transported in flatbed with a net load of 17 tons, and thus also achieve greater maneuverability and stability in an emergency, and a lower center of gravity.

Iso-tanks have an inspection certificate issued by Bureau Veritas. The following characteristics were examined:

- Weld joints were verified by magnetic particles.
- Thickness verification by ultrasound.
- Inspection by penetrating dyes.
- Calculation memory registration.
- Calculation of remaining life.
- Rate of corrosion.
- Dimensional control.
- Hydrostatic test.
- Sandblasting and painting records.
- Hatch and seal conditions.
- Load and lifting support structure.
The above certifies the suitable operating capacity of each container tank or iso-tank. The trip report verifies important points about the state of each of the iso-tanks that could have major consequences in an emergency.

In incidents related to the transport vehicle, the plan considers incidents of mechanical damage, and how to ensure that the cargo is protected on the road as well as in populated areas. Since the towing trucks and the platforms have similar specifications, it is possible to achieve logistical support with another unit in the event of an incident, and maintain a spare parts inventory tailored to the needs of the entire fleet.

Annex 7 of the Emergency Plan establishes that units are permanently maintained in adequate mechanical conditions, with modern equipment no more than five years old.

The tracts and the platforms comply with the vehicular requirement T3S3 of the Supreme Decree 058-2003 MTC, regarding the transportation of dangerous materials in Peru, the capacities, including the minimum specifications.

The container or iso-tank must be permanently fixed on the platform and / or bed and it will be fixed by a system of chains and safety pins to secure semi-trailer containers, which will be recorded in the Hazardous Materials Travel Report Format and any observation will be placed in that format.

In the procedures related to the Emergency Plans of Cerro Óxidos and Pucamarca TRL-ppre001.01 - section 8.2 “Procedimientos de Respuesta a Emergencias” (Emergency Response Procedures) p. 27 and TRL-ppre001.02 - section 8.2 “Procedimientos de Respuesta a Emergencias” (Emergency Response Procedures) p. 28, different scenarios are established of incidents, such as those related to the vehicle unit, the environment - surroundings and the product.

According to the procedures established in the “Plan de Respuesta a Emergencia” (Emergency Response Plan) TRL-ppre001.01 - section 6.2, from ordinal I to ordinal N “Identificación de Responsabilidades” (Identification of Responsibilities) p. 12 and TRL-ppre001.02 - section 6.2 from ordinal I to ordinal N, “Identificación de Responsabilidades” (Identification of Responsibilities) p. 13, the responsibilities of the client, mining company, police of Peru, the “Instituto de Defensa Civil” (Institute of Civil Defense) (INDECI) and the “Ministerio de Salud” (Ministry of Health) are defined.
Transport Practice 3.2:
Designate appropriate response personnel and commit necessary resources for emergency response.

This operation is

✓ In full compliance
☐ In substantial compliance Transport Practice 3.2
☐ Not in compliance

Summarize the basis for this Finding/Deficiencies Identified:

TRALEX has prepared training in emergency response, as established in TRL-SEGprog003 – “Programa Anual de Capacitación y Entrenamiento - Curso HAZMAT” (Annual Training and Training Program - HAZMAT Course). This course is taught by a specialized external company, with a duration of 24 (hours) per person, for drivers and supervisors. This course is scheduled to be taught in the month of August 2020 according to said Annual Training Program.

The description of the responsibilities and roles of the Cerro Óxidos Mine route personnel, in case of emergencies, are indicated in TRL-ppre001.01 - section 6.2. “Identificación de responsabilidades” (Identification of responsibilities) pp. 9-12 and TRL-ppre001.01 - section 6.3. “Organización ante una Emergencia: Comando de Incidentes” (Organization in an Emergency: Incident Command) pp.13-16.


For both routes the responsibilities of the Incident Commander, Safety Officer, Planning Section, Liaison Section, Operations, and Logistics are described.

The detailed list of emergency response equipment is defined in the Emergency Plans TRL-ppre001.01 - ANNEX 4 “Lista de Equipos de Primera Respuesta ante Emergencias y de Protección Personal” (List of Emergency Response and Personal Protection Equipment) pp. 50-51 and TRL-ppre001.02 - ANNEX 4 “Lista de Equipos de Primera Respuesta ante Emergencias y de Protección Personal” (List of Emergency Response and Personal Protection Equipment) pp. 51-52.
Among the types of equipment detailed in the checklist are:

a. Personal Protective Equipment (PPE’s): For the execution of daily tasks.
b. Vehicle Protection Equipment (EPV): For minor incidents and mechanical damage to the unit.
c. Vehicle First Response Team: For product-related vehicle emergencies.
d. Escort First Response Team: Emergency response team.

These implements will be reviewed in each shipment of Sodium Cyanide through the CHECK LIST. This activity will be carried out by the Route Supervisor, also including escort trucks. The use is mandatory according to the needs and characterization of the identified risks.

The TRL-SEGpro007 “Procedimiento de Seguridad Operacional en el Transporte de Cianuro” (Operational Safety Procedure in Cyanide Transport) item 7.1 b, c p. 9 requires a review of the equipment available in cyanide transport vehicles and in escort vans.

The forms used where the equipment checklist appears are:
TRL-Fope009 – “Check List Unidad Cianuro” (Cyanide Unit Check List).
TRL-Fope008 – “Check List Camioneta Escolta Cianuro” (Check List Van Cyanide Escort).

The Emergency Plans for both routes: TRL-ppre001.01 - ANNEX 4 “Lista de Equipos de Primera Respuesta ante Emergencias y de Protección Personal” (List of Emergency Response and Personal Protection Equipment) pp. 50-51 and TRL-ppre001.02 - ANNEX 4 “Lista de Equipos de Primera Respuesta ante Emergencias y de Protección Personal” (List of Emergency Response and Personal Protection Equipment) pp. 51-52, contains details of the equipment.

TRALEX will be regulated by document TRL-Frh002 – “Ficha de Inducción de Personal Nuevo” (Induction form for New Personnel), which considers all the steps that a new worker must take in relation to their rights, human resources aspects, policies, hazard control, hygiene and risks prevention.

In the TRL-SEGprog003 – “Programa Anual de Capacitación y Entrenamiento” (Annual Training and Training Program), the trainings are detailed following a periodic program, dictated by professionals internal and external to the company.

The annual training provided to transport vehicle operators is documented in the forms and registration "TRL-Frh002 - Ficha de inducción de personal nuevo; y TRL-SEGprog003 - Programa Anual De Capacitación Y Entrenamiento" (Induction form for new personnel; and TRL-SEGprog003 - Annual Training and Training Program).
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In February 2020, four (4) hours of training were provided on the Emergency Preparedness and Response Plan.

For the month of August 2020, 24-hour training per person is scheduled for drivers and supervisors on Hazardous Materials Response (MATPEL), dictated by an external company.

The training record of the 4-hour course Emergency Preparedness and Response Plan, issued on February 22, 2020, was reviewed.

The Emergency Response Plan section 11.4 in ANNEX 4 establishes that the implements will be checked in the trucks in each shipment of Sodium Cyanide through the CHECK LIST. This activity will be carried out by the Route Supervisor, and it also includes escort trucks. The use is mandatory according to the needs and characteristics of the identified risks.

The equipment to be inspected includes protective clothing, multi-gas cartridges, safety boots, gloves, polyethylene bags, signage, cleaning equipment, breathable oxygen application kit, MSA gas detector and neutralization substance.

“TRALEX” does not subcontract any cyanide handling or transport company.

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

*This operation is*

- In full compliance
- In substantial compliance
- Not in compliance

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

In the Emergency Response Plans for the two routes: TRL-ppre001.01 - section 7.2, 7.3 “Comunicación Externa e Interna” (External and Internal Communication), pp. 21-23, TRL-ppre001.01 - ANNEX 2 “Lista de contactos “ (List of contacts), pp. 47-48 and TRL -ppre001.02 - section 7.2, 7.3 “Comunicación Externa e Interna” (External and Internal Communication), pp. 22-24, TRL-p pre001.02 - APPENDIX 2 “Lista de contactos “ (List of contacts), pp. 48-49; It is established that any incident that occurs in the present sodium cyanide transportation service must be reported to the mine.
In ANNEX 2 of each of the two routes, there are the contact numbers of the people and entities that could be involved in attending to an emergency.

Communication to those responsible for attending the emergency.

A. TO TRALEX MANAGERS: The initial communication must be given to the Head of Security of the company to activate the crisis committee when appropriate and inform all its members. It may be done through a phone call.

B. TO THE CLIENT'S OFFICERS: Communication to customers is given to the executive who is held as the contact for the implementation of the service, so that he can put into effect his Crisis Committee. It may be done through a phone call.

C. TO THE EMERGENCY CENTER OF COMPAÑÍA MINERA: After the initial communication to the TRALEX headquarters, COMPAÑÍA MINERA must be contacted. The crisis committee must be activated when appropriate. All its members must be notified. This may be done through a phone call to the emergency center.

D. TO THE EMERGENCY SERVICES: According to the location of the accident, the severity of the events and the need for resources or specialized intervention, the Police, Health Services, the fire company, the mine brigade, water service, public electricity service, etc. will be notified as appropriate.

E. TO OTHER INSTITUTIONS: The information to be provided to other institutions, communities, local and national authorities, at the start of the event, that are not an active part of the emergency care is restricted. Communications in this way must be authorized by the company's crisis committee.

The General Management will designate the person in charge to communicate to the “Dirección General de Asuntos Ambientales” (General Directorate of Environmental Affairs) an initial report of the magnitude of the emergency.

The Emergency Response plans of the Cerro Óxidos Mine and the Pucamarca Mine routes, "TRL-ppre001.01 - ITEM 10.1 “Revisión del PPRE” (Revision of PPRE) p. 43, TRL-ppre001.02 - ITEM 10.1 “Revisión del PPRE” (Revision of PPRE) pp. 44-45" establishes that once a year the plan will be reviewed. As necessary, the outdated section (s) shall be updated. The following points will be considered:  
• Alteration or modification of operations.  
• Modification of the guidelines for the preparation of the emergency preparedness and response and mitigation plan.  
• Changes in the organization of the emergency team.
• Drill Results.
• Emergency evaluations.
• New applicable legislation.
• Evaluation of a new route.
• Updating of emergency numbers (medical attention centers, fire companies, municipalities, police stations).

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

This operation is

- In full compliance
- In substantial compliance: Transport Practice 3.4
- Not in compliance

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

The Emergency Response Plans, TRL-ppre001.01 - sections 8.3 and 8.4 “Procedimiento de Neutralización de soluciones o sólidos de producto derramado” (Neutralization Procedure for solutions or solids of spilled product) p. 41 and TRL-ppre001.02 - ITEM 8.3 and 8.4 “Procedimiento de Neutralización de soluciones o sólidos de producto derramado” (Neutralization Procedure for solutions or solids of spilled product) p. 42; consider:

8.3 “Procedimiento de Neutralización de soluciones o sólidos de producto derramado” (Neutralization Procedure for solutions or solids of spilled product):
“Emergency Response Plan prohibits the use of chemicals such as sodium hypochlorite, ferrous sulfate and hydrogen peroxide in surface water (where the potential exists for releases to reach surface water).”

8.4 Decontamination procedures of the spilled area
After applying the specific emergency response procedures, it is recommended to consider the following for decontamination of the spill area:
- a. Decontaminate all affected areas
- b. Define the appropriate container to recover the cleaning material.
- c. Remove contaminated soil and debris if required.
- d. Decontaminate all equipment.
e. Package all contaminated material for disposal.
f. Collect samples for certification: Water samples affected by contamination, soil samples, etc.

Pursuant to Procedure 8.2.13 (regarding Product Related Incidents), TRALEX will be responsible for remediating dry cyanide spills, including recovery, for small spills (spills from a single box).

The incident commander must coordinate the arrival of specialists who can certify the state of soil contamination and corrective measures must be taken.

In the event of large spills, involving breaks of more than one (1) box, the support of the 2nd Response Team, under the lead of the mining company, will be requested.

In the event of spills in wet terrain, small or large, the support of the 2nd Response Team, under the lead of the mining company, will be requested.

Section 8.4 g establishes that the transportation and disposal of the contaminated material will be coordinated with the Shipper and Recipient of the cargo (mine). This process will be supervised by the Solid Waste Service Provider Companies “Empresas Prestadoras de Servicios de Residuos Sólidos” (EPS-RS) that the shipper or recipient indicates.

In none of the transport vehicles or escorts, the sodium hypochlorite will be part of neutralization substances.

In the Emergency Response Plan TRL-ppre001.01 and TRL-ppre001.02- section 8.3 “Procedimiento de Neutralización de soluciones o sólidos de producto derramado” (Neutralization Procedure for solutions or solids of spilled product) pages 41 and 42, respectively, it is indicated that the use of chemicals, such as sodium hypochlorite, ferrous sulfate, and hydrogen peroxide, is prohibited. Lime is used to treat cyanide. Once it has entered moving surface water, the use of these chemicals (including lime) is counterproductive and has limited effectiveness.
**Transport Practice 3.5:**
*Periodically evaluate response procedure and capabilities and revise them as needed.*

This operation is

- [✓] In full compliance
- [☐] In substantial compliance
- [☐] Not in compliance

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

The Emergency Response plans of the Cerro Óxidos Mine and the Pucamarca Mine routes, "TRL-ppre001.01 - ITEM 10.1 “Revisión del PPRE” (Revision of PPRE) pp. 43, TRL-ppre001.02 - ITEM 10.1 “Revisión del PPRE” (Revision of PPRE) pp. 44-45" establishes that once a year the plan will be required to be reviewed. As necessary, the outdated section(s) shall be updated. The following points will be considered:

- Alteration or modification of operations.
- Modification of the guidelines for the preparation of the emergency preparedness and response and mitigation plan.
- Changes in the organization of the emergency team.
- Drill Results.
- Emergency evaluations.
- New applicable legislation.
- Evaluation of a new route.
- Updating of emergency numbers (medical attention centers, fire companies, municipalities, police stations).

In the Emergency Plans "TRL-ppre001.01 and TRL-ppre001.02 - section 9 “Entrenamiento y Simulacros” (Training and Drills) p. 43 and p. 44 respectively, and in TRL-SEGprog002 v00 – “Programa de Actividades” (Activities Program), it is indicated that the drill program will be carried out according to what is programmed in the TRL-SEGprog002 - “Programa de Actividades" (Activities Program).

The programming of the drill will be carried out in the format: “Plan de Simulacro” (Drill Plan), which will detail the setting, date, place and participants. The Drill Plan will be sent to the convoy supervisor in advance for review. After the drill is complete, the escort supervisor will issue a report on form TRL-Fseg018.
The Drill Report must be sent to the Chief of Security within a maximum period of 07 business days.

The objective of carrying out this evaluation is to identify improvements for the emergency preparedness and response process.

In the Emergency Plans of routes TRL-ppre001.01 and TRL-ppre001.02 - section 10 “Mejora Continua” (Continuous Improvement) pp. 43-44 and 45 respectively; it is established that:

- After the emergency and/or drill, an Emergency Analysis and Evaluation report will be prepared. The objective of carrying out this evaluation is to identify improvements for the Emergency Preparedness and Response process.
- Once a year the plan will be required to be reviewed as necessary, the outdated section (s) shall be updated, for which the following considerations will be considered:
  - Alteration or modification of operations.
  - Modification of the guidelines for the preparation of the emergency preparedness and response and mitigation plan.
  - Changes in the organization of the emergency team.
  - Drill Results.
  - Emergency evaluations.
  - New applicable legislation.
  - Evaluation of a new route
  - Updating of emergency numbers (medical attention centers, fire companies, municipalities, police stations).