

#### Submitted to:

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

#### and:

Nevada Gold Mines LLC Carlin Complex 1655 Mountain City Hwy Elko, NV 89801

# ICMC CERTIFICATION SUMMARY AUDIT REPORT

Nevada Gold Mines LLC Carlin Complex

8 November 2021 Project No.: 0587429



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#### **Signature Page**

8 November 2021

# **ICMC Certification Summary Audit Report**

Nevada Gold Mines LLC - Carlin Complex

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### 1. INTRODUCTION

The "International Cyanide Management Code for the Manufacture, Transport, and Use of Cyanide in the Production of Gold" (the Code) was developed by a multi-stakeholder Steering Committee under the guidance of the United Nations Environmental Program (UNEP) and the then, International Council on Metals and the Environment.

The Code is a voluntary industry program for gold and silver mining companies, and companies involved with the production and transport of cyanide to gold and silver mining companies; it focuses exclusively on the safe management of cyanide. Companies that adopt the Code must have their operations, which manufacture cyanide, transport cyanide or use cyanide to recover gold and silver, audited by an independent third party to determine the status of the Code's implementation. Those operations that meet the Code's requirements can be certified and be able to use a unique trademark symbol, which identifies the company as a certified operation. Audit results are made public to inform stakeholders of the status of cyanide management practices at the certified operation.

The objective of the Code is to improve the management of cyanide used in gold and silver mining and assist in the protection of human health and the reduction of environmental impacts (refer to www.cyanidecode.org). The Code is managed by the International Cyanide Management Institute (ICMI).

This summary report has been prepared to meet the requirements and intentions of the ICMI to demonstrate that following named project has met the obligations in implementing and maintaining the International Cyanide Management Code (ICMC or Code) during the past three-year recertification period.

Name of Project:	Carlin Complex
Project Owner / Operator:	Nevada Gold Mines LLC
Name of Responsible Manager:	Henri Gonin, General Manager
Address and Contact Information:	Nevada Gold Mines LLC Carlin Complex 1655 Mountain City Hwy Elko, Nevada
Audit Company:	ERM-West, Inc.
Audit Team: Lead Auditor:	Gina Rau, P.E. Email: gina.rau@erm.com
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Date of Audit:	This audit was conducted May 10-13, 2021
Nature of Certification:	Recertification

#### 2. **ATTESTATION**

	$\boxtimes$	in full compliance with	
The Carlin Complex is		in substantial compliance with	International Cyanide Management Code
		not in compliance with	

This operation has not experienced compliance problems or significant cyanide-related incidents during previous three-year audit cycle.

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

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

Gina Rau Name of Lead Auditor

Signature of Lead Auditor

November 8, 2021 Date

Name and Signature of Other Auditors:

Taylor Dillon Name of Auditor

Signature Auditor

November 8, 2021 Date

### 3. BACKGROUND ON OPERATIONS

The Carlin Complex is owned and operated by the Nevada Gold Mines LLC (NGM), which is a joint venture between Barrick Gold and Newmont that formed July 1, 2019. The Carlin Complex consists of several mining operations. The mining operations within the Carlin Complex that have cyanide facilities and are included in this Recertification Audit are the Carlin Mine and the Emigrant Mine.

The Carlin Mine is located in north-central Eureka County, Nevada, between 6 and 21 miles north of the town of Carlin and 35 to 40 miles west of Elko. Mining originally began in 1965 in the Carlin and Gold Quarry open pits, and then extended to underground mining in 1994. Carlin is separated into the North and South Areas that are connected by a haul road and a public highway.

The South Area is located in Eureka County, Nevada and consists of the following active facilities:

- Gold Quarry open pit
- Mill 5 includes the reagent building, two carbon-in-leach (CIL) circuits one for ore from Mill 5 and one for ore from Mill 6, process laboratory, magnetic separator, carbon stripping circuit, and carbon regeneration kilns
- Mill 6 includes the double rotating mill and roasters
- Mill 5/6 Central, West, and East Tailings Storage Facilities (TSF) and associated tailings and reclaim pipelines
- Tailings Booster Pump Houses #1 and #2
- Caros Acid Plant (located at the Tailings Booster Pump House #1)
- Dry Stack TSF (for tailings relocated from the James Creek TSF due to pit expansion)
- Refinery
- Metallurgical and assay laboratories
- South Area Leach (SAL) Facility includes the Property Heap Leach Pad and Non-Property Heap Leach Pad, carbon-in-column (CIC) plant, process laboratory, ponds, and pipelines
- Overburden piles, topsoil stockpiles, access roads, and haul roads
- Support facilities such as warehouses, administration buildings, truck shops, maintenance shops, and fueling facilities

The South Area includes the following inactive or closed facilities:

- Chukar underground mine (closed December 2020)
- James Creek TSF (inactive and draining down, but used occasionally for upset conditions from the Tailings Booster Pump House #1)
- Gold Quarry Leach Facility (closed)
- Commercial Refractory Leach Facility (closed)

Mill 5 is a pyrite floatation plant that processes sulfide and oxide ores that are ground in a sag mill and ball mills. The material is then sent to the floatation circuit where the sulfides are floated and dried for later processing in an autoclave or roaster. The oxide material remaining after floatation is sent to a set of CIL tanks for gold recovery. Mill 6 consists of a double rotating mill and a roaster. Sulfide material is fed to the roaster where the sulfides are volatilized. The ore leaving the roasters is sent to a second set of CIL



tanks at Mill 5 for processing. Tailings from both CIL circuits is combined and sent through a Caros Acid cyanide destruction circuit before disposal in the Mill 5/6 TSF.

Gold-bearing solution from the SAL Property and Non-Property heap leach pads drains to a series of pregnant ponds. Solution from the pregnant ponds is pumped via pipeline to two parallel CIC circuits at SAL CIC plant. Loaded carbon is transferred from the SAL CIC plant to the carbon handling facility and refinery for further processing.

The North Area is located in Eureka County, Nevada and consists of the following active facilities:

- East Carlin, Gold Quarry, Blue Star, and Silver Star open pit mines
- Leeville, Pete Bajo, and Exodus underground mines
- North Area Leach (NAL) Facility includes the heap leach pad, CIC plant, process laboratory, ponds, and pipelines
- Leeville Water Treatment Plant
- Overburden piles, topsoil stockpiles, access roads, and haul roads
- Support facilities such as warehouses, administration buildings, truck shops, maintenance shops, and fueling facilities

The North Area includes the following inactive or closed facilities:

- Mill 4/2 TSF (inactive and draining down)
- Post 1 Leach Pad (inactive and draining down)

The processes at the North Area include a heap leach pad and CIC plant. The gold-bearing solution from the NAL heap leach pad drains to a series of pregnant ponds. Solution from the pregnant ponds is pumped via pipeline to the two parallel CIC circuits at the NAL CIC plant. Loaded carbon is transferred to the carbon handling facility and refinery at the South Area for further processing.

The Emigrant Mine is located in southwest Elko County, Nevada, approximately 12 miles south of the town of Carlin and approximately 35 miles west of Elko. The mine is located on the eastern slopes of the Piñon Range in the Dixie Creek Basin and processing facilities are located at elevations ranging from approximately 5,700 to 6,600 feet above mean sea level. Mining began in 2012.

The Emigrant Mine consists of an open pit mine, heap leach pad, a CIC process building, a pregnant solution tank, two pregnant solution process ponds, a stormwater pond, solution collection and conveyance pipelines, waste rock storage facilities, stormwater diversion channels, and support facilities.

Run of mine ore was mined and hauled from the open pit and placed on the heap leach pad in previous years. At the time of the 2021 Recertification Audit, NGM was not actively mining the open pit. Operations at the heap leach pad and the CIC process building are active. A dilute sodium cyanide solution is applied to the ore on the heap leach pad through a system of pipes and drip emitters. This process solution dissolves the gold in the ore. The gold bearing solution, now called pregnant solution, is conveyed through solution collection pipes located at the base of the pad to the solution collection sump. From this location, pregnant solution may be directed to the CIC process, to the pregnant solution tank, or either of the two pregnant solution ponds. Solution collected in the tank or ponds is recovered and pumped to the CIC circuit to remove the gold from the solution and adsorb it to the activated carbon. The carbon is sent offsite to the refinery at the Carlin Mine to be stripped of the gold, regenerated, and then returned to the Emigrant CIC process. The carbon is regenerated in a kiln and the recovered gold doré is sent off site for further processing. Once the process solution passes through the CIC circuit, it is called barren solution



because it no longer contains high quantities of gold. Sodium cyanide is added to the barren solution and returned to the leach pad to repeat the leaching process.



Figure 1. Regional Map

Modifications to the Carlin Complex cyanide facilities that have been implemented since the 2018 Recertification Audit include the Mill 5/6 TSF East Expansion (work completed during the 2018, 2019, and 2020 construction seasons), the NAL Phase IX Expansion, and the Tailings Booster Pump House - No.1 Secondary Containment Upgrades.

The Carlin Complex did not experience any offsite releases or human exposures since the 2018 Recertification Audit. They did report four onsite releases of cyanide-containing solution to the Nevada Division of Environmental Protection (NDEP) during the three-year 2021 Recertification Audit period. These releases are listed in Standard of Practice 9.3. These incidents do not meet the definition of "significant cyanide incidents" and do not require notification to ICMI.

The Carlin Complex was found to be in full compliance with the International Cyanide Management Code and this operation has not experienced compliance problems during the previous three-year audit cycle.



## 4. MINING OPERATIONS VERIFICATION PROTOCOL

### 4.1 **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.

<b>FINDING:</b> The operation in <b>full</b> <b>compliance</b> with Standard of Practice 1.1	<b>BASIS FOR FINDING:</b> The Carlin Complex is in full compliance with Standard of Practice 1.1, requiring the operations to 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 Carlin Complex purchased its sodium cyanide from Cyanco under three separate contracts and from The Chemours Company under a single contract during the 2021 Recertification Audit time period. Cyanco's Winnemucca Production Plant was first certified as compliant under the Code on October 11, 2006, and was most recently recertified on December 19, 2019. Chemours' Memphis Plant, which includes the Carlin, NV transloading operation, was first certified as compliant under the Code on June 13, 2006, and was most recently recertified on January 21, 2020.
	The Carlin Complex's supply of cyanide has been Cyanco's ICMI-certified plant in Winnemucca, NV and Chemours' ICMI-certified transloading operation in Carlin, NV for the time period of the 2021 Recertification Audit; no other suppliers were used.



#### 4.2 **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.

# **FINDING:**

#### **BASIS FOR FINDING:**

The operation is in <b>full</b> <b>compliance</b> with Standard of Practice 2.1	The Carlin Complex 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.
	Newmont USA Limited, Barrick Gold of North America, and NGM (and therefore, the Carlin Complex) have, or had, written cyanide supply agreements with Cyanco and Chemours, which state that the responsibilities for production, transportation, and delivery of cyanide lies with the Supplier.
	Cyanco subcontracts with TransWood Inc. and Chemours subcontracted with Quality Carriers for the delivery of cyanide to the Carlin Complex. TransWood Inc. was certified as Code compliant on October 11, 2006 and last recertified on December 10, 2019. Quality Carriers' Carlin Terminal was certified as Code compliant on November 20, 2006 and last recertified on December 19, 2019. Therefore, the Carlin Complex can rely on the Code certification of the producers and transporters to establish their compliance with Standard of Practice 2.1.
	The Carlin Complex maintains onsite an updated cyanide Safety Data Sheet (SDS), dated April 9, 2019, that states the cyanide color is red to light pink and carmoisine dye has been added. The Carlin Complex Process Supervisors confirmed that the cyanide received in the operating areas is dyed red.

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

### **FINDING:**

The operation is in full compliance with Standard of Practice 2.2.

### **BASIS FOR FINDING:**

The Carlin Complex 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. Transportation of cyanide to the site is the responsibility of Cyanco or Chemours under the cyanide supply contract. Three of the contracts in force during the Recertification Audit period specifically required that the cyanide be transported by carriers certified and compliant to the Code. The companies used to transport cyanide to the site during the Recertification Audit period were TransWood, Inc., who was certified as fully compliant with the Code on October 11, 2006 and was last recertified to the Code on December 10,

2019, and Quality Carriers, whose Carlin Terminal was certified as Code compliant on November 20, 2006 and last recertified on December 19, 2019. TransWood, Inc. and Quality Carriers were certified as Code compliant over the period of this Recertification Audit.



#### Principle 3 – Handling and Storage 4.3

## Protect Workers and the Environment during 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.

FINDING:	BASIS FOR FINDING:
The operation is in <b>full</b> <b>compliance</b> with Standard of Practice 3.1.	The Carlin Complex is in full compliance with 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 Carlin Complex has designed and constructed the cyanide unloading and storage facilities in each Operating Area in accordance with sound engineering practices. The Carlin Complex has not made any changes to these facilities since the previous Recertification Audit in 2018. A summary of the designs were available, but the actual designs and specifications were not reviewed during the 2021 Recertification Audit since the findings of the initial Certification Audit and subsequent recertification audits are still valid.
	The Carlin Complex has located cyanide unloading, storage, and processing facilities away from people and surface water, except for at SAL and SAL Phase I area. The nearest surface water to the SAL cyanide facilities is Maggie Creek, approximately 0.7 miles away, and James Creek is 0.1 miles away from the SAL Phase I cyanide facilities; however, secondary containment and elevated roadways are in place to prevent any cyanide releases to surface waters. The processing areas have stormwater controls to reduce the potential for impacted runoff from reaching surface water. No offices or places where workers congregate are located in the vicinity of the cyanide facilities are located within fenced and secured areas of the mine sites, the Carlin Complex controls access to these areas, and no towns or houses are located in the immediate vicinity of the Operating Areas.
	The Carlin Complex installed digital level indicators with alarms in the cyanide storage tanks to prevent overfilling. The auditors observed tank levels at the storage tank areas and control room screens to verify the indicators were functioning.
	The Carlin Complex installed the cyanide storage tanks within walled, concrete containment areas to prevent seepage to the subsurface. The reinforced concrete containment areas also provide a competent barrier to leakage. Any liquids present in the containment areas will drain either to centrally located sumps and be automatically pumped to the process circuits or to adjacent process ponds. These containments have not changed since the previous Recertification Audit. The auditors observed that the containments were in good condition and free of debris.
	The Carlin Complex receives only liquid cyanide via tanker trucks. Cyanide unloading occurs on concrete pads designed to minimize seepage to the subsurface at each Operating Area. These pads are constructed of cast-in-place reinforced concrete. Each pad is sloped either to a collection sump or to piping that collects and transfers any spillage to adjacent process ponds. The concrete

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.

pads and collection sumps/piping were observed to be in good condition during the 2021 Recertification Audit.
The cyanide is unloaded from the tanker trucks directly to a cyanide storage tank. The cyanide storage tanks at the heap leach facilities are located outdoors to prevent the buildup of HCN gas. The Mill 5 cyanide storage tanks are located inside a building; however, the building is equipped with ventilation and the tanks are located next to a large bay door that opens to the outside to prevent the buildup of HCN gas. No incompatible materials, such as acids, oxidizers, and explosives, were stored in the cyanide storage tank containment areas.

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.

FINDING:	BASIS FOR FINDING:
The operation is in <b>full</b> <b>compliance</b> with Standard of Practice 3.2.	The Carlin Complex is in full compliance with 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.
	The Carlin Complex receives only liquid sodium cyanide in tanker trucks; solid cyanide is not received at any of the Operating Areas. The TransWood and Quality Carrier cyanide delivery trucks are only on site for the duration of the unloading event. Once unloaded, the tanker trucks leave the mine site. No empty cyanide containers were observed on site during the 2021 Recertification Audit.
	The Carlin Complex has two cyanide off-loading standard operating procedures (SOPs), one for the heap leach operations and one for Mill 5. Both SOPs specify the PPE that the cyanide delivery truck driver must be wearing during the transfer of cyanide from the tanker truck to the storage tank and the PPE that the Carlin Complex operator must have readily available in the event of an emergency. The procedure also includes the operation of valves and regular and emergency shutdown requirements.
	The cyanide delivery truck drivers complete the cyanide offloading. The Carlin Complex operators serve as a 'Safety Buddy' and observe as the driver connects the transfer hose and pressurizes the system and again when the driver blows out the lines and disconnects the transfer hose. During the transfer, the operator remains present during the transfer if the unloading area is not equipped with remote monitoring via a camera system, or the camera system is not operational, or the control room operator is not available to monitor the offloading. After unloading the cyanide, the delivery truck driver is responsible for cleaning any cyanide residue on the hose connections and couplings on the tanker truck following an offload event.
	Cyanco and Chemours add a red colorant dye to the liquid cyanide prior to shipping cyanide. Auditors verified the color of the cyanide during the 2021 Recertification Audit by observing the cyanide addition points where possible. Where it was not possible to observe the color of the cyanide, auditors verified compliance through interviews with the Process Supervisors.
	To verify compliance with the offload procedures, the auditors observed a cyanide unloading event and interviewed both the CIC Plant Operator and the

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.

TransWood delivery truck driver. Both demonstrated a thorough understanding of
the requirements to perform cyanide unloading, how to prevent and contain
releases, and how to prevent or respond to a worker exposure.

#### 4.4 **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.

FINDING:	BASIS FOR FINDING:
The operation is in <b>full</b> <b>compliance</b> with Standard of Practice 4.1.	The Carlin Complex 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.
	The cyanide facilities at the Carlin Complex are unchanged from the previous Recertification Audit, except for the Mill 5/6 TSF East Expansion, NAL Phase IX Expansion, and Tailings Booster Pump House Secondary Containment Upgrades. The Carlin Complex has designs, plans, and procedures that identify the assumptions and design criteria to prevent or control cyanide releases and exposures and that describe the practices necessary for the safe and environmentally sound operation of the cyanide facilities, including the specific measures needed for compliance with the Code and regulatory requirements. The Carlin Complex's procedures address cyanide unloading, heap leach operations, CIC operation, and operation of associated facilities.
	The Carlin Complex's Fluid Management Plans identify contingency measures to address upsets in the facility's water balance. These plans include remedial actions for deficiencies discovered during routine inspections and monitoring, as well as reporting requirements. Emergency power generators at each Operating Area provide sufficient electrical power for operation of the critical cyanide equipment during a power outages to prevent cyanide releases. The Fluid Management Plans address temporary closures where needed. Permanent closure, or cessation of operations, is addressed in the Tentative Plan for Permanent Closure for each facility as required by the NDEP.
	Based on review of a representative sampling of inspection records, the auditors observed that the Carlin Complex inspects its cyanide facilities on an established frequency that is sufficient to ensure and document that they are functioning as designed. Operators inspect the CIC plants and Mill 5 each shift for general conditions, housekeeping, equipment leaks, and operational parameters. Heap leach operators inspect the heap leach operations each shift for general operating conditions, ponding, seepage, and presence of wildlife. Inspections are documented on checklists and daily reports that include the inspectors name, date/shift of the inspection, and comments regarding deficiencies. Additional inspections include monitoring of the leak detection systems and annual non-destructive testing of the cyanide storage tanks and cyanide piping. Preventive maintenance inspections have been developed for cyanide-related equipment in

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.

> each Operating Area, including emergency power generators. The auditors reviewed a representative sampling of inspection forms and completed preventive maintenance work order from throughout the recertification period to verify compliance.

> The Carlin Complex has adopted NGM's web-based change management application to evaluate changes that may increase the potential for cyanide releases and identify necessary release prevention measures. The system includes the identification of risks and stakeholders, the development of an implementation plan, and requires authorizations from various departments, including the environmental and safety departments, and follow-up actions. No cyanide-related changes have required approval through the change management process, but the Carlin Complex reviewed non-cvanide related changes in the system with the auditors as evidence of system implementation.

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

<b>FINDING:</b> The operation is in <b>full</b> <b>compliance</b> with Standard of Practice 4.2.	<b>BASIS FOR FINDING:</b> The Carlin Complex 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.
	The Carlin Complex has implemented a manual strategy to control cyanide additions. Manual titrations are performed on samples collected every four hours at multiple locations within the Mill 5 and Mill 6 CIL circuits and before the tails leave each circuit. The Mill 5 Control Room Operator adjusts the setpoint for the cyanide addition rate depending on the results of the titrations. The auditors reviewed completed examples of Mill 5 and Mill 6 Daily Leach Reports that showed the cyanide concentrations at the sample locations to verify compliance throughout the recertification period.

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

<b>FINDING:</b> The operation is in <b>full</b> <b>compliance</b> with Standard of Practice 4.3.	<b>BASIS FOR FINDING:</b> The Carlin Complex is in full compliance with Standard of Practice 4.3; implement a comprehensive water management program to protect against unintentional releases.
	During the 2021 Recertification Audit time period, the Carlin Complex has maintained four GoldSim Water Balance Models, one for each Operating Area. These water balance models are comprehensive and probabilistic. The models are comprehensive in that they include the appropriate facilities and processes. The SAL, NAL, and Emigrant models include the heap leach pads, process solution ponds, and associated CIC processes. Inflows include direct precipitation and make up water flows. The Mill 5/6 model includes, but is not limited to, mill ore tons to TSF, ore moisture content, flotation concentrate tons and moisture content, tailings slurry percent solids, inflows from various water sources, and acid generation rate. Given that the heap leach pads, process solution ponds, and the Mill 5/6 TSF have been constructed as elevated features, no run-on occurs. Outflows include evaporation, saturation of additional ore that is placed on the heap leach pad, and entrainment in deposited tailings solids. The water

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

balances evaluate the impact of a specific design event on the systems and without over topping ponds or the TSF. The models for NAL, SAL, and Emigrant incorporate the 100-year, 24-hour storm event. The Probable Maximum Flood is the design storm event for the Mill 5/6 TSF. Met stations are located at Emigrant, Gold Quarry (SAL/Mill 5/6), and NAL. Precipitation data from each met station is used when the water balance model for an Operating Area is updated. Evaporation rates are based on pan evaporation rates representative for the local area. The models have been developed to simulate power outages or pump failures of various durations. The models can predict situations and conditions that would result in possible releases to the environment.
The Carlin Complex has designed and operates the process solution ponds and the Mill 5/6 TSF with adequate freeboard as required per the Carlin Complex's Water Pollution Control Permits. Operators check pond and Mill 5/6 TSF water levels twice per day. The auditors reviewed the five Fluid Management System Plans, spreadsheets, inspection forms, and daily reports to verify compliance.
The Carlin Complex measures precipitation and other meteorological parameters on site. The auditors reviewed spreadsheets and confirmed the inputs to the GoldSim model to verify compliance.

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

FINDING:	BASIS FOR FINDING:
The operation is in <b>full</b> <b>compliance</b> with Standard of Practice 4.4.	The Carlin Complex 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.
	Open waters at the Carlin Complex include any liquids (process solution or stormwater) that may be present in the heap leach facilities (pregnant solution ponds, stormwater event ponds, and ponding on the heap leach pad) and the Mill 5/6 TSF. The Carlin Complex has implemented a number of measures to protect birds, other wildlife and livestock including:
	Carlin Mine perimeter is lined with barbed-wire fencing.
	<ul> <li>Chain-link fences surround process ponds located at SAL and NAL. The fences are 8 feet high to prevent access from deer and antelope with a tighter weave mesh at the bottom to prevent small mammal access.</li> <li>Mill 6 Catch Pond was dry at the time of the Recertification Audit, but it</li> </ul>
	contains birdballs to cover the water surface when water is present.
	<ul> <li>Mill 5 Catch Pond (a small concrete pond) is kept clean to discourage wildlife use.</li> </ul>
	<ul> <li>Stormwater event ponds are maintained dry, except during wet climatic conditions to reduce the potential to attract wildlife and birds.</li> </ul>
	<ul> <li>The Emigrant CIC process building and operational ponds are surrounded by an 8-foot high chain link fence with a tighter weave at the bottom.</li> </ul>
	<ul> <li>Heap leach pads, ponds, and CIC process areas and building are connected via pipelines, rather than open channels.</li> </ul>
	The Carlin Complex applies barren solution to its heap leach pads through a drip system. The cyanide solution drips out of the drip lines and soaks into the ore. Cyanide solution is not sprayed on to the ore on the heap leach pads; therefore, overspray of solution off the heap liner does not occur. The Carlin Complex's



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

Leach Pad Ponding Procedure defines three levels for the presence of solution on the surface of the leach pads and prescribes measures that operators are to take to mitigate the ponding. Between applying the barren solution in this manner and implementation of the Leach Pad Ponding Procedure, the Carlin Complex applies leach solutions in a manner that avoids significant ponding on the heap leach pads. Ponding was not observed on any of the heap leach pads during the site inspection of the 2021 Recertification Audit.
Based on review of a representative sampling of Tails Operator Reports from 2018 through January 2021 and Annual Water Pollution Control Permit (WPCP) reports for WPCP NEV0090056, the weak acid dissociable (WAD) cyanide levels in the Mill 5/6 TSF and the Reclaim sumps samples indicate that WAD cyanide levels are below 50 mg/L. The Mill 5/6 TSF samples are collected where the tailings slurry is discharged into the Mill 5/6 TSF.
Carlin Operations personnel are required to report all wildlife mortalities to the Carlin Operations' Environmental Team. The Environmental Team submits a quarterly report to the Nevada Department of Wildlife (NDOW) that lists all wildlife mortalities and the suspected cause of death. A review of 9 quarterly wildlife reports submitted to NDOW during the 2021 Recertification Audit time period showed that a Great Horned Owl was found dead on 8/1/2019 in the Post Pad Tank Area (NAL old buried pad). The cause of death is unknown and the owl most likely drowned after falling into tank. The solution in the tank was tested and the WAD cyanide was 0.027 mg/L. The Carlin Complex's efforts to maintain a WAD cyanide concentration of 50 mg/L or less in open waters has been effective in preventing significant wildlife mortalities.

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

FINDING:	BASIS FOR FINDING:
The operation is in <b>full</b> <b>compliance</b> with Standard of Practice 4.5.	The Carlin Complex is in full compliance with Standard of Practice 4.5; implement a comprehensive water management program to protect against unintentional releases.
	The Carlin Complex operates as zero discharge facilities and does not discharge directly or indirectly to surface water. Inspections and monitoring are conducted to verify that no seepage enters surface water or surface drainages. This was verified by review of a representative sampling of data contained in quarterly Water Monitoring Reports for each operating area. The results reviewed indicated no detectable WAD cyanide (<0.010 mg/L) was measured in the groundwater at compliance points or monitoring wells down gradient of the Mill 5/6, SAL, NAL, and Emigrant cyanide facilities.

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

#### **FINDING:**

The operation is in **full compliance** with Standard of Practice 4.6.

#### **BASIS FOR FINDING:**

The Carlin Complex 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.



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

The Carlin Complex has implemented measures to protect groundwater beneath and immediately down-gradient of the operation. The Carlin Complex installed and samples groundwater monitoring wells and reviews the analytical data to detect if cyanide seepage occurs. The Carlin Complex submits the data to NDEP on a quarterly basis. The beneficial uses of groundwater down-gradient of the Carlin Complex's operations are agricultural and livestock use.
The Carlin Complex's cyanide facilities were designed as zero discharge to both surface water and groundwater and were constructed with impermeable containment systems or liners to prevent seepage. Many of the requirements, along with requirements for operating the facilities, are included the facilities' Water Pollution Control Permits. In accordance with these permits, the Carlin Complex implements inspection and monitoring programs to ensure water management and leak detection systems are functioning properly, and that water quality is being protected. Protective measures include, but are not limited to, locating process equipment on concrete pads or in buildings that are equipped with concrete stemwalls, lining ponds, bases of heap leach pads, and the Mill 5/6 TSF with HDPE liners, and placing HPDE piping in HDPE lined ditches for solution conveyances.
Auditors reviewed a representative sampling of analytical results in the Quarterly Water Monitoring Reports for the operating areas that were submitted during the 2021 Recertification Audit period. Results for the groundwater wells located down-gradient of the operating areas were less than the detection limit of 0.01 mg/L WAD cyanide. This Is below the Nevada Groundwater Standard for WAD cyanide of 0.2 mg/L, which is based on federal drinking water standards. No evidence was observed that indicates seepage from the Carlin Complex cyanide facilities is occurring.
The Leeville Underground Mine, which is part of the Carlin Complex, uses tailings from the old Mill 4/2 TSF, which is no longer used for tailings deposition, to make paste backfill. The Carlin Complex tests for WAD cyanide on the tailings solids removed from the Mill 4/2 TSF and conducts a Meteoric Water Mobility Procedure on the tailings solids and tests for WAD cyanide in the leachate produced on a quarterly basis. Sampling results indicate very low cyanide levels in tailings solids and either non-detect or well below the groundwater standard of 0.2 mg/L WAD cyanide in the leachate. Based on discussions with the Environmental Specialist, cyanide levels were so low that the NDEP approved a reduction in the monthly sampling requirement to quarterly. As such, no extra measures were required to protect worker health or groundwater.

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

FINDING:	BASIS FOR FINDING:
The operation is in <b>full</b> <b>compliance</b> with Standard of Practice 4.7.	The Carlin Complex is in full compliance with Standard of Practice 4.7; Provide spill prevention or containment measures for process tanks and pipelines.
	The Carlin Complex has provided secondary containment for all cyanide storage and process solution tanks, except for the Mill 5 thickener. A spill from the Mill 5 Thickener would run over pavement to the concrete Mill 5 Emergency Catch Pond. If the spill exceeded the capacity of this catch pond, the spill would discharge to (via an overflow pipe) and be contained in a clay-lined Sediment Control Basin located immediately downstream. The cyanide storage tank secondary containment areas and the CIC Plants have sumps to collect any liquids. The Carlin Complex does not discharge from secondary containments to



Standard of Practice 4.7: Provide spill prevention or containment measures for process tanks and pipelines.		
	the environment. For those cyanide facilities equipped with sumps, the sumps are equipped with automatically operated sump pumps that return collected solutions to the CIL or CIC circuits. The auditors observed the secondary containments and sumps during the site visit and found them to be in good condition.	
	The Carlin Complex has sized and constructed secondary containments to hold at least 110% of the volume of the largest tank or vessel within its containment. No changes to these secondary containments have been made since the site inspection of the 2018 Recertification Audit. Therefore, the findings documented in the 2018 Recertification Audit report are still valid. During the site visit for the 2021 Recertification Audit, the auditors observed that the secondary containments did not contain debris or extraneous materials that would reduce their capacity.	
	The Carlin Complex has provided spill containment and spill prevention measures for all cyanide-related pipelines. Solution pipelines cross the ephemeral James Creek Diversion in three locations. The Carlin Complex has installed special protection at these locations. No changes have been made to the crossings since the 2018 Recertification Audit and the findings of that audit are still valid. The auditors observed the containment ditches for the pipelines to be in good condition during the site inspection.	
	The Carlin Complex has constructed cyanide and process tanks of carbon steel. Process solution pipelines are constructed of HDPE or carbon steel. Reagent grade cyanide pipelines are constructed of stainless steel or carbon steel. Tailings and reclaim solution pipelines are constructed of HDPE. These materials are compatible with cyanide and high pH conditions. The auditors observed these materials during the site inspection.	

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.

<b>FINDING:</b> The operation is in <b>full</b> <b>compliance</b> with Standard of Practice 4.8.	<b>BASIS FOR FINDING:</b> The Carlin Complex 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.
	The Carlin Complex completed the following construction projects during the 2021 Recertification Audit time period: the Mill 5/6 TSF East Expansion Phase I and Phase II over the 2018, 2019, and 2020 construction seasons, the NAL Phase IX Expansion, and secondary containment upgrades at the Tailings Booster Pump House – No. 1. The auditors reviewed the Record of Construction Reports for these projects, which documented that QC/QA programs were implemented and addressed the suitability of materials, adequacy of soil compaction for earthworks, and the installation of synthetic membrane liners in addition to other aspects of these projects.
	The Record of Construction Reports were prepared by NewFields and stamped by a Professional Engineer licensed in the State of Nevada. The construction reports include copies of the field inspection reports, laboratory and field data, construction observations, drawings, and photographs. The Carlin Complex has maintained copies of QC/QA documentation related to their existing and modified cyanide facilities.

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

FINDING:	BASIS FOR FINDING:
The operation is in <b>full</b> <b>compliance</b> with Standard of Practice 4.9 <b>.</b>	The Carlin Complex 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.
	The Carlin Complex's Water Sampling and Monitoring Standard Operating Procedure (SOP) includes written standard procedures for monitoring activities. The Fluid Management Plans describe the monitoring requirements required by the Water Pollution Control Permits (WPCPs). The Fluid Management Plans and the WPCPs specify how and where samples are to be taken. The Water Sampling and Monitoring SOP specifies how certain samples are to be collected, outlines sample preservation techniques, and includes chain of Custody and shipping instructions. The WPCPs specify which parameters, including WAD cyanide, must be analyzed for. Sampling and analytical protocols within the Water Sampling and Monitoring SOP have been developed by appropriately qualified environmental professionals in the Carlin Complex's Environmental Department. The Carlin Complex sampling technicians document sampling conditions in field log books for each operating area.
	The Carlin Complex does not have any indirect or direct discharges to surface water, groundwater, or the normally dry washes.
	Carlin Complex operators inspect for wildlife either on a shift or daily basis depending on the operating area and document any observations on the operator report for their Operating Area. All wildlife mortalities are reported to the Carlin Operations' Environmental Department. They document all wildlife mortalities in quarterly wildlife reports that they submit to NDOW. If cyanide solution is the suspected cause of death, that is marked on the reports. Based on review of quarterly wildlife reports submitted to NDOW, the Carlin Complex has only observed one wildlife mortality associated with their cyanide facilities – a great horned owl suspected of drowning in a process tank – during the 2021 Recertification Audit time period.
	In the opinion of the audit team, the Carlin Complex conducts monitoring at frequencies adequate to characterize and identify changes in a timely manner in the groundwater, surface water, leak detection systems, and process solutions.



#### **Principle 5 – Decommissioning** 4.5

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

Standard of Practice 5.1: Plan and implement procedures for effective decommissioning of cyanide facilities to protect human health, wildlife and livestock.

<b>FINDING:</b> The operation is in <b>full</b> <b>compliance</b> with Standard of Practice 5.1.	<b>BASIS FOR FINDING:</b> The Carlin Complex 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.
	The Carlin Complex has planned for effective decommissioning of the cyanide facilities to protect humans, wildlife, and the environment. The Carlin Complex has developed five Tentative Plan for Permanent Closure, three Final Permanent Closure Plans, and Reclamation Plans. The closure plans include procedures for closure of cyanide-related process components. The process component procedures include procedures for characterizing spent process materials and for stabilization of process components (Heap Leach Facility, Tailings Impoundment, Residual Process Water and Pond Sediments, and Process Plant and Associated Facilities). The closure cost spreadsheets include a comprehensive proposed reclamation schedule in terms of years after closure. The reclamation plans, closure plans, and closure cost estimates are reviewed at set frequencies and revised as necessary.

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

<b>FINDING:</b> The operation is in <b>full</b> <b>compliance</b> with Standard of Practice 5.2.	<b>BASIS FOR FINDING:</b> The Carlin Complex is in full compliance with Standard of Practice 5.2; establish an assurance mechanism capable of fully funding cyanide related decommissioning activities.
	The Carlin Complex has established a financial assurance mechanism capable of fully funding cyanide-decommissioning activities. The Reclamation Plans and cost estimator spreadsheets summarize the current decommissioning costs for the appropriate facilities and activities. The Carlin Complex has reviewed and updated the decommissioning costs throughout the recertification period as required by NDEP and Bureau of Land Management (BLM) as well as NGM's internal requirements. The auditors reviewed the reclamation plan costs and the Nevada Standard Reclamation Cost Estimator that NGM utilizes for cost estimate for the funding of third-party implementation of the cyanide-related decommissioning activities identified in the site closure and reclamation plans. Carlin Complex has letter of approvals for the bonds accepted by NDEP and BLM as a financial mechanism. The amounts cover mine-wide closure, which is considerably greater than the cost for cyanide decommissioning alone.

## 4.6 **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.

<b>FINDING:</b> The operation is in <b>full</b> <b>compliance</b> with Standard of Practice 6.1.	<b>BASIS FOR FINDING:</b> The Carlin Complex 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.
	The Carlin Complex has developed Standard Operating Procedures and checklists for the Operating Areas that include the heap leach pads, Mill 5/6, and TSF operations, maintenance, and for general site safety that specify the working procedures and PPE required to eliminate, reduce, and control risks of cyanide exposure. These procedures also cover the safe operation of the cyanide management facilities, decontamination of cyanide equipment prior to maintenance work, and entry into confined spaces. The procedures, and supplemental checklists that accompany some of the procedures, specify the requirements for PPE and pre-work inspections and verify that these precautions are taken.
	A change management procedure is in place to ensure that proposed process and procedural changes consider and address worker safety.
	Worker input is achieved through various mechanisms including a Courageous Behaviors Team, safety and line out meetings, trainings, and SOP reviews.

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.

<b>FINDING:</b> The operation is in <b>full</b> <b>compliance</b> with Standard of Practice 6.2.	<b>BASIS FOR FINDING:</b> The Carlin Complex 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.
	The Carlin Complex has determined the appropriate pH for cyanide-containing process solutions to limit the evolution of hydrogen cyanide gas. The Carlin Complex uses both fixed and portable HCN monitors to ensure that worker exposure to HCN gas is less than exposure limits. The fixed monitors are set to have a red flashing light when the HCN concentration reaches 4 ppm, which triggers an investigation for the source of elevated HCN concentration, and the monitors have an audible alarm if the HCN concentration reaches 10 ppm, which requires an evacuation of the area. Areas of exposure to HCN concentrations that could equal or exceed 4 ppm have been identified and signage has been posted in these areas. Operations and maintenance procedures have been developed that specify the PPE to be worn and gas monitoring to be conducted when performing tasks that could lead to this exposure. The fixed HCN monitors and portable multi-gas detectors are calibrated in accordance with the manufacturer's recommendations. Records of calibration are kept on site for at least one year.
	Warning signs have been placed in all areas where cyanide may be encountered, and on all cyanide facilities warning that the tanks and pipes may contain cyanide



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.

> solutions. Signage also prohibits eating, smoking or drinking in cyanide areas. All process solution pipping is labelled with contents and direction of flow. Emergency showers and eye wash stations are located within the CIC Plants and next to the cyanide storage tanks/offload area where the risk of cyanide exposure exists and are checked regularly during workplace inspections and through planned maintenance. Type ABC dry chemical fire extinguishers were located at numerous places throughout the CIC Plants. Mill 5/6. and cvanide storage tanks/offload areas. The inspection records attached to the fire extinguishers indicated that inspections are up to date.

Safety Data Sheets are available on all computers in the workplace through the 3E database, and are written in English (the language of the workforce).

Procedures are in place to report and investigate incidents, including cyanide exposures, and to modify procedures based on any corrective actions and findings identified in incident investigations.

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

FINDING:	BASIS FOR FINDING:
The operation is in <b>full</b> <b>compliance</b> with Standard of Practice 6.3.	The Carlin Complex 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.
	The Carlin Complex stores their cyanide antidote kit (amyl nitrite) and oxygen in the cyanide facilities and inspects and maintains them on a regular basis. Workers are trained in the use of amyl nitrite and oxygen on an annual basis. The Carlin Complex provides 24-hour coverage onsite with qualified First Responders that are able to administer oxygen, amyl nitrite, and Cyanokits as needed for treating potential victims of cyanide exposures. In addition, the Carlin Complex has 34 Emergency Medical Technicians (EMTs) and several Advance EMTs. First aid equipment is regularly inspected to ensure it will function correctly and items are replaced after reaching their expiration dates.
	The Carlin Complex has specific written plans for dealing with cyanide exposures, including emergency response and first aid. The Carlin Complex has five onsite ambulances and two emergency response trailers. All staff that work with cyanide are trained in providing first aid for cyanide exposures. In addition to amyl nitrite and oxygen, water and resuscitators are available for use when responding to cyanide emergencies. Employees are instructed to call security or call mayday over the radio to report an incident.
	The five onsite ambulances are able to transport employees offsite to Northeastern Nevada Regional Hospital if needed. The Carlin Complex also has a process in place to summon outside assistance and transport cyanide exposure victims to Northeastern Nevada Regional Hospital using an offsite ambulance or air evacuation services. NGM has an agreement with Northeastern Nevada Regional Hospital in which the hospital agrees to maintain materials required to treat cyanide exposures.



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

> The Carlin Complex performs mock drills to test the emergency response procedures developed at site and incorporates learnings from these drills into revised procedures.

#### 4.7 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.

FINDING:	BASIS FOR FINDING:
The operation is in <b>full</b> <b>compliance</b> with Standard of Practice 7.1.	The Carlin Complex is in Full Compliance with Standard of Practice 7.1 which requires that the site prepare detailed emergency response plans for potential cyanide releases.
	The Carlin Complex has a detailed and comprehensive written Surface Emergency Response Plan, Cyanide Medical Emergency SOP, and Cyanide Spill Response and Clean Up SOP that work together to address cyanide releases. The plans consider all reasonably foreseeable cyanide failure scenarios, including offsite and onsite transportation incidents, and cyanide releases associated with cyanide facilities. The plans address the potential need for evacuations. The Surface Emergency Response Plan describes procedures to respond to exposures, including the use of specialized first aid equipment, antidotes and measures to control cyanide releases. The Surface Emergency Response Plan separates the response actions into three emergency levels: Level 1, 2, and 3. Level 3 is for catastrophic releases of cyanide and hydrogen cyanide. Prevention of future releases is dependent on incident investigation procedures outlined in the Incident Management and Investigation Standard that requires the identification of corrective and preventive actions following a cyanide-related incident.
	Cyanco, Carlin Complex's cyanide supplier, is responsible for any transportation accidents resulting in a cyanide spill during transport and until the cyanide delivery at the Operating Areas is complete as specified in the cyanide supply contracts between NGM and Cyanco.
	Contact information in the event of an emergency is provided for external agencies and nearby communities.

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

#### **FINDING:**

The operation is in full compliance with Standard of Practice 7.2.

#### **BASIS FOR FINDING:**

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



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

The Carlin Complex workforce participates in the emergency response planning process by attending and contributing to daily safety meetings as well as participating in the mock drills that are conducted on site. Safety meetings are utilized to provide information and to solicit comments and ideas on cyanide safety procedures as well as cyanide response activities. The Carlin Complex does not have any nearby communities that would be affected by cvanide releases at the site; however, NGM does conduct guarterly community meetings and discusses, among other issues, cyanide risks and use at the site.

The Carlin Complex maintains on-site capability to respond to cyanide emergencies and has an agreement in place for mutual aid emergency response with the Local Emergency Planning Commission (LEPC). The Carlin Complex's Emergency Response Team participates in local LEPC meetings along with one or more of the NGM Emergency Response Team members. The Carlin Complex Emergency Response Team members also participate in LEPC drills offsite and members can bring information back to site to share for planning purposes. The Carlin Complex incorporates comments, suggestions, and dialogue that is gathered at LEPC meetings and the community meetings into their Emergency Response Plan and trainings, as applicable. NGM maintains an agreement with Northeastern Nevada Regional Hospital to provide medical treatment for cyanide exposures.

The Carlin Complex's Surface Emergency Response Plan and contact lists in the emergency response binders provide current contact information for Elko County Dispatch, emergency services, and regulatory agencies that would be notified in the event of a cyanide incident.

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

<b>FINDING:</b> The operation is in <b>full</b> <b>compliance</b> with Standard of Practice 7.3.	<b>BASIS FOR FINDING:</b> The Carlin Complex 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.
	The Carlin Complex maintains sufficient onsite capability to respond to cyanide incidents and has agreements in place with Northeastern Nevada Regional Hospital and the local community if offsite response is needed. The Carlin Complex's Surface Emergency Response Plan discusses general response for emergencies classified as an Alert, Level 1, Level 2, or Level 3. The plan includes a description of the roles and responsibilities of employees on site, and leads and directs users to follow the directions in the Incident Command Center, which establishes lines of authorities for primary and backup incident commanders. Emergency Response personnel are on site each shift; therefore, the Carlin Complex has 24-hour response team coverage. All Emergency Response personnel carry a radio upon arrival at site for their work shift.
	The Carlin Complex has a robust monthly training schedule for all of its first responders. First aid drills, review of HAZOP scenarios, rope rescues, extraction drills, and assembling of detoxification chambers occur during these training sessions. The Carlin Complex includes and participates with outside agencies in mock drills as well as keeps the general outside agencies up to date at their LEPC meetings. The Carlin Complex has had the air ambulance come to site for a mock drill to practice loading and unloading patients on site.

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

The Emergency Response Team has a Mine Rescue Equipment Inventory Sheet and an Emergency Response Vehicle Checklist that outlines all PPE and equipment on site. All equipment used at the Carlin Complex related to Emergency Response is inspected on a monthly basis. The ambulance and Cyanokit are inspected weekly. The amyl nitrite, oxygen, and first aid kits at the process plant are inspected monthly by the Emergency Response Team and Process Supervision.
NGM maintains an agreement with the Northeastern Nevada Regional Hospital to provide treatment for cyanide exposures.
The Carlin Complex's Emergency Response Binder and Surface Emergency Response Plan provides contact information for external parties that would be informed in the event of a cyanide-related incident.

Standard of Practice 7.4: Develop procedures for internal and external emergency notification and reporting.		
FINDING: The operation is in full compliance with Standard of	<b>BASIS FOR FINDING:</b> The Carlin Complex is in full compliance with Standard of Practice 7.4, which requires that the site develop procedures for internal and external emergency	
Practice 7.4.	notification and reporting. The Carlin Complex has established internal reporting requirements, and the Surface Emergency Response Plan along with the Crisis Management Plan identifies roles, responsibilities, and procedures for external communication related to cyanide incidents and emergencies.	
	The Surface Emergency Response, Crisis Management Plan, and related documents give details for contacting external parties, and roles, responsibilities and procedures for communications with the media.	

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.

FINDING:	BASIS FOR FINDING:
The operation is in <b>full</b> <b>compliance</b> with Standard of Practice 7.5.	The Carlin Complex 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 Fluid Management System Plans and Cyanide Spill Response and Clean Up SOP specify specific remediation measures for cyanide releases. These measures include response procedures, clean-up standards, and the disposal of clean-up residuals. In the event a cyanide spill affects the potable water supply for the mine site, the Carlin Complex will provide bottled water to its employees.

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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 Surface Emergency Response Plan prohibits the use of chemicals such as sodium hypochlorite, ferrous sulphate, and hydrogen peroxide to treat cyanide spills that have reached surface water.
	In the event of a cyanide release, the Carlin Complex is required by the State of Nevada to do soil sampling to verify that no residual cyanide remains in the affected area.

Standard of Practice 7.6: Periodically evaluate response procedures and capabilities and revise them as needed.	
FINDING:	BASIS FOR FINDING:
The operation is in <b>full</b> <b>compliance</b> with Standard of Practice 7.6.	The Carlin Complex 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 Carlin Complex performs mock cyanide emergency drills. The Carlin Complex updates the Surface Emergency Response Plan at least annually and as needed following mock drills or cyanide-related events. The cyanide releases that occurred during the 2021 Recertification Audit period did not require implementation of the Surface Emergency Response Plan. The Fluid Management Plans, Cyanide Spill Response and Clean Up SOP, and Cyanide Medical Emergency SOP, which detail emergency response for cyanide releases, are reviewed as needed.



#### 4.8 **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.	
FINDING:	BASIS FOR FINDING:
The operation is in <b>full</b> <b>compliance</b> with Standard of Practice 8.1.	The Carlin Complex 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.
	The Carlin Complex provides cyanide awareness training and related operating procedure training to all relevant workers, and includes an annual refresher training and a cyanide training video for workers exposed to cyanide regularly.
	The Carlin Complex has developed training requirements that identify the required training for all workers in the CIC Plant, heap leach facilities, and Mill 5 area including training on cyanide-related procedures.
	The Carlin Complex maintains records of training on site for current employees.

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.

#### **FINDING:**

**BASIS FOR FINDING:** 

The operation is in full The Carlin Complex is in full compliance with Standard of Practice 8.2, which compliance with Standard of requires that the site train appropriate personnel to operate the facility according Practice 8.2. to systems and procedures that protect human health, the community and the environment. The Carlin Complex trains workers who perform cyanide-related tasks safely with respect to themselves, their colleagues, and the environment through induction training, cyanide awareness training and videos, training criteria checklists, and SOP reviews. The training materials identify the elements necessary for the safe performance of each job, based on the site's operating procedures. Only qualified personnel at the Carlin Complex who have knowledge of the area and specific tasks provide task training to operators and mechanics working with cyanide. Trainers are lead personnel, supervisors, experienced personnel, dedicated process trainers, or a combination of all four. Employees are trained prior to working with cyanide and, a competent person confirms transfer of knowledge. Job task observations and Cyanide Code Assessments are performed to evaluate the effectiveness of the training and confirm people's understanding. Training criteria checklists, which include safety and environmental topics related to cyanide, are required to be completed for CIC Plant, heap leach pad, and Mill



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.

> 5 operators. New employees must demonstrate knowledge of all tasks identified in the checklists by a competent trainer.

Refresher training for cyanide awareness is completed annually through the site's Annual Refresher Training and the Cyanide Code Training video.

Detailed records of training are retained as hard copy records and are supported by some records that are also kept electronically.

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

FINDING:	BASIS FOR FINDING:
The operation is in <b>full</b> <b>compliance</b> with Standard of Practice 8.3.	The Carlin Complex 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.
	All workers who work in or may enter cyanide areas are trained in the potential exposures and appropriate emergency response for worker exposure and environmental releases of cyanide.
	Emergency Response Team members are trained in cyanide decontamination and first aid procedures and participate in mock emergency response drills. Emergency Response Team members are also trained in the procedures included in the Surface Emergency Response Plan concerning cyanide, and in the use of appropriate equipment.
	An agreement is in place for Northeastern Nevada Regional Hospital to treat workers exposed to cyanide. NGM has a mutual aid agreement with the LEPC.
	Refresher training in cyanide emergency response is completed annually for all employees.
	The Carlin Complex conducts cyanide emergency response mock drills. The 2021 Recertification Audit included a review of the mock cyanide drills that have taken place from 2018 through June 2021 and the auditors verified that the drills covered both worker exposures and environmental releases. Emergency response mock drills are evaluated and lesson learned captured and incorporated into corrective actions.
	Emergency response training records are retained on SharePoint and in the Target Solutions Software system.



#### Principle 9 – Dialogue 4.9

#### Engage in Public Consultation and Disclosure.

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

FINDING:	BASIS FOR FINDING:
The operation is in <b>full</b> <b>compliance</b> with Standard of Practice 9.1.	The Carlin Complex is in full compliance with Standard of Practice 9.1, which requires that the site Provide stakeholders the opportunity to communicate issues of concern.
	The Carlin Complex hosts quarterly meetings for the communities to raise awareness of the operations and provide community members with an opportunity to raise issues of concern. NGM has a Facebook page that provides the public with information and is an avenue for issues and concerns to be raised. A toll free hotline and an email address is available to the community so that they can place grievances. In addition, the public is able to make comments during the public comment period for permit modification or renewal applications.

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

FINDING:	BASIS FOR FINDING:
The operation is in <b>full</b> <b>compliance</b> with Standard of Practice 9.2.	The Carlin Complex 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.
	NGM regularly provides information to local communities regarding cyanide use and management at the site, through the site tours, quarterly information sessions, and factsheets.

Standard of Practice 9.3: Make appropriate operational and environmental information regarding cyanide available to stakeholders.

<b>FINDING:</b> The operation is in <b>full</b> <b>compliance</b> with Standard of Practice 9.3.	<b>BASIS FOR FINDING:</b> The Carlin Complex 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.
	The Carlin Complex makes operational and environmental information regarding cyanide available through community engagements, site tours, handouts, and online information. Some information is also available on the NDEP public website.
	The majority of the local population is literate; therefore, written information is considered adequate. However, the online material NGM utilizes includes verbal and visual communication materials.
	Information regarding cyanide releases is made available through regulatory reports and Barrick's and Newmont's annual Sustainability Reports.

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