



March 21 2014

ICMI RECERTIFICATION SUMMARY REPORT

Goldcorp Inc., Porcupine Gold Mines, Timmins Ontario, Canada

Submitted to:
Goldcorp Inc.
Porcupine Gold Mines
Timmins, Ontario
P0N 1H0

REPORT



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1.0 SUMMARY AUDIT REPORT FOR GOLD MINING OPERATIONS

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Porcupine Gold Mines
Name of Facility



Signature of Lead Auditor

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2.0 LOCATION DETAIL AND DESCRIPTION OF OPERATION

2.1 Mine Location

The Porcupine gold mine (PGM) is located within the city limits of Timmins, Ontario, Canada. The Porcupine Gold Mine property area is approximately 38,000 hectares of mining claims.

Access to the property is via paved road and all the principal properties straddle Highway 101 as it enters the City of Timmins from the east. The Dome mine and mill are located to the southwest of the town of South Porcupine, and the Hoyle Pond property is situated some 20 kilometres east of Timmins and is accessed by driving north through the Hallnor property on a new all weather road. The Pamour Open Pit is located 24 kilometres east of the city. Rail freight service is available from a transfer point near the Hallnor Mine situated between Pamour and Dome. The city of Timmins is 60 kilometres from the Trans Canada Highway.

Porcupine is located within the Boreal Climatic Region which is characterized by contrasting seasons with warm, moderately humid summers and cold, dry winters. Temperatures range from -45 to +30 degrees Celsius. Mean rainfall is 600 millimetres and mean snowfall is 300 centimetres.

2.2 Background

The Site comprises two distinct mines:

2.2.1 The Dome Underground Mine

The Dome underground mine resumed operations in early 2006 after being put on Care and Maintenance in May 2004. Prior to 2004, the Dome Underground had been one of the Porcupine districts most prolific gold producers, spanning over 95 years of continuous operations since its discovery in 1909 and its production start up in 1910. The mine contains hundreds of miles of drifts and hundreds of stopes on 33 levels, with a shaft that extends to a depth of 1,665 meters. During its mine life the Dome Underground Mine has produced 13.4 million ounces of gold.

2.2.2 Hoyle Pond Underground Mine

The Hoyle Pond underground operation produced a total of 347,179 tonnes of ore at an average grade of 11.81 grams per tonne (gpt) in 2008. Ore sources included development and production stoping. A total of 4,912 meters of ore development and 7,420 meters of waste development were completed. Total gold production was 109,660 ounces, equal to 37% of the total Porcupine Gold Mine (PGM) ounces produced. Hoyle Pond has produced in excess of 2.4M ounces of gold since production started in 1985.



2.3 The Mill

After the formation of the Porcupine Gold Mines Joint Venture in 2002, ore has been fed to the Dome mill from the following main sources: Pamour Open Pit, Pamour Stockpile, the Dome Underground Mine and Hoyle Pond Underground Mine. Ore is crushed in three stages to produce a product size of 80% passing ½". Primary and secondary crushing is achieved in a 400 HP 42"x 65" gyratory and 400 HP 7' standard cone crusher, respectively. The latter feeds a 10' x 24' double deck screen in a closed circuit with a HP700 cone crusher. The screen undersize reports to two 4,000 tonne fine ore bins and the oversize is conveyed to a 75 tonne tertiary surge bin feeding the HP700 cone crusher. Due to the limited fine ore bin capacity, an external fine ore stockpile and reclaim conveyor system provide for supplemental mill feed during extended shutdowns of the crushing plants.

Minus 1/2" material is fed to a grinding circuit that consists of two parallel grinding lines. Circuit A consists of a 10.5' diameter x 14' 700 HP rod mill and 13.5' x 20' 2200 HP ball mill while Circuit B consists of a 15' diameter x 20' 2200 HP rod mill and a 16' x 28.5' 4500 HP ball mill. Prior to 2005, Circuit B operated as a primary ball mill circuit. The rod mill was added in conjunction with the Pamour Pit expansion to handle the higher work index of the Pamour ore and to produce a finer grind at a total designed plant capacity of 11,000 metric tonnes per day. Gravity gold is recovered by the use of five Knelson CD-30 Concentrators fed from the cyclone underflow. In December 2002, a Consep CS6000 Acacia Reactor was commissioned to intensively leach the Knelson concentrate. The Acacia loaded solution has a dedicated electrowinning circuit. Gravity recovery accounts for up to 45% of the recovered gold, depending on ore type.

The cyclone overflows reports to a 155' thickener where the slurry density is increased to 55-60% solids. The thickener underflow feeds six leach tanks in series, which provide about 32 hours residence time. The leach circuit was expanded during the Pamour Pit Expansion to include three new additional tanks to increase the leach residence time which was a requirement of the Pamour ore.

Lime is added to the mill discharge pump boxes, thickener feed well, as well as staged addition points in the leach circuit to maintain a pH of 11.5 during cyanide leaching. Cyanide is added to the second tank of the leach circuit following preoxidation in the first tank. Staged oxygen addition maintains oxygen levels for optimum leach kinetics. After leaching, the slurry passes over a vibrating screen to remove any grit before being pumped to the CIP circuit where solution gold is absorbed by activated carbon contained in the CIP tanks. Loaded carbon is removed from the tanks and stripped. A fine carbon collection system is in place to collect any fine carbon generated during the transferring and sizing stages and is periodically shipped to a smelter for refining. The strip circuit including acid wash and strip vessels as well as the kiln was upgraded during the Pamour Pit Expansion to eliminate a prior bottleneck. The elution process transfers the gold from carbon into solution. The solution is passed through electrowinning cells where gold attaches itself to a cathode in the form of high-grade sludge. The cells are cleaned by power washing the sludge off the stainless mesh, and the sludge is filtered, dried and then refined in an induction furnace.

CIP tails pass over a vibrating screen to collect any carbon which may have leaked past the inter-stage screens. This carbon is collected and shipped to a smelter for refining. The final tails are sampled using an automated full stream sampler before being pumped to the tailing impoundment.



2.4 Tailings and Dam Construction


The current No. 6 Tailing Management Area is located approximately 3 km to the south of the mill site and consists of a naturally occurring basin enclosed by topographic highs to the east and west of the facility and by construction of a series of dams within the topographic lows around the perimeter.

Construction of the No. 6 tailing facility began in 1983 and has been raised in stages over the past 27 years with engineered dams constructed using local fill materials. In 1997, an emergency spillway was constructed on the east side of the north dam to replace the old style decant structure.

Tailing slurry is pumped from the mill to the No. 6 Tailing Management Area via a 22 inch pipeline that branches into two 18 inch pipelines at the north dam to allow for the tailing material to be distributed around the perimeter of the facility to maintain beaches and a pond at the north end of the basin where the emergency spillway is located along with a mill water reclaim system.

Water reclaimed from the tailing impoundment represents approximately 95% of the total mill water used in the process. The balance comes from a freshwater source and some nominal volume from the underground. Excess water in the impoundment is treated prior to being discharged to the environment. The Effluent Treatment Plant (ETP) operates each year between May and October, and uses sulphur dioxide and air to destroy any residual cyanide and ferric sulphate and lime are used to precipitate heavy metals. A 105' diameter x 16'-9" reactor clarifier separates the precipitated sludge which is pumped back into the tailing impoundment where it is co-deposited with the tailing. The clear overflow is further treated with EDTA and carbon dioxide to control to regulatory limits.

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3.0 SUMMARY AUDIT REPORT

3.1 Auditors Findings

This operation is:

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

with the International Cyanide Management Code.

Porcupine Gold Mines has not experienced any significant cyanide incidents or compliance problems during the three-year audit cycle.

Audit Company: Golder Associates Ltd.
Audit Team Leader: Evan Jones, Lead Auditor
Email: evanjones@golder.com

3.2 Name and Signatures of Other Auditors

Name	Position
Alistair Cadden	Technical Specialist


3.3 Dates of Audit

The Certification Gold Mining Operation Audit was undertaken within three days (six person-days) between September 9 and 11, 2013.

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 Verification Protocol for Gold Mining Operations and using standard and accepted practices for health, safety and environmental audits.

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4.0 PRINCIPLE 1 – PRODUCTION

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

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

in full compliance with

The operation is

in substantial compliance with

Production Practice 1.1

not in compliance with

Summarise the basis for this Finding/Deficiencies Identified:

PGM 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.

PGM purchases its sodium cyanide from E.I DuPont de Nemours under a contractual Agreement. E.I DuPont de Nemours, the cyanide producer, was certified as compliant under the Code on December 1, 2009 and recertified April 30, 2013.

PGM bought 1 delivery of NaCN from Cyanco, which was initially certified as being fully Code compliant 11/10/06, recertified in 2010, and again on 12/07/13.

PGM has bought cyanide from Code certified companies throughout the period of this recertification audit.

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5.0 PRINCIPLE 2 – TRANSPORTATION

Protect Communities and the Environment during Cyanide Transport

Transport 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.

[X] in full compliance with

The operation is

[] in substantial compliance with

Transport Practice 2.1

[] not in compliance with

Summarise the basis for this Finding/Deficiencies Identified:

PGM 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.

PGM has a written cyanide supply agreement with Dupont which clearly states the responsibilities for safety, security, release prevention, training and emergency response in written agreements with producers, distributors and transporters. Dupont has a contract with Miller Transporters Inc. to deliver cyanide to the site. Miller Transporters Inc. was certified as Code compliant on October 22, 2007 and recertified on April 7, 2011.

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

[X] in full compliance with

The operation is

[] in substantial compliance with

Transport Practice 2.2

[] not in compliance with

Summarise the basis for this Finding/Deficiencies Identified:

PGM is in FULL COMPLIANCE with Standard of Practice 2.2, requiring that cyanide transporters implement appropriate emergency response plans and capabilities and employ adequate measures for cyanide management.

Transportation of cyanide to the site is the responsibility of E.I DuPont de Nemours and Company under the cyanide supply contract. This contract requires that the cyanide is transported by code compliant haulers.

The company used to transport cyanide to the site in Miller Transporters Inc. Miller was certified as full complaint with the Code October 22, 2007 and recertified on April 7, 2011.





6.0 PRINCIPLE 3 – HANDLING AND STORAGE

Protect Workers and the Environment during Cyanide Handling and Storage

Handling and Storage

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.

[X] in full compliance with

The operation is [] in substantial compliance with Handling and Storage Practice 3.1

[] not in compliance with

Summarise the basis for this Finding/Deficiencies Identified:

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

The facilities are the same as during the 2010 verification audit where they were found to be fully compliant with the Code. They appear to have been maintained in good working order.

Handling and Storage

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

[X] in full compliance with

The operation is [] in substantial compliance with Handling and Storage Practice 3.2

[] not in compliance with

Summarise the basis for this Finding/Deficiencies Identified:

The operation is in FULL COMPLIANCE with Handling & 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.

Bulk cyanide is being delivered in Excel trailers. Solid cyanide briquettes in the trailers are dissolved by circulating mix water through the Excel trailers and into the mixing tank. The offload pad and cyanide mixing and holding tanks have been designed with adequate secondary containment. Standard operating procedures, operator training and practices have been developed and implemented to manage the cyanide unloading and clean-up activities effectively and safely. An operator is in attendance during unloading.

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Standard operating procedures and operator training are effective in managing unloading practices.

When normal deliveries from Dupont were interrupted due to force majeure caused by flooding of the Mississippi River, PGM implemented their procedures for risk analysis of non-standard hazardous operations to ensure that health safety and environmental aspects associated with the offload of one load of liquid cyanide from Cyanco were adequately addressed and the operation could be performed safely.

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7.0 PRINCIPLE 4 – OPERATIONS

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

Operations Practice 4.1: Implement management and operating systems designed to protect human health and the environment utilizing contingency planning and inspection and preventative maintenance procedures.

in full compliance with

The operation is

in substantial compliance with

Operations Practice 4.1

not in compliance with

Summarise the basis for this Finding/Deficiencies Identified:

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

- PGM has written management and operating plans and procedures for all cyanide facilities.
- The assumptions and parameters on which the facility design was based are identified within the operating plans and procedures.
- PGM has a system of inspections and schedule of preventive maintenance to ensure the safe operation of the facility.
- A formalised change management system is in place to ensure that the impact of any process or procedural changes on the safe management of cyanide is addressed.
- PGM has contingency plans to address upsets in the water balance, or other process upsets such as an emergency power generation system and facility shut down procedures.
- There are a number of systems and procedures in place to ensure that the facility is operated in accordance with the Code. These include inspections by workers and management, computerized systems such as the water balance and planned maintenance, and contingency plans.
- Inspections of all cyanide facilities are undertaken at suitable intervals to ensure that they are functioning as required. Record keeping of the inspections and systems ensures that their implementation can be readily tracked.

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Operations 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

Operations Practice 4.2

not in compliance with

Summarise the basis for this Finding/Deficiencies Identified:

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

The operation conducts a programme of test work to determine appropriate cyanide addition rates in the mill and evaluate and adjust addition rates as necessary when ore types or processing practices change cyanide requirements.

Control of cyanide addition is through an in-line cyanide titration system and manual titrations undertaken by the mill operators.

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

in full compliance with

The operation is

in substantial compliance with

Operations Practice 4.3

not in compliance with

Summarise the basis for this Finding/Deficiencies Identified:

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


PGM has developed a comprehensive, probabilistic water balance.

The water balance addresses the rate of deposition of tailings (there are no heap leach facilities at PGM); design storms; the quality of the input data through statistical evaluation; the impact of run-off from the catchment; the impact of freezing and thawing; losses due to evaporation and seepage; the impact of power outages and the capacity of the ETP. It is actively used as a management tool to plan dam wall and spillway sill raises.

Regular inspection of the pond water level, pond area and depth and monitoring of piezometers and outflows is undertaken.

Precipitation is measured at Timmins airport and used to update the water balance annually.

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Operations 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 **Operations Practice 4.4**

not in compliance with

Summarise the basis for this Finding/Deficiencies Identified:

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

There are no open waters where WAD cyanide exceeds 50 mg/L at PGM.

The only open water at the site is the tailings pond. Monitoring of the water in the tailings pond shows that the WAD cyanide concentration is consistently less than 50ppm.

There has been no wildlife mortalities reported at the site.

There are no heap leach facilities or solution ponds at the site.

Operations 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 **Operations Practice 4.5**

not in compliance with

Summarise the basis for this Finding/Deficiencies Identified:

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


The site does not have a discharge to surface water with a WAD cyanide concentration exceeding 0.5 mg/L.

There is no mixing zone permitted in the jurisdiction. WAD cyanide concentrations of the discharge from the ETP are <0.022 mg/L.

There is no indirect discharge to surface water as shown by groundwater monitoring.

Fish habitat studies have concluded that the Porcupine River is not adversely impacted by the discharge from the ETP.

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Operations 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

Operations Practice 4.6

not in compliance with

Summarise the basis for this Finding/Deficiencies Identified:

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

The hydrogeology of the tailings dam area has been studied to ensure its suitability to minimize impacts on groundwater. The dam walls include a low permeability geomembrane barrier.

A network of groundwater monitoring wells has been installed and is sampled regularly to ensure groundwater is not being impacted by the operation. Monitoring of WAD cyanide in groundwater has shown the concentration to be below detection levels (<0.005mg/L).

The site does not use mill tailings for backfill.

Cyanide levels in groundwater have not risen above levels protective of beneficial use therefore PGM is not undertaking any remediation of groundwater.

Operations 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

Operations Practice 4.7

not in compliance with

Summarise the basis for this Finding/Deficiencies Identified:


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

Spill prevention or containment measures are provided for the following all cyanide unloading, storage, mixing and process solution tanks:

- Cyanide mixing and holding tanks;
- Leach tanks; and
- CIP tanks.

All process tanks and pipelines have adequate secondary containment.

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The site implements procedures, such as sump pumps, to ensure that cyanide solutions collected in secondary containments are not released to the environment.

The process tanks have secondary containment.

Cyanide pipelines and return / reclaim water pipelines are designed as pipe in pipe, or within containment bunds to collect leaks, to prevent releases to the environment and to ensure protection of surface water. A 'pipe in pipe' secondary containment system was adopted for the South Porcupine River crossing.

Currently all tanks and pipelines are constructed with compatible materials such as carbon steel and HDPE. A new cyanide distribution system has been installed made from stainless steel components.

Operations 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

Operations Practice 4.8

not in compliance with

Summarise the basis for this Finding/Deficiencies Identified:

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

QA/QC programmes have been implemented for the construction of all cyanide facilities.

The QA/QC programmes address the suitability of the material used and their correct installation.

QA/QC records and engineers reports for all cyanide facilities are retained on site.

There has been no need for QA/QC inspections undertaken by appropriately qualified people since the original certification audit.

Operations 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

Operations Practice 4.9

not in compliance with

Summarise the basis for this Finding/Deficiencies Identified:

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

The operation has written standard procedures for monitoring activities for wildlife, surface and groundwater quality.

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These procedures have been prepared by appropriately qualified persons.


The procedures contain information on how and where samples should be taken, sample preservation techniques, chain of custody procedures, shipping instructions, and cyanide species to be analysed.

Groundwater sampling conditions and procedures are documented in writing.

PGM inspects and documents any wildlife mortality that may be associated with contact with or ingestion of cyanide.

Monitoring is conducted at frequencies adequate to characterise the medium being monitored and to identify changes in a timely manner.

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8.0 PRINCIPLE 5 – DECOMMISSIONING

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

Decommissioning

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 **Decommissioning Practice 5.1**

not in compliance with

Summarise the basis for this Finding/Deficiencies Identified:

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

- The operation has plans for decommissioning cyanide facilities.
- The plan includes an implementation schedule for the decommissioning works.
- The decommissioning plan is updated from time to time in accordance with the requirements of the Ontario Ministry of Northern Development, Mines and Forestry.

Decommissioning

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 **Decommissioning Practice 5.2**

not in compliance with

Summarise the basis for this Finding/Deficiencies Identified:

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

- The closure plan includes a cost estimate for 3rd party decommissioning of the site.
- The cost estimate is regularly reviewed, the most recent update being March 2012.
- An irrevocable letter of credit is issued to the Ontario Ministry of Northern Development, Mines and Forestry to cover the cost of 3rd party decommissioning of the mine.



9.0 PRINCIPLE 6 – WORKER SAFETY

Protect Workers’ Health and Safety from Exposure to Cyanide

Worker Safety

Practice 6.1: Identify potential cyanide exposure scenarios and take measures as necessary to eliminated, reduce and control them.

in full compliance with

The operation is in substantial compliance with Worker Safety Practice 6.1 not in compliance with

Summarise the basis for this Finding/Deficiencies Identified:

The site is in FULL COMPLIANCE with Standard of Practice 6.1 requiring that the site identify potential cyanide exposure scenarios and take measures as necessary to eliminate, reduce and control them.

- PGM has developed Safe Operating Procedures and other procedures which identify potential exposure pathways for cyanide, and specifies the working procedures and PPE required to eliminate, reduce and control them.
■ The procedures specify the requirements for PPE and pre-work inspections.
■ A change management procedure is in place to ensure the proposed process and procedural changes consider and address worker safety.
■ Worker input is sought while developing or modifying work procedures, through the use of planned task observations, JHSC and crew meetings, and review / sign-off processes.

Worker Safety

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 Worker Safety Practice 6.2 not in compliance with

Summarise the basis for this Finding/Deficiencies Identified:

PGM is in FULL COMPLIANCE with Standard of Practice 6.2 requiring that the site operate and monitor cyanide facilities to protect worker health and safety and periodically evaluate the effectiveness of health and safety measures.

- The site has determined appropriate pH (around 11.2) for operating the facility.



- The site uses both fixed and portable HCN monitors to ensure that worker exposure to HCN gas is limited. These alarm when the concentration of HCN reaches 2 ppm which triggers an investigation for the source of elevated HCN concentrations, and again when it reaches 4.7 ppm, which triggers an evacuation and emergency response.
- Areas of exposure to >4.7ppm of HCN have been identified and signed. Safe working procedures have been developed to minimise the risk to workers from HCN gas.
- The fixed HCN monitors are full span calibrated every 3 months in accordance with the manufacturer’s recommendations. The zero setting is checked every month. Portable HCN monitors are tested each time they are used. Records of calibration are kept on site for at least 1 year.
- Warning signs have been placed in all areas where cyanide may be encountered, and on all cyanide facilities warning that the tanks and pipes may contain cyanide solutions.
- Emergency showers and eye wash stations are located at locations around the plant where there is a risk of cyanide exposure. These are checked regularly as planned maintenance. Type ABC fire extinguishers (with nitrogen propellant) were located at numerous places around the plant. The inspection records were attached to the fire extinguishers.
- MSDS sheets are displayed in English (the language of the workforce) at various locations around the plant site.
- Procedures are in place to investigate cyanide exposures, and to modify procedures in the light of any findings from the investigations.

Worker Safety

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

in full compliance with

The operation is in substantial compliance with **Worker Safety Practice 6.3**

not in compliance with

Summarise the basis for this Finding/Deficiencies Identified:

PGM is in FULL COMPLIANCE with Standard of Practice 6.3 which requires that the site develop and implement emergency response plans and procedures to respond to worker exposure to cyanide.

- PGM has two oxygen therapy and IV cyanide antidote kits required for treating potential victims of cyanide exposures and trained personnel capable of administering the IV drips.
- First aid equipment is regularly inspected to ensure it will function correctly and remains within it useful life.
- PGM has specific written plans for dealing with cyanide exposures, updated to reflect new antidote procedures.

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- PGM has on site facilities, including a site nurse and clinic to provide first aid to staff exposed to cyanide.
- PGM has a procedure to transport cyanide exposure victims to Timmins District Hospital.
- PGM has arrangements in place through the Timmins Fire Chief with local emergency responders such as the ambulance service and Timmins District Hospital, who have confirmed they have adequate training and facilities to deal with victims of cyanide exposure.
- Mock drill are performed to test the emergency response procedures developed at site, and to incorporate learning's from these drills into revised procedures.

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10.0 PRINCIPLE 7 – EMERGENCY RESPONSE

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

Emergency Response

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

in full compliance with

The operation is in substantial compliance with **Emergency Response Practice 7.1**

not in compliance with

Summarise the basis for this Finding/Deficiencies Identified:

PGM is in FULL COMPLIANCE with Standard of Practice 7.1 which requires that the site prepare detailed emergency response plans for potential cyanide releases.

- PGM has a well thought through and comprehensive written emergency response plan and related procedures / appendices to deal with potential cyanide releases.
- The plan considers all reasonably foreseeable cyanide failure scenarios, including off site and on site transportation incidents.
- The plan addresses the potential need for evacuations of both the site and potentially affected communities. It specifies procedures for the use of specialised first aid equipment, antidotes and measures to control cyanide releases.

Emergency Response

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

in full compliance with

The operation is in substantial compliance with **Emergency Response Practice 7.2**


not in compliance with

Summarise the basis for this Finding/Deficiencies Identified:

PGM is in FULL COMPLIANCE with Standard of Practice 7.2 which requires that the site involve site personnel and stakeholders in the planning process.

- PGM has involved the workforce and stakeholder such as the town of South Porcupine and the Fire Chief, on behalf of the community and other emergency response service providers, in emergency response planning.
- PGM has made potentially affected communities aware of the risks associated with cyanide release through a series of public events, and the Hollinger information centre.

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- Local emergency responders have been involved in the emergency planning process.
- PGM consults and communicates with stakeholders to ensure the emergency response plan is kept current.

Emergency Response

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 Emergency Response Practice 7.3

not in compliance with

Summarise the basis for this Finding/Deficiencies Identified:

PGM is in FULL COMPLIANCE with Standard of Practice 7.3 which requires that the site designate appropriate personnel and commit necessary equipment and resources for emergency response.

- PGM has designated appropriate staff equipment and other resources for emergency response.
- PGM has confirmed that outside responders understand their roles in an emergency situation and their willingness to be involved in mock drills.

Emergency Response

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

in full compliance with

The operation is in substantial compliance with Emergency Response Practice 7.4

not in compliance with

Summarise the basis for this Finding/Deficiencies Identified:

PGM is in FULL COMPLIANCE with Standard of Practice 7.4 which requires that the site develop procedures for internal and external emergency notification and reporting.

- The ERP and related documents provide details on procedures for notifying management, outside responders and regulatory authorities.
- The ERP and related documents give details for contacting affected communities, which will be handled through the Timmins Fire Chief and the Ontario Provincial Police. The Mine General Manager is responsible for dealing with the media.



Emergency Response

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

[X] in full compliance with

The operation is [] in substantial compliance with Emergency Response Practice 7.5

[] not in compliance with

Summarise the basis for this Finding/Deficiencies Identified:

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

- The emergency response plan specifies specific remediation measures required for a range of solid and liquid cyanide releases, including tailings. These measures included detailed work procedures, clean up limits and how to dispose of residuals.
■ The use of sodium hypochlorite, ferrous sulphate and hydrogen peroxide are specifically prohibited for the neutralisation of cyanide that may enter into surface water. These chemicals are not kept on site for cyanide emergency response.
■ The emergency response plan gives details of the locations and frequencies of required environmental monitoring, and the sampling and analytical methods to be used.

Emergency Response

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

[X] in full compliance with

The operation is [] in substantial compliance with Emergency Response Practice 7.6

[] not in compliance with

Summarise the basis for this Finding/Deficiencies Identified:

PGM is in FULL COMPLIANCE with Standard of Practice 7.6, which requires that the site periodically evaluate response procedures and capabilities and revise them as needed.

- PGM updates the ERP at least annually.
■ Mock cyanide emergency drills are performed at least annually.
■ The mine has a system to review the results of emergency responses and mock emergency drills and updates procedures accordingly.

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11.0 PRINCIPLE 8 – TRAINING

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

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

in full compliance with

The operation is

in substantial compliance with

Training Practice 8.1

not in compliance with

Summarise the basis for this Finding/Deficiencies Identified:

PGM is in FULL COMPLIANCE with Standard of Practice 8.1 which requires that the site train workers to understand the hazards associated with cyanide use.

- PGM trains all personnel who may encounter cyanide in cyanide hazard recognition.
- Periodic cyanide hazard recognition refresher training is undertaken.
- Training records are retained on the SAP database system and by an accredited training service provider.

Training 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

Training Practice 8.2

not in compliance with

Summarise the basis for this Finding/Deficiencies Identified:

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

- The operation trains workers to undertake cyanide related tasks safely with respect to themselves, their colleagues, the community and the environment.
- The training materials identify the elements necessary for the safe performance of each job, based on the sites safe working procedures.
- Appropriately qualified personnel deliver the training, with accredited external specialists engaged as required.
- Employees are trained prior to working with cyanide, with assessment undertaken to ensure they understand the requirements.

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- Refresher training is undertaken regularly and as identified from planned task observations.
- The effectiveness of training is assessed through written tests on each training module, and through planned task and crew observations.
- The competency of the trainers themselves is also assessed through workplace observations.
- Detailed records of training are retained as hard copy and on the SAP database.

Training 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

Training Practice 8.3


not in compliance with

Summarise the basis for this Finding/Deficiencies Identified:

PGM is in FULL COMPLIANCE with Standard of Practice 8.3 which requires that the site train appropriate workers and personnel to respond to exposures and environmental releases of cyanide.

- All mill workers and contractors are trained in the appropriate emergency response for worker exposure and environmental releases of cyanide.
- Emergency responders are trained in cyanide decontamination and first aid procedures and participate in mock emergency response drills.
- Emergency responders are trained in the procedures included in the emergency response plan concerning cyanide, and in the use of appropriate equipment.
- Offsite emergency responders have been made aware of their responsibilities and have confirmed they are prepared to deal with cyanide related emergencies.
- Refresher training in cyanide emergency response is undertaken regularly.
- Emergency response mock drills are undertaken regularly.
- Emergency response mock drills are evaluated and lesson learnt captured and incorporated into the updated procedures.
- Emergency response training records are retained either as paper copy or on the SAP database system.

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12.0 PRINCIPLE 9 – DIALOGUE

Engage in Public Consultation and Disclosure

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

in full compliance with

The operation is

in substantial compliance with

Dialogue Practice 9.1

not in compliance with

Summarise the basis for this Finding/Deficiencies Identified:

PGM is in FULL COMPLIANCE with Standard of practice 9.1 which requires that the site Provide stakeholders the opportunity to communicate issues of concern.

- PGM has a number of community engagement initiatives including the Watchful Eye, the Schumacher Information Centre, and engagement with Northwatch NGO and other community groups to enable them to voice concerns.

Dialogue 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

Dialogue Practice 9.2

not in compliance with

Summarise the basis for this Finding/Deficiencies Identified:

PGM is in FULL COMPLIANCE with Standard of practice 9.2 which requires that the site initiate dialogue describing cyanide management procedures and actively address identified concerns.

- PGM has a number of community engagement initiatives including the Watchful Eye, the Schumacher Information Centre, engagement with Northwatch NGO and other community groups to facilitate dialogue with respect to cyanide management procedures.

Dialogue 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

Dialogue Practice 9.3

not in compliance with

Summarise the basis for this Finding/Deficiencies Identified:

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ICMI RECERTIFICATION SUMMARY REPORT

PGM is in FULL COMPLIANCE with Standard of Practice 9.3 which requires that the site make appropriate operational and environmental information regarding cyanide available to stakeholders.

- PGM makes operational and environmental information regarding cyanide available through the Porcupine Gold Mine website, the corporate Goldcorp website, and various publicly distributed newsletters, also available through the Schumacher information centre.
- The majority of the local population is literate and so written information is considered adequate.
- Information regarding cyanide releases would be made available through a number of company and official outlets such as the Mines and Aggregates Safety and Health Association (MASHA) website, the Porcupine Gold Mine website (under News), the Goldcorp website (including the Sustainability Report), the Ontario Ministry of Labour website (under Newsroom) and potentially the City of Timmins website.

GOLDER ASSOCIATES LTD.

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AC/EJ/lih

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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.

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