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**INTERNATIONAL CYANIDE MANAGEMENT CODE  
GOLD MINING OPERATION RECERTIFICATION AUDIT  
GOLDSTRIKE MINE, NEVADA**

**SUMMARY AUDIT REPORT**

*Submitted to:*



*International Cyanide Management Institute  
888 16<sup>th</sup> Street N.W, Suite 303  
Washington, D.C. 20006*

*and*

*Barrick Goldstrike Mines Inc.  
Goldstrike Mine  
PO Box 29  
Elko, Nevada 89803*

*Submitted by:*

*Golder Associates Inc.  
44 Union Boulevard, Suite 300  
Lakewood, Colorado 80228*

August 11, 2010

103-81649

Name of Project: Goldstrike Mine

Project Owner / Operator: Barrick Goldstrike Mines Inc.

Name of Responsible Manager: Randy Buffington, General Manager

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Audit Dates: April 4-8, 2010

**Location and Description of Operation**

The Barrick Goldstrike Mine (Goldstrike) is located in the Little Boulder Basin adjacent to the Tuscarora Mountain Range on the county line between Elko and Eureka Counties, approximately 27 miles northwest of the community of Carlin, Nevada. Goldstrike consists of a single large open pit mine; two underground mines; overburden stockpiles; topsoil stockpiles; two tailings impoundments; a closed and reclaimed heap leach facility; two separate grinding and milling circuits feeding a roaster and carbon-in-leach (CIL) circuit and an autoclave and CIL circuit; administration and maintenance facilities; access and haul roads. The two ore processing circuits are designed, permitted and operated as zero-discharge facilities. The Goldstrike Mine complex is located on both private land and federal land administrated by the U.S. Department of Interior, Bureau of Land Management.

Goldstrike is comprised of two general areas of operation: 1) the AA-Block area which includes the Betze-Post open pit, the Meikle and Rodeo underground mines, the Wet Mill/Autoclave and CIL circuit, the AA-Tailings Disposal Facility, the reclaimed AA-heap leach facility; and 2) the North-Block area which includes the Roaster and CIL circuit and the North-Block Tailings Disposal Facility. Goldstrike recovers precious metals at two separate mill and process circuits utilizing CIL cyanidization processing. Sulfide ore is processed either at the Roaster and CIL circuit or the Wet Mill / Autoclave and CIL circuit. Both ore processing facilities have been designed and constructed with appropriate secondary containments for pipelines and tanks with additional storage for collection of storm water from extreme precipitation events, and with controls for wildlife protection including fencing and cyanide detoxification. Tailings disposal occurs at two engineered facilities with rotating discharge points to promote drying and consolidation. The North Block Tailings Disposal Facility is lined with a composite liner system consisting of compacted low permeability soil through stage seven overlain by a synthetic liner. The liner is an alternate geosynthetic clay liner (GCL) overlain by a 60- or 80- mil HDPE liners through stage six and a GCL overlain by a 60- mil linear low-density polyethylene (LLDPE) liner in stages seven and eight. The synthetic liner is overlain with a coarse rock drainage system, or full blanket drain, in the southwest portion of the impoundment where the supernatant pond is location. The AA Block tailings impoundment has a downstream constructed embankment with soil and natural materials liner system, overlain by a drainage blanket. The Roaster

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circuit includes an INCO sulfur dioxide cyanide destruction process to detoxify the tailings prior to discharge at the North Block tailings Impoundment. The Wet Mill / Autoclave circuit utilizes a Caro's Acid cyanide destruction process prior to discharge at either tailings impoundment.

The only changes to the cyanide facilities since the initial audit are:

- New piping at Tanks A and B of the Mill CIL circuit
- Raises (Stages 7 and 8) of the North Block Tailings Disposal Facility (NBTDS)
- Installation of wick drains for water management in the NBTDS
- Improvements to critical sections of the tailings delivery line and
- Re-deposition in the reclaimed AA Tailings Disposal Facility (TDF) (only for maintenance and water management of the NBTDS).

Goldstrike has ceased spigot discharge into the AA Tailings Disposal Facility. Goldstrike will only discharge into the AA Tailings Disposal Facility for maintenance purposes.

Goldstrike has a comprehensive environmental monitoring program to evaluate the performance of the ore processing facilities and containments. The monitoring program includes daily monitoring of pond leak collection systems, quarterly sampling and analysis of groundwater and surface water, and quarterly sampling and analysis of tailings supernatant ponds. Wildlife monitoring is conducted per shift by the operators during facility inspections.


The Goldstrike mines include active dewatering operations. Water produced by Goldstrike's pumping operation that is not used in mining and milling operations is used for irrigation, infiltrated or injected into the ground, or discharged, subject to Water Pollution Control Permits and an Underground Injection Control Permit. Water quality monitoring confirmed that the dewatering circuit is separate and distinct from the cyanide processing circuit.

Starting in January 2009, Cyanco (located in Winnemucca, Nevada) has been the liquid cyanide supplier to Goldstrike and Transwood has been the transporter. Prior to December 31, 2008, Goldstrike received liquid sodium cyanide from DuPont De Nemours & Co., Inc. (DuPont) located in Carlin, Nevada in specially engineered tanker trucks. The sodium cyanide was delivered by Sentinel Transportation LLC (Sentinel). Cyanco, DuPont, Transwood and Sentinel are signatory to the Code and have been certified as compliant with the Code by third-party auditors. Goldstrike stores and manages sodium cyanide in engineered tanks, pipelines and lined ponds that have had appropriate quality control and quality assurance. Goldstrike employees are trained in cyanide hazards and first aid, first response, emergency response, and specific operational task training. Goldstrike facilities are fenced to preclude wildlife and livestock from entering cyanide process areas. Goldstrike conducts daily, weekly, and monthly inspections to assure that facilities are functioning as designed and to monitor process solutions. Preventive maintenance programs are in place to assure the continuous operations. Goldstrike has approved closure and reclamation plans along with financial assurance to complete the appropriate management of cyanide solutions and solids, and the decontamination of cyanide pipelines and equipment.

Goldstrike has an emergency response team that is trained to respond to onsite fires, chemical spills and worker exposures to cyanide. Goldstrike works with local community emergency responders to assure that adequate resources are available to address both offsite and onsite emergencies.

**Auditors:** Pamela Stella, Lead Auditor and Gold Mining Technical Expert Auditor

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Ivón Aguinaga, Gold Mining Technical Expert Auditor

**The operation is**  **in full compliance with**  
 in substantial compliance with **All Code Principles**  
 not in compliance with

Audit Company: **Golder Associates Inc.**

Audit Leader: **Pamela J. Stella, CEA**  
E-mail: [Pamela\\_Stella@golder.com](mailto:Pamela_Stella@golder.com)

Names and Signatures of other Auditors:

G. Ivón Aguinaga  July 1, 2010  
Name of Auditor Signature of Auditor Date

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 International Cyanide Management Institute for Code Verification Auditors.

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

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**1. PRODUCTION:** *Encourage responsible cyanide manufacturing by purchasing from manufacturers who operate in a safe and environmentally protective manner.*

Standard of Practice 1.1: *Purchase cyanide from manufacturers employing appropriate practices and procedures to limit exposure of their workforce to cyanide, and to prevent releases of cyanide to the environment.*

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

**Basis for Audit Finding:** Goldstrike has committed to only purchase cyanide from producers that are compliant with the Code. Cyanco, located in Winnemucca Nevada, is the cyanide producer and supplier for Goldstrike since January 1, 2009. The contract with Cyanco states they shall comply with the Code requirements. DuPont was the cyanide producer and supplier for Goldstrike from the date of the initial audit until December 31, 2008. The contract with DuPont specifically identifies the Code requirements as a provision. Cyanco and DuPont are signatory to the Code and have been certified as complaint under the Code.

**2. TRANSPORTATION:** *Protect communities and the environment during cyanide transport.*

Standard of Practice 2.1: *Establish clear lines of responsibility for safety, security, release prevention, training and emergency response in written agreements with producers, distributors and transporters.*

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

**Basis for Audit Finding:** Starting in January 2009, Cyanco has been the liquid cyanide supplier to Goldstrike and Transwood has been the transporter. Prior to January 2009, DuPont was the cyanide producer and supplier and the sodium cyanide was delivered by Sentinel. Cyanco, DuPont, Transwood and Sentinel are signatory to the Code and have been certified as compliant with the Code with clear lines of responsibility for safety, security, release prevention, training, and emergency response. The cyanide supply contract with Cyanco specifies that Goldstrike takes ownership of the cyanide at the time the liquid cyanide is delivered into the cyanide storage tank at the mine site. The contract specifies that Goldstrike and Cyanco agree to comply with the "Principals and Standards of Practice" of the Code.

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

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

**Basis for Audit Finding:** Starting in January 2009, Transwood has been the cyanide transporter. No interim storage facilities are used by either Cyanco or TransWood; and TransWood is the only transporter allowed by Cyanco to transport cyanide from their facility to Goldstrike. TransWood is currently certified by the ICMI. Auditors reviewed the summary report posted on the Code website titled "TransWood, Inc. Winnemucca Terminal Sodium Cyanide Solution Transportation Operations ICMI Cyanide Code Re-Certification Audit SUMMARY AUDIT REPORT". The report was written by Management Solutions Inc. The audit dates were August 12-13, 2009. The date of re-certification was January 20, 2010. Goldstrike's Bills of Lading were reviewed to confirm that the cyanide was, in fact, transported by TransWood.

During the time period from the initial audit until December 31, 2008, DuPont was responsible for the production and transport of cyanide to the delivery point at Goldstrike. The supply chain from the DuPont production facility in Memphis Tennessee to the Goldstrike Mine includes rail transportation to Carlin, Nevada as solid sodium cyanide followed by truck transportation of liquid sodium cyanide to the mine. The DuPont supply chain from the manufacturing facility was not certified under the Code but through a formal due diligence of the rail transport completed and documented in the Audit Report, DuPont Management of Sodium Cyanide Transportation via Rail Memphis, TN Plant to Carlin, NV Packaging Terminal via Union Pacific Railroad and Canadian National Railway by Management System Solutions, Inc. (December, 2006). The audit report was completed by a qualified transportation auditor that meets the ICMI criteria. Based on the results of this review, DuPont was in full compliance with Code cyanide transportation audit requirements and had considered to the extent practical, the security, safety, training and emergency response aspects of the rail carriers. Sentinel is currently and was signatory to the Code during the time period they were transporting cyanide to Goldstrike. Sentinel is certified as compliant with the Code.

**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.*

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

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**Basis for Audit Finding:** The only change to the unloading and cyanide storage areas since the initial certification audit was installation of Cyanco's telemetry units in the storage tanks and connection couplings for compatibility with TransWood's cyanide tanker trucks. Goldstrike has two liquid sodium cyanide unloading and storage facilities: 1) the Wet Mill; and 2) the Roaster. The design and construction of the cyanide unload and storage facilities have been completed appropriately as documented in final design and construction drawings prepared and stamped by Nevada registered Professional Engineers. The cyanide unload and storage facility quality control and assurance procedures and documentation include construction level drawings with detailed specifications noting foundation compaction and concrete reinforcement and piping and tankage materials. Leavitt & Associates Engineers, Inc. conducted a verification of the secondary containment at the Roaster cyanide storage tank in 2009. Cyanco conducted a site survey in December 2008 focusing on how the cyanide is received, stored and handled at Goldstrike. Auditors reviewed a letter from Cyanco to Goldstrike dated December 29, 2008.


The unloading and storage areas are located away from public access and no surface water bodies are nearby. The two cyanide unload pads are constructed with cast-in-place reinforced concrete with curbed containment that report to sumps for return to the process. These unload pads are adequate barriers to prevent seepage to the subsurface. The liquid cyanide storage tanks each have a high-level alarm and level indicator that prevent the overfilling. The Roaster cyanide unloading and storage tanks are located outside with adequate ventilation. The Wet Mill cyanide storage tanks consist of one tank outside with adequate ventilation, and one tank inside the building with more limited, but in general, adequate ventilation provided by a wall fan. During unloading at both sites traffic and access is controlled by the operators. The cyanide unloading and storage areas are within concrete containment to contain releases and precipitation that may contact cyanide. The delivery of liquid cyanide is performed in specially engineered tanker trucks. There are no unsecured valves that would allow direct access to the liquid cyanide. Goldstrike has isolated the cyanide unload and storage tanks away from incompatible chemicals such as acids and oxidizers. No smoking or eating is allowed near either of the cyanide storage areas.

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

**The operation is**  **in full compliance with**  
 in substantial compliance with **Standard of Practice 3.2**  
 not in compliance with

**Basis for Audit Finding:** Goldstrike has developed and implements Standard Operating Procedures (SOPs) to prevent exposure and releases of cyanide during unloading, storage, and application. The SOPs consist of "Bulk Chemical Unloading Procedures" and "Cyanide Unloading Access." Cyanco has a procedure titled "Sodium Cyanide Delivery Procedure" for safe and accurate delivery of cyanide. These procedures cover the responsibilities for the transporter and the site personnel. Cyanco's procedure details step by step the offload procedure and includes photographs of all valves and couplings. Both Goldstrike's and Cyanco's offload procedure require appropriate personal protective equipment (PPE) during an offload. Off-loading does not occur until a Goldstrike operator is there to observe compliance with the PPE requirements, truck parking and chocking, and to unlock the unload piping. Both the transporter and control room check to confirm that the storage tank has

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sufficient capacity for the off-load. A Goldstrike operator is present during the making and breaking of connections and during the start of product flow. The offload is monitored via a video monitor during the entire offload process.

**4. OPERATIONS:** *Manage cyanide process solutions and waste streams to protect human health and the environment.*

Standard of Practice 4.1: *Implement management and operating systems designed to protect human health and the environment utilizing contingency planning and inspection and preventive maintenance procedures.*

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

**Basis for Audit Finding:** Goldstrike operation has operating plans that cover the management and operation of the cyanide facilities including the changes made to the cyanide facilities since the initial certification audit (i.e., new piping for the A and B CIL tanks at the Mill; Raises (Phases 7 and 8) of the North Block Tailings Disposal Facility (NBTDF); installation of wick drains in the NBTDF; and Re-deposition into the AA Tailings Disposal Facility). Goldstrike has developed and implemented task-specific SOPs that address protection of human health and the environment for the entire cyanide management facilities. Goldstrike has Fluid Management Plans (developed for the two process circuits and tailings impoundments) which include descriptions of the fluid management requirements for safe operation and within regulatory compliance. The plans also cover emergency or unusual operating conditions. The SOPs and operating plans were found to have adequate contingency planning, routine inspections, and a preventive maintenance program. Goldstrike has established inspection frequency on a shift, daily and weekly basis. These inspections are sufficient to assure and document that they are functioning with the design parameters. The Goldstrike preventive maintenance programs are designed to assure the continuous and safe operation of the equipment for cyanide management. Goldstrike has emergency power generators to operate critical functions during power outages for the Wet Mill, Autoclave, Roaster, and at the NBTDF Underdrain Pond. Operating plans have been developed to include specific instructions on the critical components to be maintained during power outages.

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

The operation is  in full compliance with **Standard of Practice 4.2**  
 in substantial compliance with  
 not in compliance with

**Basis for Audit Finding:** Goldstrike ore sulfide content has decreased over the mine life with higher contents early, followed by a transition period, and then reducing to the current levels resulting in slight changes in cyanide consumption during the life of the operation. Goldstrike has evaluated the

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cyanide addition target in the first CIL tanks and in the final tanks for the two CIL circuits. In general cyanide is applied to the first CIL tank in a circuit but two additional tanks are plumbed in with cyanide addition lines if needed. These targets were developed in optimization studies. Goldstrike has received ore from the Cortez Project since 2001. The Cortez ores are similar and based on operational experience has not required a change in the cyanide concentration targets. Goldstrike evaluates the cyanide addition in the first CIL tank using an automatic control that analyses pH and flow density measurements and manual cyanide titration (at least 3 times per shift) to control cyanide addition rates. Cyanide addition can be controlled from the Control Room or manually at the tanks. If the cyanide content is lower than the target the addition set point is increased in the first tank. The manually recorded cyanide concentration and pH are recorded on daily inspection forms.

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

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

**Basis for Audit Finding:** Goldstrike has developed a comprehensive water balance that tracks water flow throughout the entire mine site. The water balance is a dynamic systems model calibrated to actual site conditions and set up to evaluate “what if” scenarios including probabilistic analysis of the precipitation. The water balance addresses the variability and uncertainty of the precipitation and evaporation data. In addition to this very comprehensive, but complex water balance model, Goldstrike has spreadsheet models focused on the Tailings Facilities to evaluate the impact of the 100 year, 24 hour storm event on varying conditions. Process facility inspection procedures and data collection programs have been implemented to update the water balance model on a regular basis. Goldstrike has three weather stations and measures and records precipitation data for incorporation into the model and operational planning. Daily shift inspections include pond levels and available freeboard monitoring that is incorporated into the water balance model and operational planning to prevent potential overtopping.

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

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

**Basis for Audit Finding:** Goldstrike has implemented several different measures to restrict access by wildlife and livestock to open solutions containing cyanide. The primary approach employed is to eliminate open process solution ponds to the degree practical. Goldstrike has all pregnant and barren solution maintained in tanks. The only cyanide bearing solutions exposed to the environment are the supernatant pond in the NBTDF, occasionally in the AA TDF impoundment and the underdrain ponds. The underdrain solutions are generally contained in enclosed vaults for direct pumping back to the impoundments. The tailings impoundment supernatant pond is maintained well below the 50

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mg/L WAD cyanide. Other measures to protect wildlife include a perimeter fence to prevent livestock access and chain link fences around the underdrain ponds.

Goldstrike's cyanide detoxification practices are effective in preventing wildlife mortality on the open water in the spigot discharge and supernatant ponds. All mine staff is trained in wildlife mortality monitoring and reporting requirements.

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

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

**Basis for Audit Finding:** Goldstrike is designed and operated for zero-discharge of process fluids. Goldstrike conducts monitoring to characterize the seepage collection system, leak detection system, and surface water quality. No impact to beneficial uses has occurred according to the data presented in the monitoring reports. Spill prevention and emergency response plans have been developed to comply with the zero-discharge operating requirements.

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

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

**Basis for Audit Finding:** Goldstrike has implemented solution management and seepage control systems to protect ground water below and down gradient of the operation. The project cyanide facilities including the tailings impoundments have been constructed with liners to prevent seepage. The North Block Tailings Disposal Facility is lined with a composite liner system consisting of compacted low permeability soil through stage 7 overlain by a synthetic liner. The liner is an alternate geosynthetic clay liner (GCL) overlain by a 60- or 80- mil HDPE liners through stage six and a GCL overlain by a 60- mil linear low-density polyethylene (LLDPE) liner in stages 7 and 8. The synthetic liner is overlain with a coarse rock drainage system, or full blanket drain, in the southwest portion of the impoundment where the supernatant pond is location. The tailings impoundments have clay core embankments and clay liner or natural materials barrier extending underneath the impoundment footprint for the AA tailings impoundment and a composite soil liner and geomembrane liner for the North Block tailings impoundment. The tailings facilities have been operated to promote evaporation and develop consolidated tailings. Excess water is decanted off the impoundment surface and conveyed to the process circuit for reuse. Review of the monitoring data indicated that the operation has no detectable WAD cyanide (<0.01 mg/L) in the ground water at compliance points or down gradient of the operation. Goldstrike operations are protective of the beneficial uses of ground water.

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

The operation is  in full compliance with **Standard of Practice 4.7**  
 in substantial compliance with  
 not in compliance with

**Basis for Audit Finding:** Goldstrike has spill prevention and containment measures for the two cyanide unload areas, the associated storage tanks, and CIL tank process areas. The containments are constructed of cast-in-place reinforced concrete. The secondary containments in the cyanide unload, storage, and cyanide processing areas have been designed to contain at least 110 % of the largest tank leakage and a design storm event. Goldstrike has automated pumps with level controls within the containments to pump collected solutions into the process circuit. The cyanide storage and process tanks and their secondary containments have not changed since the initial certification audit. They were determined to be in full compliance then.

Goldstrike has constructed all pipelines with spill prevention and containment measures to collect leaks and prevent releases. The pipelines are constructed either as pipe-in-pipe configuration and/or within lined ditches. Review of the operation indicates that all tanks, piping and containments are constructed of materials appropriate for handling high pH cyanide solutions.

Standard of Practice 4.8: *Implement quality control/quality assurance procedures to confirm that cyanide facilities are constructed according to accepted engineering standards and specifications.*

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

**Basis for Audit Finding:** A quality control and quality assurance (QC/QA) program that have occurred since the initial certification audit include installation of new piping at tanks A and B of the Mill CIL circuit and the Stages 7 and 8 raise of the North Block tailings storage facility. QC/QA programs have been required during construction for cyanide facilities including the cyanide storage facilities, pipelines, conveyance ditches, process ponds, and tailings impoundments.

Goldstrike has implemented QC/QA programs for all earthworks projects related to tank foundations, compacted subgrades, clay liners and geomembrane liners for ponds. These QC/QA reports include information on subgrade preparation, grading, soil liner material properties and compaction characteristics, leak detection construction, solution collection piping, geomembrane liner seams and testing. The reports include copies of the field inspection reports, lab and field data, construction observations, and photographs. Goldstrike has committed to retain all QC/QA information in the Environmental Office. Goldstrike has retained qualified engineering personnel to review and provide construction verification documentation. The QC/QA reports are stamped by Professional Engineers licensed in the State of Nevada. These QC/QA documents have also been reviewed and approved the Nevada Department of Environmental Protection.

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

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

**Basis for Audit Finding:** Goldstrike has environmental monitoring programs developed to evaluate the performance of the cyanide management systems on wildlife, surface and groundwater quality. The environmental programs have been prepared and approved by qualified professionals and implemented by qualified personnel. The plans have also been reviewed and approved by Nevada Department of Environmental Protection. The plans include all appropriate sampling and analysis documentation.

**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.*

**The operation is**  **in full compliance with**  
 in substantial compliance with **Standard of Practice 5.1**  
 not in compliance with

**Basis for Audit Finding:** Goldstrike has prepared a Conceptual Reclamation Plan as well as an internal Life of Mine Plan with written procedures to decommission the cyanide facilities including: process ponds, processing facilities and tailings facilities. The 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 Reclamation Plan review, Goldstrike has protocols for the cyanide facility decommissioning of the equipment and materials that have come into contact with process solutions including cyanide compounds (Goldstrike Process Facility Decontamination Procedure, December 2009). Goldstrike is required to update the closure plan and estimated costs at least every three years with their Nevada reclamation permit and with project changes. The Closure and Reclamation Plan includes an implementation schedule and performance monitoring.

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

**The operation is**  **in full compliance with**  
 in substantial compliance with **Standard of Practice 5.2**  
 not in compliance with

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**Basis for Audit Finding:** Goldstrike has developed a cost estimate for the funding of third party implementation of the decommissioning activities for the cyanide-related facilities and activities. The cost estimate has been reviewed and approved by the Nevada State and Department of Interior Bureau of Land Management. Goldstrike is required by Nevada State regulations and Department of Interior Bureau of Land Management requirements to review and update the cost estimate at least every three years or as required by changes in planned disturbances. Additional reporting requirements by Security Exchange Commission require that mine closure liabilities be reevaluated every year. Barrick Gold Corporation requires ongoing review and update of the Life of Mine Plan. GoldStrike has established approved financial mechanisms to cover the estimated costs for cyanide related decommissioning activities. These mechanisms include Letters of Credit, Surety Bond and Corporate Guarantee.

**6. WORKER SAFETY:** *Protect workers' health and safety from exposure to cyanide.*

Standard of Practice 6.1: *Identify potential cyanide exposure scenarios and take measures as necessary to eliminate, reduce and control them.*

The operation is  in full compliance with **Standard of Practice 6.1**  
 in substantial compliance with  
 not in compliance with

**Basis for Audit Finding:** Goldstrike has developed written SOPs and operating plans that describe the management and operation of the cyanide facilities. The SOPs and plans have been developed to eliminate, reduce and control exposure to cyanide. Individual task specific SOPs provide details for safe operation of cyanide equipment, PPE requirements and inspection requirements. Goldstrike has also signage for PPE requirements located at the entrances of the process areas. Goldstrike general safety induction and cyanide refresher training discuss PPE requirements.

Barrick has a Management of Change (MOC) Procedure that includes the methods to be used to manage changes at all Barrick Gold operations and sites. The procedure includes minimum standards to ensure changes that impact safety, health, environment or productivity are identified, assessed, managed and appropriately communicated to all affected personnel. All changes are communicated to the workforce and training requirements updated. Goldstrike has safety meetings to provide information and training to employees as well as solicit input from employees on worker safety issues.

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 is  in full compliance with **Standard of Practice 6.2**  
 in substantial compliance with  
 not in compliance with

**Basis for Audit Finding:** The pH is monitored and maintained to prevent the formation of hydrogen cyanide gas (HCN) as recommended in the operating plans. Daily pH logs were reviewed to verify

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that the pH was maintained as recommended. Fixed HCN monitors are installed in areas of potential exposure to cyanide. In addition, Goldstrike has portable HCN meters which are made available to employees to check the cyanide concentrations in any area. Prior to maintenance work or confined space entry, work areas are checked for HCN concentrations with a portable HCN meter. HCN sensors are set at 4.7 ppm low level alarm and 10 ppm high level alarm. In addition to an audible alarm, there are warning lights and an alarm display on the Control Room System. HCN monitors are maintained, calibrated and inspected as recommended by the manufacturer. Warning signs are in areas where cyanide is used to alert workers that cyanide is present, 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. Signage for confined spaces at the tank entry points has also been placed.

Showers, low-pressure eye wash stations and non-acidic sodium bicarbonate fire extinguishers are located at strategic locations throughout the operation and are maintained, inspected and tested on a regular basis. Showers and eyewash stations were inspected and determined to be operational. First aid instructions for cyanide exposure and Material Safety Data Sheets (MSDS) are available in areas where cyanide is managed. The MSDS are in English, the language of the workforce. Goldstrike has and implements procedures that require all incidents and accidents involving cyanide exposure be investigated and evaluate to determine if its programs and procedures to protect worker health and safety and to respond to cyanide exposures are adequate or if changes are necessary.

*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

**Basis for Audit Finding:** There is cyanide antidote kit (amyl nitrite and oxygen) at the cyanide unloading areas and inside both the Wet Mill and the Roaster building. Automated External Defibrillators (AEDs) are distributed in various locations within the Wet Mill and the Roaster. Cyanide antidotes are stored in locked refrigerators and are within expiration dates. Goldstrike has two emergency response vehicles (ERVs) that contain oxygen, lifepacks and AED. First aid equipment is inspected regularly. The antidote is stored at the manufacture's recommended temperature and replaced as specified by the manufacture's expiration date.

Goldstrike has developed written emergency response plans for cyanide exposures. These plans address both identification and response procedures to cyanide exposures including the use of the MSDS, emergency contact information, response measures, clean up actions and reporting requirements. Goldstrike has a trained and equipped Emergency Response Team (ERT). Qualifications range from Emergency Medical Technician (EMT), First Responder, Fire Fighting, Rescue and HazMat certifications. Every shift has a First Responder and EMT trained to administer amyl nitrite and oxygen.

Goldstrike has notified the Northern Nevada Regional Hospital (NNRH) of the potential need to treat victims with cyanide exposure, and has determined the facility has adequate, qualified staff, equipment and expertise to be able to respond effectively. The NNRH Emergency Department has cyanide antidote kit (amyl nitrite, sodium thiosulfate and sodium nitrite) with information and instruction material. Goldstrike has developed procedures to transport workers exposed to cyanide to

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NNRH. Goldstrike conducts mock emergency drills based on likely cyanide release/exposure scenarios to test the response procedure, and incorporates lessons learned from the drills into its response planning.

**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

**Basis for Audit Finding:** Goldstrike has developed several plans and SOPs that address emergency response to potential accidental releases of cyanide. Goldstrike plans contain procedures for potential scenarios such as: 1) cyanide intoxication; 2) accidents during cyanide transportation; 3) releases during unloading; 4) release of cyanide during fires and explosions; 5) pipe, valve or tank ruptures; 6) overtopping of ponds and tailings impoundments; 7) electrical power outage and pump failures; 8) uncontrolled seepage; 9) tailings impoundment failure; 10) failure of the cyanide destruction system; 11) cyanide spill control and clean-up; and 12) decontamination and emergency evacuation.


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

**Basis for Audit Finding:** Goldstrike solicits the input of its workforce in its emergency response planning process through safety meetings and mock drills. The Barrick Goldstrike Mine Emergency Response Plan (ERP) does not designate any responsibilities to offsite responders and communities with the exception of ambulance and local medical facility. These agencies are involved in mock drills and are consulted with related to roles and responsibilities. Goldstrike has sponsored a regional cyanide training mock drill in August 2008 which involved the participation of the ERT members, Access Air, NNRH, other Barrick sites (Cortez, Ruby Hill and Bald Mountain.), Carlin Fire Department, DuPont (that was the cyanide provider by that time), Elko County Sheriff's Office, Nevada Environmental Protection, Mine Safety and Health Administration (MSHA) and other external agencies.

The nearest community to the site is the town of Carlin, which is located 27 miles southeast of the mine. There are no identified risks of onsite release scenarios that would affect Carlin. Goldstrike does provide the opportunity to communicate issues of concern with the public through quarterly community communication sessions, and public communications meetings where members of the general public are provided with information on the use of cyanide.

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

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

**Basis for Audit Finding:** Goldstrike has committed in its emergency response plans the necessary emergency response equipment and first aid to manage all cyanide incidents at the operation and to coordinate transportation to the nearest medical facility. The Emergency Response Guide (ERG) defines the primary and alternative response coordinators in case of an emergency. Goldstrike has an updated list of its ERT. The ERT training includes HazMat, Fire Fighting, Medical Care and High Angle Rope Rescue. Each crew has several EMTs. All ERT members are trained in first aid and emergency response for cyanide exposure.

The ERP includes emergency radio channel, office and telephone numbers for the “Emergency Chain of Command”. In addition, Goldstrike has a list with the name of the Emergency Response Coordinators and ERT, including their 24 hour contact information (cell and home phone numbers). Goldstrike has a list of its emergency response equipment, including medical, fire/confined Space/Rope Rescue/Decontamination and HazMat equipment. All emergency equipment and supplies are inspected on a regular basis.

Goldstrike does not use off-site responders for onsite emergencies other than ambulance service and local medical facility. These agencies are involved in mock drills and are consulted with related to roles and responsibilities. Goldstrike has made formalized arrangements with NNRH to treat victims with cyanide exposure and has determined the facility has adequate, qualified staff, equipment and expertise to be able to respond effectively. The ERG provides detailed contact information and describes the anticipated roles of the hospital and ambulance, if needed.

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

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

**Basis for Audit Finding:** The ERG includes procedures and contact information for notifying management, governmental agencies, ambulance services, NNRH, medical clinics, poison control center, Nevada Division of Safety health and Training, Fire Services, Law Enforcement, Nevada Highway Patrol, Federal Bureau of Investigation, MSHA and Chemical Spill Clean-up Services. The ERP includes procedures for communication with the media.

Standard of Practice 7.5: *Incorporate into response plans and remediation measures monitoring elements that account for the additional hazards of using cyanide treatment chemicals.*

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

**Basis for Audit Finding:** Operating plans require that immediate measures be taken to halt the release by sealing the leak in a pipeline or tank, shutting down the pipeline, or by other appropriate measures. Emergency containment structures would be constructed to minimize the extent of any releases to prevent released material from reaching natural drainages. Spilled cyanide solution may be mixed with soil and other absorbent material during excavation and cleanup, and placed directly back into the mill feed circuit. All wetted and cyanide contaminated soils would be completely excavated and removed to the mill feed circuit or tailing facilities. Soils samples would be taken following clean up to confirm complete removal of all cyanide contaminated materials. The plans describe what final cyanide concentration will be allowed in residual soil as evidence that the release has been completely cleaned up. Necessary monitoring activities will be conducted in the event of a cyanide release based on Goldstrike's Water Pollution Control Permit requirements and in coordination with the appropriate Nevada Division of Environmental Protection (NDEP) Bureau of Mining Regulation representative.

Goldstrike does not consider the use of chemicals such as sodium hypochlorite, ferrous sulfate and hydrogen peroxide to treat cyanide that has been released into surface waters. Goldstrike uses bottled water for drinking water supply; therefore, there is no risk that the drinking water supply can be adversely impacted in case of a cyanide release.

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

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

**Basis for Audit Finding:** The ERG and the ERP are reviewed once every year by management personnel. Goldstrike conducts mock drills on a regular basis to practice and prepare for emergencies and to provide insight into the effectiveness of its emergency response plans. The emergency response plans are also reviewed following any incident or mock drill requiring their implementation. Auditors verified that emergency response plans have been updated and/or revised since the Initial Code Certification Audit.

**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**

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

**Basis for Audit Finding:** Goldstrike provides initial training and annual refresher training to all employees on cyanide hazard recognition. Goldstrike retains all cyanide training records for all employees. 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.

Standard of Practice 8.2: *Train appropriate personnel to operate the facility according to systems and procedures that protect human health, the community and the environment.*

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

**Basis for Audit Finding:** In addition to the training in cyanide hazard recognition, all personnel in job positions that involve the use of cyanide and cyanide management (including unloading, production and maintenance) receive training on how to perform their assigned tasks with minimum risk to worker health and safety. Task-specific training is provided prior to working with cyanide independently. Task specific training includes CIL Circuit training and work area familiarization. Task specific training covers critical tasks associated with the circuit, SOPs, tour of process circuits and chemical hazards in process areas. Training elements for each specific job are identified in training materials. Auditor reviewed training requirements and SOPs to verify compliance.

The trainers are MSHA and Hazard Communication (HazCom) certified and are First Responders. The task specific training to new operators is provided by various process supervisors/trainers who have several years of experience in the mine process. Goldstrike requires and provides annual refresher for cyanide management to assure that employees continue to perform their jobs in a safe and environmentally protective manner. In addition, Goldstrike discusses cyanide related health and safety issues as well as changes in cyanide management SOPs, if any, at safety meetings.

Training records are retained throughout an individual's employment documenting the training they receive. 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.

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

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

**Basis for Audit Finding:** All personnel responsible for unloading, production and maintenance are trained in decontamination and first aid procedures for cyanide release incidents. Employees working with cyanide are trained in cyanide physical and chemical properties, effect of pH on HCN/NaCN

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ratio, safe handling and storage, HCN exposure limits, routes of exposure, cyanide poisoning first aid, spill response, use of the emergency response equipment, emergency communication procedures, audible and visual alarms and MSDS.

Emergency and First Responders (including unloading, production and maintenance workers) are trained in decontamination and first aid procedures for cyanide releases. In addition, responders are familiarized with the procedures included in the ERP, including the use of the emergency response equipment. The ERP contains a section on “Cyanide Specific Information in the Event of a Chemical spill”. The section details cyanide poisoning symptoms (early and serious later stages), PPE, rescue procedures (including decontamination procedures) and first aid procedures. Emergency Responders have participated in the cyanide mock drills.

Goldstrike does not use off-site responders for onsite emergencies other than ambulance service and the NNRH. These groups are involved in mock drills and are consulted with related to roles and responsibilities. Goldstrike has made formalized arrangements with the NNRH.

Goldstrike requires and provides annual refresher for cyanide management. Cyanide refresher training includes: physical and chemical properties, effect of pH on HCN/NaCN ratio, safe handling and storage, HCN exposure limits, routes of exposure, cyanide poisoning first aid, spill response, use of the emergency response equipment, emergency communication procedures, audible and visual alarms and MSDS. Employees working with cyanide receive annual refresher on cyanide in the MSHA and HazCom training.

Goldstrike conducts mock emergency drills based on likely release/exposure scenarios. Cyanide emergency drills are evaluated from a training perspective to determine if personnel have knowledge and skills required for effective response. Training procedures will be revised if needed. Training records are retained throughout an individual's employment documenting the cyanide training they receive. 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.

**9. DIALOGUE:** *Engage in public consultation and disclosure.*

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

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

**Basis for Audit Finding:** Goldstrike provides the opportunity to communicate issues of concern with the public through community communication sessions. Goldstrike sponsors and conducts quarterly community communication sessions where the members of the general public and government leaders are encouraged to attend and discuss issues related to the mining operation including the use of cyanide. Additionally, Goldstrike through Barrick’s corporate website provides information on the use of cyanide and has provisions for stakeholders to communicate issues of concern (<http://www.Barrick.com>). The site is provided with a “Contact Us” tab that allows an individual to contact the company via email and telephone. Goldstrike also offers tours upon request and approval. Tours of Goldstrike facilities include the cyanide circuit.

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

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

**Basis for Audit Finding:** Goldstrike creates opportunities to interact with stakeholders and provide them with information regarding cyanide management practices and procedures. Goldstrike sponsors and conducts quarterly community communication sessions where the members of the general public and government leaders are encouraged to attend and discuss issues related to the mining operation including the use of cyanide. Goldstrike also interacts with regulators during compliance inspections conducted by the NDEP Bureau of Mining Regulation and Reclamation. Inspections include process areas. In addition, Goldstrike offers tours upon request and approval. Tours of Goldstrike facilities include the cyanide circuit.

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

**Basis for Audit Finding:** Goldstrike has developed written descriptions of how their activities are conducted and how cyanide is managed, and made these descriptions available to communities and stakeholders. Barrick's corporate website has a link titled "Use of Cyanide at Barrick Goldstrike" that provides information on cyanide use and management practices at the mine. The 2009 Goldstrike Mine Responsibility Report is also available on their website and describes Barrick's cyanide code compliance effort. In addition, Goldstrike provides written descriptions of how their activities are conducted and how cyanide is managed in submittals to regulatory agencies. The Goldstrike Water Pollution Control Permits require the company to file quarterly reports to the NDEP that includes a summary of cyanide spills and releases. These reports are available to the public. Goldstrike is also required to complete MSHA reports that would include any cyanide related worker exposure or death.

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