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ARSENIC AND IRON MOBILITY IN CORONATION NORTH PROJECT SURFACE WATER

Dear Jackie

Golder Associates (NZ) Limited (Golder) has been engaged by OceanaGold (New Zealand) Limited (OceanaGold) to undertake an assessment of catchment water flows and water quality in support of a resource consent application for the Coronation North Project (the Project). This letter[1] is provided as an addendum to Golder's surface water modelling report (Golder 2016) to support conclusions reached in that report with respect to the limited mobility of arsenic and iron in surface water at the Project site and in the receiving environment waterways.

1.0 INTRODUCTION AND SCOPE

The mass balance modelling documented in Golder's surface water modelling report (Golder 2016) was undertaken assuming conservative transport of the contaminants modelled. It is however known from past contaminant transport modelling of the Macraes Gold Project and environmental monitoring data from the site that neither iron nor arsenic (Craw et al 2000, Golder 2011a,b) is conservatively transported in water at the site.

The surface water modelling results (Golder 2016) indicated both iron and arsenic concentrations at the proposed compliance monitoring point MB02 would potentially exceed the corresponding compliance concentrations applying at the existing monitoring point MB01. In that report Golder indicated that exceedances of the compliance criteria for arsenic and iron were however unlikely due to adsorption and precipitation reactions that take place in the surface water environment. OceanaGold has subsequently requested Golder to undertake appropriate hydrogeochemical modelling of the surface water system in the Mare Burn catchment to support this conclusion.

An equilibrium, aqueous geochemical model has therefore been developed from the site-specific water quality data and water balance presented in Golder (2016) and used to evaluate potential water quality, taking into account metal/metalloid precipitation or sorption. The results of this evaluation are documented in this letter, used to assess future compliance with receiving environment water quality criteria and to identify whether mitigation measures may be required for arsenic and iron.

All tables referenced in the body of this letter have been provided as attachments to the letter. A reference list of all documents referred to in this letter has also been attached to the letter.

[1] This letter is subject to the Golder Limitations attached.

2.0 THERMODYNAMIC MODEL

2.1 Model Development

Thermodynamic modelling was conducted in three phases to evaluate the presence of arsenic and iron in surface water:

- Assessment of run-off from undisturbed areas, waste rock stack (WRS) runoff and seepage, and pit lake water (data sources are described in Section 2.2) with respect to the aqueous speciation of mineral species typically associated with mine environments.
- Thermodynamic equilibration of each water type to determine the potential effects of mineral precipitation (e.g., potential oxidation of dissolved reduced iron and precipitation as ferrihydrite) and the availability of iron oxide minerals to remove arsenic by adsorption.
- Mixing of WRS seepage and pit lake water to assess the potential mobility of arsenic and iron in the combined discharge during the post-closure period. Water from undisturbed catchments has not been included in this assessment as projected exceedances documented from the surface water modelling report (Golder 2016) relate to periods when the natural flow contribution in Mare Burn would be either very low or nil.

2.2 Water Quality Input Data

The water quality input data included in the thermodynamic model was taken from the GoldSim water and chemical mass balance model input data documented in the surface water report (Golder 2016). These data included:

Undisturbed surface water runoff: Average water quality for Mare Burn (MB01 site) from December 2014 to November 2015 (Table 1).

WRS runoff: WRS runoff was assumed to comprise the majority of silt pond influent after a storm event. The operational runoff water quality data were selected from the MPIII project (Golder 2011a) for application in the current model (Table 1). It is assumed that when WRSs are rehabilitated for closure, run-off water quality will be similar to that from undisturbed areas of the catchment (Table 1).

- WRS seepage:
  - For operational periods (Stage 1 and Stage 2) the 95th percentile value for each water quality parameter from the first five years of recorded seepage from the Clydesdale WRS has been used (Table 2). Where data were missing, data from monitoring of Northern Gully silt pond as described below was substituted.
  - For closure and post closure (Stage 3), the 95th percentile value for each water quality parameter from the Northern Gully silt pond monitored between 2010 and 2015 was used (Table 2). Northern Gully WRS is the longest standing WRS at the Macraes Gold Project (MGP) site and is considered the best available estimate for long term WRS seepage quality.
- Pit water quality: A fixed water quality for pit sump water was assumed based on the 95th percentile values of pit water quality data from samples obtained from Frasers Pit and Golden Bar Pit during operational mining and closure periods, respectively. Frasers Pit data were analysed over the operational mining period between 1998 and 2008 and used to represent operational mining pit water quality (Table 3). Golden Bar pit water quality data were analysed between 2010 and 2015 and used to represent closure pit water quality (Table 3).

2.3 Model Software

Two software packages were used for the modelling: Microsoft Excel® and PHREEQC Version 3 (Parkhurst & Appelo, 2013). Excel was used to construct the model input code for eventual mixing and geochemical equilibration in PHREEQC, which provides the estimated water quality. The PHREEQC code was developed by the U.S. Geological Survey (USGS) and is widely accepted by the regulatory and scientific community for the computation of aqueous chemistry.

2.4 Geochemical Controls

2.4.1 Thermodynamic equilibration

Geochemical controls were imposed on the various mine surface waters. The water was brought to thermodynamic equilibrium with the aqueous species, mineral phases, mineral surfaces and atmospheric gases in the model using the geochemical modelling code PHREEQC. For this modelling effort, all reactions were assumed to be at equilibrium and reaction kinetics were not considered. The model relied on solubility data provided by the extended minteq.v4.dat database, a database derived from MINTEQA2 version 4 (U.S. Environmental Protection Agency, 1998).

The primary geochemical processes that can potentially modify mine water chemistry, including mineral precipitation, sorption and redox transformations are predominantly controlled by the surface water pH and pe, which are in turn strongly influenced by equilibrium with atmospheric gases. The surface waters were assumed to be in equilibrium with atmospheric CO_2 at all times, which exerted a primary pH control. Redox effects may exert a strong control on the mine water chemistry, given that the precipitation of iron and the presence of iron oxide surfaces for arsenic adsorption depends on maintaining an oxidizing environment. Therefore, the surface waters were buffered with atmospheric oxygen to maintain a pe value of 4.0, which is typical for oxygenated surface water in the natural environment, assumed for the surface waterways at the Project site. The temperature of all water balance components used for mixing was set at 10˚C, the median annual temperature in Tipperary Creek at Rock Weir.

2.4.2 Mineral precipitation

Mineral precipitation was allowed in the model for phases reaching supersaturation. The potential for mineral precipitation was assessed using the saturation index (SI). The SI is the ratio of the ion activity product (IAP) of a mineral and its solubility product (Ksp). An SI greater than zero indicates that the water is supersaturated with respect to a particular mineral phase; precipitation of that phase may occur if sufficient time is available. Since the precipitation rates of many minerals are exceedingly slow, the list of minerals potentially precipitating was chosen based on those commonly observed in mining environments at surface conditions under operational or accepted post-closure timeframes (Nordstrom & Alpers 1999, Eary 1990), phases that include the metals, metalloids and ions for which input data are available, and based on Golder's experience with similar deposits. The list of equilibrium mineral phases are presented in Table 4.

2.4.3 Sorption

Surface reactions (sorption) are a well-established natural attenuation mechanism for dissolved metals and other solutes at surface conditions (Dzombak & Morel, 1990). Surface reactions describe the electrostatic attraction of ions in solution onto charged surfaces. Many mineral phases have active surfaces that can sorb or exchange cations and anions, including organic matter, clays, hydroxides and oxides. The hydroxide ferrihydrite (Table 4) is a common amorphous precipitate that can significantly attenuate metals and other constituents in solution. Sorption was accounted for in the model by allowing the formation of ferrihydrite mineral surfaces. Ferrihydrite surface properties (e.g., surface area, site density, types of sites) were set according to Dzombak and Morel (1990) and the amount of ferrihydrite available for attenuation was based on the mass of ferrihydrite precipitated in a given solution, rather than on iron oxides that exist in the pit wall or on WRS materials.

3.0 GEOCHEMICAL MODEL RESULTS

3.1 Assessment of Mineral Saturation

Saturation indices are provided in Table 5 for the mineral phases that occur near-saturation or are super-saturated in the mine waters. The model results indicate ferrihydrite is super-saturated and may precipitate from all of the eight water types assessed, given sufficient iron and suitable reaction kinetics. The WRS seepage and pit lake water is also near-saturation with respect to the carbonate minerals calcite, dolomite, and magnesite and the hydrous sulfate minerals potassium and sodium jarosite (K-jarosite and Na-Jarosite). Based on observations from similar mine sites, calcite and dolomite could precipitate from the alkaline water but jarosite would typically only occur in an acidic environment, while magnesite is also typically formed under lower pH conditions (i.e., pH <6). Sulfate concentrations are elevated in WRS seepage, but are likely to remain conservative due to the lack of mineral phases that may exert control over sulfate given the seepage composition (e.g., model results showed gypsum remained under-saturated in all water types).

3.2 Equilibration of Model Water Quality

The modelled concentrations of major ions and metals in the eight different water types are presented in Table 5 and show the effects of atmospheric equilibration, precipitation of saturated mineral phases, and surface sorption in oxygenated surface water. The mass of ferrihydrite that precipitated in the model was considered as a surface for metals adsorption.

Compared to the input water quality, the equilibrated solutions showed the following changes in arsenic and iron concentrations:

- Arsenic: Concentrations were either similar or substantially lower due to surface sorption on ferrihydrite:
  - Unimpacted runoff: The low concentration of 0.002 g/m^3 declined to 0.0001 g/m^3.
  - WRS seepage: Concentrations declined by orders of magnitude to 0.0001 g/m^3 (Stage 1 and 2) and 0.00004 g/m^3 (Stage 3).
  - Pit water: No substantial reduction; water quality data used to represent the pit water may already be in equilibrium. Concentrations were to 0.49 g/m^3 (Stage 1 and 2) and 0.28 g/m^3 (Stage 3).
- Iron: Concentrations declined by up to an order of magnitude in all water types due to the precipitation of ferrihydrite.
  - Iron in model input data ranges in concentrations from 0.13 g/m^3 to 2.2 g/m^3.
  - Iron in equilibrated solutions: <0.0002 g/m^3; essentially all oxidized.

Ferrihydrite could potentially precipitate from all water types and produce between 0.4 g/m^3 and 6.7 g/m^3 of particulate material. Surface runoff is expected to produce the least amount of ferrihydrite and the WRS seepage has greatest potential to precipitate ferrihydrite, which is consistent with site observations of iron precipitates developing down-gradient of where seepage emerges from existing WRSs.

Model results also suggest calcite or dolomite could precipitate from each of the waters from disturbed areas. This has been observed in WRS seepage discharging to Murphys Creek downstream from the Frasers West WRS.

3.3 Mixing

A mixing model was developed to assess the potential arsenic and iron concentrations in post closure (Stage 3) surface waterways. The mixing was conducted on a conservative basis, assuming mid-summer conditions (dry season) when there will be no run-off from unimpacted areas, approximately 240 m^3/day of overflow occurring from the pit lakes, and 200 m^3/day of seepage emerging from the WRS. At other times of the year, when rainfall events occur more frequently, run-off from unimpacted areas or reclaimed WRS surfaces would dilute the mine water discharges. A model-predicted ferrihydrite mass of 6.7 g/m^3, which represented precipitation from WRS seepage, was included in the model for surface sorption.

The composition of the mixed solution is presented in Table 6 in comparison to the proposed water quality compliance criteria for MB02. Iron and arsenic remain less than the respective compliance limits and sulfate shows an exceedance.

4.0 CONCLUSIONS

Geochemical modelling suggests iron present in the alkaline and oxygenated surface water types included in this assessment will most likely oxidize and precipitate as ferrihydrite (or a similar amorphous iron oxide or oxyhydroxide species). Precipitation of ferrihydrite will reduce the concentration of iron in solution by up to an order of magnitude compared to the input concentrations used for the surface water model (Golder 2016). The presence of ferrihydrite in the WRS, silt ponds, flooded pits and surface waterways will facilitate arsenic adsorption, thus lowering the concentration of arsenic substantially in most cases.

The results of the post-closure scenario mixing model developed with WRS seepage and pit overflow water showed that in dry conditions when no dilution is provided by run-off from undisturbed areas, arsenic is projected to occur in the discharge water at a concentrations of approximately 0.03 g/m^3, while iron is projected to precipitate to essentially a non-detectable concentration (0.0002 g/m^3). This estimate for arsenic is regarded as a worst-case condition because during wetter periods the Mare Burn will contain significant run-off flows from unimpacted areas. These projected concentrations are lower than the proposed compliance criteria for arsenic and iron at MB02. Based on the modelling documented in this letter, Golder expects that the water quality in Mare Burn at MB02 will remain within the proposed compliance criteria for dissolved iron and arsenic following closure of the Coronation North Project.

It should be noted that the results of this assessment were prepared under the assumption that the surface waterways will remain oxidized and maintain the stability of iron precipitates. If reductive conditions develop for any reason, then it is possible that ferrihydrite dissolution could occur, thus releasing sorbed arsenic and remobilizing both arsenic and iron into the receiving environment waterways.

5.0 LIMITATIONS

Your attention is drawn to the document, “Report Limitations”, as attached to this letter. The statements presented in that document are intended to advise you of what your realistic expectations of this report should be, and to present you with recommendations on how to minimise the risks to which this report relates which are associated with this project. The document is not intended to exclude or otherwise limit the obligations necessarily imposed by law on Golder Associates (NZ) Limited, but rather to ensure that all parties who may rely on this report are aware of the responsibilities each assumes in so doing.

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Attachments: Tables 1 – 6.
Reference list
Statement of Limitations

TABLES

Table 1: Undisturbed catchment and WRS run-off water quality.

Parameter (1,2)	Undisturbed (all stages)	WRS (Stage 1 and 2)	WRS (Stage 3)
Arsenic	0.0019	0.1	0.0019
Sulfate	6.4	286	6.4
Cyanide $_{WAD}$	0.0005	0.001	0.0005
Copper	0.0009	0.002	0.0009
Iron	0.24	0.135	0.24
Lead	0.0002	0.001	0.0002
Sodium	9.3	28	9.3
Potassium	1.7	4	1.7
Calcium	11.3	63	11.3
Magnesium	2.8	34	2.8
Zinc	0.0009	0.005	0.0009
Chloride	5.3	13	5.3

Notes: 1) All data in units of g/m^3.
2) Water quality data sources are described in Golder (2016).

Table 2: Coronation North WRS seepage water quality.

Parameter (1,2)	Operational (Stage 1 and 2)	Closure and post closure (Stage 3)
Arsenic	0.03	0.01
Sulfate	611	2,900
Cyanide $_{WAD}$	0.002	0.002
Copper	0.005	0.005
Iron	1.34	2.2
Lead	0.001	0.001
Sodium	26.4	68.2
Potassium	5.9	14.3
Calcium	125	514
Magnesium	101.2	466
Zinc	0.043	0.043
Chloride	14.4	24.8

Notes: 1) All values presented in units of g/m^3.
2) Water quality data sources are described in Golder (2016).

Table 3: Pit water quality.

Parameter [1,2]	Operational (Stage 1 and 2)	Closure (Stage 3)
Arsenic	0.54	0.29
Sulfate	301	302
Cyanide $_{WAD}$	0.010	0.001
Copper	0.002	0.001
Iron	0.85	0.13
Lead	0.001	0.0002
Sodium	54.7	14.6
Potassium	15.8	4.8
Calcium	89.7	82.3
Magnesium	51.0	76.1
Zinc	0.04	0.0009
Chloride	18.9	7.0

Note: 1) All values presented in units of g/m^3.
2) Water quality data sources are described in Golder (2016).

Table 4: Mineral phases considered in the PHREEQC model.

Mineral	Common Formula	Group
Calcite	$CaCO_3$	Carbonate
Cerrusite	$PbCO_3$	Carbonate
Dolomite	$CaMg(CO_3)_2$	Carbonate
Magnesite	$MgCO_3$	Carbonate
Otavite	$CdCO_3$	Carbonate
Siderite	$FeCO_3$	Carbonate
Smithsonite	$ZnCO_3$	Carbonate
Azurite	$Cu_3(OH)_2(CO3)_2$	Hydrous Carbonate
Malachite	$Cu_2(OH)_2CO_3$	Hydrous Carbonate
Brochantite	$Cu_4(OH)_6SO_4$	Hydrous Sulfate
Chalcanthite	$CuSO_4{:}5H_2O$	Hydrous Sulfate
Goslarite	$ZnSO_4 \cdot 7H_2O$	Hydrous Sulfate
Gypsum	$CaSO_4{:}2H_2O$	Hydrous Sulfate
Jarosite-H	$(H_3O)Fe_3(SO4)_2(OH)_6$	Hydrous Sulfate
Jarosite-K	$KFe_3(SO_4)_2(OH)_6$	Hydrous Sulfate
Jarosite-Na	$NaFe_3(SO_4)_2(OH)_6$	Hydrous Sulfate
Melanterite	$FeSO_4 \cdot 7H2O$	Hydrous Sulfate
Copper Hydroxide	$Cu(OH)_2$	Hydroxide
Ferrihydrite	$Fe(OH)_3$	Hydroxide
Zinc Hydroxide	$Zn(OH)_2(G)$	Hydroxide
Anglesite	$PbSO_4$	Sulfate

Table 5: Mineral saturation indices and equilibrated water quality.

	Runoff			WRS Seepage		Pit Water	
Parameter	**Undisturbed (all stages)**	**WRS (Stage 1 and 2)**	**WRS (Stage 3)**	**Operational (Stage 1 and 2)**	**Closure and post closure (Stage 3)**	**Operational (Stage 1 and 2)**	**Closure (Stage 3)**
Mineral Saturation Indices[1]							
Calcite	-0.9	**0.7**	-0.9	**0.9**	**1.4**	**0.9**	**1.0**
Dolomite	-2.3	**1.3**	-2.3	**1.9**	**3.0**	**1.7**	**2.2**
Ferrihydrite	**2.9**	**3.1**	**2.9**	**4.1**	**4.2**	**3.8**	**3.1**
K-Jarosite	-1.9	**0.2**	-1.9	**3.7**	**5.7**	**3.3**	**0.03**
Magnesite	-2.0	-0.1	-2.0	**0.3**	**0.9**	**0.1**	**0.5**
Na-Jarosite	-4.3	-1.8	-4.3	**1.2**	**3.3**	**0.6**	-2.3
Equilibrated Water Quality[2]							
pH	8.42	8.46	8.42	8.12	7.90	8.41	8.34
Alkalinity	87	100	87	48	33	90	77
Arsenic	0.0001	0.09	0.0001	0.0001	0.00004	0.49	0.28
Sulfate	6.4	286	6.4	611	2,899	301	302
Copper	0.0005	0.0015	0.0005	0.0025	0.0023	0.002	0.0009
Iron	0.0001	0.0001	0.0001	0.0001	0.0002	0.0001	0.0001
Lead	0.000001	0.00007	0.000001	0.00001	0.000003	0.00002	0.000005
Sodium[3]	27.1	144	27.1	65.8	197	131	91.7
Potassium	1.7	4.0	1.7	5.9	14.3	15.8	4.8
Calcium	11	18	11	90	402	23	18
Magnesium	2.8	12.8	2.8	80	398	16.3	36.9
Zinc	0.0004	0.004	0.0004	0.030	0.034	0.022	0.0008
Chloride	5.3	13.0	5.3	14.4	24.8	18.9	7.0

Notes:
1) Positive saturation indices are shown in bold and indicate supersaturated mineral phases.
2) All data in units of g/m^3.
3) Sodium was added in modeling to balance charges; concentrations appear higher than should be expected.

Table 6: Combined discharge water quality.

Parameter [1]	Combined discharge closure (Stage 3)	Compliance criteria	Exceedance
pH	8.01	6.0 – 9.5	NO
Alkalinity	40	-	N/A
Arsenic	0.031	0.15	NO
Sulfate	1,484	1,000	YES
Copper	0.0017	0.009	NO
Iron	0.00015	1.0	NO
Lead	0.000004	0.0025	NO
Sodium [2]	140	-	N/A
Potassium	9.1	-	N/A
Calcium	189	-	N/A
Magnesium	200	-	N/A
Zinc	0.017	0.12	NO
Chloride	15.1	-	N/A

Note: 1) All values presented in units of g/m^3.
2) Sodium was added in modelling to balance charges; concentrations appear higher than expected.

REFERENCES

Craw D, Chappell D, Reay A, Walls D 2000. Mobilisation and attenuation of arsenic around gold mines, east Otago, New Zealand. New Zealand Journal of Geology and Geophysics 43, 373-383.

Dzombak D A, Morel F M M 1990. Surface Complexation Modeling: Hydrous Ferric Oxide. Wiley-Interscience, New York, 393 pp.

Eary, L E 1999. Geochemical and equilibrium trends in mine pit lakes. Applied Geochemistry 14, 963-987.

Golder 2011a. Macraes Phase III Project. Groundwater contaminant transport assessment - Deepdell Creek, North Branch Waikouaiti River, and Murphys Creek catchments. Report prepared for Oceana Gold (New Zealand) Ltd by Golder Associates (NZ) Limited. Report number 0978110562-006.

Golder 2011b. Macraes Phase III Project – site wide surface water model. Report prepared for Oceana Gold (New Zealand) Ltd by Golder Associates (NZ) Limited. Report number 0978110562-008.

Golder 2016. Coronation North Project – Surface Water Modeling. Report prepared for Oceana Gold (New Zealand) Ltd by Golder Associates (NZ) Limited. Report number 1545831-003.

Nordstrom D K, Alpers C N 1999. Geochemistry of acid mine waters. In Reviews in Economic Geology, vol. 6A, The Environmental Geochemistry of Mineral Deposits. Part A. Processes, Methods and Health Issues. Plumlee G S, Logsdon M J. eds. Soc. Econ. Geol., Littleton, CO. 133-160.

Parkhurst D L, Appelo C A J 2013. Description of input and examples for PHREEQC version 3 - A computer program for speciation, batch-reaction, one-dimensional transport, and inverse geochemical calculations. U.S. Geological Survey Techniques and Methods, book 6, chap. A43, 497 pp. Available only at http://pubs.usgs.gov/tm/06/a43/.

Palandri J L, Kharaka Y K 2004. A compilation of rate parameters of water-mineral interaction kinetics for application to geochemical modeling. USGS Open File Report 2004-1068, 64 pp.

U.S. Environmental Protection Agency 1998. MINTEQA2/PRODEFA2, A geochemical assessment model for environmental systems - User manual supplement for version 4.0. Athens, Georgia, National Exposure Research Laboratory, Ecosystems Research Division, 76 pp. Revised September 1999.

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