TOXIC SUBSTANCE REDUCTION PLAN SUMMARY – Hydrochloric Acid

This Toxic Substance Reduction Plan Summary has been prepared in accordance with Section 8(2) of the *Toxics Reduction Act* and satisfies the minimum Plan Summary content requirements stipulated in Section 24 of Ontario Regulation (O.Reg.) 455/09.

Basic Facility Information

Mandatory Basic Facility Information Item	Details
Substance Name and Chemical Abstracts Service (CAS) Registry Number for the Toxic Substance	Hydrochloric Acid (CAS No. 7647-01-0)
National Pollutant Release Inventory (NPRI) and O.Reg.127/01 Identification Numbers	NPRI ID: 1941 O.Reg.127/01 ID: 9490
The legal and trade names of the owner and the operator of the facility, the street address of the facility and the mailing address of the facility, if different	Goldcorp Canada Inc. 4315 Gold Mine Road, South Porcupine, ON P0N1H0 Canada
The number of full time employee equivalents at the facility	643
The two- and four-digit North American Industry Classification System (NAICS) codes and the six-digit NAICS Canada code	21 – Mining & Oil & Gas Extraction 2122 – Metal Ore Mining 212220 – Gold & Silver Ore Mining
Public contact	László Götz Environmental Manager Goldcorp Canada Inc. [address per above] (705) 235-6720
The spatial coordinates of the facility expressed in Universal Transverse Mercator (UTM) within a North American Datum 83 (NAD83) datum	UTM Zone 17 482866 E, 5368194 N
Parent Company Information	N/A

List of All Substances for which Toxic Substance Reduction Plans Have Been Prepared at the Facility

The Facility has prepared Toxic Substance Reduction Plans for the following prescribed Toxic Substances:

Arsenic*

Cadmium*

Chromium*

Cobalt*

Copper*

Lead*

Manganese*

Nickel*

Zinc*

Vanadium (CAS number 7440-62-2)

Cyanides (Ionic)*

Hydrochloric Acid (CAS number 7647-01-0)

*Per O.Reg.455/09, no single CAS numbers apply to these substances

Statement of Intent

As required by s.4(1) of the TRA, a Plan must include either a statement of the Facility's intent to reduce the use and/or creation of the Toxic Substance at the Facility, or the reasons for not including this statement, as well as objectives of the Plan.

A statement of the Facility's intent to reduce use of the Toxic Substance has not been included as a part of this Plan. The Toxic Substance is never created within the Facility's process and therefore no statement with respect to intent to reduce creation of the Toxic Substance is required.

The Facility is of the opinion it has previously optimized its use of the Toxic Substance using the best available technology and practices that are economically achievable at this time. This opinion is supported by the following three aspects which influence the way in which the Facility uses the Toxic Substance:

1) Plans, Policies and Procedures that Are Currently in Place at the Facility

The Facility currently has several standard policies and procedures in place which dictate practices at the Facility pertaining to the Toxic Substance, from operational and health and safety standpoints. These policies and procedures include the following:

- Hydrochloric Acid Mixing;
- Spill Prevention and Contingency Plan;
- Emergency Response for Liquid Hydrochloric Acid Spill;
- Carbon Acid Washing; and
- Mill Reagent Information Module.

The above noted standard plans, policies and procedures provide a framework for the safe use of hydrochloric acid, as well as step-by-step instructions on how hydrochloric acid is to be used within the Facility process.

The Facility is of the opinion that development and implementation of the above noted policies and procedures result in the safest and most efficient use of the Toxic Substance which can reasonably be expected.

2) Compliance with Environmental Legislation Pertaining to the Toxic Substance

The Facility currently complies with all environmental regulations that control the release and disposal of the Toxic Substance, and possesses all applicable environmental approvals including:

- Air and Noise Approvals under s.9 of the Ontario *Environmental Protection Act*;

- Water Discharge Permit under the Ontario *Water Resources Act*; and
- Waste Permit under s.V of the Ontario *Environmental Protection Act.*

The Ontario Ministry of the Environment has stated that the TRA is not intended to focus on these "end of pipe" emissions, however, the fact that the Facility meets or exceeds the strict release limits imposed by these regulations, despite the relatively large amount of the Toxic Substance that is required to be used in order to operate the Facility, is a further indication of optimal use of the Toxic Substance at the Facility.

3) Economic Factors Associated with the Use of the Toxic Substance

The purchase of the product which contains the Toxic Substance is a significant capital expenditure and therefore optimizing the use of the product which contains the Toxic Substance is in the Facility's best interest as it is directly related to cost control.

Throughout the course of achieving the current level of process and practice optimization with respect to the Toxic Substance, and considering the above noted aspects which influence the Facility's use of the Toxic Substance, the Facility has considered options to reduce its use of the Toxic Substance and has already completed internal assessments of some initiatives which could constitute toxic substance reduction options that could otherwise be identified for the purposes of this Plan. Some of these initiatives are mentioned within this Plan, however, they have not been provided as toxic substance reduction options for the purposes of this Plan since they have previously been deemed not to be feasible or implemented.

Objectives of the Toxic Substance Reduction Plan

The objectives of this Plan are as follows:

- provide the reader with information on measures currently in place at the Facility which influence the way in which the Toxic Substance is used at the Facility;
- provide support for the Facility's position with respect to the Statement of Intent of this Plan; and
- document how, by preparing this Plan, the Facility has fulfilled the applicable requirements under the TRA and O.Reg.455/09 with respect to the Toxic Substance.

Description of Why the Toxic Substance Is Used or Created

Hydrochloric acid is used at the Facility to remove carbonate buildup on the activated carbon that is used to recover gold in the carbon circuit. This use of the Toxic Substance allows for the re-use of the activated carbon within the carbon circuit, which is a significant cost saving measure for the Facility and a common practice within the gold ore processing industry. Currently no other reagent is known in the gold ore processing industry to be as effective as hydrochloric acid for this application. The Toxic Substance is never created at the Facility.

The removal of carbonate build-up is an intermittent process that is completed as needed. The overall volume of hydrochloric acid consumed in relation to the total hours of mill operation and throughput is insignificant.

There is also a small amount of the Toxic Substance that is used in the Facility's assay laboratory. This amount is very minor in comparison to the amount that is used in the Facility's process and therefore this Plan does not focus on this minor use of the Toxic Substance.

Rationale for Not Implementing Toxic Substance Reduction Options

As required by s.18(4) of O.Reg.455/09 (as amended by s.9(3) of O.Reg.214/11), a Plan must contain an explanation of why no toxic substance reduction options will be implemented.

Facility personnel have carefully examined each of the seven categories for toxic substance reduction options, and, in light of the information provided in the Statement of Intent section of this Plan, the Facility feels that no toxic substance reduction options can be identified in any of the seven toxic substance reduction categories at this time.

Therefore the rationale for not implementing toxic substance reduction options is that no toxic substance reduction options could be identified.

Statement that the Plan Summary Accurately Reflects the Current Version of the Plan

As required by s.24(1)8 of O.Reg.455/09 this Plan Summary accurately reflects the current version of the Plan.

Planner License Number

As required by s.18(2) of O.Reg.455/09 (as amended by s. 9(2) of O.Reg.214/11), the Licensed Toxic Substance Reduction Planner responsible for providing Planner Recommendations on and certification of this Plan is as follows:

Russell Polack
Air Quality Specialist
Golder Associates Ltd.
Toxic Substance Reduction Planner License Number TSRP0002

Copies of the Certification

Certification statements are provided in the following page.

Toxic Substance Reduction Plans Certification by Highest Ranking Employee

As required by s.4(2) of the Toxics Reduction Act (TRA), Toxic Substance Reduction Plans must contain a certification, signed by the highest ranking employee at the Facility who has management responsibilities relating to the Facility.

The following Certification Statement is being made under s.19(2) of Ontario Regulation (O.Reg.) 455/09 (as amended by s.11 of O.Reg.214/11) and satisfies the requirements of s.4(2) of the TRA for the Toxic Substance Plans that are assembled within this single document as of the date of this Certification Statement. Furthermore, the following Certification Statement is limited to the respective versions of the Plans which are dated as indicated in the Certification Statement:

As of [insert date] Dec 18 2012, *I, [insert name]* Marc Lauzier, *certify that I have read the toxic substance reduction plans for the toxic substances referred to below and am familiar with their contents, and to my knowledge the plans are factually accurate and comply with the Toxics Reduction Act,2009 and Ontario Regulation 455/09 (General) made under that Act.*

- *Cyanides* *[dated December 18, 2012]*
- *Hydrochloric Acid* *[dated December 18, 2012]*
- *Lead* *[dated December 18, 2012]*
- *Arsenic* *[dated December 18, 2012]*
- *Cadmium* *[dated December 18, 2012]*
- *Chromium* *[dated December 18, 2012]*
- *Cobalt* *[dated December 18, 2012]*
- *Copper* *[dated December 18, 2012]*
- *Manganese* *[dated December 18, 2012]*
- *Nickel* *[dated December 18, 2012]*
- *Vanadium* *[dated December 18, 2012]*
- *Zinc* *[dated December 18, 2012]*

Marc Lauzier
Mine General Manager
Porcupine Gold Mines

Dec 18 / 2012

Date

December 18, 2012 Project No. 12-1192-0080

Laszlo Gotz
Goldcorp Canada Ltd.

LICENSED TOXIC SUBSTANCE REDUCTION PLANNER CERTIFICATION STATEMENT FOR PHASE I TOXIC SUBSTANCE REDUCTION PLANS FOR GOLDCORP CANADA LTD. PORCUPINE GOLD MINES

Dear Mr. Gotz:

Golder Associates Ltd. (Golder) was retained by Goldcorp Canada Ltd. Porcupine Gold Mines (the Facility) to provide various services pertaining to Phase I Toxic Substance Reduction Plan preparation under the *Toxics Reduction Act* (TRA), including Toxic Substance Reduction Planner (Planner) certification of Phase I Toxic Substance Reduction Plans (the Plans).

The following Planner Certification Statement which is made under s.19.1(4) of Ontario Regulation (O.Reg.) 455/09 (as amended by s.11 of O.Reg.214/11) satisfies the Planner Certification requirements for the Plans that are assembled as a single document as of the date of this Certification Statement. Furthermore, the following Certification Statement is limited to the respective versions of the Plans which are dated as indicated in the Certification Statement:

> *As of (December 18, 2012), I, Russell Polack certify that I am familiar with the processes at the Goldcorp Canada Ltd. Porcupine Gold Mines facility that use or create the toxic substances referred to below, that I agree with the estimates referred to in subparagraphs 7 iii, iv and v of subsection 4 (1) of the Toxics Reduction Act, 2009 that are set out in the toxic substance reduction plans referred to below for the toxic substances and that the plans comply with that Act and Ontario Regulation 455/09 (General) made under that Act.*

- *Cyanides(Ionic) (December 18, 2012)*
- *Hydrochloric Acid (December 18, 2012)*
- *Lead (December 18, 2012)*
- *Arsenic (December 18, 2012)*
- *Cadmium (December 18, 2012)*
- *Chromium (December 18, 2012)*
- *Cobalt (December 18, 2012)*
- *Copper (December 18, 2012)*
- *Manganese (December 18, 2012)*
- *Nickel (December 18, 2012)*
- *Vanadium (December 18, 2012)*
- *Zinc (December 18, 2012)*

Russell Polack
Toxic Substance Reduction Planner
License No. TSRP0002

December 18, 2012
Date

SAG/RLP/ms

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