

International Cyanide Management Code Mining Operation Recertification Audit - Summary Audit Report

Report Prepared for

Evolution Mining Red Lake Operation

15 Eric Radford Way
Bag 2000
Balmertown, ON P0V 1C0



Report Prepared by



Mountain Valley Professionals, LLC

MVP Project No. P-RLGM2020.6

August 11, 2021

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Summary Audit Report for Mining Operations

Mine Operations: Red Lake Operation
Mine Owner: Evolution Mining Company
Name of Operator: Red Lake Operations
Name of Responsible Manager: Kristy Liddicoat
Address and Contact information: 15 Eric Radford Way
Bag 2000
Balmertown, ON P0V 1C0

Red Lake Operations (RLO)



August 11, 2021

Name of Mine

Signature of Lead Auditor

Date

Location Detail and Description of Operation

Red Lake was originally certified in full compliance with the International Cyanide Management Code on December 22, 2010 under the Goldcorp Canada, Inc. signatory. Red Lake was subsequently recertified in full compliance in 2014 and 2017. On April 18, 2019 Newmont and Goldcorp finalized a merger, which included all Goldcorp sites under Newmont Goldcorp ownership. On, April 1, 2020, Evolution Mining completed the acquisition of the Red Lake Operation from Newmont Goldcorp. Evolution Mining Red Lake Operation became signatory to the ICMC on December 28, 2020. The Red Lake recertification audit scheduled to be completed in 2020, was postponed due to the recent acquisition of the site and subsequently to complications with COVID-19; travel and auditing, received an extension from ICMI was granted until March 31, 2021.

The Red Lake Operations (RLO) are located in Balmertown, Ontario, Canada (Figure 1). Mining, all underground, is carried out using three main mining methods - underground overhand cut and fill, underhand cut and fill, and longhole - allowing maximum ore extraction. The operation is supported by two mill processing facilities; the Red Lake Site (RLS) and the Campbell Site (CS), providing a total milling capacity of 3,000 tons per day, including crushing, processing, and paste fill plants. During this audit cycle the RLS was in a care and maintenance status for two periods; January 2017 – September 2017 and June 2020 – February 2021.



Figure 1 - Location Map of the Red Lake Gold Mines

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Red Lake Site Mill Mineral Processing

At the time of the Recertification Audit, RLS was being re-commissioned after the care and maintenance period from June 16, 2020 to February 25, 2021, with the exception of the Paste Plant operations, which accepts CS tailings and returns reclaimed water to CS. During the field verification for the 2021 audit cycle the RLS was just beginning re-commissioning activities, cyanide was first mixed and cyanide addition were initiated on February 25, 2021. During operations, RLS has the capability to process 1,150 tons per day. The processing facilities consist of crushing, processing, and paste preparation. The crushing circuit is a two-stage process, which reduces underground ore from approximately 12 inches to 3/8 inch. The ore is fed into the jaw crusher and is classified using a sizing screen. Oversized material larger than 3/8 inch is further crushed using the cone crusher. The oversized ore then reports back to the screen for further classification, whereas the undersized ore is conveyed to the processing stages.

The processing stages consist of grinding, gravity concentrating, leaching with cyanide solution, carbon-in-pulp (CIP), carbon elution and reactivation, electrowinning, bullion smelting/refining, cyanide destruction, flotation, and concentrate handling.

The grinding circuit consists of a 1,200 Horsepower (HP) ball mill in closed circuit with sizing cyclones, with the secondary cyclone underflow feeding a 400 HP vertimill. Coarse gold is recovered from grinding using three Knelson Concentrators. This gold is concentrated on a shaker table and smelted into bullion at the RLS refinery.

The overflow from the secondary cyclone is thickened and pumped into four leach tanks where gold is dissolved using a weak cyanide solution. The dissolved gold and slurry mixture then flows to eight CIP tanks that contain granular activated carbon particles that adsorb the gold in solution. The adsorbed gold is stripped from the carbon using a heated mild caustic solution that is pumped to two electrowinning cells. Dore is then produced in the refinery at the RLS.

After exiting the CIP tanks, most of the remaining cyanide in solution is destroyed via the Inco SO₂/Air treatment process, which oxidized the cyanide component of the slurry and precipitates heavy metals. After the cyanide is destroyed, the slurry flows to the flotation circuit. This slurry has a concentrate of sulphides, which encapsulates the remaining recoverable gold and is

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separated from the rest of the gangue minerals. In the flotation circuit, chemicals are added to help the gold bearing sulphide minerals adhere to tiny bubbles of air that are added in small, agitated tanks. The bubbles rise to the surface and collect in a froth layer which is removed from the surface with paddles. The concentrate is collected, and any excess water is removed in the concentrate thickener. The concentrate is transferred at around 70 percent solids through a connecting pipeline, but if required it could be filtered to remove moisture and trucked to the concentrate storage area, until reclaimed back into the process later. This concentrate is then processed in the CS pressure oxidation circuit (autoclave).

The tailings from the flotation circuit are directed to the Paste Plant from where the slurry is either discharged to the RLS Tailings Management Facility or prepared to be used as backfill underground. The tailings that are used underground are filtered using a disc filter to remove excess water. The filtered tailings are then mixed with cement, fly ash, and water to form a paste. Once the proper consistency was achieved, the paste was sent underground to the desired stope. Tailings sent to the RLS Tailings Management Facility were discharged via spigot to either Tailings Area 1 or Tailings Area 2. Water is decanted to Tailings Area 2, followed by the Primary and Secondary ponds. Lastly, water is pumped from the Secondary Pond to the treatment plant to remove arsenic before the water was discharged into Balmer Lake. Water is also pumped from the Secondary Pond to the RLS for reuse as process water.

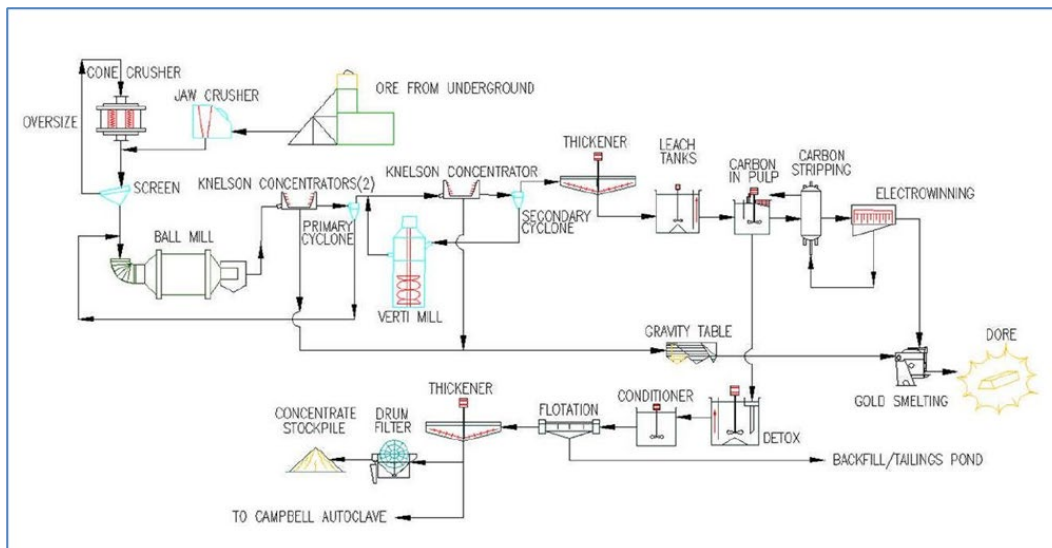


Figure 2 - Process Flowchart at Red Lake Site

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Campbell Site Mill Mineral Processing

The CS mill has the capability to process 1,850 tonnes per day. Processing facilities consist of crushing, grinding, gravity recovery, flotation, pressure oxidation, cyanide leach, carbon-in-leach (CIL), CIP recovery and paste preparation.

The crushing plant is a three-stage process which reduces underground ore size to approximately ½ inch in size. The ore is fed into a jaw crusher, which reports to a standard cone crusher. The ore is then classified using a double deck screen. Oversized ore is fed into a short head cone crusher to be crushed to the desired size and reports back to the screen for additional classification, whereas the crushed undersize ore is conveyed to the grinding circuit to be reduced further in size.

The grinding circuit is a two-stage process with an open circuit rod mill and a closed-circuit ball mill with sizing cyclones. The coarse gold is recovered from the grinding circuit using two Knelson Concentrators. The gold is concentrated on a shaker table and sent to the refinery at the RLS where it is smelted into bullion.

Following grinding, the slurry is fed to the flotation circuit where a sulphide concentrate is produced. In the flotation circuit, chemicals are added to help the gold bearing sulphide minerals adhere to tiny bubbles of air that are added to the bottom of small, agitated tanks. The bubbles rise to the surface and collect in a froth layer, which is removed from the surface with paddles. The concentrate is collected, and any excess water is removed in the concentrate thickener. This concentrate is then mixed with concentrate from RLS and passes into the pressure oxidation circuit (autoclave). The flotation tails pass on to the cyanide leach circuit for additional gold recovery.

In the pressure oxidation circuit, thickened flotation concentrate is contacted with weak acidic solution to convert any hydrocarbons into CO₂. This process takes place in five continuous stirred reactor tanks to ensure that this reaction is complete. It is very important that all CO₂ is removed as the CO₂ will rob the oxygen's partial pressure, ultimately resulting in low autoclave kinetics. Once treated, the slurry is then pumped into a carbon steel, lead and acid brick lined autoclave where the concentrate will be exposed to extreme pressures (305 PSI) and high temperatures (varying depending on compartments). Under these conditions, the oxidation

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process converts the sulphides to sulphates and the arsenopyrite to scorodite (ferric arsenate). The oxidized slurry is pH adjusted using lime prior to being leached in the CIL circuit. The acidic tailings solution from the oxidation process is sent to the waste treatment circuit where it is first neutralized with final mill tailings, and then further with lime.

The oxide product from the autoclave circuit and the flotation tailings are leached in a weak cyanide solution for approximately 72 hours. Carbon is added to CIP 6 and transferred concurrently with the flow of slurry right up to CIL 1. The gold in solution is adsorbed onto the carbon and the loaded carbon is separated from the slurry using a screen. The gold is stripped from the carbon using a caustic solution. The carbon is then acid washed to remove calcium in the pores of the carbon, before being reactivated in a rotary kiln and recycled.

The leached tailings are then treated using the Inco SO₂/Air process which oxidizes the cyanide component of the slurry and precipitates heavy metals. After the cyanide is destroyed, the slurry is sent to the paste thickener. Slurry that is to be sent underground is filtered before adding cement, fly ash and water to form a paste. Once the proper consistency is achieved, the paste is discharged underground by gravity to the desired stope. Thickener underflow that is not required for paste fill is mixed with the acidic solution from the pressure oxidation circuit and treated with lime in the waste treatment circuit to precipitate metals and increase the pH. Outflow from the waste treatment circuit is combined with thickener overflow prior to being pumped to the Campbell main tailings pond.

In December 2016, a 2-kilometer bi-directional pipeline was constructed that transfers CS tailings to the RLS Paste Plant, and returns reclaimed water from the RLS Paste Plant to CS.

All water that has accumulated in the main tailings pond is treated by pumping into the effluent treatment system from approximately May through October. Once the water reaches effluent treatment, lime is added to adjust the pH further to ensure the removal of metals. From the effluent treatment system, the treated effluent is pumped to the settling pond. The settling pond also receives inflow of water from the primary clear water pond which stores runoff from the closed Balmer Tailings and seepage from the Main Tailings Pond. From the settling pond, water is filtered as it travels through waste rock berm into the polishing pond. Next, the polishing pond water is gravity fed to the wetlands. The wetlands consist of various cells with

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cattails which remove ammonia from the water. The treated water is eventually discharged into Balmer Lake.

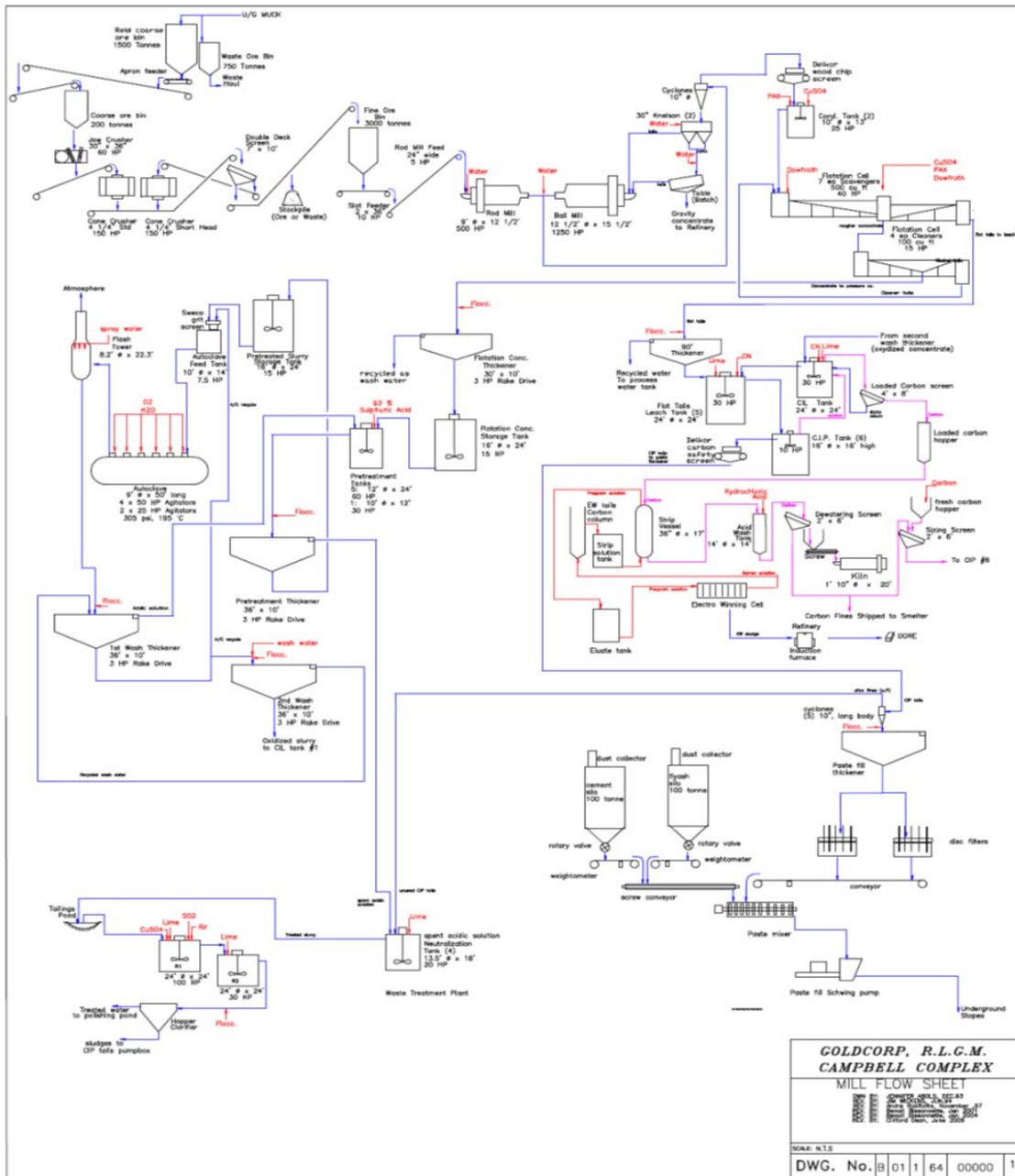


Figure 3 - Process Flowchart at Campbell Site

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Summary Audit Report

Auditor's Findings

**Red Lake Gold Mine
Operations**

- in full compliance with
 *in substantial compliance
with
 not in compliance with

**The
International
Cyanide
Management
Code**

During the previous three-year ICMC audit cycle (occurring over the period July 17, 2017 to date), the Red Lake Operations (RLO) have not experienced any "significant cyanide incidents" subject to the notification requirements under Item 6 of the ICMC signatory application or any cyanide exposures or releases, which are subject to listing under Question 3 of the ICMC Standard of Practice 9.3. The Red Lake Operations have experienced small spills (i.e., minor releases of cyanide-bearing solutions to soil) over the audit cycle; however, these incidents do not affect the compliance status.

During this audit cycle the auditor identified that RLO did not have a process or procedure for significant event reporting to the ICMI. The auditor requested RLO to develop and implement an ICMI significant event reporting process. RLO, developed, implemented, and provided satisfactory evidence, the auditor confirmed a process is now in place.

The auditor has determined that RLO is in **Full Compliance** over this ICMC audit cycle.

Audit Company:

Mountain Valley Professionals, LLC

Audit Team Leader:

John R. Barber, Lead Auditor and
Mining Technical Auditor

Email:

john.barber@mvp-nv.com

Red Lake Operations (RLO)

Name of Mine



Signature of Lead Auditor

August 11, 2021

Date

Other Auditors

Name, Position	Signature
Not Applicable	

Dates of Audit

Audit Dates: *February 22-25, 2021*

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 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 Institute for Mining Operations Verification Protocol (2018) and using standard and accepted practices for health, safety, and environmental audits.

Red Lake Operations (RLO)

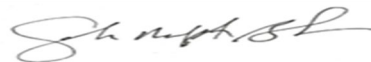


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PRINCIPLE 1 - PRODUCTION

Encourage Responsible Cyanide Manufacturing by Purchasing from Manufacturers Who Operate in a Safe and Environmentally Protective Manner

Standard of Practice 1.1

Purchase Cyanide from Manufacturers Employing Appropriate Practices and Procedures to Limit Exposure of their Workforce to Cyanide, and to Prevent Releases of Cyanide to the Environment

The operation is in full compliance with **Standard of Practice 1.1**
 in substantial compliance with
 not in compliance with

Summarize the basis for this Finding/Deficiencies Identified:

The operation is in full compliance with Standard of Practice 1.1; purchase cyanide from manufacturers employing appropriate practices and procedures to limit exposure of their workforce to cyanide, and to prevent releases of cyanide to the environment.

RLO exclusively purchases its sodium cyanide from Chemours under a contract which requires cyanide to be produced at a facility that has been certified as being in compliance with the Code. Chemours, the cyanide producer, was recertified as fully compliant on January 21, 2020. Independent cyanide distributors were not used.

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PRINCIPLE 2 - TRANSPORTATION

Protect Communities and the Environment during Cyanide Transport

Standard of Practice 2.1 **Establish Clear Lines of Responsibility for Safety, Security, Release Prevention, Training and Emergency Response in Written Agreements with Producers, Distributors and Transporters**

The operation is in full compliance with **Standard of Practice 2.1**
 in substantial compliance with
 not in compliance with

Summarize the basis for this Finding/Deficiencies Identified:

The operation is in full compliance with Standard of Practice 2.1, requiring that the operation establish clear lines of responsibility for safety, security, release prevention, training and emergency response in written agreements with producers, distributors and transporters.

The contract with Chemours clearly states Code responsibilities between producers and transporters. The contract extends to any subcontractors and carriers that may be used by Chemours.

The contract specifies that Chemours will add colorant dye to the solid material packaging prior to shipment.

Standard of Practice 2.2 **Require that Cyanide Transporters Implement Appropriate Emergency Response Plans and Capabilities and Employ Adequate Measures for Cyanide Management**

The operation is in full compliance with **Standard of Practice 2.2**
 in substantial compliance with
 not in compliance with

Summarize the basis for this Finding/Deficiencies Identified:

The operation is in full compliance with Standard of Practice 2.2, requiring that cyanide transporters implement appropriate emergency response plans and capabilities and employ adequate measures for cyanide management.

The contract notes the transportation of cyanide to RLO is the responsibility of Chemours and that transportation is to be conducted by Code certified transporters.

Empire Express, Inc. (Empire) transports cyanide to the operation and was re-certified as fully compliant with the Code on September 20, 2017. ICMI has authorized an extension of time to August 31, 2021, for Empire to complete their recertification audit.

Chain of custody records indicated that only Empire was used to transport cyanide during the Recertification Audit period.

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PRINCIPLE 3 – HANDLING & STORAGE

Protect Workers and the Environment During Cyanide Handling and Storage

Standard of Practice 3.1 **Design and Construct Unloading, Storage and Mixing Facilities Consistent with Sound, Accepted Engineering Practices, Quality Control/Quality Assurance Procedures, Spill Prevention and Spill Containment Measures**

The operation is in full compliance with
 in substantial compliance with **Standard of Practice 3.1**
 not in compliance with

Summarize the basis for this Finding/Deficiencies Identified:

The operation is in full compliance with Standard of Practice 3.1, requiring that cyanide handling and storage facilities are designed and constructed consistent with sound, accepted engineering practices, quality assurance/quality control (QA/QC) procedures, spill prevention and spill containment measures.

The mixing and distribution tanks at the RLS Mill are located within the mill which was part of the site verification visit. At the time of the site verification visit the RLS was being re-commissioned after the care and maintenance (not running) period of June 16, 2020 to February 24, 2021. The reagent grade cyanide mixing, and distribution systems were not in operation at the time of the site verification visit. The RLS reagent grade cyanide systems were recommissioned on February 25, 2021.

Facilities for unloading, storing and mixing cyanide have been designed and constructed in accordance with cyanide producers' guidelines, applicable jurisdictional rules and/or other sound and accepted engineering practices. No changes in the cyanide storage and mixing facilities have occurred since the previous Recertification Audit, except for repair of the RLS cyanide mixing tank based on the 2019 Non-Destructive Testing (NDT). An inspection of the facilities in 2017 by the cyanide producer did not identify any improvements or corrective works. Unloading and storage areas of solid cyanide are located away from people and surface waters. Cyanide is not transported, stored or unloaded in solution.

The temporary storage area within the CS Mill, as well as the mixing and storage tanks, are located away from mill offices and areas where staff may congregate.

The temporary storage area in the RLS Mill, as well as the mixing and storage tanks, are located away from mill offices and areas where staff may congregate. The mill itself is located approximately 100 m from Balmer Creek, in a bermed area with no reasonable flow path to the creek. The cyanide mixing and distribution tanks at the RLS Mill have level sensors and high-level alarm indicators (lights and a siren) to warn of possible overfilling. There is also a system with automatic shut off valves that prevents overfilling of the mixing tank.

The mixing and distribution tanks at the CS Mill also have level sensors and high-level alarm indicators (lights and a siren) to warn of possible overfilling. The systems to prevent overfilling are

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maintained. The high-level sensor on the mix tank shuts off makeup water addition at 89% and the high-level alarm is set at 95%. The level sensor on the distribution tank automatically shuts the valve from the mixing tank at 95%.

The systems to prevent overflowing are maintained and inspected routinely.

Cyanide mixing and storage tanks are located on a concrete surface that can prevent seepage to the subsurface.

The secondary containments for the mixing and distribution tanks at both the RLS Mill and the CS Mill are constructed of reinforced concrete that provides a competent barrier to leakage.

The cyanide is stored with adequate ventilation to prevent the build-up of HCN gas, under a roof and off the ground. The central storage area and reagent mixing facilities are in secure areas where public access is prohibited, and employee access is restricted. The cyanide is stored separately from incompatible materials through packaging and secondary containments which prevent mixing. The cyanide storage tanks for the mills are located within the open areas of the mills, which provide adequate ventilation to prevent build-up of hydrogen cyanide gas.

Standard of Practice 3.2

Operate Unloading, Storage and Mixing Facilities using Inspections, Preventive Maintenance and Contingency Plans to Prevent or Contain Releases and Control and Respond to Worker Exposures

The operation is

in full compliance with
 in substantial compliance with
 not in compliance with

Standard of Practice 3.2

Summarize the basis for this Finding/Deficiencies Identified:

The operation is in full compliance with Practice 3.2 requiring that cyanide handling and storage facilities are operated using inspections, preventive maintenance and contingency plans to prevent or contain releases and control and respond to worker exposures.

RLO has develop procedures with respect to empty cyanide containers. Cyanide is received, stored and handled in dedicated flo-bins which are returned to the manufacturer for reuse. The Cyanide Handling & Delivery Procedure requires that flo-bins are not stacked.

The operation has implemented procedures to prevent releases and exposures during cyanide unloading, transfer, and mixing. The procedures describe the steps for mixing solid cyanide including emptying of the mixing tank, pre-mix preparation and mixing the cyanide into solution. The operation of the valves and the requirement to wash connection points are included in the procedures. The procedures are accompanied by checklists.

The operation has also developed procedures to be followed in case of a cyanide spillage during cyanide offloading and transfer activities, or in response to spills of cyanide during mixing activities, including the timely clean-up of cyanide spills. The procedures describe the required PPE for mixing, and control room operators observe mixing events via video camera. RLO also requires a second observer either in the mix room or in the control room. The Chemours contract specifically states that dye will be added to the solid packaging prior to shipment.

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PRINCIPLE 4 – OPERATIONS

Manage Cyanide Process Solutions and Waste Streams to Protect Human Health and the Environment

Standard of Practice 4.1

Implement Management and Operating Systems Designed to Protect Human Health and the Environment Utilizing Contingency Planning and Inspection and Preventive Maintenance Procedures

The operation is in full compliance with **Standard of Practice 4.1**
 in substantial compliance with
 not in compliance with

Summarize the basis for this Finding/Deficiencies Identified:

The operation is in full compliance with Standard of Practice 4.1, requiring that the operation implement management and operating systems designed to protect human health and the environment including contingency planning and inspection and preventive maintenance procedures.

RLO has developed and implemented written management plans and procedures describing the standard of practice necessary for the safe and environmentally sound operation of the cyanide facilities, including:

- Cyanide unloading, storage and mixing areas
- Secondary containments
- Leach tanks
- CIP tanks
- Cyanide destruction plants
- Paste plants
- Unloading station for paste trucking
- Effluent treatment plant
- Tailings pipelines and reclaim lines
- Tailings dams and associated ponds

The procedures and plans have been updated, as needed, to reflect operational changes during the recertification period.

The operation has plans and procedures that identify the assumptions and parameters on which the facility design was based and any applicable regulatory requirements as necessary to prevent or control cyanide releases and exposures consistent with applicable requirements. The CS and RLS Tailings Management facilities – Operation, Maintenance and Surveillance (OMS) Manuals and Emergency Planning and Response (EPPs) describe the procedures and plans have been updated, as needed, to reflect operational changes during the recertification period.

The operation has plans and procedures that identify the assumptions and parameters on which the facility design was based and any applicable regulatory requirements as necessary to prevent or control cyanide releases and exposures consistent with applicable requirements. The CS and

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RLS Tailings Management facilities – Operation, Maintenance and Surveillance (OMS) Manuals and Emergency Planning and Response (EPPs) describe the freeboard required for safe operation of the tailings impoundments and ponds as well as their maximum operating levels and storage volumes. Specific Weak Acid Dissociable (WAD) cyanide concentration allowed in the tailings and in the effluent discharges into the ponds are also considered. The procedures for the CS Effluent Treatment Plant Operation, the CS Detox Operation and the RLS Detox Operation detail cyanide concentrations. The operating procedures for both mills cover the operational requirements for all tanks, valves, pipes and other equipment with regard to elements such as tonnages, densities, pH and cyanide concentrations.

The plans and procedures describe the standard of practice necessary for the safe and environmentally sound operation of the cyanide facilities, including the specific measures needed for compliance with the Code. RLO has developed and implemented inspection and preventive maintenance programs for all the cyanide facilities including: cyanide unloading, mixing and storage facilities; the mills; the cyanide destruction plants; the paste plants; the effluent plant; and the Tailings Management Areas (TMAs) (including all ponds and wetlands).

In September of 2020, RLO streamlined the process for evaluating changes to cyanide facilities to ensure the current processes of safe management and handling of cyanide. This process requires review and agreement by the processing, safety, maintenance, and environmental managers, as well as other department managers if relevant to the proposed change. Three changes, were assessed during the audit.

RLO has various procedures and plans to address contingency actions for various scenarios related to cyanide, including: leaks and/or tank ruptures inside the mills; spills of solid cyanide during transportation; fires inside the mills; pipe/valve ruptures; cyanide destruct system failure; power outages; detoxification process upsets and failure; overtopping of TMAs and ponds; and, temporary closure or cessation of operations.

Inspections of the cyanide facilities are conducted on a shift, daily, weekly, monthly and annually basis at CS and RLS. These inspections are sufficient to assure and document that the cyanide facilities are functioning within the design parameters. Inspections are documented on operator reports and inspection forms. The documentation includes the name of the inspector, date and observed deficiencies. It is the auditors professional opinion that the site inspects cyanide facilities on a frequency that is sufficient to assure and document that they are functioning within design parameters.

RLO inspects unloading, storage, mixing, process, and tailings areas at both the CS and RLS. Tanks are inspected visually during the weekly operational and cyanide inspection and annually Non-destructive testing is conducted on all cyanide tanks including the detox tanks and the paste plants' tanks. Secondary containments are inspected visually by the mill operations personnel every shift and as part of the weekly operational and cyanide inspections. Pipelines, valves, and pumps are inspected visually during the weekly operational, cyanide, and tailings inspections. Tailings ponds are inspected daily for wildlife, water levels, freeboard, run-on diversions, tailings pipelines, and adverse conditions. In addition, RLO commissions the engineer-of-record to conduct dam safety inspections.

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RLO has recently transitioned the maintenance program from the SAP software to Pronto. The program includes both preventative (scheduled) maintenance and corrective (unscheduled) maintenance to ensure that equipment and devices function as necessary for safe cyanide management. During the field verification review of the maintenance cyanide related workorders, the auditor identified that the calibration checklist were frequently only partially completed or not completed as required. RLO recently transitioned from SAP software to Pronto, which contributed to the deficiency. Site reviewed the Pronto software platform, modified the cyanide related workorders to ensure calibration verification forms were included and relevant, and retrained all workers in the completion of the required forms. Site provided relevant documentation confirming to the auditor that the modifications have been implemented and are being followed. The auditor determined that no immediate or substantial risk to employee or community safety, health or the environment was deemed to exist prior to the implementation of the defined corrective action/s.

RLO has redundant (standby) units for critical equipment and spare parts in the warehouse such as pumps and due to this there is not a specific preventive maintenance frequency determined for the pumps. If a pump fails, it will be immediately replaced by its spare part.

RLO receives electrical power via a single line from the Ear Falls hydropower plant. In the event of disruptions to this source, RLO has provided emergency generators at the CS and the RLS. There are two 1 Mega Watt (MW) generators for the CS that will run critical equipment in the mill and paste plant. There are also two generators for the RLS that will run critical equipment in the mill (0.5 MW) and the paste plant (0.25 MW). The generators were routinely tested and maintained during the recertification period.

Standard of Practice 4.2 **Introduce Management and Operating Systems to Minimize Cyanide use, thereby Limiting Concentrations of Cyanide in Mill Tailings**

The operation is

- in full compliance with
- in substantial compliance with
- not in compliance with
- Not subject to

Standard of Practice 4.2

Summarize the basis for this Finding/Deficiencies Identified:

The operation is in full compliance with Standard of Practice 4.2, requiring that the operation limit the use of cyanide to that optimal for economic recovery of gold so that the waste tailings material has as low a cyanide concentration as practical.

RLO conducted an initial evaluation of cyanide addition rates at the CS Mill and the RLS Mill in 2010 and updated that initial study in 2013. RLO conducted a study to evaluate the optimization of leaching parameters in terms of gold recovery including cyanide consumption and pH in August 2016. The study served to confirm or adjust the cyanide targets being used at the mills at the time of the evaluation.

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RLO has evaluated and implemented control strategies for cyanide additions and currently implements both a manual and an automatic strategy at both mills. The manual strategy consists of conducting titration tests every four hours at the mills. In addition, leach assays are completed by the internal laboratory every 12 hours at RLS, and every 24 hours at CS. Since 2016, RLO installed automatic titrators at both mills that record NaCN values every 15 minutes, when in use.

Standard of Practice 4.3 **Implement a Comprehensive Water Management Program to Protect against Unintentional Releases**

The operation is in full compliance with
 in substantial compliance with **Standard of Practice 4.3**
 not in compliance with

Summarize the basis for this Finding/Deficiencies Identified:

The operation is in full compliance with Standard of Practice 4.3, requiring the operation to implement a comprehensive water management program to protect against unintentional releases. The operation has developed a comprehensive, probabilistic water balance. The model is comprehensive in that they include: tailings deposition rates; available storage volume based on annual bathymetric surveys; precipitation and evaporation; undiverted run-on; spring snowmelt; treatment systems; and losses to seepage. The model does not include power outages because the effects would be negligible given that the pumped inflow and outflow would simply stop and, in any case, those rates are low relative to the large solution storage volumes available (i.e., these tailings ponds are unlike heap leach pads that naturally continue to drain when there is a power outage).

The model is comprehensive in that it includes tailings deposition rates; available storage volume based on annual bathymetric surveys; precipitation and evaporation; undiverted run-on; spring snowmelt; treatment systems; and losses to seepage. The model does not include power outages because the effects would be negligible given that the pumped inflow and outflow would simply stop.

The model is probabilistic in that it can be run using measured and average precipitation as well as extreme dry and/or wet scenarios for multiple return periods. In addition, selected extreme events are included.

Operating procedures incorporate inspection and monitoring activities to implement water balance and prevent overtopping of the impoundments and ponds. RLO conducts inspections of the pond water levels, run-on diversions, and dam conditions daily to implement the water balance.

The design freeboard is specified in the CS and RLS OMS Manuals and EPPs for each TMA. The required freeboard varies from 0.6 to 1.5 m depending on the pond.

The operation measures precipitation, compare results to design assumptions and revises operating practices, as necessary. RLO installed a weather station near the CS TMA wetland discharge location in 2020. This station was installed in anticipation of the closure of the Red Lake Airport weather station and will be used in future updates to the water balance model. RLO has

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conducted periodic reviews of the precipitation collected onsite against the precipitation data collected at the Red Lake Airport station in order to identify any possible reading errors and/or significant differences in data.

Standard of Practice 4.4 **Implement Measures to Protect Birds, other Wildlife and Livestock from Adverse Effects of Cyanide Process Solutions**

The operation is in full compliance with **Standard of Practice 4.4**
 in substantial compliance with
 not in compliance with

Summarize the basis for this Finding/Deficiencies Identified:

The operation is in full compliance with Standard of Practice 4.4, requiring the operation implement measures to protect birds, other wildlife and livestock from adverse effects of cyanide process solutions.

RLO has implemented cyanide neutralization as a primary means to maintain WAD cyanide concentrations below 50 mg/L in open waters at the CS and RLS TMAs. In addition, RLO has also installed fencing to limit wildlife access in certain areas of the TMAs. WAD cyanide in open waters at the CS and RLS TMAs are well below 50 mg/L.

Analytical data for the cyanide facilities (open water and discharge points) at the CS and RLS TMAs indicated that WAD cyanide concentrations in these facilities did not exceed 50 mg/L during the Recertification Audit period.

RLO inspects daily for wildlife mortality at the CS and RLS TMAs and data indicates that no cyanide related wildlife mortalities have occurred during the recertification period.

RLO does not have a heap leach facility.

Standard of Practice 4.5 **Implement Measures to Protect Fish and Wildlife from Direct and Indirect Discharges of Cyanide Process Solutions to Surface Water**

The operation is in full compliance with **Standard of Practice 4.5**
 in substantial compliance with
 not in compliance with

Summarize the basis for this Finding/Deficiencies Identified:

The operation is in full compliance with Standard of Practice 4.5, requiring the operation implement measures to protect fish and wildlife from direct or indirect discharges of cyanide process solutions to surface water.

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RLO discharges seasonally from May to October directly to Balmer Lake from the wetlands at the CS TMA (at "WetOut") and from the water treatment plant at the RLS TMA. Total cyanide levels for both direct discharges were less than 0.5 mg/L throughout the recertification period.

Regulatory authorities have established mixing zones for the direct discharges from the CS and RLS TMAs to Balmer Lake. Total cyanide (includes free CN) levels at the monitoring points for both mixing zones were below 0.022 mg/L.

RLO has the potential for indirect discharges to surface water from the CS and RLS TMAs.

Due to a groundwater divide underlying the Main Tailings Pond, the CS TMA may indirectly discharge to the northeast to Balmer Lake and to the southwest to the McNeely Bay of Red Lake. The RLS Tailings Management Facility may indirectly discharge to Balmer Lake from the adjacent Secondary Pond. Analytical data that indicated that free cyanide at all monitoring locations were less than 0.022 mg/L.

Standard of Practice 4.6 **Implement Measures Designed to Manage Seepage from Cyanide Facilities to Protect the Beneficial Uses of Ground Water**

The operation is in full compliance with
 in substantial compliance with **Standard of Practice 4.6**
 not in compliance with

Summarize the basis for this Finding/Deficiencies Identified:

The operation is in full compliance with Standard of Practice 4.6, requiring the operation implement measures designed to manage seepage from cyanide facilities to protect the beneficial uses of groundwater.

RLO has constructed its tailings dams at both the CS and RLS TMAs with low permeability, compacted clay cores, and installed tailings pipelines in secondary containment. In addition, RLO has installed several monitoring well immediately downgradient of the CS and RLS process facilities in order to monitor groundwater and detect potential impacts from cyanide.

The beneficial use of groundwater has been identified by the operation as "drinking water". The Province of Ontario has not established groundwater protection levels for any cyanide species for the RLS TMA. However, the Province of Ontario has established an alert level of 0.025 mg/L for free cyanide in groundwater for the CS TMA. If this protective level is exceeded in more than 50% of the sentinel wells in more than 50% of the samples in 3 consecutive monitoring events, a biological risk assessment is recommended by the Province of Ontario (as indicated in the Campbell Complex, Monitoring Framework: Updated to Groundwater Monitoring Plan and Leachate Contingency Plan, February 2020).

As indicated in Question 4.6.1, the Province of Ontario has established an alert level of 0.025 mg/L for free cyanide in groundwater for the CS TMA. If this protective level is exceeded in more than 50% of the sentinel wells in more than 50% of the samples in 3 consecutive monitoring events, a biological risk assessment is recommended by the Province of Ontario (as indicated in the Campbell Complex, Monitoring Framework: Updated to Groundwater Monitoring Plan and

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Leachate Contingency Plan, February 2020). Monitoring results for the recertification period did not trigger this requirement.

RLO uses paste backfill from the CS and RLS Paste Plants for backfill in the underground workings and the potential impacts to worker health and beneficial uses of groundwater have been evaluated and measures have been implemented as necessary to address them. Given that RLO reduces cyanide to low levels via their SO₂/Air cyanide destruct circuits at both mills before the tailings arrive at their respective paste plants, the levels of cyanide in the backfill are also low. Nonetheless, RLO performed sampling in the underground workings from sumps and areas where workers are pouring, or recently have poured, backfill. Sampling was conducted for WAD cyanide and HCN gas during the recertification period to evaluate potential impacts to workers and to groundwater. Results obtained are protective of workers and groundwater.

RLO has not caused cyanide concentrations in groundwater to exceed the applicable standards, nor is RLO engaged in remediation of cyanide in groundwater.

Standard of Practice 4.7	Provide Spill Prevention or Containment Measures for Process Tanks and Pipelines
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The operation is	<input checked="" type="checkbox"/> in full compliance with	Standard of Practice 4.7
	<input type="checkbox"/> in substantial compliance with	
	<input type="checkbox"/> not in compliance with	

Summarize the basis for this Finding/Deficiencies Identified:

The operation is in full compliance with Standard of Practice 4.7 requiring that the operation provide spill prevention or containment measures for process tanks and pipelines.

RLO has spill containment measures for all mixing, distribution, and process solution tanks at the CS Mill and the RLS Mill as well as paste facilities at the Far East Zone Unloading Station. The containments are sized to hold a volume greater than 110% of the largest tank within the containment. The operation does not have any cyanide process tanks without secondary containment.

RLO has implemented procedures to prevent discharge to the environment of any cyanide solution or cyanide-contaminated water that is collected in the secondary containment area. The mixing and distribution tanks at both mills have their own sumps with pumps to return any spills of reagent grade solution to the tanks. All other process tanks at both mills have sumps and/or flow-through capability with ultimate containment provided by the mill floors. The sump pumps for the cyanide storage and distribution tanks as well as for process tanks at both mills have level sensors to automatically operate the pumps, which in turn are monitored from the control rooms.

In the case of Far East Zone Unloading Station (paste backfill), if a spill occurs from the paste hopper, the spilled material collected in the secondary containment and will be removed and placed back into the process.

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A short stretch (i.e., 50 feet) of the tailings pipeline leaving the RLS paste plant travels underground without pipe-in-pipe containment, but the area has video observation as spill prevention, and in any case, the natural slope of the ground would direct spills to an adjacent stormwater pond allowing timely identification of leaks. RLO has constructed all cyanide process solution pipelines and tailings pipelines as pipe-in-pipe or within concrete secondary containment or geomembrane-lined ditches as secondary containment systems.

Areas where cyanide pipelines present a risk to surface water have been evaluated for special protection needs. The tailings pipeline from the RLS paste plant to the RLS TMA crosses over Balmer Creek, a perennial watercourse. This pipeline segment is a pipe in pipe system. All cyanide-related tanks and pipelines are constructed of materials compatible with cyanide and high pH, such as mild steel, stainless steel, and HDPE.

Standard of Practice 4.8

Implement Quality Control/Quality Assurance Procedures to Confirm that Cyanide Facilities are Constructed According to Accepted Engineering Standards and Specifications

The operation is in full compliance with
 in substantial compliance with **Standard of Practice 4.8**
 not in compliance with

Summarize the basis for this Finding/Deficiencies Identified:

The operation is in full compliance with Standard of Practice 4.8 requiring that operations implement QA/QC procedures to confirm that cyanide facilities are constructed according to accepted engineering standards and specifications.

RLO provided evidence of construction quality assurance / quality control (QA/QC) programs during the 2017 Recertification Audit for the cyanide facilities existing at that time. These records were available on site. There have been two new construction projects at cyanide facilities since the 2017 Recertification Audit:

The stage 6 stabilization berms and Stage 7 toe berms were completed, and portions of the Stage 7 dam crest raise of the Main Tailing Pond structure were completed over two construction seasons (September-December 2018 and May- November 2019. As-built documentation was provided in December 2020 report. The 2020 report included As-built drawings, construction photos, material suitability, and quality control measures taken during construction.

The final Stage 7 dam raise construction was completed from May to October of 2020. Construction, supervision, and instrumentation monitoring were carried out in accordance with the design outline in the Wood design report. As-built drawings, construction photos, material suitability, and quality control measures taken during the construction are included in the January 2021 report.

The reports included QA/QC testing results and photos as evidence of compliance with this Standard of Practice. The report was signed by a licensed professional engineer of the Province of Ontario.

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Standard of Practice 4.9

Implement Monitoring Programs to Evaluate the Effects of Cyanide Use on Wildlife, Surface and Ground Water Quality

The operation is in full compliance with
 in substantial compliance with **Standard of Practice 4.9**
 not in compliance with

Summarize the basis for this Finding/Deficiencies Identified:

The operation is in full compliance with Standard of Practice 4.9 requiring that operations implement monitoring programs to evaluate the effects of cyanide use on wildlife, surface and groundwater quality.

RLO has developed written procedures for monitoring activities including surface water, groundwater and wildlife. The procedures were developed by qualified RLO staff with environmental science backgrounds and appropriate levels of experience.

The monitoring procedures specify the details of where, how, and when samples should be taken, sample preservation techniques, shipping instructions, chain of custody procedures and cyanide species to be analyzed. The RLO Surface Water Sampling Procedure and the Groundwater Sampling Procedure contain step-by-step instructions for sampling procedures including photos. RLO uses laboratories accredited by the Canadian Association for Laboratory Accreditation throughout the recertification period for analysis of free, WAD, and total cyanide.

RLO sampling staff note sampling conditions during groundwater and surface water sampling activities.

RLO monitors for cyanide in discharges to surface water and in surface and groundwater downgradient of the operation. Groundwater is monitored at numerous wells around the site.

RLO monitors wildlife daily throughout the year.

Groundwater and surface water monitoring are completed at frequencies adequate to characterize each medium. Groundwater is monitored quarterly, while surface water is monitored at variable frequencies from weekly to monthly depending on the location. Wildlife activities and mortalities are inspected as part of the daily tailings inspection conducted on open waters at the TMAs.

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PRINCIPLE 5 - DECOMMISSIONING

Protect Communities and the Environment from Cyanide Through Development and Implementation of Decommissioning Plans for Cyanide Facilities

Standard of Practice 5.1	Plan and Implement Procedures for Effective Decommissioning of Cyanide Facilities to Protect Human Health, Wildlife and Livestock
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The operation is	<input checked="" type="checkbox"/> in full compliance with	Standard of Practice 5.1
	<input type="checkbox"/> in substantial compliance with	
	<input type="checkbox"/> not in compliance with	

Summarize the basis for this Finding/Deficiencies Identified:

The operation is in full compliance with Standard of Practice 5.1 requiring that the site plan and implement procedures for effective decommissioning of cyanide facilities to protect human health, wildlife and livestock.

The operation has developed written procedures to decommission cyanide facilities at the cessation of operations. RLO commissioned consultants to prepare a mine-wide closure plan that covers both the RLS and CS. A December 2013 revision of the closure plan incorporates comments from the Northern Development and Mines (MNDN).

The plan includes an implementation schedule for decommissioning activities.

RLO reviewed its decommissioning procedures for cyanide facilities in 2011 and 2013. During this audit period the closure plan was updated in 2020 submitted to regulatory authorities and was pending approval.

Standard of Practice 5.2	Establish An Assurance Mechanism Capable of Fully Funding Cyanide Related Decommissioning Activities
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The operation is	<input checked="" type="checkbox"/> in full compliance with	Standard of Practice 5.2
	<input type="checkbox"/> in substantial compliance with	
	<input type="checkbox"/> not in compliance with	

Summarize the basis for this Finding/Deficiencies Identified:

The operation is in full compliance with the Standard of Practice 5.2 requiring that the site establish an assurance mechanism capable of fully funding cyanide related decommissioning activities.

The operation has developed an estimate of the cost to fully fund third party implementation of the cyanide-related decommissioning measures as identified in its Plan. The 2020 Asset Retirement Obligation (ARO) spreadsheet is based on using third party contractor for implementation of the decommissioning activities.

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The operation reviews and updates the cost estimate at least every five years and when revisions to the plan are made that affect cyanide-related decommissioning activities. RLO provided the 2013 version of the closure plan as evidence that the decommissioning and demolition costs are periodically reviewed and revised. In addition, RLO updates the ARO spreadsheet annually according to Evolution's policy.

The applicable regulatory agency (MNDM) has accepted a letter of credit issued by the Bank of Montreal on behalf of Evolution Mining Gold Operations Limited. The letter of credit amount exceeds the estimates for decommissioning of mill equipment at both complexes, as well as estimates for complete demolition of the mill complexes.

PRINCIPLE 6 – WORKER SAFETY

Protect Workers' Health and Safety from Exposure to Cyanide

Standard of Practice 6.1	Identify Potential Cyanide Exposure Scenarios and Take Measures as Necessary to Eliminate, Reduce or Control Them
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The operation is	<input checked="" type="checkbox"/> in full compliance with	Standard of Practice 6.1
	<input type="checkbox"/> in substantial compliance with	
	<input type="checkbox"/> not in compliance with	

Summarize the basis for this Finding/Deficiencies Identified:

The site is in full compliance with Standard of Practice 6.1 requiring that the site identify potential cyanide exposure scenarios and take measures as necessary to eliminate, reduce and control them. RLO has developed standard operating procedures (SOPs) that describe how cyanide-related tasks are to be performed to minimize worker exposure. The SOPs describe related hazards, minimum PPE requirements, operator responsibilities, procedures for using and handling cyanide, and documentation. During the verification audit review of the maintenance cyanide related workorders, the auditor identified that the RLMG Maintenance Checklist (pre-work) were frequently only partially completed or not completed as required. In addition, the pre-work checklist didn't always align with the task risk. RLO recently transitioned from SAP software to Pronto, which contributed to the deficiency. At the auditors' request site reviewed the Pronto software platform, modified the cyanide related workorders to include a pre-work risk assessment, calibration verification forms and retrained all workers. Site provided relevant documentation confirming to the auditor that the modifications have been implemented and are being followed. The auditor determined that no immediate or substantial risk to employee or community safety, health or the environment was deemed to exist prior to the implementation of the defined corrective action/s. RLO has also posted signage for PPE requirements located at the entrances of process areas. Pre-work inspections are undertaken before every shift using a 5-point card, which prompts the completion of a field-level risk assessment based on the task and a workplace inspection.

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RLO implements a Management of Change process to evaluate any proposed change or modification to any part of the cyanide process flow and/or any changes or modifications to any of the cyanide management controls.

RLO solicits worker input in developing and evaluating health and safety procedures via direct communication with supervisors and workers during safety meetings. An Occupational Health & Safety representative who is a worker representative is involved in all reviews of SOPs. The representative and supervisors ask for worker input during safety meetings, and in the performance of Job Task Observation's (JTO's).

Standard of Practice 6.2	Operate and Monitor Cyanide Facilities to Protect Worker Health and Safety and Periodically Evaluate the Effectiveness of Health and Safety Measures
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The operation is	<input checked="" type="checkbox"/> in full compliance with	Standard of Practice 6.2
	<input type="checkbox"/> in substantial compliance with	
	<input type="checkbox"/> not in compliance with	

Summarize the basis for this Finding/Deficiencies Identified:

The operation is in full compliance with Standard of Practice 6.2 requiring that the site operate and monitor cyanide facilities to protect worker health and safety and periodically evaluate the effectiveness of health and safety measures.

RLO has determined the appropriate pH for limiting the evolution of HCN gas during mixing and production activities. At CS and RLS, the pH is maintained at least at 12.5 for mixing activities, diminishing to 10.5 to 10.8 throughout the production processes.

RLO has identified areas and activities where workers may be exposed to cyanide and has developed PPE requirements for each relevant procedure. Some procedures also require the use of a portable HCN meter during the task. RLO has also installed fixed HCN monitors in areas where the potential exists for cyanide exposure.

Annual assessments are conducted of underground areas where paste has been applied. During this audit it was identified that the underground paste areas were not sampled in 2017 or 2018 and the auditor requested the site to include this activity in the Industrial Hygienist annual task list. Based on historic data it was determined that no immediate or substantial risk to employee safety, health or the environment was deemed to exist. Sampling was conducted in 2020 and 2021 and no detectable concentrations of HCN were identified.

The fixed HCN meters have visual and audible alarms that alert at 2.5 ppm HCN and at 4.7 ppm HCN. At 2.5 ppm, an alarm and amber light are activated in the work area and the control room. At 4.7 ppm, a red light and alarm are activated, and evacuation is required. HCN monitoring equipment is maintained, tested and calibrated as directed by the manufacturer, and the records are retained for at least one year.

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Warning signs prohibiting smoking, food and drink are posted at the entrance to all cyanide facilities, and areas where cyanide is present.

During the verification review of the maintenance cyanide related workorders, the auditor identified that the calibration checklists were frequently only partially completed or not completed as required. RLO recently transitioned from SAP software to Pronto, which contributed to the deficiency. At the auditor's request site reviewed the Pronto software platform, modified the cyanide related workorders to include calibration verification forms and retrained all workers. Site provided relevant documentation confirming to the auditor that the modifications have been implemented and are being followed.

The auditor determined that no immediate or substantial risk to employee or community safety, health or the environment was deemed to exist prior to the implementation of the defined corrective action/s.

Safety showers, low-pressure eye wash stations and dry chemical fire extinguishers are located at strategic locations throughout RLO and are maintained, inspected and tested on a regular basis.

All piping and tanks containing cyanide process solutions, including unloading, storage, mixing, process tanks and pipes, and tailings delivery and return pipelines are marked as containing cyanide and, in the case of accessible tanks and pipes, are painted with purple paint. Pipe labelling also indicates the direction of solution flow. SDSs for liquid and solid sodium cyanide are maintained in an online SDS system, with hard copies available at the RLS and CS control rooms, and cyanide emergency response procedures have been posted at several locations in the workplace.

The assigned contract between RLO and Chemours specifies that the manufacturer add dye to the solid cyanide material packaging. The auditor reviewed the site SDSs for liquid cyanide which indicated that the liquid cyanide color was red.

RLO has implemented a procedure throughout the recertification period to investigate and evaluate potential cyanide exposure incidents to determine the adequacy of the operation's programs and procedures to protect worker health and safety, and to respond to cyanide exposures.

Standard of Practice 6.3 **Operate and Monitor Cyanide Facilities to Protect Worker Health and Safety and Periodically Evaluate the Effectiveness of Health and Safety Measures**

The operation is in full compliance with **Standard of Practice 6.3**
 in substantial compliance with
 not in compliance with

Summarize the basis for this Finding/Deficiencies Identified:

The operation is in full compliance with Standard of Practice 6.3 which requires that the site develop and implement emergency response plans and procedures to respond to worker exposure to cyanide.

RLO has water, oxygen, resuscitators, cyanide antidote kits (Cyanokits), Amyl Nitrite, radios, and telephones at key locations to be available for use in the event of emergencies.

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The Amyl Nitrite can be administered by a trained first responders, while the Cyanokits must be administered by either the Site nurse, or a responding paramedic, all of whom have received training in the administration of Cyanokits arranged by RLO. Oxygen cylinders and Amyl Nitrite are available for deployment by first responders before the Cyanokit is deployed. RLO has nursing stations in CS and Balmer Complex, with two nurses providing coverage on day shifts Monday through Friday, and on call during weekends and at night to provide 24-hour coverage. The operation has developed procedures for responding to and transporting workers exposed to cyanide to Red Lake Hospital.

The operation inspects its first aid equipment regularly to ensure that it is available when needed, and that materials are stored and/or tested as directed by their manufacturer and replaced on a schedule to ensure that they will be effective when needed.

RLO has developed specific written emergency response plans and procedures to respond to cyanide exposures. These procedures describe emergency response actions including the location of emergency response equipment, cyanide exposure treatment, directions for decontamination, and emergency communication protocols. RLO conducts mock drill events for cyanide spills and exposures, including tabletop exercises and full mock drills in the field. The drills cover cyanide exposure and environmental release scenarios. Action plans from the various mock drills, include incorporation of the lessons learned into the response procedures and plans.

First aid responders are trained in the administration of Amyl Nitrite and oxygen to exposure victims. Oxygen tanks and Amyl Nitrite are available in the mill control rooms, as well as at all security gates, and would be brought to the location of an emergency by security, nurses, and/or mill operators. RLO has a formalized agreement with the local hospital, Red Lake Hospital, that acknowledges the presence of cyanide at RLO and states the hospital's preparedness to treat cyanide exposure victims.

PRINCIPLE 7 – EMERGENCY RESPONSE

Protect Communities and the Environment Through the Development of Emergency Response Strategies and Capabilities

Standard of Practice 7.1

Prepare Detailed Emergency Response Plans for Potential Cyanide Releases

The operation is in full compliance with **Standard of Practice 7.1**
 in substantial compliance with
 not in compliance with

Summarize the basis for this Finding/Deficiencies Identified:

The operation is in full compliance with Standard of Practice 7.1 which requires that the site prepare detailed emergency response plans for potential cyanide releases.

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RLO has developed several plans and procedures that address cyanide exposures and releases including potential cyanide failure scenarios relevant to RLO such as spills (solid and liquid), fires, power outages, system failures, overtopping of ponds, pipes/valves/tank ruptures, releases of hydrogen cyanide from processing and storage facilities, and transportation events. The RLO plans and procedures describe appropriate preparedness, response, evacuation and decontamination procedures for the relevant scenarios. In each case, the plans and procedures identify requirements for clearing the area of personnel and others, controlling access, the application of first aid and exposure response measures, the control and containment of released materials, and remediation / restoration of affected areas.

Responsibility for cyanide rests with Chemours and the transporters until it is unloaded into the cyanide warehouse.

Empire Express, Inc. is certified as fully compliant with the Code and has met with the requirements associated with this Standard of Practice to obtain their certification. Mock drills conducted at RLO have included transportation related scenarios.

Standard of Practice 7.2

Involve Site Personnel and Stakeholders in the Planning Process

The operation is in full compliance with **Standard of Practice 7.2**
 in substantial compliance with
 not in compliance with

Summarize the basis for this Finding/Deficiencies Identified:

The operation is in full compliance with Standard of Practice 7.2 which requires that the site involve site personnel and stakeholders in the planning process.

RLO solicits worker input in developing and evaluating emergency response procedures via direct communication to supervisors and during pre-shift safety meetings and monthly safety meetings. An Occupational Health & Safety representative who is a worker representative is involved in all reviews of procedures. A November 2020 letter from the Red Lake District Fire Chief was reviewed that confirmed he was provided with and reviewed a copy of the Surface Spill Response Plan. The Fire Chief is the emergency response coordinator for the community and communicates on emergency preparedness matters with the community, through public town council meetings. Several members of the RLO emergency response team are also members of the community emergency response teams.

RLO maintains an ongoing dialogue with the Red Lake Hospital in regard to cyanide emergency response preparedness. Representatives from RLO have visited the nearest school and spoken about the Emergency Response Plan and the actions to be taken in the event of an evacuation.

RLO regularly, and at least annually on a formal basis, consults with the Red Lake Fire Chief about emergency response planning and preparedness.

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Standard of Practice 7.3

Designate Appropriate Personnel and Commit Necessary Equipment and Resources for Emergency Response

The operation is in full compliance with **Standard of Practice 7.3**
 in substantial compliance with
 not in compliance with

Summarize the basis for this Finding/Deficiencies Identified:

The operation is in full compliance with Standard of Practice 7.3 which requires that the site designate appropriate personnel and commit necessary equipment and resources for emergency response.

RLO has developed plans and procedures that describe the authorities and responsibilities for emergency response, as well as specific duties for implementing cyanide response.

The Surface Response Team Structure Procedure identified minimum representation required on the Team, and the Surface Response Team List provides current team member names and contact information. The callout information includes 24-hour contact information for team members and the emergency coordinators. The current Team exceeds the minimum requirements of the procedure by roughly three-fold.

An incident Control Group is described in the Surface Spill Response Plan, and RLO has also identified minimum representation required on the emergency response Team, with current team member names and contact information. Training for emergency responders includes coverage of all cyanide-related emergency procedures. The role of outside responders is described, including the fire department, paramedics, police officers, and the hospital. Reference is also made to the Municipality of Red Lake Emergency Plan.

Emergency response equipment is identified in the Cyanide Related Emergencies procedures. Inspection procedures for this and other emergency equipment is conducted in accordance with several procedures and checklists.

RLO takes part in drills related to the Municipality of Red Lake Emergency Response Plan. External responders may be invited to RLO mock drill events as well, but are not often able to attend. However, several members of the RLO emergency response Team are also members of the community emergency response teams, and therefore attend RLO mock drills in an unofficial manner.

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Standard of Practice 7.4

Develop Procedures for Internal and External Emergency Notification and Reporting

The operation is in full compliance with
 in substantial compliance with **Standard of Practice 7.4**
 not in compliance with

Summarize the basis for this Finding/Deficiencies Identified:

The operation is in full compliance with Standard of Practice 7.4 which requires that the site develop procedures for internal and external emergency notification and reporting.

The Surface Spill Response Plan and Sodium Cyanide Emergency Response document includes procedures and contact information for notifying Evolution management, the ERT, Government Agencies, Municipal Fire Department, the ambulance and hospital, local police, Chemours and community representatives, including First Nations contacts. The Plans also make reference to the Red Lake Municipal Emergency Plan, with contact information and notification procedures for all other community response agencies and procedures for communicating with the media.

Standard of Practice 7.5

Incorporate into Response Plans and Remediation Measures Monitoring Elements that Account for the Additional Hazards of Using Cyanide Treatment Chemicals

The operation is in full compliance with
 in substantial compliance with **Standard of Practice 7.5**
 not in compliance with

Summarize the basis for this Finding/Deficiencies Identified:

The operation is in full compliance with Standard of Practice 7.5 which requires that the site incorporate in response plans and remediation measures monitoring elements that account for the additional hazards of using cyanide treatment chemicals.

The Surface Spill Response Plan has specific remediation measures for the cyanide release scenarios, including affected soils (excavation), standing water (treatment), recovery of spilled solid cyanide, and treatment of residuals following remediation. The plan permits the use of lime or sodium carbonate, located in the RLC Chemical storage tent and at each mill, to treat liquid or solid residuals, but prohibits the use of sodium hypochlorite, ferrous sulphate, or hydrogen peroxide for releases to water. Chemicals used for treatment (pH management) will be prepared in accordance with the site environmental department guidance – based on impacted media, cyanide concentrations and chemical materials to be used.

RLO procedures require the treatment or removal of all contaminated soils affected by a release. Generic sampling plans have been developed for cyanide spills. The sampling plans Recovered residuals will be excavated until the desired endpoint of 0.5 mg/kg WAD cyanide is reached. Liquid

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and solid residuals are to be placed in the Tailings Management Area. Bottled water is to be supplied in the event of cyanide contamination of drinking water supplies, although pathways to the potable water supply (at Cochenour, upgradient of RLO) are unlikely.

Standard of Practice 7.6 **Periodically Evaluate Response Procedures and Capabilities and Revise Them as Needed**

The operation is in full compliance with **Standard of Practice 7.6**
 in substantial compliance with
 not in compliance with

Summarize the basis for this Finding/Deficiencies Identified:

The operation is in full compliance with Standard of Practice 7.6, which requires that the site periodically evaluate response procedures and capabilities and revise them as needed. The Surface Spill Response Plan is reviewed and revised annually or more frequently if required, with the most recent revisions being completed in October 2020. A revision table included in the front of the Plan indicates that the Plan was reviewed and revised on four occasions during the recertification period.

RLO has procedures in place to evaluate and revise its emergency response plans and procedures following cyanide related emergencies. Incident reports were reviewed, and corrective actions were also observed, including revisions to procedures.

RLO conducts mock drill events for cyanide spills and exposures, including tabletop exercises and full mock drills in the field. Records of the mock drill events showed that corrective or preventive actions had been identified as a result of learnings from the drill events.

PRINCIPLE 8 – TRAINING

Protect Communities and the Environment Through the Development of Emergency Response Strategies and Capabilities

Standard of Practice 8.1 **Train Workers and Emergency Response Personnel to Manage Cyanide in a Safe and Environmentally Protective Manner**

The operation is in full compliance with **Standard of Practice 8.1**
 in substantial compliance with
 not in compliance with

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Summarize the basis for this Finding/Deficiencies Identified:

The operation is in full compliance with Standard of Practice 8.1 which requires that the site train workers to understand the hazards associated with cyanide use.

RLO provides initial and annual training to all site personnel who may encounter cyanide. General Orientation Training is provided to all employees, visitors, and contractors upon first arrival at the site and is refreshed annually. This training includes cyanide awareness, identification, coloring and signage, points of use, and exposure routes and risks. General emergency response information is reviewed. Information on the Code is also provided. Mill Induction Training is given to all mill, tailings and maintenance employees except Maintenance electrical workers.

All mill employees also receive training during annual Mill safety training that includes the Mill Induction cyanide training presentation as refresher training.

RLO retains employee training records in an electronic system using the INX platform.

Standard of Practice 8.2 **Train Appropriate Personnel to Operate the Facility According to Systems and Procedures that Protect Human Health, the Community and the Environment**

The operation is in full compliance with **Standard of Practice 8.2**
 in substantial compliance with
 not in compliance with

Summarize the basis for this Finding/Deficiencies Identified:

The operation is in full compliance with Standard of Practice 8.2 which requires that the site train appropriate personnel to operate the facility according to systems and procedures that protect human health, the community and the environment.

RLO ensures personnel receive general and specialized training for all cyanide-related standard operating procedures, as required for their role. Training elements for each specific job are identified in the training modules developed for each specific process area. The training material includes objectives, safety measures,

process descriptions, equipment location and recognition, PPE, hazardous materials, tools and emergency procedures.

Training is supported by Job Task Observations (JTOs) that allow the trainee operator, trainer and manager to review the performance of each task together both allowing the operator to operate the circuit.

Training at RLO is provided by qualified trainers, including senior mill or safety personnel with many years of experience conducting the tasks that the training pertains to. Train-the-trainer program training has been provided to RLO's supervisors who are responsible for training operators.

All employees, contractors and temporary employees (such as summer students) receive orientation training prior to working onsite. This training includes general information about cyanide hazards, control measures, and exposure response protocols. Additional mill induction

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training is provided to those who work in the mill, with or around cyanide. This includes first aid, exposure response and similar training, as well as detailed training to operate the mill circuits.

Mill operators are trained on a circuit but are not permitted to undertake the job by themselves until they successfully undertake a JTO for the specific circuit together with a trainer and supervisor. RLO provides all employees and contractors with annual safety training, in which cyanide awareness refresher training is included.

RLO evaluates the effectiveness of cyanide training by worker testing and observation. Training programs, including General Awareness training and Mill Induction training, are concluded with tests to verify comprehension of the materials. RLO retains employee training records in an electronic system using the INX platform. Course information in the INX database identifies the trainee, trainer, the course title and date of course for each employee and contractor and the results of tests associated with the training material. Hardcopy records for most training events and tests are also available.

Standard of Practice 8.3 **Train Appropriate Workers and Personnel to Respond to Worker Exposures and Environmental Releases of Cyanide**

The operation is in full compliance with **Standard of Practice 8.3**
 in substantial compliance with
 not in compliance with

Summarize the basis for this Finding/Deficiencies Identified:

The operation is in full compliance with Standard of Practice 8.3 which requires that the site train appropriate workers and personnel to respond to exposures and environmental releases of cyanide.

RLO personnel responsible for unloading, mixing, production, and maintenance receive the Mill Orientation Training, which covers, in part, the emergency procedures to be followed in the case of a cyanide release. This includes recognition of exposure symptoms, first aid / first response, and decontamination procedures. Monthly safety meetings are used to reinforce training. Annual Mill refresher training cyanide components includes training in first aid and decontamination procedures.

RLO maintains an ongoing dialogue with the Red Lake Hospital in regard to cyanide emergency response preparedness, and the role of the hospital in response to cyanide emergencies.

RLO conducts mock drill events for cyanide spills and exposures, including tabletop exercises and full mock drills in the field. The drills included response and treatment to worker exposures, as well as environmental remediation following a spill event.

The Surface Response Team has an annual training program which includes annual comprehensive spill response training provided by an external trainer, and monthly procedure / equipment reviews. Annual comprehensive spill response training, and monthly focused emergency response training sessions, are provided to all Surface Response team members. Training provided to the Surface Spill Response Team includes a field component that allows the

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team to apply and test their cyanide release and exposure response procedures. A total of 28 training events have been held during the recertification period.

Cyanide emergency drills are evaluated from a training perspective to determine if personnel have the knowledge and skills required for effective response. The training procedures are revised if deficiencies are identified. In the action plans from the various mock drills, there was evidence observed of incorporation of the lessons learned into the response procedures and plans.

RLO retains employee training records in an electronic system using the INX platform. Information in the INX database identifies the name of the trainee, trainer, the course title and date of course for each employee and contractor and the results of tests associated with the training material.

PRINCIPLE 9 – DIALOGUE

Engage in Public Consultation and Disclosure

Standard of Practice 9.1

Provide Stakeholders the Opportunity to Communicate Issues of Concern

The operation is in full compliance with **Standard of Practice 9.1**
 in substantial compliance with
 not in compliance with

Summarize the basis for this Finding/Deficiencies Identified:

The operation is in full compliance with Standard of Practice 9.1 which requires that the site Provide stakeholders the opportunity to communicate issues of concern.

RLO provides the opportunity for stakeholders to communicate issues of concerns in a number of ways, from email accounts and hotlines established to receive concerns, to regularly scheduled community and First Nations meetings at which concerns are raised by these stakeholders. The Community Connections Meetings and First Nations meetings target a broad range of stakeholder interests, but any concerned party may contact RLO through the hotline or email accounts, which are provided on business cards that are distributed.

Standard of Practice 9.2

Initiate Dialogue Describing Cyanide Management Procedures and Responsively Address Identified Concerns

The operation is in full compliance with **Standard of Practice 9.2**
 in substantial compliance with
 not in compliance with

Summarize the basis for this Finding/Deficiencies Identified:

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The operation is in full compliance with Standard of Practice 9.2 which requires that the site initiate dialogue describing cyanide management procedures and actively address identified concerns.

RLO hosts Community Connections Meetings every second month, or minimum quarterly, with a number of chosen representatives from a broad range of local business, government and community interests. The goal is for RLO to hear and understand any community concerns. The meetings also provide RLO with an opportunity educate representatives about the use and management of cyanide. Previous meetings have discussed the implications of RLO being a signatory to the Code.

RLO maintains a ledger of community and stakeholder meetings attended, including municipal council meetings, Chamber of Commerce meetings, Community Connection meetings, First Nations meetings, tours, volunteer days, media events, and special events.

Standard of Practice 9.3 **Make Appropriate Operational and Environmental Information Regarding Cyanide Available to Stakeholders.**

The operation is in full compliance with
 in substantial compliance with **Standard of Practice 9.3**
 not in compliance with

Summarize the basis for this Finding/Deficiencies Identified:

The operation is in full compliance with Standard of Practice 9.3 which requires that the site make appropriate operational and environmental information regarding cyanide available to stakeholders.

RLO has produced written descriptions of the mine processes and use of cyanide. RLO provides documented information on cyanide as well as verbal information during meetings with stakeholders. The population is generally literate and English is the prevalent common language in the community.

Should a cyanide exposure or release occur, the Surface Spill Response Plan provides procedures for notification of regulatory agencies, if required. RLO Regulatory entities would require reporting for: cyanide hospitalizations, releases off the mine site, and releases that exceed an applicable standard are required to be reported to regulatory agencies, who make the information on releases and exposures available to the public. All incidents reports reviewed by the auditor were not required to be reported to authorities, with the exception of one.

RLO had one reportable release during this audit cycle. RLO did not have any other reportable releases or exposure of cyanide on or off-site since the previous recertification audit in 2017, including worker exposures, releases offsite, releases resulting in significant adverse impacts, or releases causing cyanide limits to be exceeded. Should a cyanide exposure or release occur, the Surface Spill Response Plan provides procedures for notification of regulatory agencies, if required.

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