October 2009

INTERNATIONAL CYANIDE MANAGEMENT CODE
GOLD MINING CERTIFICATION AUDIT

Barrick Gold of Australia Limited
Porgera Joint Venture
Porgera Gold Mine Certification Audit
Summary Audit Report

Submitted to:

International Cyanide Management Institute (ICMI)
888 16th Street, NW - Suite 303
Washington, DC 20006
UNITED STATES OF AMERICA

Barrick Gold of Australia Limited
Level 10, 2 Mill Street
Locked Bag 12, Cloisters Square
PERTH WESTERN AUSTRALIA 6850

REPORT

A world of capabilities delivered locally

Report Number: 077641418-R14-Rev1

Distribution:

1 Copy – International Cyanide Management Institute
1 Copy – Barrick Gold of Australia Limited
1 Copy – Golder Associates

Golder Associates

Record of Issue

Company	Client Contact	Version	Date Issued	Method of Delivery
ICMI	Norm Greenwald	077641418-R14-Rev0	27 February 2009	Electronic and Hard Copies
Barrick Gold of Australia Limited	Matt Hochen	077641418-R14-Rev0	27 February 2009	Electronic and Hard Copies
ICMI	Norm Greenwald	077641418-R14-Rev1	30 October 2009	Electronic and Hard Copies
Barrick Gold of Australia Limited	Matt Hochen	077641418-R14-Rev1	30 October 2009	Electronic and Hard Copies

SUMMARY AUDIT REPORT FOR OPERATIONAL GOLD MINES

Name of Mine:	Porgera Gold Mine
Name of Mine Owner:	Porgera Joint Venture
Name of Mine Operator:	Barrick Gold Australia Limited
Name of Responsible Manager:	Matt Hochen, Project Manager ICMC Compliance
Address:	Barrick Gold Australia Limited Level 10, 2 Mill Street Locked Bag 12, Cloisters Square Perth, 6850
State/Province:	Western Australia
Country:	AUSTRALIA
Telephone:	+61 8 9212 5748
Fax:	+61 8 9322 5739
E-Mail:	mhochen@barick.com.au

LOCATION DETAIL AND DESCRIPTION OF OPERATION:

Globally Barrick has 27 operating mines, located in some of the world's most prospective gold districts in North America, South America, Australia-Pacific and Africa.

Barrick's Australia-Pacific Business Unit is headquartered in Perth, Western Australia and comprises 10 operating mines: the Kalgoorlie, Kanowna, Granny Smith, Plutonic, Darlot and Lawlers gold mines in Western Australia; the Cowal gold mine in New South Wales; the Henty gold mine in Tasmania; the Osborne copper-gold mine in Queensland; and the Porgera gold mine in Papua New Guinea.

The Porgera Gold Mine (Porgera or the operation) is located in Enga Province in the Central Highlands of Papua New Guinea, approximately 200 km west of Mt Hagen by road and 680 km from Lae, the port of entry for most of the mine's supplies. The mine is situated in rugged, mountainous terrain at 2,500 m elevation on the floor of the Porgera Valley, which rises to 3,850 m at the rim. The annual rainfall is approximately 3.7 m and daily temperatures range from 10 to 25°C.

The major components of the Porgera processing plant include:

- crushing circuit and coarse and fine ore storage;
- grinding circuit;
- gravity and regrind circuit;
- flotation circuit;
- pressure oxidation and tailings neutralisation circuits;
- leaching and adsorption circuits;
- acid wash and stripping elution circuit;
- electrowinning and gold refinery;
- oxygen plant;
- chemical storage and mixing; and
- tailings pipework and Infrastructure.

SUMMARY AUDIT REPORT
AUDITORS FINDINGS

The Porgera Gold Mine is:

☒ **in full compliance with**

☐ in substantial compliance with

☐ not in compliance with

The International Cyanide Management Code

Audit Company:	Golder Associates
Audit Team Leader:	Edward Clerk, CEnvP (112), RABQSA (020778)
Email:	eclerk@golder.com.au

Name and Signatures of Other Auditors:

Name	Position	Signature	Date
Edward Clerk	Lead Auditor and Technical Specialist		18 Feb 2009
Mark Latham	Auditor		18 Feb 2009
Jaclyn Goad	Auditing Support		18 Feb 2009

Dates of Audit:

The Certification Audit was undertaken over six days (18 man-days) between 24 and 29 November 2008.

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

I attest that this 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's *Gold Mining Operations Verification Protocol* and using standard and accepted practices for health, safety and environmental audits.

Porgera Gold Mine		30 October 2009
Name of Facility	Signature of Lead Auditor	Date

Table of Contents

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.**

The operation is

☒ **in full compliance with**

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

☐ not in compliance with

Summarise the basis for this Finding/Deficiencies Identified:

Porgera is in FULL COMPLIANCE with Standard of Practice 1.1, requiring the operation 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.

Porgera purchases its sodium cyanide from Orica Australia Pty Ltd (Orica) under a supply agreement which has been amended by a Deed of Variation to require that supplied cyanide is manufactured at a facility certified under the Code.

Orica supplies cyanide to Porgera from its Yarwun, Australia, facility, which ICMI announced as fully certified under the Code on 7 June 2007. Orica provides documentation with every cyanide shipment representing that the cyanide supplied has been manufactured at Yarwun.

Porgera Gold Mine		30 October 2009
Name of Facility	Signature of Lead Auditor	Date

PRINCIPLE 2 – TRANSPORTATION:

Protect Communities and the Environment During Cyanide Transport

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

☒ **in full compliance with**

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

☐ not in compliance with

Summarise the basis for this Finding/Deficiencies Identified:

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

The transportation of cyanide from Orica's Yarwun production facility in Queensland, Australia to Porgera is split into two stages managed by two different entities. These are:

- Orica Australia Pty Ltd for transport between Yarwun and Port of Townsville; and
- Porgera itself for transport between Port of Townsville and the Porgera mine.

Porgera purchases its sodium cyanide from Orica under a contract that designates responsibility for the aspects of cyanide transportation between Yarwun and Port of Townsville. The contract establishes clear lines of responsibility for safety, security, release prevention, training and emergency response through reference to the Code. The contract extends to any transportation subcontractors used by Orica, the cyanide transporter, by requiring the transporter and all subcontractors to have passed third-party independent Code certification audits or equivalent.

Porgera manages the transportation of cyanide from the Port of Townsville to the operation. Whilst Porgera uses contracted labour, equipment and services, it retains for itself the overall responsibility for managing Code compliance consistent with the arrangements demonstrated by an independent third party audit.

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

☒ **in full compliance with**

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

☐ not in compliance with

Summarise the basis for this Finding/Deficiencies Identified:

Porgera 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.

Porgera Gold Mine		30 October 2009
Name of Facility	Signature of Lead Auditor	Date

Porgera sources all its sodium cyanide supply requirements from Orica who are also responsible for transportation of supplied cyanide to the Port of Townsville. Porgera is responsible for transport of cyanide from the Port of Townsville to the mine.

The operation's contract with Orica for cyanide transportation requires that the transporter(s) is either a) certified under the Code or b) provides the results of an independent third party audit of the cyanide transportation activities.

Code equivalent, non-certification audits, have been undertaken for the transport route between Orica's cyanide production facility in Yarwun, Queensland Australia to Porgera in Papua New Guinea. The route was spilt into three segments for auditing purposes:

- Orica Yarwun cyanide production facility to the Townsville Rail Yard in Queensland Australia – Orica.
- Townsville Rail Yard to the Port of Townsville in Queensland Australia – Orica.
- Port of Townsville in Queensland Australia to Porgera Mine site in Papua New Guinea – Barrick.

The transport of cyanide from Orica's Yarwun production facility to the Port of Townsville is coordinated from the Yarwun production facility and uses a combination of road and rail:

- Road:
  - Toll Resources (Gladstone) – Yarwun to Mt Miller Rail Yard
  - Chemtrans (Townsville) – Townsville Rail Yard to port of Townsville
- Rail:
  - QR National, Queensland (Mt Miller Rail Yard to Townsville Rail Yard in Queensland).

Orica's due diligence investigations of the rail transporter, rail yards and port were reviewed by the transport auditor during the audit process to determine if it had reasonably evaluated these facilities and implemented, as practical, any necessary management measures.

Responsibility for the transportation of the cyanide is transferred from Orica to Porgera once the cyanide is loaded onto the ship in Townsville (Free on Board).

The transport of cyanide from the port of Townsville to the Porgera site is coordinated by Porgera and uses a combination of sea and road:

- Sea:
  - Consort Express Lines Limited (Consort) – Port of Townsville, Queensland Australia to Port of Lae, Lae, Papua New Guinea.
- Road:
  - Riback Stevedores Limited (Riback) – Port of Lae to the Porgera Storage Yard, Lae.
  - Mapai Transport Ltd (Mapai) – Porgera Storage Yard, Lae to the Porgera mine site.
  - Traisa Transport Ltd (Traisa) – Porgera Storage Yard, Lae to the Porgera mine site.

Porgera's due diligence investigations of the port and shipping company were reviewed by the transport auditor during the audit process to determine if it had reasonably evaluated these facilities and implemented, as practical, any necessary management measures.

All the audits have been undertaken within the last three years and were undertaken by auditors pre-certified by ICMI in accordance with the ICMI Transportation Verification Protocol. Chain of Custody documents demonstrate that the transport arrangements actually implemented are in accordance with those that were the subjects of the audits.

Porgera Gold Mine		30 October 2009
Name of Facility	Signature of Lead Auditor	Date

PRINCIPLE 3 – HANDLING AND STORAGE

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

Standard of Practice 3.1: **Design and construct unloading, storage and mixing facilities consistent with sound, accepted engineering practices, quality control/quality assurance procedures, spill prevention and spill containment measures.**

☒ **in full compliance with**

The operation is ☐ in substantial compliance with **Standard of Practice 3.1**

☐ not in compliance with

Summarise the basis for this Finding/Deficiencies Identified:

Porgera is in FULL COMPLIANCE with Handling and Storage Practice 3.1, requiring that cyanide handling and storage facilities are designed and constructed consistent with sound, accepted engineering practices, quality assurance/quality quality (QA/QC) procedures, spill prevention and spill containment measures.

Consultants GHD have prepared a report concluding that the Cyanide Unloading, Mixing and Storage facilities were designed and constructed in accordance with sound and accepted engineering practices. The emergency plan for the operation is based on an assessment that it is extremely unlikely that an uncontrolled cyanide release from the mill area cyanide could adversely impact either Kogai Creek or the Pongema River and that at present, local residents do not drink from these water resources. As Porgera brings cyanide onto site in solid form only, the risks of spillage and seepage from unloading operations are not required to be considered. There are sophisticated controls on the mixing and storage tanks that are designed to prevent the overfilling of the tanks. The two tanks are located in a concrete bund within a bunded Reagent Building and so arrangements to control seepage and the spread of spills are in place. The solid cyanide in briquetted “cyanoid” form is received by road in sea containers that hold plastic-lined boxes of cyanide. Those sea containers are used to store the cyanide until it is transferred to the Reagent Building one at a time in campaigns of up to six boxes. Accordingly there are two storage locations. Both locations are highly secured, effectively roofed, off the ground and segregated from incompatible dangerous goods. The reagent building is mechanically ventilated, but the container storage relies on procedures to ensure workers are protected from any accumulation of hydrogen cyanide gas. In the absence of complete QA/QC records, GHD concluded that following the implementation of asset integrity recommendations in the report, the facility should be in a suitable condition for continued operation. Porgera has developed a risk based inspection program that responds to GHD’s asset integrity recommendations.

Porgera Gold Mine		30 October 2009
Name of Facility	Signature of Lead Auditor	Date

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.**

☒ **in full compliance with**

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

☐ not in compliance with

Summarise the basis for this Finding/Deficiencies Identified:

Porgera is in FULL COMPLIANCE with Handling and Storage Practice 3.2 requiring that cyanide handling and storage facilities are operated using inspections, preventive maintenance and contingency plans to prevent or contain releases and control and respond to worker exposures.

Porgera has comprehensive written procedures that address key risks of cyanide release and exposure related to the unloading, mixing and storage of cyanide – from sea container unloading to mixing and storage of reagent strength cyanide. Those procedures include health and safety and environment protection safeguards and regular inspections to identify issues and also address the required operation of all valves, the proper handling of cyanide containers to avoid rupture , and a limit on the stacking height of cyanide containers. Procedures are available to respond to spills. Facilities are in place to recover spilled reagent back into storage.

Important features covered include the requirement that an independent observer is in attendance whenever cyanide mixing is being conducted and the use of appropriate personal protective equipment. A good standard of housekeeping was observed around the reagent mixing and storage area, simplifying the task of identifying any reagent leaks that may occur. Preventive maintenance activities are scheduled to ensure the reliability of important features, such as the ventilation fan and to monitor the integrity of features such as the bunding. A level-switch sump pump is provided to control the accumulation of any fluids in the reagent bund by pumping to the Cyanide Mix Tank.

Porgera Gold Mine		30 October 2009
Name of Facility	Signature of Lead Auditor	Date

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 preventive maintenance procedures.**

☒ **in full compliance with**

The operation is ☐ in substantial compliance with **Standard of Practice 4.1**

☐ not in compliance with

Summarise the basis for this Finding/Deficiencies Identified:

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

An extensive suite of documents is maintained to define standard operating procedures, training information and assessment criteria and the record keeping requirements associated with plant inspections. Training materials pay attention to cyanide-critical issues, such as the concentrations required for process effectiveness and indicative of hazardous conditions. Procedures guide important operating activities that must be performed correctly to manage cyanide-related risks, such as plant inspections, start up and shutdown and the correct dosing of cyanide into the process. Changes to plant and procedures are subject to a Management of Change Procedure that Barrick has developed for its global operations. Procedures have been developed to guide the response to abnormal operating conditions such as cyanide spills and high hydrogen cyanide concentrations around the processing areas. Inspections of various kinds are undertaken on a range of intervals from daily through to annually and it appears that this combination of activities is working as an effective part of managing cyanide-related risks. The inspections address an appropriate range of lead and lag indicators and the results of those inspections are recorded and retained. An extensive program of preventive maintenance activities is scheduled and implemented based on schedules that are administered in a computerised maintenance management system. Porgera has emergency power available and manages the reliability of its emergency generators. However, Porgera does not consider that emergency power is critical to managing its risks of cyanide exposures or releases.

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

☒ **in full compliance with**

The operation is ☐ in substantial compliance with **Standard of Practice 4.2**

☐ not in compliance with

Summarise the basis for this Finding/Deficiencies Identified:

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

Porgera Gold Mine		30 October 2009
Name of Facility	Signature of Lead Auditor	Date

Porgera currently processes ore from its open pit and underground operation. New ore types are not tested for cyanide consumption rates as the blending of ore on the Run of Mine pad, additional blending in the CSTs and the oxidisation process in the autoclaves produces a homogenous feed requiring a relatively constant cyanide addition rate.

Although new ore types are not tested for cyanide consumption rates, operational assessments are conducted using bottle roll leach tests of the leach feed. These are done on weekly composite samples and as required.

Additional diagnostic tests are conducted on composite weekly CIP tails samples to determine proportions of gold locked up in sulphide, silicates and jarosite.

The cyanide addition rate in the leach circuit is automatically controlled using Cyantific instrumentation in Tank 0 and 3. The addition of cyanide is automatically stopped if the instrumentation in Tank 0 records cyanide levels above a predetermined level.

The Process Operators also perform manual titrations for quality purposes.

Porgera directly discharges tailings to the environment and the requirement to have a low cyanide level at the discharge limits the process plants ability to increase cyanide addition rates in the leach circuit.

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

Summarise the basis for this Finding/Deficiencies Identified:

Porgera is in FULL COMPLIANCE with Standard of Practice 4.3, requiring the operation to implement a comprehensive water management programme to protect against unintentional releases.

The Porgera “water balance” relates only to the sizing of secondary containments for cyanide unloading, storage, mixing and process tanks to hold a volume greater than that of the largest tank within the containment and any piping draining back to the tank, and with additional capacity for the design storm event. This is because the operation practices riverine disposal of its tailings after they have been treated to reduce the concentration of cyanide to less than 0,5 mg/L WAD cyanide.. There is no accumulation of cyanide-bearing tailings outside the actual processing plant from which of loss of containment could occur.

Porgera engaged Water Management Consultants (WMC) in 2007 to assess Porgera’s water balance against Code requirements. In their report, WMC noted that the release of tailings to the wider environment is planned, intentional and fully in accordance with mine permits. The report also noted that there are no fluid impoundments containing cyanide outside of the plant area.

Porgera Gold Mine		30 October 2009
Name of Facility	Signature of Lead Auditor	Date

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

☒ **in full compliance with**

The operation is ☐ in substantial compliance with **Standard of Practice 4.4**

☐ not in compliance with

Summarise the basis for this Finding/Deficiencies Identified:

Porgera is in FULL COMPLIANCE with Standard of Practice 4.4 requiring an operation implement measures to protect birds, other wildlife and livestock from adverse effects of cyanide process solutions.

There are no open water bodies at Porgera with WAD cyanide levels in excess of 50 mg/L. As such, there is no requirement under the Code to restrict wildlife access.

Prior to December 2008 the discharged tailings stream contained WAD cyanide averaging between 3 to 5 mg/L. In December 2008, Porgera commissioned a Cyanide Destruction Plant that reduces WAD cyanide levels in the discharged tailings stream to less than 0.5 mg/L WAD cyanide. Monitoring results for the discharge have been viewed from 10 December 2008 to 4 January 2009; the average daily discharge was 0.2 mg/L WAD cyanide.

The reduction of WAD cyanide levels in the discharged tailings to less than 0.5 mg/L WAD is effective in preventing significant wildlife mortality.

Monitoring results demonstrating that open water cyanide concentrations in event ponds are less than 50 mg/L are recorded and also reported to the PNG Department of Environment and Conservation in Porgera's Annual Environmental Monitoring Report.

The operation does not use a heap leach process.

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

☒ **in full compliance with**

The operation is ☐ in substantial compliance with **Standard of Practice 4.5**

☐ not in compliance with

Summarise the basis for this Finding/Deficiencies Identified:

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

The operation directly discharges tailings to surface waters. Tailings from the process plant are discharged onto the Anawe erodible waste rock dump located within the Maiapam Creek valley. The tailings are released onto the Anawe erodible waste rock dump at an authorised discharge point listed within the Porgera Environmental Permit issued by the Papua New Guinean Government.

In December 2008, Porgera commissioned a Cyanide Destruction Plant that reduces WAD cyanide levels in the discharged tailings stream to less than 0.5 mg/L WAD cyanide. Monitoring results for of the discharge have been viewed from 10 December 2008 to 4 January 2009; the average daily discharge was 0.2 mg/L WAD cyanide.

Porgera Gold Mine		30 October 2009
Name of Facility	Signature of Lead Auditor	Date

The PNG government has referenced SG3 as the end of the designated mixing zone in Porgera's Environmental Permit, approximately 160 km from the point of discharge. This point is sampled 16 times monthly and all free cyanide results have been less than the analytical detection limit.

The operation could potentially discharge to surface water indirectly though springs flowing into the surface water. Springs within the first seven kilometres downstream of the tailings discharge are monitored for cyanide, but no cyanide has been detected. Springs further downstream are believed to be fed from catchments outside the footprint of the mine. All springs observed by Water Management Consultants (WMC) in 2007 lead to the Pongema River catchment and the surface water is ultimately sampled at the end of the designated mixing zone at SG3 where WAD cyanide is less than the analytical detection limit.

Indirect discharges from the operation have not caused cyanide concentrations in surface water to rise above levels protective of a designated beneficial use for aquatic life.

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

☒ **in full compliance with**

The operation is ☐ in substantial compliance with **Standard of Practice 4.6**

☐ not in compliance with

☐ not subject to

Summarise the basis for this Finding/Deficiencies Identified:

Porgera is in FULL COMPLIANCE with Standard of Practice 4.6 requiring the implementation of measures designed to manage seepage from cyanide facilities to protect the beneficial uses of groundwater.

At Porgera there is no tailings impoundment requiring seepage management. Since December 2008, Porgera has operated a Cyanide Destruction Plant that reduces cyanide in the tailings stream discharged to the riverine environment to less than 0.5 mg/L WAD cyanide.

Groundwater within the vicinity of Porgera has not been designated a beneficial use by the PNG Department of Environment and Conservation (PNG DEC) therefore, based on the WMC report, Porgera has determined that the beneficial use of groundwater in the area is drinking water and domestic uses from groundwater fed springs.

In-situ groundwater is not currently monitored nor sampled at any location by Porgera. Barrick consider it appropriate to monitor groundwater at the points of actual groundwater withdrawal for use, these being the springs. As there are no regulatory compliance requirements for cyanide concentrations at the sites of withdrawal, an appropriate level has been taken from the Australian Drinking Water Guidelines 6 (Australian Government, 2004) which states that *"based on health considerations, the concentration of cyanide in drinking water should not exceed 0.08 mg/L."* Barrick's Australia-Pacific Business Unit is headquartered in Perth, Australia.

Monitoring results show that Porgera is meeting this limit for groundwater at the points of withdrawal. Since monitoring began in late 2007 the levels of WAD cyanide at the springs has been below the detection limit of 0.02 mg/L

Porgera has implemented monitoring of the tailings discharge itself, sampling of the Anawe Ponds,sites downstream of disposal and streams surrounding the first seven kilometres of disposal.

Porgera Gold Mine		30 October 2009
Name of Facility	Signature of Lead Auditor	Date

The operation does not use mill tailings as underground backfill therefore measures are not needed to address potential impacts.

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

☒ **in full compliance with**

The operation is ☐ in substantial compliance with **Standard of Practice 4.7**

☐ not in compliance with

Summarise the basis for this Finding/Deficiencies Identified:

Porgera is in FULL COMPLIANCE with Standard of Practice 4.7 requiring that the operation provide spill prevention or containment measures for process tanks and pipelines.

Secondary containment measures are provided for all cyanide mixing, storage and process solution tanks by a combination of impermeable concrete surfacing, concrete bund walls, concrete joint sealing, culverts and an HDPE-lined event pond. A significant number of process tanks are founded on ring beams which create inherent vulnerability that Porgera has addressed by installing leak detection systems based on lysimeter technology. The lysimeter installed beneath each such tank is monitored routinely for evidence of leakage through the tank floor. Calculations have been prepared that demonstrate that the capacities of the system of bunds and linked event pond together provide the capacity required to meet Code requirements. Procedures are in place to manage the water that accumulates in secondary containments. These include instructions for the use of pumps installed to pump fluids into the process (using both manual and automatic control schemes) and for the cyanide-testing of water that is proposed to be discharged to the environment. There is no situation involving a cyanide tank without secondary containment. Cyanide solution pipelines are generally located within the areas served by secondary containments established for process tanks; where this is not the case, the lines are jacketed to provide effective secondary containment.

The facility is constructed in a way that provides protection against unintended releases to permanent surface water. The construction materials used for process equipment are suitable use with cyanide solutions and under high pH processing conditions with carbon steel and HDPE being the key materials used.

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

☒ **in full compliance with**

The operation is ☐ in substantial compliance with **Standard of Practice 4.8**

☐ not in compliance with

Summarise the basis for this Finding/Deficiencies Identified:

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

Porgera Gold Mine		30 October 2009
Name of Facility	Signature of Lead Auditor	Date

In April 2007, engineers and scientists appropriately qualified and experienced in risk management issued a report based on the March 2007 investigations. They concluded on an itemised basis for defined cyanide facilities at Porgera that "GHD certifies that the (Defined Cyanide Facility) infrastructure review has been conducted in accordance with the requirement of ICMC SOP 4.8.5 and confirm that the facility is in a suitable condition for continued operation". In making this type of finding, the consulting engineers and scientists noted in the case of certain nominated facilities that their finding was subject to Porgera implementing asset integrity recommendations set out in the report to ensure those facilities (currently in generally good condition) remain in a suitable condition for continued operation. Porgera is implementing a program of risk-based inspection, monitoring and repair to address this recommendation. The consulting engineers and scientists also drew attention to defined areas where steelwork, concrete and equipment were in a state that required more intensive inspection and monitoring to ensure an acceptable level of risk. Porgera has demonstrated that the defined areas are subject to regular inspection and non-destructive testing routines as appropriate.

Since March 2007, Porgera has constructed a Cyanide Destruct Plant and Cyanide Compliance Works to ensure compliance with the Cyanide Code. Documented Quality Control/Quality Assurance programs have been implemented as part of those engineering works, including material, fabrication, assembly and function testing. Qualified personnel have implemented those programs and the records have been retained at Porgera.

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

☒ **in full compliance with**

The operation is ☐ in substantial compliance with **Standard of Practice 4.9**

☐ not in compliance with

Summarise the basis for this Finding/Deficiencies Identified:

Porgera is in FULL COMPLIANCE with Standard of Practice 4.9 requiring the implementation of monitoring programs to evaluate the effects of cyanide use on wildlife, surface and groundwater quality.

The operation has developed written standard procedures for monitoring activities for most situations. The main procedure is the Porgera Environment Chemistry Laboratory Sampling Manual. Version 1.1 August 2008. Reference: QM ECL-E. This and associated procedures have been written by appropriately authorised and qualified persons.

The procedures viewed specify how and where samples should be taken, sample preservation techniques, chain of custody procedures, shipping instructions, and cyanide species to be analysed for most situations. They also include an example of or reference where to find the field sheet. The field sheet includes areas to describe the weather and other observations such as human activity, river flow, sources of other potential contamination. This was confirmed when inspecting filled in field sheets that contained appropriate observations.

Cyanide in surface water is monitored at SG 3 on a monthly basis as required in the Environmental Permit. Groundwater monitoring is not directly undertaken, due to the hydrology groundwater and that there is no regulatory requirement for groundwater monitoring. Groundwater is indirectly sampled at the springs which are the points of actual groundwater withdrawal for use.

Porgera Gold Mine		30 October 2009
Name of Facility	Signature of Lead Auditor	Date

There is no formal recording of wildlife mortalities at Porgera as there are no open waters where WAD cyanide is expected over 0.5 mg/L. However if there is anything unusual related to wildlife mortalities this can be noted during sampling as there is an opportunity to record 'observations' on the field data sheet

Monitoring is conducted at frequencies adequate to characterise the medium being monitored and to identify changes in a timely manner. The parameters monitored and frequency of monitoring depends on the location and the type of sampling. Areas where changes in WAD cyanide need to be identified quickly are sampled frequently i.e. the tailings stream monitoring is conducted hourly and confirmed by manual sampling twice daily. Areas where there is a low probability of recording cyanide such as the surface water compliance point and the springs are sampled monthly.

Porgera Gold Mine		30 October 2009
Name of Facility	Signature of Lead Auditor	Date

PRINCIPLE 5 – DECOMMISSIONING

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.**

☒ **in full compliance with**

The operation is ☐ in substantial compliance with **Standard of Practice 5.1**

☐ not in compliance with

Summarise the basis for this Finding/Deficiencies Identified:

Porgera is in FULL COMPLIANCE with Standard of Practice 5.1 requiring operations plan and implement procedures for effective decommissioning of cyanide facilities to protect human health, wildlife and livestock.

Barrick engaged a consultant in 2007 to develop the Porgera Decontamination and Decommissioning Plan (DDP) for the Porgera operation.

The operation has developed a Decontamination and Decommissioning Plan (DDP) detailing Porgera's decommissioning procedures. The DDP is relevant to Porgera's operation and the decommissioning procedures are detailed in Sections 5, 6 & 7 of the DDP.

The DDP includes an implementation schedule divided into monthly units and the planned tasks are scheduled up to 24 months prior to closure and continue for up to 24 months after closure.

The operation has established a system to review its decommissioning procedures for cyanide facilities annually as part of the review and updated of the operation's Mine Closure Plan.

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

☒ **in full compliance with**

The operation is ☐ in substantial compliance with **Standard of Practice 5.2**

☐ not in compliance with

Summarise the basis for this Finding/Deficiencies Identified:

Porgera is in FULL COMPLIANCE with Standard of Practice 5.2 requiring that the operation establish an assurance mechanism capable of fully funding cyanide related decommissioning activities.

The closure cost for Porgera operation has been calculated by Barrick's Regional Reclamation and Closure Manager. The costs are formally reviewed annually and any costs are adjusted when necessary. The cost estimate is sufficient to cover the items detailed within the DDP and third party equipment and labour rates were used.

The Papua New Guinea Department of Mining has not established a financial mechanism for closure or decommissioning.

Porgera Gold Mine		30 October 2009
Name of Facility	Signature of Lead Auditor	Date

Barrick engaged an independent certified public accountant to assist in obtaining a corporate financial guarantee for all cyanide decommissioning activities. The process was conducted in accordance with attestation standards established by the American Institute of Certified Public Accountants.

Porgera Gold Mine		30 October 2009
Name of Facility	Signature of Lead Auditor	Date

PRINCIPLE 6 – WORKER SAFETY

Protect Workers' Health and Safety from Exposure to Cyanide

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

☒ **in full compliance with**

The operation is ☐ in substantial compliance with **Standard of Practice 6.1**

☐ not in compliance with

Summarise the basis for this Finding/Deficiencies Identified:

Porgera is in FULL COMPLIANCE with Standard of Practice 6.1 requiring an operation to identify potential cyanide exposure scenarios and take measures as necessary to eliminate, reduce and control them.

The Operation has developed in excess of 70 procedures describing how cyanide-related tasks such as unloading, mixing, plant operations, entry into confined spaces, and equipment decontamination prior to maintenance should be conducted to minimise worker exposure.

The procedures require, where necessary, the use of personal protective equipment (PPE) and address pre-work inspections. All employees and contractors working on the site are required to undertake a field level risk assessment (Stop Skillem Stretim or SSS) prior to undertaking any task. Training on the SSS process is provided during Induction training and all contractors and employees are issued with SSS pocket book detailing the procedure, risk assessment matrix and record sheets. The risk score obtained during the SSS process requires different responses from workers.

The operation has a change management procedure to allow process and operational changes and modifications to be reviewed for their potential impacts on worker health and safety, and incorporate the necessary worker protection.

The operation does formally solicit and actively consider worker input in developing and evaluating health and safety procedures. This is done formally using the SSS process, Environmental, Health and Safety Committee and feedback on procedures through the intranet.

Standard of Practice 6.2: **Operate and monitor cyanide facilities to protect worker health and safety and periodically evaluate the effectiveness of health and safety measures.**

☒ **in full compliance with**

The operation is ☐ in substantial compliance with **Standard of Practice 6.2**

☐ not in compliance with

Summarise the basis for this Finding/Deficiencies Identified:

Porgera is in FULL COMPLIANCE with Standard of Practice 6.2 requiring an operation operates and monitors cyanide facilities to protect worker health and safety and periodically evaluates the effectiveness of health and safety measures.

Porgera metallurgists have determined that, based on its solution chemistry, a target pH of 10.5 shall be maintained throughout its operation to limit the evolution of hydrogen cyanide gas. The target pH is

communicated to the operators as part of the Leach Circuit Training program and by way of a set point board in the control room.

Where the potential exists for significant cyanide exposure, the operation does use a combination of static and personal monitoring devices to confirm that controls are adequate to limit worker exposure to HCN gas. Fixed monitors are located at 9 sites around the process plant and employees are required to wear personal monitors when accessing the certain areas or undertaking certain activities (e.g. deliver, mixing, emergency response). Both the fixed and personal monitors are set to alarm at 5 and 10 ppm HCN.

The operation has identified areas and activities where workers may be exposed to cyanide in excess of 10 ppm HCN and require use of personal protective equipment in these areas or when performing these activities.

Employees are made aware of these areas through Induction, Cyanide Awareness training, through the general training, procedures and signage. The high risk cyanide areas are communicated through induction to the general staff and contractors.

Hydrogen cyanide monitoring equipment is maintained, tested and calibrated as directed by the manufacturer, and records retained for at least one year. The Maintenance Foreman is responsible for ensuring that all HCN monitors used (personal and static) are serviced and calibrated by the Instrumentation Group within the Maintenance Department on a monthly basis.

Warning signs have been placed where cyanide is used, advising workers that cyanide is present, and that smoking, open flames and eating and drinking are not allowed, and that suitable PPE must be worn. Signage is provided in English and in Tok Pisin. Temporary barriers and signage is posted when bulk cyanide deliveries are in progress to keep non-essential persons away. An observer remains present through out the delivery to ensure that other personal do not enter the area. There are signs and gates when entering the Process Plant area noting cyanide is present, and that smoking, open flames and eating and drinking are not allowed.

Showers, low-pressure eyewash stations and dry-powder fire extinguishers were located at strategic locations throughout the operation in the cyanide areas, and are maintained, inspected and tested on a regular basis. They are checked informally on a daily basis by Process Operators and formally during statutory weekly inspections.

Tanks and piping containing high and medium strength cyanide were adequately labelled. The tanks were painted with a lilac band and accompanied signage. The piping was either painted lilac and/or had lilac stick-on labels with arrows indicating the direction of flow.

Low strength cyanide pipes were addressed through a number of signs located in the process area that stated “Warning – Treat all vessels, tanks, slurry and solution lines inside area as if containing cyanide”.

MSDSs, first aid procedures and informational materials on cyanide safety were available in the language of the workforce (English and Tok Pisin) and in areas where cyanide is managed.

MSDSs and first aid instructions were posted at all designated cyanide areas. MSDSs were available in the control rooms, emergency response centre, safety cabinets, mixing area and reagents yard. An electronic MSDS database Chemwatch is available via the intranet.

Porgera has implemented an Incident Reporting and Investigation Procedure capable of investigating and evaluating cyanide exposure incidents to determine if the programmes and procedures are adequate to protect worker health and safety or need revising.

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

Summarise the basis for this Finding/Deficiencies Identified:

Porgera is in FULL COMPLIANCE with Standard of Practice 6.3 requiring an operation develop and implement emergency response plans and procedures to respond to worker exposure to cyanide.

The operation has the necessary equipment to respond in the event of a worker's exposure to cyanide.

An adequate water supply was observed for rinsing and cyanide decontamination at numerous showers and eyewash stations located strategically around the site. An adequate supply of oxygen was observed in the safety boxes strategically placed around the processing plant, in the Medical Facility and ambulances. The Emergency Response Team also have dedicated equipment that they maintain.

The operation inspects its First Aid equipment regularly to ensure that it is available when needed. An outside contractor is used to service all oxygen equipment on an annual basis to ensure that it is available when needed. The Senior Medical Administrator ensures all equipment within the Medical Facility is checked on a daily basis through the use of checklists. This check includes oxygen equipment, cyanide antidotes, First Aid and other medical equipment, including equipment stored within the ambulance. An inspection of the cyanide antidotes confirmed they are stored as directed by their manufacturer.

The operation has developed and implemented a site specific Cyanide Emergency Response Plan (CERP) and cyanide treatment protocol to respond to cyanide exposures. The CERP notes that cyanide exposure scenarios represent a real risk to the operation and as such the plan has developed a pre-incident plan for a cyanide related injury. These procedures are enforced through cyanide awareness training, procedures, and signage out in the treatment plant at strategic positions where there are high-risk, cyanide tasks.

The operation does have its own on-site capability to provide First Aid or medical assistance to workers exposed to cyanide. The operation has an on-site Medical Centre that is staffed by three doctors, seven medical staff (nurses and community health workers) and a senior medical administrator. The facility is open 24 hours and a doctor is on call during the night shift. The Medical Centre is fully equipped with a two bed ward, mini theatre, four clinic treatment areas and an emergency room. There are two ambulance vehicles based at the medical centre. The Medical Facility maintains 15 Cyanokits cyanide antidote kits (hydroxocabalamine). One kit is located at the ERT centre.

The operation has developed procedures to transport workers exposed to cyanide to locally available, qualified, off-site, medical facilities. Workers exposed to cyanide will be treated in the first instance by on-site medical practitioners and then transferred to Paiam Hospital, Port Moresby Hospital, Mt Hagen Hospital, Kainanto Hospital or Cairns Base Hospital as necessary.

Mock emergency drills are conducted periodically to test response procedures for various emergency scenarios, and lessons learned from the drills are incorporated into response planning via debriefs.

Mock drill debriefs are conducted after all mock drills and any corrective actions are entered into RIMS for tracking until they are closed out.

Porgera Gold Mine		30 October 2009
Name of Facility	Signature of Lead Auditor	Date

PRINCIPLE 7 – EMERGENCY RESPONSE

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

Standard of Practice 7.1: **Prepare detailed emergency response plans for potential cyanide releases.**

The operation is

☒ **in full compliance with**

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

☐ not in compliance with

Summarise the basis for this Finding/Deficiencies Identified:

Porgera is in FULL COMPLIANCE with Standard of Practice 7.1 requiring an operation prepare detailed emergency response plans for potential cyanide releases.

The operation has developed and implemented a site specific Cyanide Emergency Response Plan (CERP) to address potential accidental releases of cyanide.

The site has adopted a tiered approach to emergency response and the CERP forms part of the Porgera Incident Management Team Plan (IMTP) which combines with the Porgera Joint Venture Crises Management Plan (CMP) and Regional Crisis Management Plan (RCMP) to form Porgera's Emergency Management System.

The CERP details the site cyanide hazards, required response, equipment, responsibilities, training and procedures for foreseeable cyanide emergencies at Porgera. The intention of the CERP is to provide a single point of reference for all cyanide incidents on site where emergency response is required. The CERP forms part of the ERP. It is designed to be a point of reference for both new and existing employees involved in responding to cyanide incidents

The CERP details five pre-incident plans (PIP) that address the identified potential incident scenarios for the site It is considered that these PIP's cover the potential cyanide failure scenarios appropriate for its site-specific environmental and operating circumstances, including on-site transportation. In addition to the five PIPs, a procedure detailing the emergency response actions for a failure of the Cyanide Destruct Plant that results in a release of tailings containing WAD cyanide >0.5 mg/L to the riverine environment has also been developed.

PIP3 (Transportation Accidents) adequately details the main Emergency response for transport related accidents between the Port of Lae and the Anawae process plant at Porgera is managed through the Cyanide Transport Management Plan Townsville to Porgera.

The CERP also contains detailed information on the physical and chemical properties of the cyanide delivered to site as well as the container used to transport the cyanide.

The Plan does describe specific response actions (as appropriate for the anticipated emergency situations) such as clearing site personnel from the area of exposure, use of cyanide antidotes and First Aid measures.

The intention of the CERP is to provide a single point of reference for all cyanide incidents on site where emergency response is required. It is designed to be a point of reference for both new and existing employees involved in responding to cyanide incidents on-site.

Porgera Gold Mine		30 October 2009
Name of Facility	Signature of Lead Auditor	Date

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

☒ **in full compliance with**

The operation is ☐ in substantial compliance with **Standard of Practice 7.2**

☐ not in compliance with

Summarise the basis for this Finding/Deficiencies Identified:

Porgera is in FULL COMPLIANCE with Standard of Practice 7.2, requiring an operation involve site personnel and stakeholders in the planning process.

The operation engaged an external emergency management consultant to assist in the development of the CERP. The development process involved workforce and stakeholder consultation.

Barrick has determined that there are no potentially affected communities in close proximity to the Porgera Operation. The workforce at Porgera is considered to be the main group at risk from an on-site cyanide emergency as there are no downstream, or nearby communities. They are fully trained in cyanide awareness and trained in the operations and maintenance procedures as well as emergency response.

The workforce at Porgera is considered to be the main group at risk from an on-site cyanide emergency as there are no down stream or nearby communities. The operation has developed and implemented a cyanide awareness training session as part of the site induction program which is compulsory for all persons on the operation's site. The training covers the nature of the risks associated with accidental cyanide releases and what action to take in the event of an emergency.

Porgera is a remote site that is largely self reliant in the event of an emergency. Despite this, the operation has developed procedures to transport workers exposed to cyanide to qualified, off-site, medical facilities. Workers exposed to cyanide will be treated in the first instance by on-site medical practitioners and then transferred to Paiam Hospital, POM Hospital, Mt Hagen Hospital, Kainanto Hospital or Cairns Base Hospital as necessary. Porgera have donated four cyanide antidote kits to each medical facility.

The CERP review and revision process solicits and incorporate feedback from stakeholders listed within the CERP as appropriate.

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

☒ **in full compliance with**

The operation is ☐ in substantial compliance with **Standard of Practice 7.3**

☐ not in compliance with

Summarise the basis for this Finding/Deficiencies Identified:

Porgera is in FULL COMPLIANCE with Standard of Practice 7.3 requiring an operation designate appropriate personnel and commit necessary equipment and resources for emergency response.

Porgera's Emergency Management System incorporating the CERP does:

- designate primary and alternate emergency response coordinators whom have explicit authority to commit the resources necessary to implement the Plan;
- identify Emergency Response Teams;

Porgera Gold Mine		30 October 2009
Name of Facility	Signature of Lead Auditor	Date

- require appropriate training for emergency responders;
- include call-out procedures and 24-hour contact information for the coordinators and response team members;
- specify the duties and responsibilities of the coordinators and team members;
- list emergency response equipment, including personal protection gear, available along transportation routes and/or on-site;
- include procedures to inspect emergency response equipment to ensure its availability; and
- describe the role of outside responders, medical facilities and communities in the emergency response procedures.

Mock emergency drills are conducted periodically to test response procedures for various emergency scenarios, and lessons learned from the drills are incorporated into response planning via debriefs. Recent drills were completed in August 2008 and June 2007. Following these there were full debriefs with corrective actions identifed.

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

☒ **in full compliance with**

The operation is ☐ in substantial compliance with **Standard of Practice 7.4**

☐ not in compliance with

Summarise the basis for this Finding/Deficiencies Identified:

Porgera is in FULL COMPLIANCE with Standard of Practice 7.4 requiring the development of procedures for internal and external emergency notification and reporting.

The Plan does include procedures and contact information for notifying management, regulatory agencies, outside response providers and medical facilities of the cyanide emergency.

The roles and responsibilities of the various emergency responders are defined in the Cyanide Emergency Response Plan (CERP).

The CERP and the Crisis Management system also include procedures for communicating 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.**

☒ **in full compliance with**

The operation is ☐ in substantial compliance with **Standard of Practice 7.5**

☐ not in compliance with

Porgera Gold Mine		30 October 2009
Name of Facility	Signature of Lead Auditor	Date

Summarise the basis for this Finding/Deficiencies Identified:

Porgera is in FULL COMPLIANCE with Standard of Practice 7.5, requiring an operation develop procedures for internal and external emergency notification and reporting.

The Cyanide Emergency Response Plan (CERP) and associated procedures do describe specific remediation measures as appropriate for the likely cyanide release scenarios, such as:

- Recovery or neutralisation of solutions or solids;
- Decontamination of soils or other contaminated media;
- Management and/or disposal of spill clean-up debris; and
- Provision of an alternate drinking water supply.

The CERP prohibits the use of chemicals, such as sodium hypochlorite, ferrous sulphate and hydrogen peroxide to treat cyanide that has been released into surface water. The CERP notes that Orica is to be contacted for specialist advice in regard to the decontamination of waterways.

Section 6.0 of the CERP address the potential need for environmental monitoring to identify the extent and effects of a cyanide release, and include sampling methods, parameters and, sampling locations.

Standard of Practice 7.6:	**Periodically evaluate response procedures and capabilities and revise them as needed.**	
	☒ **in full compliance with**	
The operation is	☐ in substantial compliance with	**Standard of Practice 7.6**
	☐ not in compliance with	

Summarise the basis for this Finding/Deficiencies Identified:

Porgera is in FULL COMPLIANCE with Standard of Practice 7.6 requiring an operation periodically evaluate response procedures and capabilities and revise them as needed.

The operation does review and evaluate the cyanide related elements of its Emergency Response Plan for adequacy on a regular basis. The CERP has a review period of 1 year and was reviewed most recently in November 2008.

Mock cyanide emergency drills are conducted periodically as part of the CERP evaluation process. Section 8.7 of the CERP notes the frequencies at which the cyanide exercises shall be conducted.

Section 8.8 of the Cyanide Emergency Response Plan (CERP) provides that the plan is to be reviewed and revised following all cyanide related emergencies and drills (in the absence of incidents, review and revision should occur immediately after the mock cyanide drill) and revision information kept on file.

No cyanide emergency requiring the implementation of the CERP has occurred. Recommendations following mock drills conducted to date did not require amendment to the response procedures.

Porgera Gold Mine		30 October 2009
Name of Facility	Signature of Lead Auditor	Date

PRINCIPLE 8 – TRAINING

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

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

☒ **in full compliance with**

The operation is ☐ in substantial compliance with **Standard of Practice 8.1**

☐ not in compliance with

Summarise the basis for this Finding/Deficiencies Identified:

Porgera is in FULL COMPLIANCE with Standard of Practice 8.1 requiring an operation train workers to understand the hazards associated with cyanide use

The operation does train all personnel who may encounter cyanide in cyanide hazard recognition. Basic cyanide awareness is a component of the site induction training courses and all persons encountering cyanide are required to also attend a more comprehensive cyanide awareness course. The cyanide awareness courses contain information on hazards associated with cyanide.

Cyanide awareness training is provided to all new workers and the operation has scheduled annual refresher training for processing and maintenance personnel for the cyanide awareness training.

The cyanide awareness training records are maintained in hard copy in the Department training records and electronic records are maintained in the RIMS system.

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

☒ **in full compliance with**

The operation is ☐ in substantial compliance with **Standard of Practice 8.2**

☐ not in compliance with

Porgera is in FULL COMPLIANCE with Standard of Practice 8.2 requiring an operation train appropriate personnel to operate the facility according to systems and procedures that protect human health, the community and the environment.

The Process Department has developed a structured training program that ensures workers are trained in their normal tasks to train workers to perform their normal production tasks to prevent unplanned cyanide releases.

A training needs analysis detailing the training elements required for each area within the plant and each operational level has been established. The elements required for each level are based on the standard operating procedures. A competency based assessment form has been developed for each operating procedure.

Training is based on a mentoring or buddy system and before employees are allowed to perform a task solo they have to go through a series of steps.

Appropriately qualified personnel do provide task training related to cyanide management activities. Supervisors act as the trainers and are responsible for mapping and tracking and employees progress in accordance with the training needs analysis. Supervisors must be deemed competent in the subject matter being trained and competent as a trainer prior to training employees in a task. The Processing Training Coordinator determines who is competent to train and assess workers and the authorised list is maintained within the training assessment procedure.

The Maintenance Reliability Foreman has been working within the maintenance area for 29 years and is responsible for and undertakes maintenance training.

Employees are trained and assessed as competent prior to working with cyanide.

Cyanide is covered in the general induction, area specific induction and cyanide awareness training which is given before personnel can work in cyanide areas or on cyanide related tasks.

Formal competency training, which includes cyanide tasks, is run by the Processing Training Coordinator for the process personnel and the Maintenance Reliability Foreman for the maintenance personnel. Employees have to follow a series of steps to show competency.

Refresher training is completed annually for the Cyanide Awareness training and competency based training elements are refereshed every two years.

Records are retained throughout an individual's employment documenting the training they receive. They are kept in both an electronic database and hard copy files. The records do include the names of the employee and the trainer, the date of training, the topics covered, and if the employee demonstrated 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.**

☒ **in full compliance with**

The operation is ☐ in substantial compliance with **Standard of Practice 8.3**

☐ not in compliance with

Summarise the basis for this Finding/Deficiencies Identified:

Porgera is in FULL COMPLIANCE with Standard of Practice 8.3 requiring an operation train appropriate workers and personnel to respond to worker exposures and environmental releases of cyanide.

All cyanide unloading, mixing, production and maintenance personnel are trained in the procedures to be followed if cyanide is released.

There is Cyanide Awareness training which is provided at induction, with refresher training annually which addresses cyanide releases.

Formal competency training, which includes cyanide tasks, is run by the Processing Training Coordinator for the process personnel and the Maintenance Reliability Foreman for the maintenance personnel. Personnel are trained in the standard work procedures for all tasks undertaken.

Site cyanide response personnel, including unloading, mixing, production and maintenance workers, are trained in decontamination and First Aid procedures and they have taken part in emergency drills to test and improve their response skills.

Porgera Gold Mine		30 October 2009
Name of Facility	Signature of Lead Auditor	Date

All Process, Maintenance and ERT personnel receive cyanide awareness training, in which decontamination and the First Aid response is presented.

Emergency Response Coordinators and members of the ERT are trained in the procedures included in the Emergency Response Plan regarding cyanide, including the use of necessary response equipment.

There is a formal Cyanide Emergency Response training package and all ERT team members attending a cyanide incident are required to have completed this training.

The operation has made off-site Emergency Responders, such as medical providers, familiar with those elements of the Emergency Response Plan related to cyanide. The operation has developed procedures to transport workers exposed to cyanide to qualified, off-site, medical facilities. Workers exposed to cyanide will be treated in the first instance by on-site medical practitioners and then transferred to Paiam Hospital, POM Hospital, Mt Hagen Hospital, Kainanto Hospital or Cairns Base Hospital as necessary.

Porgera has made contact with these facilities advising of the intent to form a close working relationship and the possible requirement to treat cyanide exposures.

Records are retained throughout an individual's employment documenting the training they receive. The records do include the names of the employee and the trainer, the date of training, the topics covered, and if the employee demonstrated an understanding of the training materials.

Mock emergency drills are conducted periodically for training purposes and lessons learned from the drills are incorporated into response planning via debriefs. Two worker exposure and environmental releases mock cyanide emergency drills were conducted in August 2008 and June 2007.

Cyanide emergency drills are evaluated from a training perspective to determine if personnel have the knowledge and skills required for effective response.

PRINCIPLE 9 – DIALOGUE

Engage in Public Consultation and Disclosure

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

☒ **in full compliance with**

The operation is ☐ in substantial compliance with **Standard of Practice 9.1**

☐ not in compliance with

Summarise the basis for this Finding/Deficiencies Identified:

Porgera is in FULL COMPLIANCE with Standard of Practice 9.1 requiring an operation provide stakeholders the opportunity to communicate issues of concern

The operation does provide the opportunity for stakeholders to communicate issues of concern regarding the management of cyanide. This is done at an operational and corporate level.

At an operational level all employees, contractors and visitors are required to attend a "general site induction" and "cyanide awareness training" prior to working on the site. Cyanide awareness information is delivered in English and Tok Pisin (a language that facilitates communication between English and the various vernacular languages) and Tok Ples (the vernacular languages). In addition to this Tool Box meetings, safety topic of the month, Tok Save (information sheets) and the newsletter Ipili Wai Pii are provided to employees and contactors. These have contained information about cyanide and allow for feedback and questions. The mine employs community relations officers who act as communications interfaces in the diverse range of local languages.

There are also multiple group meetings focused on different groups of the community. Cyanide has been raised at these meeting and questions have been asked. The Ipili Wai Pii is also made available to external stakeholders (locally, nationally and internationally). The Ipili Wai Pii has contact numbers listed on the last page.

At a corporate level, Barrick has established an email address (publicaffairsap@barrick.com) on their website for questions concerning cyanide.

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

☒ **in full compliance with**

The operation is ☐ in substantial compliance with **Standard of Practice 9.2**

☐ not in compliance with

Summarise the basis for this Finding/Deficiencies Identified:

Porgera is in FULL COMPLIANCE with Standard of Practice 9.2 requiring operations initiate dialogue describing cyanide management procedures and responsively address identified concerns.

At an operational level, Porgera utilise site inductions, cyanide awareness training, monthly safety topics, Tok Save information sheets and the Ipili Wai Pii newsletters to create forums for the operation to

Porgera Gold Mine		30 October 2009
Name of Facility	Signature of Lead Auditor	Date

communicate with stakeholders and provide them with information regarding cyanide management practices and procedures.

Opportunities exist for the operation to communicate with external stakeholders through the Community Relations Department and a network of Community Relations Officers, and various group meetings focused on different groups of the community (Porgera Environmental Advisory Kommittee, Porgera District Women's Association, Porgera District Youth Association).

Barrick Gold has also established a contact email address on their website for queries on cyanide use at Porgera.

Standard of Practice 9.3:	**Make appropriate operational and environmental information regarding cyanide available to stakeholders.**	
	☒ **in full compliance with**	
The operation is	☐ in substantial compliance with	**Standard of Practice 9.3**
	☐ not in compliance with	

Summarise the basis for this Finding/Deficiencies Identified:

Porgera is in FULL COMPLIANCE with Standard of Practice 9.3 requiring an operation make appropriate operational and environmental information regarding cyanide available to stakeholders

The operation provided information on cyanide to the stakeholders in many different mediums.

All written information produced by the operation, excluding the Ipili Wai Pii, is produced in both English and Tok Pisin and in some cases Tok Ples (local languages).

Written information contained in Site Induction, Cyanide Awareness Training, Monthly Safety Topic, and Tok Save are also discussed verbally in internal and external working groups and meetings.

Community consultation is also undertaken verbally in the language of the community. It is also realised that the information provided to employees and contractors on site will be disseminated to their local communities verbally.

The operation has mechanisms to make information publicly available on cyanide release or exposure incidents, where applicable.

The communications strategy following an incident will depend on the circumstances surrounding each individual incident but must comply with Porgera's minimum standards for communication for each event.

Porgera has a safety and environment incident reporting and investigation procedure that ensures unplanned cyanide exposures and releases are investigated and reported by Porgera. The procedures detail reporting requirements for individual incident categories according to incident severity. Records of all incidents are maintained on-site.

Porgera is required to submit an annual environmental report (AER) to the PNG DEC on an annual basis. The AER details releases that would cause applicable discharge limits for cyanide to be exceeded. High potential incidents and unauthorised releases to water are also reported to the DEC. The public can submit a formal request (via phone, writing, email) to the DEC to receive a copy of the AER.

In addition to the AER, off-site spills for all Barrick operations are reported in the Company's annual Responsibility Report. Information contained include the specific operation, substance spilt, amount and remedial action. The Responsibility Report is available on the Barrick website and is issued to employees.

Porgera Gold Mine		30 October 2009
Name of Facility	Signature of Lead Auditor	Date

The PNG Safety Mining Act 195A and Regulations require Porgera to notify the PNG Department of Mining with appropriate details within 24 hours of defined significant incidents. The reported statistics are available on the Department of Mining's website.

The Cyanide Emergency Response Plan (CERP) provides the procedure for dealing with media.

Porgera Gold Mine		30 October 2009
Name of Facility	Signature of Lead Auditor	Date

Report Signature Page

GOLDER ASSOCIATES PTY LTD

Edward Clerk
ICMI Lead Auditor/Technical Specialist
Manager Mining Environmental Services Group

EC/ML/cem/sp

A.B.N. 64 006 107 857

m:\jobs407\mining\077641418-barrick cn audits\certification audit\porgera\final reports\077641418 014 r rev1.doc

APPENDIX A

Limitations

LIMITATIONS

This Document has been provided by Golder Associates Pty Ltd ("Golder") subject to the following limitations:

This Document has been prepared for the particular purpose outlined in Golder's proposal and no responsibility is accepted for the use of this Document, in whole or in part, in other contexts or for any other purpose.

The scope and the period of Golder's Services are as described in Golder's proposal, and are subject to restrictions and limitations. Golder did not perform a complete assessment of all possible conditions or circumstances that may exist at the site referenced in the Document. If a service is not expressly indicated, do not assume it has been provided. If a matter is not addressed, do not assume that any determination has been made by Golder in regards to it.

Conditions may exist which were undetectable given the limited nature of the enquiry Golder was retained to undertake with respect to the site. Variations in conditions may occur between investigatory locations, and there may be special conditions pertaining to the site which have not been revealed by the investigation and which have not therefore been taken into account in the Document. Accordingly, additional studies and actions may be required.

In addition, it is recognised that the passage of time affects the information and assessment provided in this Document. Golder's opinions are based upon information that existed at the time of the production of the Document. It is understood that the Services provided allowed Golder to form no more than an opinion of the actual conditions of the site at the time the site was visited and cannot be used to assess the effect of any subsequent changes in the quality of the site, or its surroundings, or any laws or regulations.

Any assessments made in this Document are based on the conditions indicated from published sources and the investigation described. No warranty is included, either express or implied, that the actual conditions will conform exactly to the assessments contained in this Document.

Where data supplied by the client or other external sources, including previous site investigation data, have been used, it has been assumed that the information is correct unless otherwise stated. No responsibility is accepted by Golder for incomplete or inaccurate data supplied by others.

Golder may have retained subconsultants affiliated with Golder to provide Services for the benefit of Golder. To the maximum extent allowed by law, the Client acknowledges and agrees it will not have any direct legal recourse to, and waives any claim, demand, or cause of action against, Golder's affiliated companies, and their employees, officers and directors.

This Document is provided for sole use by the Client and is confidential to it and its professional advisers. No responsibility whatsoever for the contents of this Document will be accepted to any person other than the Client. Any use which a third party makes of this Document, or any reliance on or decisions to be made based on it, is the responsibility of such third parties. Golder accepts no responsibility for damages, if any, suffered by any third party as a result of decisions made or actions based on this Document.

At Golder Associates we strive to be the most respected global group of companies specialising in ground engineering and environmental services. Employee owned since our formation in 1960, we have created a unique culture with pride in ownership, resulting in long-term organisational stability. Golder professionals take the time to build an understanding of client needs and of the specific environments in which they operate. We continue to expand our technical capabilities and have experienced steady growth with employees now operating from offices located throughout Africa, Asia, Australasia, Europe, North America and South America.

Africa	+ 27 11 254 4800
Asia	+ 852 2562 3658
Australasia	+ 61 3 8862 3500
Europe	+ 356 21 42 30 20
North America	+ 1 800 275 3281
South America	+ 55 21 3095 9500

solutions@golder.com
www.golder.com

Golder Associates Pty Ltd
Level 2, 1 Havelock Street
West Perth Western Australia 6005
Australia
T: +61 8 9213 7600

Golder Associates