GOLDER

REPORT

ICMC RECERTIFICATION
SUMMARY AUDIT REPORT

Turquoise Ridge Complex (Former Twin Creeks Mine), Nevada, USA

Submitted to:

International Cyanide Management Institute (ICMI)
1400 I Street, NW - Suite 550
Washington, DC 20005
United States of America

Submitted by:

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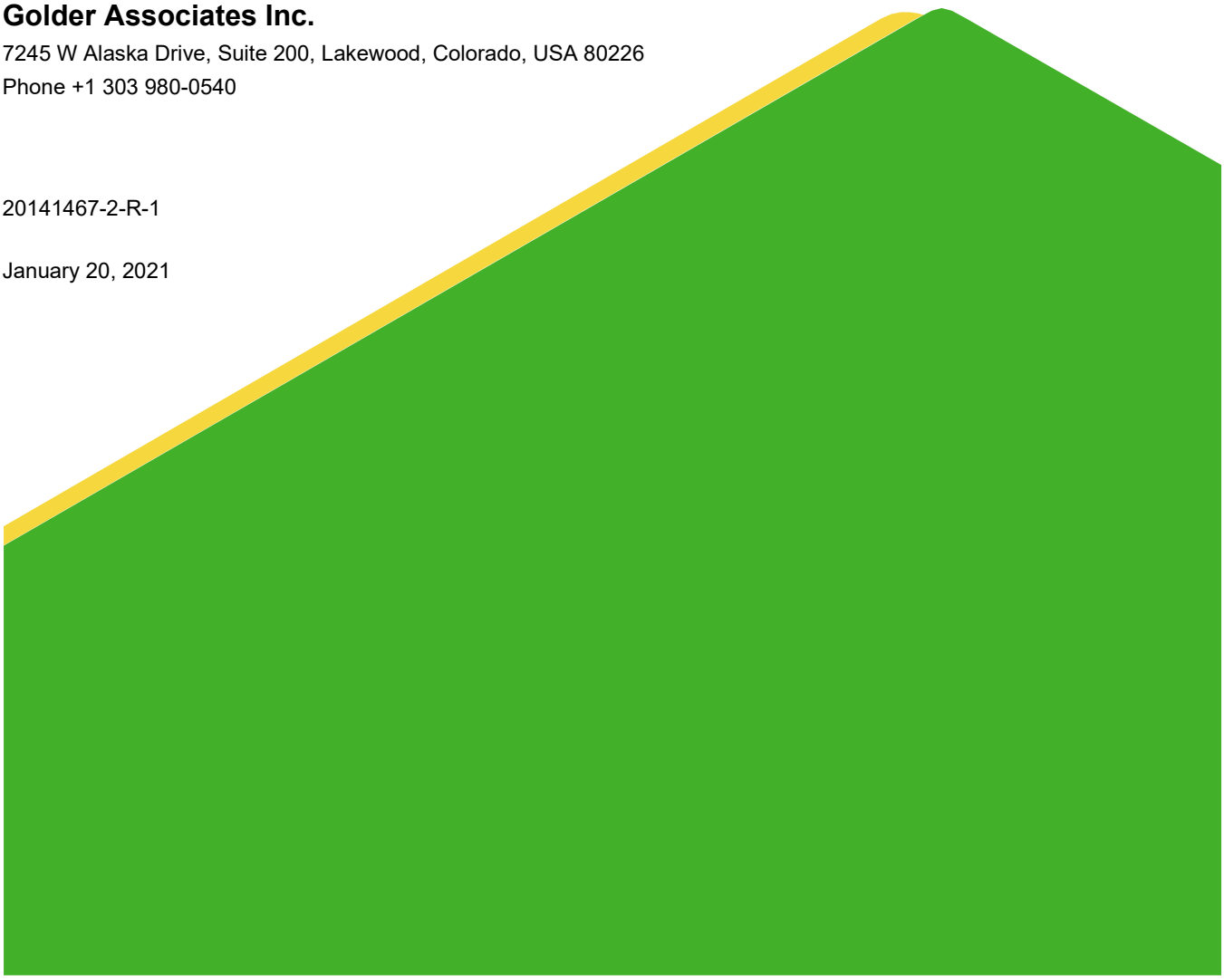

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1.0 SUMMARY AUDIT REPORT FOR GOLD AND SILVER MINING OPERATIONS

Name of Mine:	Turquoise Ridge Complex (Former Twin Creeks Mine)
Name of Mine Owner and Operator:	Nevada Gold Mines LLC
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2.0 LOCATION DETAIL AND DESCRIPTION OF OPERATION

2.1 Mine Location

The Turquoise Ridge Complex (TRC) (Former Twin Creeks Mine) is located in Humboldt County, approximately 35 miles north of the town of Golconda, in Nevada, USA.

2.2 Background

Nevada Gold Mines LLC (NGM) is a joint venture between Barrick Gold Corporation (Barrick) and Newmont Corporation (Newmont). Barrick is the operator of the joint venture and owns 61.5 percent (%), with Newmont owning the remaining 38.5%. Under the joint venture, Barrick Turquoise Ridge Mine and Newmont Twin Creeks Mine were combined in July 2019 as a single operation, now known as TRC. Only mining activities occur at the former Barrick Turquoise Ridge Mine, with the mined ore being hauled out and processed at the former Newmont Twin Creeks Mine. This audit covers the former Newmont Twin Creeks Mine only, hereafter referred to as TRC.

TRC's facilities that were part of the former Newmont Twin Creeks Mine consist of an open pit mine; overburden piles; topsoil stockpiles; tailings impoundments; heap leach facilities including the carbon-in-column (CIC) circuits; sulfide and oxide milling facilities including the carbon-in-leach (CIL) circuits, strip and gold recovery circuits; administration buildings; maintenance facilities; and access and haul roads.

Sulfide ore is milled in the Sage Mill and then conveyed to the autoclave for rapid oxidation of the sulfide minerals. The oxide ore from the Juniper Mill is mixed with the sulfide ore from the Sage Mill (autoclaves), then adjusted for pH in the Neutralization Tanks then sent to the CIL train for cyanide addition and leaching. The spent material is treated by a Caro's Acid Plant for cyanide reduction prior to deposition in the Juniper tailings storage facility (TSF). The Juniper/Sage Mills receive ore for processing from other mining operations. TRC has a closed Pinon TSF and mill in the southern portion of the project area referred to as the Pinon Mill. The Pinon Mill was inactive at the time of the audit except for the CIC and Funda Circuit in the mill building. The Pinon TSF has been decommissioned by removal of process water from the surface and placing a vegetated cover over the impoundment and has not been included in any of the previous recertification audits.

The heap leach circuit consists of three heap leach facilities in the northern portion of the site area (Izzenhood/L8, Snowstorm, and Sonoma) and one heap leach facility in the southern portion of the project area (Osgood). Ore placement at the Osgood leach pad was discontinued in January 2013. The heap leach facilities and associated ponds are permitted as zero-discharge facilities. The heaps drain to a series of intermediate and pregnant ponds. Solutions from the pregnant ponds are pumped via pipeline to the CIC gold recovery circuits. The major components of the processing facilities are as following:

North Area:

- Cyanide offloading and storage facilities (Sage/Juniper Mill and South Pond)
- Sage and Juniper Mills
- Caro's Acid Plant
- Leach pads (Snowstorm [phases N1 and N2], Sonoma [phases N3-N5], Izzenhood/L8 [phases S1-S5]). No irrigation has occurred at the Snowstorm leach pad over this recertification period.
- Pregnant Pond
- Intermediate Pond

- South Pond (previously the Barren Pond). This pond is now used as a contingency pond.
- Events ponds (major, minor and N5)
- Juniper TSF (until Stage 10)
- North Reclaim Pond (was only in use until April 2019)
- Cutoff trenches and seepage collection wells associated with the Juniper TSF
- Flush Pond
- Diversion channels

South Area:

- Cyanide offloading and storage facility (Pinon Mill)
- Pinon Mill (Inactive at the time of the audit except for the CIC and Funda Circuit)
- Leach pad (Osgood). No longer a cyanide facility (Weak Acid Dissociable [WAD] cyanide concentrations were below 0.5 milligrams/liter (mg/L) over the recertification period)
- Barren Pond. No longer a cyanide facility (WAD cyanide concentrations were below 0.5 mg/L over the recertification period)
- Pregnant Pond. No longer a cyanide facility (WAD cyanide concentrations were below 0.5 mg/L over the recertification period)
- Intermediate Pond
- Diversion channels

Since the previous recertification audit, the only new cyanide facility constructed and put in operation has been the Stage 10 of the Juniper TSF.

TRC has not had any significant cyanide releases or exposures during this recertification period. However, TRC had two cyanide spills that were not considered significant and that fell under Standard of Practice 9.3.3. These cyanide spills have been reported to regulators as per permit requirements as indicated in Standard of Practice 9.3.3.

SUMMARY AUDIT REPORT
Auditors Findings

TRC is:

☒ **in full compliance with**

☐ in substantial compliance with

☐ not in compliance with

The International Cyanide Management Code

The operation has not experienced compliance problems during the previous three-year audit cycle.

Audit Company: Golder Associates Inc.

Audit Team Leader: Ivon Aguinaga, Lead Auditor and Mining Technical Specialist

Email: Ivon_Aguinaga@golder.com

Name of Other Auditors

Name, Position	Signature
Jesse Steele, Mining Technical Specialist	

Dates of Audit

The recertification audit was undertaken over four days from August 31 to September 03, 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 Cyanide Management Institute (ICMI) and that all members of the audit team meet the applicable criteria established by the ICMI for 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 (ICMC or the Code) Mining Operations Verification Protocol and using standard and accepted practices for health, safety and environmental audits.

TRC Mine
Name of Facility

Signature of Lead Auditor

January 20, 2021
Date

PRINCIPLE 1 – PRODUCTION

Encourage Responsible Cyanide Manufacturing by Purchasing from Manufacturers that 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**

☒ **in full compliance with**

The operation is

☐ in substantial compliance with **Standard of Practice 1.1**

☐ not in compliance with

Summarize the basis for this finding:

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.

During the recertification period, the operation received liquid sodium cyanide from Cyanco (Winnemucca, Nevada). The sodium cyanide purchase and sale agreement between TRC and Cyanco is current. The agreement requires that the cyanide be produced at a facility that has been certified as complying with the Code. Cyanco's Winnemucca Production Facility was recertified in December 2019.

Bills of lading were reviewed to confirm receipt of cyanide from Cyanco. Cyanide was not purchased from independent distributors during this audit cycle.

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.**

☒ **in full compliance with**

The operation is ☐ in substantial compliance with **Standard of Practice 2.1**

☐ not in compliance with

Summarize the basis for this finding:

The operation is in full compliance with 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.

TRC has a written agreement with Cyanco (the cyanide producer and transporter) requiring that the seller "shall utilize an ICMC certified motor carrier for the delivery of the product." Through this requirement it was confirmed that all entities involved in the transportation are certified with the Code and that designation of the transport related responsibilities, including subcontractors, are addressed.

Cyanco utilized TransWood (Transporter subcontracted by Cyanco) to provide liquid cyanide to the operations during the audit period. TransWood has been certified by the ICMI. From the bills of lading reviewed, TransWood is listed as the only transporter.

Standard of Practice 2.2: **Require that cyanide transporters implement appropriate emergency response plans and capabilities and employ adequate measures for cyanide management**

☒ **in full compliance with**

The operation is ☐ in substantial compliance with **Standard of Practice 2.2**

☐ not in compliance with

Summarize the basis for this finding:

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

TRC has a written agreement with Cyanco (the cyanide producer and transporter) requiring that the seller "shall utilize an ICMC certified motor carrier for the delivery of the product." The operation has bills of lading identifying all elements of the supply chain.

Cyanco utilized TransWood (Transporter subcontracted by Cyanco) to provide liquid cyanide to the operations during the audit period. TransWood has been certified with the Code. Its most recent recertification was in

December 2019. From the bills of lading reviewed, TransWood is listed as the only transporter. Therefore, all of the supply chain was certified under the Code over the recertification period.

PRINCIPLE 3 – HANDLING AND 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.**

☒ **in full compliance with**

The operation is

☐ in substantial compliance with **Standard of Practice 3.1**

☐ not in compliance with

Summarize the basis for this finding:

The operation is in full compliance with Standard of Practice 3.1; design and construct unloading and storage facilities consistent with sound accepted engineering practices, quality control/quality assurance procedures, spill prevention and spill containment measures.

TRC has three cyanide offloading and storage facilities for liquid cyanide located at the Pinon Mill, the South Pond, and the Sage/Juniper Mill, respectively. These facilities have been active over the recertification period, except for the Pinon Mill facility.

TRC has designed and constructed the cyanide offloading and storage facilities in accordance with sound and accepted engineering practices. No physical changes to these cyanide offloading and storage facilities have occurred since the 2017 recertification audit. The design of the cyanide offloading and storage facilities at the Pinon Mill, the South Pond, and the Sage/Juniper Mill were evaluated in the 2007 initial certification audit and found compliant during that audit.

All of the cyanide offload pads are constructed with cast-in-place reinforced concrete to prevent seepage to the subsurface. Also, all cyanide storage tanks are located on cast-in-place reinforced concrete pads and within concrete curbed containment that prevents seepage to the subsurface. TRC has a procedure entitled “Spills in Cyanide Secondary Containment” that addresses inspection, identification and response for the cleanup or recovery of leakage in case of any leakage during offloading activities.

TRC has implemented a method to prevent the overfilling of cyanide storage tanks by the installation and maintenance of level indicators and high-level alarms in all their cyanide storage tanks. All sumps of the cyanide storage tank secondary containments also have level indicators. No changes or modifications have been made to cyanide storage tanks since the 2017 recertification audit. TRC has also implemented operating procedures to prevent overfilling that include verification of the tank levels prior to receiving the expected delivery. In addition, the cyanide supplier, Cyanco, has remote telemetry monitoring of the cyanide tank levels to track cyanide usage and inventory, allowing them to dispatch cyanide loads when needed.

The cyanide offloading and storage areas are located away from public access, areas where workers may congregate and no surface water bodies are nearby. Rabbit Creek is the closest surface water body, which is approximately 3 miles away. Only authorized people can access the site via a gate that it is activated with an authorized security access card. All personnel with access to the offloading and storage facilities, including

contractors, receive site specific health and safety training. All these measures minimize the potential for human exposure.

Cyanide is stored in outside tanks with adequate ventilation to prevent the build-up of HCN gas at the South Pond and the Sage/Juniper Mill cyanide offloading and storage areas. At Pinon Mill, the offload area is outside while the cyanide storage area is located inside the mill building with adequate ventilation. Fixed HCN monitors are located at all the cyanide offloading and storage areas. TRC uses liquid cyanide delivered in a fully enclosed tanker. The cyanide offloading and storage areas are all located within the security perimeter of the mine. In addition, all the valves associated with the cyanide storage tanks are locked.

All the cyanide offloading and storage tanks are located apart from foods, animal feeds, acids, strong oxidizers, and explosives; smoking is prohibited and signed accordingly. All tanks storing acid antiscalant are located away from the cyanide storage tank secondary containments in areas where no risk of commingling of this acid with the cyanide exist.

The auditors observed that the cyanide offloading and storages facilities at the Pinon Mill, the South Pond, and the Sage/Juniper Mill were in good condition and have been regularly maintained.

Standard of Practice 3.2: **Operate unloading storage and mixing facilities using inspections, preventative maintenance, and contingency plans to prevent or contain releases and control and respond to worker exposures.**

☒ **in full compliance with**

The operation is ☐ in substantial compliance with **Standard of Practice 3.2**

☐ not in compliance with

Summarize the basis for this finding:

The operation is in full compliance with Standard of Practice 3.2; operate unloading and storage facilities using inspections, preventative maintenance, and contingency plans to prevent or contain releases and control and respond to worker exposures.

TRC receives liquid cyanide in fully enclosed tankers from Cyanco (via TransWood) and has implemented procedures to manage empty tankers. The empty tankers are returned to Cyanco immediately after the offload is completed. Therefore, no empty cyanide containers require disposal. The TransWood truck driver is required to monitor and control the entire offload operation. At the end of the offload, TransWood truck driver is also required to inspect the truck by walking completely around the tractor-trailer before moving. The inspection ensures that spillage or leaks, if they occurred during the offloading and disconnecting activities, have been cleaned and fittings are securely closed. TRC has a procedure entitled “Spills in Cyanide Secondary Containment” that addresses inspection, identification and response for the cleanup or recovery of leakage.

TRC has developed procedures that include the operation of all valves and couplings for offloading of cyanide, the required Protective Personal Equipment (PPE), as well as the use of the buddy system when hooking up and unhooking the tanker. Also, TRC leach operators have received training on the cyanide tanker design, valves and emergency shut off procedures. Refresher training is provided at least 3 times a year. The auditors reviewed training material and records, the cyanide offloading procedure, and interviewed the TransWood truck driver and the TRC leach operator to verify compliance. The auditors also observed an offload of liquid cyanide at the South

Pond to confirm the use of the appropriate PPE during the cyanide offload, as well as the buddy system during connections and disconnections.

A 2019 letter from Cyanco, the cyanide producer and transporter, indicates that Cyanco started to ship all liquid sodium cyanide with a red dye incorporated into the solution in April 2019. The Cyanide Solution Procedure also includes the use of the red dye. The auditors verified the use of the dye through this letter, the procedure, and by visual inspection during the site visit when reviewing the cyanide addition point at one of the CIL tanks.

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 including contingency planning and inspection and preventative maintenance procedures.**

☒ **in full compliance with**

The operation is

☐ in substantial compliance with **Standard of Practice 4.1**

☐ not in compliance with

Summarize the basis for this finding:

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

TRC has developed and implemented written management and operating plans and procedures for all their cyanide facilities. The cyanide facilities at TRC are comprised (or have been comprised) of the following over the recertification period:

North Area:

- Cyanide offloading and storage facilities (Sage/Juniper Mill and South Pond)
- Sage and Juniper Mills
- Caro's Acid Plant
- Leach pads (Sonoma [phases N3-N5], Izzenhood/L8 [phases S1-S5]). No irrigation has occurred at the Snowstorm leach pad over this recertification period.
- Pregnant Pond
- Intermediate Pond
- South Pond (previously the Barren Pond). This pond is now used as a contingency pond.
- Events ponds (major, minor and N5)
- Juniper TSF
- North Reclaim Pond (was only in use until April 2019)
- Cutoff trenches and seepage collection wells associated with the Juniper TSF
- Flush pond, designed to receive any discharge from the tailing conveyance ditch
- Diversion channels

South Area:

- Cyanide offloading and storage facility (Pinon Mill)
- Pinon Mill (Inactive at the time of the audit except for the CIC and Funda Circuit)
- Leach pad (Osgood). No longer a cyanide facility (WAD cyanide concentrations were below 0.5 mg/L over the recertification period)
- Barren Pond. No longer a cyanide facility (WAD cyanide concentrations were below 0.5 mg/L over the recertification period)
- Pregnant Pond. No longer a cyanide facility (WAD cyanide concentrations were below 0.5 mg/L over the recertification period)
- Intermediate Pond
- Diversion channels

Operating procedures cover procedures for the safe operation of the entire cyanide management at TRC. The procedures include process descriptions, operating tasks, inspections, maintenance and shut down procedures. Operating procedures also include regulatory requirements.

The Fluid Management System Operating Plans (NEV0086018 for the North and NEV0089035 for the South) include design criteria and parameters, and applicable regulatory requirements. This includes the minimum requirement for freeboard within all ponds and in the Juniper TSF supernatant pond, requirements for regular pumping and monitoring of leak detection and leak collection systems for the process ponds, pond operating levels, reporting of quarterly supernatant pond quality and others. These plans also include procedures that describe:1) actions for differing pond water elevations and where process solutions need to be conveyed to prevent discharge to the environment during upset conditions, 2) contingency actions from a deviation from design parameters including high leak detection flow in ponds, elevated groundwater monitoring parameters and tailing supernatant pool beyond design limits and 3) actions for temporary cessation of operations due to an unplanned temporary shutdown.

TRC has a management of change procedure for addressing process and operational changes and modifications. At TRC management of change is used to manage proposed changes which include, but are not limited to, modifications to plant, equipment and facilities, as well as proposed changes to organization, practices, procedures, and systems. The approved change is communicated to workers and training is provided, if necessary, prior to the change implementation. The auditors reviewed examples of completed management of change evaluations done over the recertification period, as well as interviewed operations, safety, and environmental staff to confirm the implementation of the management of change procedure.

Inspections of the cyanide facilities are conducted on a shift, weekly, monthly, quarterly, and annually basis at the Pinon Mill, the Sage Mill, the Juniper Mill and TSF, leach pad areas, and associated ponds and diversion channels. The established frequency for these inspections is sufficient to assure and document that the cyanide facilities are functioning within the design parameters. The inspections cover the condition of tanks, pumps, valves, pipes, secondary containments, leak collection and recovery systems, pond levels, cyanide concentrations, seepage monitoring, wildlife monitoring, presence of ponding at leach areas, diversion channels, TSF facilities, and others. The auditors reviewed completed examples of the inspection forms to verify

compliance. The auditors also observed that the cyanide facilities were generally in good condition, without leaks or other issues that would be related to inefficient inspections.

Inspections are documented. The inspection forms include the name of the inspector, date and observed deficiencies. If the corrective action is such that an operator can complete it, then the operator notes the date of completion on the inspection form. The auditors observed such notes on the completed inspection forms. If the corrective action is such that maintenance staff must complete it, then a notification is entered into the SAP database, a work order is assigned, and completion of the action is tracked. The auditors randomly selected a sample of deficiencies noted on inspection forms for the recertification audit, and the maintenance staff was able to pull up the records in SAP to verify the completion date, the name of the staff involved, and the time it took to complete.

TRC has implemented a maintenance program via the SAP software that includes both preventative (scheduled) maintenance and corrective (unscheduled) maintenance. The preventive maintenance program includes the elements necessary for cyanide safety management including fixed HCN monitors, pH meters, non-destructive testing on cyanide solution tanks, tank level indicators, sump level sensors, pumps, and others. The auditors reviewed examples of completed maintenance records from the SAP system for the recertification period to verify that the preventive and corrective maintenance programs were implemented as required during the recertification period.

TRC does not employ back-up emergency power for their cyanide facilities in the event of a power outage. The cyanide facilities include secondary containment, diversion channels, detention ponds that are designed to accommodate fluid flows resulting from power outages. For example, the tailings pipeline drains by gravity to the tailings impoundment, and the plant facilities have check valves to prevent uncontrolled gravity drainage. The solutions ponds are designed to accommodate drain down during power outages. Fluid flow during a power outage is described in the Fluid Management System Operating Plans that have been reviewed and approved by the NDEP. The auditors reviewed the Fluid Management System Operating Plans and interviewed maintenance personnel.

Standard of Practice 4.2: **Introduce management and operating systems to minimise cyanide use, thereby limiting concentrations of cyanide in mill tailings.**

☒ **in full compliance with**

The operation is

☐ in substantial compliance with **Standard of Practice 4.2**

☐ not in compliance with

Summarize the basis for this finding:

The operation is in full compliance with Standard of Practice 4.2; introduce management and operating systems to minimize cyanide use, thereby limiting concentrations of cyanide in mill tailings.

TRC has determined the appropriate cyanide addition rates in the mills and has evaluated and optimized these addition rates during the recertification period. In June 2020, TRC implemented a project to reduce cyanide consumption by adding oxygen to pre-aeration tank at the CIL circuit at Sage/Juniper Mill. This addition has reduced cyanide consumption at the CIL circuit by 50 percent. The monthly consumption has been reduced from 915,000 pounds to 471,600 pounds (cyanide addition flow reduced from 6-8 grams/minute [g/m] to 3-4 g/min).

Cyanide targets have been set up at 0.12-0.16 grams per liter (g/L) of free CN at CIL tank #1 and CIL tank #2, and < 0.050 g/L at CIL tank #7. At the tails tank, the target is < 0.040 g/L. If cyanide values are above the target at the tails tank, cyanide addition is reduced.

TRC has implemented a sampling strategy at the Sage/Juniper Mill. The strategy consists of conducting titration tests every 3 hours. The auditors reviewed examples of completed CIL Operator's Logs as well as interviewed metallurgical personnel to confirm that the strategy and controls for cyanide addition have been implemented during the recertification period.

Standard of Practice 4.3: Implement a comprehensive water management programme to protect against unintentional releases.

☒ **in full compliance with**

The operation is

☐ in substantial compliance with **Standard of Practice 4.3**

☐ not in compliance with

Summarize the basis for this finding:

The operation is in full compliance with Standard of Practice 4.3; implement a comprehensive water management program to protect against unintentional releases.

TRC has a site wide water balance that was most recently updated in 2018. The water balance is a probabilistic model prepared using GoldSim. The 2018 model is used by the site to support day-to-day operations. The site updates the operational parameters in the model monthly.

The model is comprehensive in that it includes: leach application rates and tailings deposition rates at the Juniper TSF, ore production, percent solids, ore density, pumping rates, precipitation and evaporation, pond capacities, draindown volumes during potential outages, impact of freezing and thawing, and others.

The GoldSim model is probabilistic since it was developed based on a stochastic analysis in GoldSim that represents input variables with distributions. The model considers the 100-year, 24-hour storm event for the simulations.

The model considered data from a National Oceanic and Atmospheric Administration meteorological station near the mine site, Paradise Valley, with more than 108 years of precipitation and evaporation data, and 2) one of the two meteorological site stations, the Twin Creeks North, with 8 years of precipitation and evaporation data. Data from both stations represent actual site conditions. As part of the 2018 model update, measured precipitation at the Twin Creeks North was used for the model calibration, and also was compared to design assumptions to confirm that design assumptions were still adequate.

The auditors reviewed the 2018 GoldSim model results and the report on the water balance model update and calibration to verify compliance.

TRC incorporates inspection and monitoring activities to implement the water balance and prevent overtopping of ponds and impoundments, and unplanned discharge of cyanide solutions to the environment. TRC monitors pond levels and the TSF impoundment level during shift inspections to support water management of the facilities. The

auditors reviewed examples of completed critical control points logs, as well as data on pond levels, and TSF impoundment levels to verify compliance.

As indicated in the Fluid Management System Operating Plans NEV0086018 (North) and NEV0089035 (South), the ponds and the Juniper TSF are designed with adequate freeboard. The ponds are designed and operated with a minimum freeboard of 2 feet while the Juniper TSF supernatant pond is designed and operated with a minimum freeboard of 3 feet from top of the crest. The auditors reviewed time series graphs for all the process ponds and the Juniper TSF showing the pond levels and the Juniper TSF impoundment level over the recertification period to confirm that these facilities have been operated without exceeding the required freeboard specified in the Fluid Management System Operating Plans.

Standard of Practice 4.4: Implement measures to protect birds, other wildlife, and livestock from adverse effects of cyanide process solutions.

☒ **in full compliance with**

The operation is

☐ in substantial compliance with **Standard of Practice 4.4**

☐ not in compliance with

Summarize the basis for this finding:

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

TRC has maintained measures to restrict wildlife and livestock access to process ponds and the Juniper TSF supernatant pond. These measures consist of a barbed-wire fence around the entire property for livestock exclusion; cyclone fencing around all process ponds; and bird balls in process ponds. Locally, flumes at the heap leach pads are covered with permeable gravel to prevent wildlife access. In addition, the Juniper TSF supernatant pond is equipped with propane fired air cannons. TRC has personnel trained and ready to support bird hazing and rescue if required on the Juniper TSF supernatant pond.

TRC measures WAD cyanide concentrations in the Juniper TSF and heap leach ponds. TRC installed the Caro's Acid Plant at the Sage Mill in 2009 to reduce the cyanide concentrations in the Juniper TSF. WAD cyanide concentrations at the Juniper TSF (tails spigots and supernatant pond) and in all the process pond were below 50 mg/L over the recertification period. The auditors reviewed analytical data for all the ponds and the Juniper TSF to confirm this.

TRC has not experienced wildlife mortalities related to cyanide during the recertification period. TRC has three active Industrial Artificial Pond permits with the Nevada Department of Wildlife (NDOW) and is required by law to maintain concentrations in open waters to prevent any cyanide mortality. Under the provisions of these permits the operation is required to conduct mortality monitoring and report all wildlife mortalities. In addition, TRC has a procedure for wildlife mortality that provides guidance for reporting and disposal of wildlife mortalities at the mine site. Wildlife activity and mortality are monitored daily and weekly as part of the leach area inspections. The auditors reviewed the quarterly reports for the Industrial Artificial Pond permits since 2018 to confirm that no wildlife mortality associated with cyanide occurred during the recertification period.

As part of the daily inspections for the heap areas, TRC checks for solution ponding and records the results on the leach critical control points logs. In addition to the daily pad checks, a weekly leach pad inspection specific for

solution pooling and wildlife mortalities is conducted and recorded in the Leach Pad Inspection Top/Toe forms. Ponding areas greater than 100 square feet (sq ft) are eliminated by adjusting the application rates or locations. The weekly inspection form also requires sampling the ponded solution for pH and cyanide. The form specifies that corrective actions are documented, and follow-up inspections conducted. For ponding areas of concern that are less than 100 sq ft, a follow-up inspection is required. TRC uses in general drip emitters with some low-profile sprinklers on the side slopes to eliminate overspray of solution. During the site visit, the auditors inspected the tops of the active heap leach areas and did not observe any ponding issues.

Standard of Practice 4.5: Implement measures to protect fish and wildlife from direct or indirect discharges of cyanide process solutions to surface water.

☒ **in full compliance with**

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

Summarize the basis for this finding:

The operation is in full compliance with Standard of Practice 4.5; implement a comprehensive water management program to protect against unintentional releases.

Standard of Practice 4.5 is inapplicable because TRC cyanide facilities operate as zero-discharge facilities and do not directly or indirectly discharge process solution to surface water.

As indicated in the Fluid Management System Operating Plan NEV0089035, TRC is permitted under NPDES Individual Permit No. NV0021725 to discharge treated water from their water distribution system (pit dewatering, a non-cyanide facility) to Rabbit Creek, an ephemeral surface water drainage. TRC is not required to monitor WAD cyanide at the discharge of this treated water. However, TRC monitors WAD cyanide at a compliance point, SW-09, in Rabbit Creek immediately after the discharge point. Rabbit Creek is the closest water body and is located 3 miles downgradient of the TRC cyanide facilities. Any indirect discharges that could occur from the cyanide facilities would be detected at SW-09, which is the first downgradient compliance point in Rabbit Creek. The auditors reviewed analytical data for SW-09 over the recertification period and confirmed that WAD cyanide was not detected above the laboratory detection limit of 0.010 mg/L.

Because TRC does not directly or indirectly discharges process solution to surface water, no impact to beneficial uses has occurred.

Standard of Practice 4.6: Implement measures designed to manage seepage from cyanide facilities to protect the beneficial uses of groundwater.

☒ **in full compliance with**

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

Summarize the basis for this finding:

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

No physical changes have occurred to the cyanide facilities since the 2017 recertification audit except for the completion of the construction of Stage 10 of the Juniper TSF. As described in the 2017 recertification audit, TRC has implemented measures to protect groundwater below and downgradient of the operation including the following:

- Double geomembrane liners with leak detection under all cyanide heap leach facilities
- Double geomembrane liners with leak detection and collection systems for all process water and minor events ponds
- Single geomembrane liners for all major events ponds (used only in emergency or upset conditions)
- Geomembrane-lined secondary containment ditches or pipe-in-pipe containment for all cyanide-bearing pipelines
- Underdrains with seepage collection systems above low permeability layers under all cells of the Juniper TSF. The Juniper TSF is underlain by low permeability layer and a drain gravel layer with perforated pipes to collect seepage; the tailings embankments have a clay core at the lower levels and High Density Polyethylene (HDPE) liner where the supernatant pond contacts the embankment; and the embankments also have seepage collection systems.
- All cyanide tanks and pipes have been designed with secondary containments such as concrete or lined containments.

The Nevada State drinking water standard is 0.2 mg/L WAD cyanide, and this is the numerical standard established by TRC's Fluid Management System Operating Plans NEV0089035 and NEV0086018. TRC currently monitors groundwater quality at several compliance wells surrounding the operation on a quarterly basis. The current groundwater compliance wells located downgradient for the process facilities in the north area are GW-1B, GW2A, GW-4, GW-6A, GW-9, GW-11, GW-8, GW-10 and in the south area are MW-1, MW-3,, MW-4, MW-5, MW-6, MW-7, MW-19-5, MW-29-6, MW-2R1, MW-29-4, MW-29-4-5. The auditors reviewed quarterly groundwater monitoring data from these wells over the recertification period. Over this period, WAD cyanide concentrations at all these compliance wells were non-detect or below the regulatory numerical standard for WAD cyanide in groundwater.

TRC has an active seepage control system associated with the Juniper TSF that consists of two cutoff trenches and two seepage recovery wells. A review of the annual reports to NDEP for 2018, 2019 and 2020 showed WAD cyanide concentrations in the seepage components (CT-1, CT-2, RW-1 and SCW-1) and groundwater monitoring wells GW-11 (upgradient from the seepage system) and GW-8 and GW-10 (downgradient wells from the seepage system) have remained below 0.2 mg/L WAD cyanide over the recertification period. Therefore, TRC has not caused cyanide concentrations of groundwater to rise above levels protective of beneficial use for drinking water.

TRC does not use tailings as underground backfill.

Standard of Practice 4.7: **Provide spill prevention or containment measures for process tanks and pipelines.**

The operation is

☒ **in full compliance with**

☐ in substantial compliance with **Standard of Practice 4.7**

☐ not in compliance with

Summarize the basis for this finding:

The operation is in full compliance with Standard of Practice 4.7; Provide spill prevention or containment measures for process tanks and pipelines.

TRC has spill containment measures for all the cyanide-related storage and process tanks. Secondary containments are constructed on concrete pads within an epoxy-coated concrete secondary containment that drain to sumps with pumpback systems. Also, TRC has adequately sized the secondary containments for all cyanide and process tanks, as previously accepted in the 2017 recertification audit and previous audits. TRC has not added any cyanide or process tanks or modified any concrete containment areas of the cyanide and process tanks, and therefore the adequacies of the individual containment volumes at the cyanide storage areas and process facilities did not need to be reconfirmed during this recertification audit. The auditors observed that these containments for the cyanide storage and process tanks were still in good condition and suitable for use.

TRC 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. TRC has a Procedure entitled “Spills in Cyanide Secondary Containment” that covers responsibilities for employees and supervisors, PPE, and options for managing collected cyanide solutions in secondary containments depending on location and situation. In addition, TRC prevents releases from secondary containments by two methods depending on the location: 1) by automated collection sumps pumping cyanide solution to the process circuits, and/or 2) gravity drainage to process water ponds or events ponds.

TRC has constructed all pipelines with spill containment measures to collect leaks and prevent releases. The process solution pipelines are constructed within concrete secondary containments, pipe-in-pipe configurations, or lined ditches/areas. The tailings pipeline is constructed to drain by gravity to the Juniper TSF, which is also contained within secondary pipes or geomembrane-lined ditches. TRC is not located near any surface water bodies that require special protection needs for pipelines.

Cyanide tanks and pipelines are constructed of materials compatible with cyanide and high pH conditions. Cyanide and process pipelines are made of steel and HDPE. All cyanide process tanks are constructed of steel.

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.**

☒ **in full compliance with**

The operation is

☐ in substantial compliance with **Standard of Practice 4.8**

☐ not in compliance with

Summarize the basis for this finding:

The operation is in full compliance with 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.

Construction Quality Assurance /Quality Control (QA/QC) programs have been implemented for all the cyanide facilities. Construction QA/QC programs implemented for the cyanide facilities, constructed and in operation at the

time of the 2007 initial certification audit, and the 2010, 2014 and 2017 recertification audits, were evaluated and found compliant during those audits.

Regarding new cyanide facilities, QA/QC programs have been implemented during the construction of the Juniper TSF Stage 10 that is the only new cyanide facility with construction completed during this recertification period. The Stage 10 expansion consisted of a modified centerline raise to the perimeter embankments, constructed above the Stage 9 raise. The Stage 10 expansion provided for an additional storage capacity of approximately 10.5 million tonnes within the Juniper TSF.

QA/QC programs during the construction of Juniper TSF Stage 10 have addressed the suitability of materials and adequacy of soil compaction for earthworks, and the installation and relocation of piping. The QA/QC activities included field testing, laboratory testing and visual observation of methods and materials uses. QA/QC activities addressed random fill placement, placement of embankment face grain materials, extension of face drain collection outlet pipes, and relocation of tailing distribution lines.

The Record of Construction Report for the Juniper TSF Stage 10 includes a statement certifying that the construction was completed in compliance with the approved design. The report is signed and stamped by a professional engineer registered in the State of Nevada.

The auditors reviewed the “Stage X Expansion, Embankment Construction, Record of Construction Report” that also includes the as-built drawings and QA/QC activities performed to verify compliance.

TRC has retained electronic and/or physical copies of the QA/QC documentation for the cyanide facilities. The auditors spot checked the list of evidence from the 2007, 2010, 2014, and 2017 audits against the hard and electronic copies on site to verify documents were retained.

Standard of Practice 4.9: **Implement monitoring programs to evaluate the effects of cyanide use on wildlife, surface, and groundwater quality.**

☒ **in full compliance with**

The operation is

☐ in substantial compliance with **Standard of Practice 4.9**

☐ not in compliance with

Summarize the basis for this finding:

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

TRC has developed written procedures for monitoring activities including surface water and groundwater sampling, and wildlife monitoring. These procedures include the Fluid Management System Operating Plans (NEV0086018 for the North and NEV0089035 for the South), the water sampling and monitoring procedures, and the sampling and analysis plan. These plan and procedures specify how and where samples are to be taken, and include instructions for sample collection and preservation, chain of custody procedures, quality control procedures and cyanide species to be analyzed. TRC has a procedure for wildlife mortality that provides guidance for reporting and disposal of wildlife mortalities at the mine site. Sampling and analytical protocols have been developed and updated by appropriately qualified personnel in the TRC Environmental Department and are approved by NDEP.

TRC environmental sampling personnel document the sampling conditions, field parameters and the procedures followed during sampling. The auditors reviewed water sampling procedures and examples of completed field data sheets as well as interviewed environmental personnel to verify compliance.

TRC cyanide facilities operate as zero-discharge facilities and do not directly or indirectly discharge process solution to surface water. TRC currently monitors groundwater quality including WAD cyanide at several compliance wells surrounding the operation on a quarterly basis as required under the Fluid Management System Operating Plans NEV0089035 and NEV0086018. TRC has an active seepage control system associated with the Juniper TSF that consists of two cutoff trenches and two seepage recovery wells. TRC monitors WAD cyanide in the seepage components on a quarterly basis. TRC monitors the leak collection systems at the ponds and collection ditches daily. The auditors reviewed quarterly monitoring data over the recertification period to verify compliance.

TRC monitors groundwater and seepage system components quarterly. TRC monitors the leak collection systems at the ponds and collection ditched daily. TRC inventories wildlife and monitors mortality daily. These frequencies are adequate to characterize the media being monitored and identify changes in a timely manner. The auditors reviewed inspection records to verify compliance.

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.**

☒ **in full compliance with**

The operation is

☐ in substantial compliance with **Standard of Practice 5.1**

☐ not in compliance with

Summarize the basis for this finding:

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

TRC has developed written procedures to decommission cyanide facilities at the cessation of operations. These procedures are included in the Fluid Management System Operating Plans and are approved by NDEP. The plans have written procedures to decommission the cyanide facilities including heap leach facilities, process ponds, processing facilities and tailings facilities. These plans include general descriptions of the commitments for management of cyanide solutions, encapsulation of solids with covers, collection, and control of seepage, and rinsing and disposal of piping and other equipment. In addition to the closure plan, the Cyanide Equipment Decontamination Procedure is proposed for the decommissioning of the pipelines and other equipment at closure.

TRC is required by Nevada State regulations and their operating permit requirements to review and update the reclamation plan and costs at least every three years to address inflation and any project changes. The Fluid Management System Operating Plans were last updated in July 2020. In addition, TRC conducts an internal review and update of the reclamation and closure requirements and obligations on an annual basis. TRC has developed an implementation schedule for closure activities that is updated annually as part of the annual internal update of its closure costs.

The auditors reviewed the most updated version of the Fluid Management System Operating Plans and the 2017, 2018 and 2019 closure cost spreadsheets to verify compliance.

Standard of Practice 5.2: **Establish an assurance mechanism capable of fully funding cyanide related decommissioning activities.**

☒ **in full compliance with**

The operation is

☐ in substantial compliance with **Standard of Practice 5.2**

☐ not in compliance with

Summarize the basis for this finding:

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

TRC has developed a cost estimate to fully fund third party implementation of the cyanide related decommissioning measures. The operation uses the Standardized Reclamation Cost Estimator Spreadsheet to estimate the closure costs.

Closure costs are updated annually for internal requirements. TRC is also required by Nevada State regulations and their operating permit requirements to review and update the reclamation costs at least every three years to address inflation and any project changes. The closure costs were last approved by NDEP Bureau of Mining Regulation and Reclamation (BMRR) in 2018 as part of the required 3-year update.

The costs are based on third party rates obtained from NDEP cost unit database, Means Construction estimating manual, Caterpillar handbook costs, federal governments vehicle allowance rates, and other contractor's rates as indicated in the closure cost spreadsheets.

The auditors reviewed the 2017, 2018 and 2019 closure cost spreadsheets and a November 2018 letter from NDEP BMRR approving the 3-year reclamation bond cost estimate update to verify compliance.

The operation has an established financial mechanism approved by the applicable jurisdiction (NDEP BMRR and Bureau of Land Management [BLM]). The auditors reviewed 1) a November 2018 letter from NDEP BMRR approving the 3-year reclamation bond cost estimate update and specifying the required bond amount, and 2) a July 2019 letter from the BLM Nevada State Office (NSO) entitled "Replacement Surety Bond Accepted" confirming that NSO received the required surety bond. The bond amount held is equal to the required bond amount, adequately covering the costs of cyanide decommissioning activities, which in any case is a subset of the overall closure costs.

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 eliminated, reduce, and control them.

☒ **in full compliance with**

The operation is

☐ in substantial compliance with **Standard of Practice 6.1**

☐ not in compliance with

Summarize the basis for this finding:

The operation is in full compliance with Standard of Practice 6.1; identify potential cyanide exposure scenarios and take measure as necessary to eliminate, reduce and control them.

TRC has standard operating procedures (SOPs) and standard task procedures (STPs) describing how cyanide tasks are performed. These documents describe PPE requirements, entry into confined spaces, equipment decontamination, operator responsibilities, procedures for using and handling cyanide and safe work practices. The general safety induction and cyanide refresher training also discuss PPE requirements.

TRC operational procedures include workplace inspections that include electrical, mechanical, environmental, guarding, and housekeeping issues. Shift inspections also include cyanide and pH levels, and inspections of pumps, tanks, pipelines, secondary containment areas, and other cyanide elements. Additionally, inspections of the cyanide offloading and storage facilities are conducted before each offload.

TRC has a management of change procedure for addressing process and operational changes and modifications. At TRC, management of change is used to manage proposed changes which include, but are not limited to, modifications to plant, equipment and facilities, as well as proposed changes to organization, practices, procedures, and systems. The approved change is communicated to workers and training is provided, if necessary, prior to the change implementation. The auditors reviewed examples of completed management of change evaluation done over the recertification audit as well as interviewed operations, safety, and environmental staff to confirm the implementation of the management of change produce and verify compliance.

TRC solicits and actively considers worker concerns and comments on safety issues through safety training and safety meetings. Process safety suggestion boxes are also located throughout the facility where employees can provide input into how the operation manages safety.

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.

☒ **in full compliance with**

The operation is

☐ in substantial compliance with **Standard of Practice 6.2**

☐ not in compliance with

Summarize the basis for this finding:

The operation is in full compliance with 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.

The operation has determined the appropriate pH for limiting the evolution of HCN gas during offloading and production activities. The operations procedures state that the pH for the CIL feed cyanide solution should be 9.5-9.8 to minimize the potential for HCN gas formation. The Fluid Management System Operating Plan NEV0086018 states that the heap leach solutions will have a pH ranging from 9.5 to 11. pH and cyanide concentrations of the CIL tanks and the leach solution are checked and recorded on a daily operator log. The auditors reviewed daily operator logs to verify that pH values have been maintained as recommended in the procedures and the Fluid Management System Operating Plan NEV0086018 over the recertification period.

TRC has identified activities and areas where the exposure to harmful concentrations of cyanide is possible. The operation uses both fixed and portable meters at process areas where there is potential for HCN gas to be generated. Ten-fixed HCN monitors are installed in critical areas where workers may be exposed to cyanide with audible alarms and warning lights at 4.7 parts per million (ppm) (“Investigate and Correct”) and 10 ppm (“Evacuate”). In addition to an audible alarm and warning lights, there is an alarm display on the control room. TRC also has portable HCN meters which are made available to employees to check the cyanide concentrations in any area. HCN monitors are maintained, calibrated, and inspected as recommended by the manufacturer. The auditors reviewed calibration records over the recertification period.

Warning signs are placed in areas where cyanide is used to alert workers that cyanide is present including offloading areas, cyanide storage tanks, process areas, the Juniper TSF and tailings pipeline corridor, pregnant solution pipeline and ponds, and the heap leach pads. Warning signs state that smoking, open flames, eating, and drinking are not allowed, and that the necessary cyanide-specific PPE must be worn. Pipes carrying cyanide are marked and the direction of flow is indicated with arrows on the pipe.

TRC purchases liquid sodium cyanide from Cyanco’s Winnemucca Production Facility which is certified as being fully compliant with the Code. Although the supply agreement does not specifically include the use of the colorant dye, the auditors reviewed a 2019 letter from Cyanco stating they started to ship all liquid sodium cyanide with a red dye incorporated into the solution in April 2019. The Cyanide Solution Procedure also includes the use of the red dye. The auditors verified the use of the dye through this letter, the procedure, by visual inspection during the site visit when reviewing the cyanide addition point at one of the CIL tanks.

Showers, low-pressure eye washes, and dry powder fire extinguishers are located at strategic locations throughout the operation and are maintained, inspected, and tested on a regular basis. Safety showers and eyewashes were operational. SDSs, first aid procedures, and informational materials on cyanide safety were available in the language of the workforce (i.e., English) in areas where cyanide is managed. Each control room contained a copy of the TRC Emergency Response Plan (ERP) including direction on exposure recognition and emergency response.

Procedures are in place to investigate and evaluate cyanide exposure incidents. TRC has an incident reporting and investigation procedure used for all incidents and an electronic database for recording the incidents and investigations. A review of NGM Direct database shows that the system has been implemented and incidents involving cyanide have been recorded and investigated. The auditors reviewed the incident reporting and investigation procedure and examples of incident reports to verify compliance.

Standard of Practice 6.3: Develop and implement emergency response plans and procedures to respond to worker exposure to cyanide.

The operation is

☒ **in full compliance with**

☐ in substantial compliance with **Standard of Practice 6.3**

☐ not in compliance with

Summarize the basis for this finding:

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

TRC has water, oxygen, resuscitators, antidote kits (Amyl Nitrate), radios, telephones, alarm systems or other means of communications or emergency notification readily available for use at the process areas and control rooms. In addition, Automated External Defibrillators (AEDs), an emergency response vehicle, and an ambulance are available. The ambulance has oxygen, AED, and a Cyanokit (Hydroxycobalamin). Cyanide antidote kits, oxygen kits, and five-minute escape capsules are inspected monthly. The auditors confirmed that all antidote kits are stored at the correct temperature and that the antidotes have not expired.

Cyanokits are only administered by paramedics. At the time of the audit, the site continues to use amyl nitrate as their primary response to cyanide exposure. The site is however currently undertaking a change management process to consider if amyl nitrate will continue to be the primary response mechanism or if this will be replaced Cyanokits at a future date.

TRC has developed written procedures that address response measures for HCN releases and exposures. Procedures include cyanide antidote and oxygen administration, emergency transportation, recovery, decontamination, emergency communication and evacuation, reporting requirements, and others.

TRC has employees trained to serve as Emergency Medical Responders and Emergency Medical Technicians as part of their Mine Response Team (MRT). Every shift has at least one employee medically trained on the administration of amyl nitrate and oxygen for treatment of cyanide exposure. The mine has one fully equipped emergency response vehicle to transport workers exposed to cyanide. In addition, the site has recently gained access to a license ambulance equipped with oxygen, AED and Cyancokits with one paramedic always available onsite.

In the event of a cyanide accident, TRC will administer the necessary first aid and transfer the patient to the Humboldt General Hospital using the onsite ambulance. The ERP has provision for an Air Ambulance and provides the landing requirements and coordinates for a helicopter response. TRC has formalized arrangements with Humboldt General Hospital to provide medical assistance to workers exposed to cyanide.

TRC has conducted three mock emergency drills over the recertification period based on likely cyanide release/exposure scenarios to test the response procedures and response times, and incorporates lessons learned from the drills into its response planning.

The auditors reviewed the ERP, the agreement between Humboldt General Hospital and NGM to verify compliance. The auditors also reviewed mock drill reports and supporting documentation to verify that the corrective actions were addressed.

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**

☐ in substantial compliance with **Standard of Practice 7.1**

☐ not in compliance with

Summarize the basis for this finding:

The operation is in full compliance with Standard of Practice 7.1; prepare detailed emergency response plans for potential cyanide releases.

TRC has developed plans and procedures that address emergency response to potential accidental releases of cyanide. TRC plans and procedures contain measures for potential scenarios such as: 1) cyanide intoxication; 2) accidents during cyanide transportation; 3) releases during offloading and production activities; 4) release of cyanide during fires and explosions; 5) pipe, valve or tank ruptures; 6) overtopping of ponds; 7) electrical power outages and pump failures; 8) uncontrolled seepage; 9) failure of the heap leach facility and Juniper TSF; 10) failure of the Caro's Acid Plant; 11) cyanide spill control and clean-up; and 12) for clearing site personnel and emergency evacuation.

The site currently receives cyanide in liquid form via truck from Cyanco (transported by Cyanco supply chain via TransWood). Offsite transport emergencies are managed under TransWood's emergency management plan with TRC providing assistance as requested.

TRC has developed procedures that address specific response actions for potential releases of cyanide including procedures for clearing site personnel from the area of exposure; use of cyanide antidotes; first aid measures and medical treatment for cyanide exposure; decontamination procedures; control of releases at their source; and containment, assessment, mitigation and future prevention of releases. The TRC project area is remote, with the nearest community, Golconda, over 25 miles away. Given the distance to Golconda, there are no identified risks of a release affecting this community other than potentially transportation, which would be primarily addressed by the shipper.

Standard of Practice 7.2: Involve site personnel and stakeholders in the planning process.

The operation is

☒ **in full compliance with**

☐ in substantial compliance with **Standard of Practice 7.2**

☐ not in compliance with

Summarize the basis for this finding:

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

TRC has involved its workforce and stakeholders (e.g., local response agencies and communities) in the emergency response planning and response process through training sessions, mock drills, and community meetings.

Worker input in developing and evaluating health and safety procedures is via direct communication between supervisors and operators, training sessions, and participation in cyanide-related mock drills.

The TRC project area is remote, with the nearest community, Golconda, over 25 miles away. Given the distance to Golconda, there are no identified direct release scenarios that may affect the community. Even so, TRC conducts a variety of stakeholder engagement activities.

The Emergency Response Coordinator is a member of the Local Emergency Planning Committee (LEPC) and has involved the site in a number of mock drills and training exercises with external stakeholders.

TRC hosts and participates in Winnemucca Community Breakfasts / Lunches (alternatively held at the site, including site tours) to discuss the operation and the use of cyanide. Community Breakfasts / Lunches allows the general public the opportunity to comment on all aspects of the operation including the use of cyanide. TRC also has formalized arrangements with Humboldt General Hospital to provide medical assistance to workers exposed to cyanide.

The ERP does not designate any responsibilities to offsite responders or communities and with the addition of an onsite ambulance does not rely on Humboldt General Hospital for patient transport. Despite this TRC has developed strong relationships with local response agencies including the Humboldt Rural Fire Department, the Humboldt General Hospital and LEPC. TRC also hosted a cyanide release and exposure mock drill with TransWood.

The auditors reviewed the agreement with Humboldt General Hospital as well as records of mock drills, community meetings and safety meetings to verify continuing consultation.

Standard of Practice 7.3: Designate appropriate personnel and commit necessary equipment and resources for emergency response.

☒ **in full compliance with**

The operation is

☐ in substantial compliance with **Standard of Practice 7.3**

☐ not in compliance with

Summarize the basis for this finding:

The operation is in full compliance with Standard of Practice 7.3; designate appropriate personnel and commit necessary equipment and resources for emergency response.

TRC has designated appropriate personnel and committed necessary equipment and resources for emergency response as detailed in the ERP. The ERP details individuals (primary and alternate) that have authority to commit the resources necessary to implement a plan in the event of an emergency. A current list of MRT members list is always available and is located with Security, senior employees and within the NIMS Incident Command. The ERP also includes call-out procedures and 24-hour contact information for coordinators and

response team members. Specific duties and responsibilities of the coordinators and team members are also defined in the ERP.

Minimum MRT training requirements are detailed in the ERP. Training specific to cyanide emergencies includes providing first aid for personnel exposed to cyanide, to administer amyl nitrite, locations of cyanide antidote kits, medical oxygen, hazard awareness associated with sodium cyanide and HCN gas, victim, and rescuer decontamination procedures.

TRC has a list of the emergency response equipment in their inspection forms. All emergency equipment and supplies are inspected monthly by Emergency Response Coordinator while the onsite ambulance and associated equipment is inspected monthly by onsite paramedics. Inspection records of the antidote kits, oxygen tanks, ambulances, chemical suits, spill response kits, and Self-Contained Breathing Apparatus (SCBAs) were reviewed.

The ERP provides detailed contact information and describes the anticipated roles of the Humboldt General Hospital, if needed. The ERP also includes contact information for Cyanco and regulatory agencies.

The ERP does not designate any responsibilities to offsite responders or communities and with the addition of an onsite ambulance does not rely on Humboldt General Hospital for patient transport. Despite this TRC has developed strong relationships with local response agencies including the Humboldt Rural Fire Department, the Humboldt General Hospital and LEPC. TRC also hosted a cyanide release and exposure mock drill with TransWood and participated in joint training exercises with the Humboldt Rural Fire Department and LEPC. TRC also has communications with the Humboldt General Hospital acknowledging that the hospital uses the Cyanokit for cyanide exposure implying that they are aware and prepared to address a cyanide exposure, if necessary.

The auditors reviewed the ERP, Fluid Management Plans and other emergency response documents and interviewed emergency personnel to compliance. The auditors also reviewed the agreement with Humboldt General Hospital and mock drill records.

Standard of Practice 7.4: Develop procedures for internal and external emergency notification and reporting.

☒ **in full compliance with**

The operation is

☐ in substantial compliance with **Standard of Practice 7.4**

☐ not in compliance with

Summarize the basis for this finding:

The operation is in full compliance with Standard of Practice 7.4; develop procedures for internal and external emergency notification and reporting.

The operation's emergency documentation includes procedures and contact information for notifying management, regulatory agencies, outside response providers and medical facilities of the cyanide emergency.

The ERP details the Communication and Emergency Notification and callout process. Notification of and numbers for contacting management, regulatory agencies, outside responders and medical facilities are detailed in the ERP and the Fluid Management System Operating Plans. Contact numbers for the MRT is included in the TRC Mine Rescue Team Current Roster. The auditors verified that the contact information was up to date.

TRC would implement the NIMS Crisis Management System in the event of a serious incident. This system details addition information on stakeholders, including communities and includes communication procedures for media notification.

The auditors reviewed the ERP, Fluid Management System Operating Plans, and the RC Mine Rescue Team Current Roster to verify compliance.

Standard of Practice 7.5: Incorporate in 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:

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

TRC has developed cyanide response and remediation plans that address appropriate uses and situations for cyanide treatment chemicals. The ERP and the Fluid Management System Operating Plans include response procedures for liquid sodium cyanide and diluted process solutions. Spilled liquid sodium cyanide solutions are to be contained or diluted with water. If low pH conditions occur, then lime will be spread to increase to the pH value to at least 10. All contaminated soils will be excavated in large scoops and will be removed in layers. The ERP defines the WAD cyanide concentration up to which the contaminated soil must be excavated. Soil samples will be taken to verify total cleanup success.

TRC has not used chemicals to treat cyanide releases during the past audit cycle. It is their intention not to use chemicals other than process water for cyanide cleanup. This has eliminated the need for a decontamination chemical, preparation procedure and a storage location. The ERP prohibits the use of chemicals to treat cyanide that has been released into surface waters.

The Fluid Management System Operating Plans require cyanide releases to be disposed of on the leach pad areas or be returned to the process circuit depending on the physical nature of the release. The Procedure for “Spills in Cyanide Secondary Containment” defines locations where spills can be pumped. After clean-up is complete, soil samples will be taken and analyzed to verify total cleanup success. Necessary monitoring activities in the event of a release will be conducted in accordance with the Fluid Management System Operating Plans and in coordination with the NDEP BMRR if warranted. TRC has a potable water system and also uses bottled water for drinking water supply. In the event of a cyanide release, bottle water would be used.

The auditors also reviewed the Fluid Management System Operating Plans and the ERP and interviewed environmental personal to verify compliance.

Standard of Practice 7.6: **Periodically evaluate response procedures and capabilities and revise them as needed.**

☒ **in full compliance with**

The operation is

☐ in substantial compliance with **Standard of Practice 7.6**

☐ not in compliance with

Summarize the basis for this finding:

The operation is in full compliance with Standard of Practice 7.6; periodically evaluate response procedures and capabilities and revise them as needed.

The ERP includes a section for periodic review and update of emergency response procedures. As required by the ERP, TRC reviews the plan annually and adjusts it as appropriate. TRC pointed to the lack of incidents with cyanide solutions as evidence that the ERP has not needed changes during the recertification period. Evidence of the review and revision to the 2017 and 2018 ERPs were observed during the audit. The 2019 version was under review during the audit.

TRC conducts mock drills annually to practice and prepare for emergencies and to provide insight into the effectiveness of the ERP. The ERP is also reviewed following any incident or mock drill requiring its implementation. No cyanide accidents/incidents have occurred at TRC over the audit period that have required changes to the ERP.

The auditors reviewed mock drill reports and previous versions of the ERP to verify compliance.

PRINCIPLE 8 – TRAINING

Train Workers and Emergency Response Personnel to Manage Cyanide in a Safe and Environmentally Protective Manner

Standard of Practice 8.1: Train workers to understand the hazards associated with cyanide use.

☒ **in full compliance with**

The operation is

☐ in substantial compliance with **Standard of Practice 8.1**

☐ not in compliance with

Summarize the basis for this finding:

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

The operation provides training for employees and contractors who encounter cyanide. Inductions include cyanide awareness training (New Miner Cyanide Recognition) and annual refresher training, which includes cyanide awareness and associated hazard identification. All employees must complete this training. Visitors receive basic cyanide awareness at the access gate and are escorted at all times while onsite. The auditors reviewed the January 2020 refresher-training package as well as attendee sheets.

Additionally, foremen from each working area discuss the Cyanide Code Procedures and discuss updates/reviews and key messages annually. This is completed as part of process safety meetings.

Records of cyanide training are retained and include the names of the employee and the trainer, training dates, topics covered, and test results demonstrating an understanding of the training.

Training materials and records of (new hires and process operators) were reviewed to verify compliance.

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.

☒ **in full compliance with**

The operation is

☐ in substantial compliance with **Standard of Practice 8.2**

☐ not in compliance with

Summarize the basis for this finding:

The operation is in full compliance with 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.

In addition to the cyanide hazard recognition as part of the New Miner Training, all personnel in job positions that involve the use of cyanide and cyanide management (including offloading, storage, production and maintenance) receive training on how to perform their assigned tasks.

The process training program (NA-NNA-PROC-POC-478) identifies the specific cyanide management elements for each job utilizing SOPs, STPs, and descriptions of operating circuits. In addition, operating procedures include the purpose of the procedure, required PPE, safety considerations, and the steps of each task.

Qualified personnel, process supervisors who have several years of experience in the mill processes, provide task training related to cyanide management. These qualified personnel provide task specific training to new operators on various unit processes.

Following task training, a new operator works first with a group of experienced operators for a minimum of three months for on-the-job-training. The new operator is observed at the end of this period by a supervisor to evaluate his performance prior to working with cyanide independently.

Refresher training on cyanide management is provided to ensure that employees continue to perform their jobs in a safe and environmentally protective manner. The operation provides annual refresher training, which includes cyanide awareness and associated hazard identification, which all employees complete. Additionally, foremen from each working area run through the Cyanide Code Procedures document discussing updates/reviews and key messages with their teams yearly.

The operation evaluates the effectiveness of cyanide training by testing, observation or other means including a final interview and competency check undertaken by the process trainer and supervisor.

TRC maintains the training records documenting the training for each employee throughout the entire period of their employment. Training records include the names of the employee and the trainer, the date of training, the topics covered, and test results demonstrating an understanding of the training.

The auditors reviewed training materials and paper training records for a selection of employees, as well as interviewed training personnel to verify compliance.

Standard of Practice 8.3: Train appropriate workers and personnel to respond to worker exposures and environmental releases of cyanide.

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

Summarize the basis for this finding:

The operation is in full compliance with Standard of Practice 8.3; train appropriate workers and personnel to respond to worker exposures and environmental releases of cyanide.

Employees working with cyanide are trained in cyanide awareness, cyanide emergency response (including evacuation), first aid for cyanide poisoning, spill response (spills and leaks in the process area, spills during transportation of cyanide, etc.), use of the emergency response equipment, emergency communication procedures, signs, audible and visual alarms and SDSs. TRC requires and provides annual refresher training for cyanide management, including cyanide exposures and releases.

Although all employees receive training on how to respond to cyanide emergencies, the Emergency Response Coordinator and MRT are considered the site first-responders. All MRT members are trained in firefighting,

HazMat, advanced first aid, vehicle and equipment rescue, rope rescue, incidents command and others. MRT members are all trained in the procedures described in the ERP.

The MRT members are trained in accordance with the in the Surface Mine Rescue Training Agenda which is updated annually.

The operation conducted several multi-agency field cyanide exposure and spill response drills as part of its emergency response plan evaluation during the audit period. Drills included cyanide spill response, worker cyanide exposure and rescue, and fire. The drills are conducted at varying scales and debrief reports are compiled following each exercise.

The ERP does not designate any responsibilities to offsite responders or communities and with the addition of an onsite ambulance does not rely on Humboldt General Hospital for patient transport. Despite this TRC has developed strong relationships with local response agencies including Humboldt Rural Fire Department and LEPC. TRC also hosted a cyanide release and exposure mock drill with TransWood.

The Emergency Response Coordinator is a member of the LEPC and participates in these meetings quarterly to ensure the committee is kept aware on any updates or changes at the site.

TRC hosts and participates in Winnemucca Community Breakfasts / Lunches (alternatively held at the site, including site tours) to discuss the operation and the use of cyanide. Community Breakfasts / Lunches allows the general public the opportunity to comment on all aspects of the operation including the use of cyanide.

Training records are retained throughout an individual's employment. The records include the names of the employee and the trainer, the date of training, the topics covered, and test results demonstrating an understanding of the training materials.

The auditors reviewed training materials and records, agreement with Humboldt General Hospital, mock drill records and records of agency and community meetings to verify compliance.

PRINCIPLE 9 – DIALOGUE

Engage in Public Consultation and Disclosure

Standard of Practice 9.1: Provide stakeholders the opportunity to communicate issues of concern.

☒ **in full compliance with**

The operation is

☐ in substantial compliance with **Standard of Practice 9.1**

☐ not in compliance with

Summarize the basis for this finding:

The operation is in full compliance with Standard of Practice 9.1; provide stakeholders with the opportunity to communicate issues of concern.

TRC maintains an open-door policy that provides the opportunity for members of the public to communicate issues of concern regarding the management of cyanide at the mine. Opportunities have been provided throughout the recertification period by community meetings, direct contact with stakeholders, tours, a complaint program, and the NGM website (previously the Newmont website). The NGM website has contact information and provides a link to the Barrick Sustainability Report which provides information about the use of cyanide.

NGM maintains a hotline (phone and email) for grievances and feedback. Access to this hotline is provided through a contact card that is handed out at new hire / annual safety refresher training and at sessions held at supply chain summits held twice per year (primarily held in Elko).

In addition, stakeholders may comment during project permitting via “Open Houses” and public comment periods. No public comments period occurred for TRC during the audit cycle, however this communication mechanism is available.

Standard of Practice 9.2: Initiate dialogue describing cyanide management procedures and responsively address identified concerns.

☒ **in full compliance with**

The operation is

☐ in substantial compliance with **Standard of Practice 9.2**

☐ not in compliance with

Summarize the basis for this finding:

The operation is in full compliance with Standard of Practice 9.2; initiate dialogue describing cyanide management procedures and responsively address identified concerns.

TRC has created opportunities for the operation to interact with stakeholders and provide them with information regarding cyanide management practices and procedures. These opportunities include an open-door policy, quarterly community breakfasts, a NGM Facebook page, mine tours, and brochures. Internal stakeholders have many avenues open to communicate concerns, including regular safety meetings, annual refresher training and the NGM hotline.

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:

The operation is in full compliance with Standard of Practice 9.3; make appropriate operational and environmental information regarding cyanide available to stakeholders.

TRC has developed written descriptions, fact sheets and site brochures of how their activities are conducted and how cyanide is managed. These are available to employees, local communities, and interested parties through the tours, the website and community breakfasts. TRC also disseminates information verbally via meetings and mine tours. The operation has the mechanisms to make information publicly available on the cyanide release or exposure incidents.

TRC is required to report any actual or potential cyanide releases or exposure incidents to regulators as part of their licensing requirements. Both Newmont and Barrick have websites which include sustainability reports, which reports on cyanide management including incidents and Code summary data. These data provide information to the public on incidents and releases. TRC had two incidents during the recertification period that met the criteria “cyanide released on or off the mine site required reporting under applicable regulations”. None of these spills were considered significant as per the classification matrix. These spills occurred within the mine property. The auditors reviewed the investigation reports on these cyanide spills to confirm that they were reported to the regulators as required, where they would be available to the public.

Signature Page

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