4 July 2016

Otago Regional Council
Private Bag 1954
DUNEDIN

For: Charles Horrell

Dear Charles

RE: s92 requests for additional information from Tonkin & Taylor – groundwater and engineering/hazard matters

Thank you for providing us with Tonkin & Taylor's letter dated 13 June 2016 with requests for additional information. We respond below with the questions in bold and answers following.

Appendix 5: Golder Associates; Coronation North Project Groundwater Assessment

We attach correspondence from Golder Associate which answers the questions in (a) to (e).

Appendix 14: Engineering Geology Ltd.; Oceana Gold (New Zealand) Ltd., Macraes Gold Project Coronation North Project, Erosion and Sediment Control

We attach correspondence from EGL which answers the questions in (f) to (h).

(i) Please advise details of proposed water quality monitoring within the catchments associated with the application including location, frequency and parameters being measured.

A draft Compliance and Monitoring Schedule for the Coronation North Waste Rock Stack is attached. This will be appended to the relevant consents for the waste rock stack. The schedule includes water quality compliance criteria, monitoring point location details and plans, parameters and frequency of monitoring.

(j) Please provide details of proposed criteria to assess monitoring results against (along with response protocols) including threshold criteria that would trigger a requirement for a comprehensive review of water quality to determine whether additional mitigation measures should be adopted to ensure appropriate discharges (latter in accordance with approach utilised by existing consents).

A draft Compliance and Monitoring Schedule for the Coronation North Waste Rock Stack is attached. The schedule includes water quality compliance criteria. These criteria are consistent with criteria applied elsewhere on the minesite.

OceanaGold are proposing the following consent condition relating to water quality which requires a Water Quality Management Plan (WQMP) to be prepared for the Coronation North Project. The WQMP will cover the timing and implementation of additional mitigation measures in relation to meeting water quality criteria and allows for an adaptive management approach. The use of a WQMP is consistent with existing consents for the Macraes Gold Project.

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Monitoring of waste rock stack toe seepage water quality and surface water quality at sites MB01 and CCMP01 will provide advance warning of any increasing levels before compliance criteria are reached at the compliance point at MB02. Water quality results approaching compliance criteria at these upstream surface water sites would trigger a comprehensive review of water quality and if necessary implementation of mitigation options.

Proposed Water Quality Management Plan consent condition

(a) Prior to the exercise of this consent, the consent holder shall submit to the Consent Authority, a Water Quality Management Plan for the Coronation North Waste Rock Stack. The purpose of the Water Quality Management Plan is to set out the monitoring and methods which can be used to ensure that water quality associated with the Coronation North Waste Rock Stack meets the compliance standards set out in the Coronation North Waste Rock Stack Compliance and Monitoring Schedule (attached) both during mining operations and post-closure. The Water Quality Management Plan shall be in accordance with the conditions of this consent, and include (but not be limited to):

i) Details of surface water and groundwater quality monitoring within the Mare Burn catchment, including location and frequency and parameters bring measured;

ii) Identification of monitoring results that would trigger the requirement for a comprehensive review of water quality to determine whether additional mitigation measures should be adopted to ensure appropriate surface water and groundwater quality;

iii) A description of mitigation measures implemented or available during the mine operational period of the Coronation North Project;

iv) A description of mitigation measures implemented or available post mine closure of the Coronation North Project; and

v) A timeline detailing when it is anticipated that mitigation measures may be required and providing an indication of implementation timeframes.

(b) The Water Quality Management Plan for this consent may be combined with any Water Quality Management Plan required by any other consent held by the consent holder for mining operations at Macraes Flat.

(c) The consent holder shall exercise this consent in accordance with the Water Quality Management Plan.

(d) The consent holder shall review the Water Quality Management Plan annually and, if necessary, update it. Details of the review shall be included in the Project Overview and Annual Work and Rehabilitation Plan required by this permit and Discharge Permits RM16.XXX.03 and RM16.XXX.04. The Consent Authority shall be provided with any updates of the plan within 1 month of any update occurring.

Appendix 17: techNick; Mining Vibration Assessment, Coronation Project, Macraes New Zealand; April 2013 and 9 December 2015

(k) 4. Sensitive Areas. Please clarify where the respective distances to Longdale Station and Howard's residence are measured from. Our review of the document by Opus, Macraes Gold Project Coronation North Project; Landscape and Visual Assessment, Appendix 1 – Coronation Base Map, indicates that Longdale Station is located approximately 2.0km from the boundary of the Coronation North Pit, and Howard's residence is located approximately 1.8km from the boundary of the Coronation Pit Extension.

The distance to the Howard residence has been measured from the original Coronation Pit (a distance of 2.3 km). While this distance is shortened by 0.3 km with the development of the Coronation Pit Extension this was assessed as having no material impact on the vibration effects at the Howard residence. techNick concluded that the predicted vibration levels will remain well below applicable limits. Residences that are not OceanaGold owned *"will experience predicted vibration levels well below the acceptable 5mm/s vibration limit for 95% of blasts"*.

The reference to Longdale Station is no longer applicable as this residence is owned by OceanaGold.

(l) 5.1.d Vibration predictions for Coronation Project. Please clarify how the respective adopted site constant (Kg) and site exponent (B) of 1450 and -1.6 have been verified. If this has been done using monitoring data from similar works on site, please provide the relevant data presented in an appropriate plot. Alternatively, if the intention is to verify these factors using monitoring during the Coronation project, please provide details of the monitoring programme.

We note that the adopted site constant is higher than the "average field conditions" value provided in AS 2187.2 – 2006, however this relates to a 50% probability of exceedance, rather than the 5% probability of exceedance adopted for this project.

The basis is using the data from the AS 2187, and it has employed a slightly higher 'K' factor to allow for a tighter blasting pattern and a greater percentage level of probability and confidence. However the intention is to verify these factors using monitoring during the Coronation project. This is a simple process and involves setting up a very conservative blast (using low kg per delay) and / or locating the establishment blast at a place more distant from any site of concern and to monitor the actual vibration so as to be able to re-calibrate the predictive model more precisely.

(m) 5.1.e Airblast. Please clarify the value used for the site constant (Ka) and how this value and the site exponent (a) of -1.2, have been verified. If this has been done using monitoring data from similar works on site, please provide the relevant data presented in an appropriate plot. Alternatively, if the intention is to verify these factors using monitoring during the Coronation project, please provide details of the monitoring programme.

The basis is using the data from the AS 2187, and it has employed a slightly higher 'K' factor to allow for a tighter blasting pattern and a greater % level of probability and confidence. However the intention is to verify these factors using monitoring during the Coronation project. This is a simple process and involves setting up a very conservative blast (using low kg per delay) and / or locating the establishment blast at a place more distant from any site of concern and to monitor the actual airblast so as to be able to re-calibrate the predictive model more precisely.

In summary for 5.1.d and 5.1.e the K and B factors (1450 and -1.6 respectively) that were submitted are based of AS 2187.2, which is acceptable practice given there is no previous site data for these factors. 5.1.d notes that even though a slightly higher k factor was applied in the initial calculation OGL will still obtain blast data for Coronation and back calculated actual k factors. There are two processes that we can adopt;

1. Design a few blast with smaller than normal hole in the Coronation Pit blast and measure the vibration readings and/or
2. Design a few blasts away from the Coronation Pit (away from the sites of concern blast and measure the vibrations).

5.1.e refers to airblast over-pressure measurements, not vibrations, measurement of blast overpressure is undertaken at the same time as vibration measurements.

The precentages relate to the method of back calculating K factors the 50% probability of exceedance refers to averaging the blast readings whereas the 5% probability refers to calculation of a linear regression model which is the industry standard for the reporting of blast factors.

OceanaGold proposes to adopt the same conditions for monitoring airblast (and vibration) as apply to the Coronation Project under Section 9 of the land use consent (WDC Reference: 201.2013.360; DCC Reference: LUC-2013-225). The relevant conditions are:

9 MONITORING OF NOISE, AIRBLAST AND VIBRATION

9.1 Prior to exercise of this consent, the consent holder shall update the Noise, Airblast and Vibration Monitoring Plan. The plan shall include but not be limited to:

(a) Details of the monitoring locations, the frequency of monitoring and the method of measurement and assessment in accordance with Conditions 7.4, 7.5 8.1 and 8.2;

(b) Procedures for recording blasting method, strength of the blast and time of blast; and

(c) Procedures for addressing non-compliant results and notification of the Councils.

9.2 The consent holder shall exercise this consent in accordance with the Noise, Airblast and Vibration Monitoring Plan. The consent holder shall review the plan annually and if necessary update it. Confirmation of the review shall be included in the Project Overview and Annual Work and Rehabilitation Plan. The Councils shall be provided with any updates of the plan within one month of any update occurring.

9.3 The consent holder shall produce a report each year summarising the results of the Noise, Airblast and Vibration Monitoring. The report shall be included in the Project Overview and Annual Work and Rehabilitation Programme.

9.4 All measurements from the monitoring programmes shall be recorded and shall be made available to the Councils on request.

Noise, Airblast and Vibration Monitoring Plan is attached.

Appendix 18: Engineering Geology Ltd.; Macraes Gold Project, Coronation North Waste Rock Stack, Design Report, 29 April 2016

We refer to attached correspondence from EGL, which answers the questions in (n) to (q).

(r) Does this report cover the redesign of the Coronation WRS in order to avoid the south wall of the Coronation North Pit? Please provide some information regarding redesign of the Coronation WRS.

The Coronation WRS is not being built to the full extent of the original design, it is reduced in size. It has been redesigned so that it will not interfere with the south wall of the proposed Coronation North Pit. The design allows sufficient standoff distance between the toe of the WRS and the Pit. It is considered that there will not be any resulting stability issues.

Appendix 19: Pells Sullivan Meynick; Impact of the Coronation and Coronation North Waste Rock Stack on Open Pits; 12 April 2016

(s) Please provide a summary of the assessment that forms the basis for the recommended 100 m offset from pit crest to WRS toe. The very long term retreat of the pit crest is often a controlling factor in such an assessment. This may be covered in a previous study carried out for the site?

The basis for leaving a 100m offset from the pit crest to the WRS toe is to leave room for the possibility of further pit expansion. As the resource is still being defined, this buffer zone leaves the possibility of an extension to the pit and the long term retreat of the pit crest, should economic factors change, without the need to rehandle the waste material which has already been deposited within the stack.

Appendix 20: Pells Sullivan Meynick Coronation North Pit – Slope Design Angles, 5 April 2016

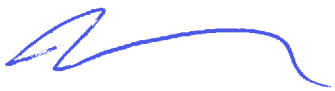
(t) Does this report also cover the proposed expansion of the Coronation Pit? Please provide some information to confirm the pit wall design for the Coronation Pit.

The proposed expansion of the Coronation Pit has been assessed by Pells Sullivan Meynick in the Geotechnical Review of Macraes LOM Design 2015 pages 2 and 3, Figure 7 and Appendix B, attached. The

risk assessment of current pit wall design concludes that any risk can be managed and approves the pit wall design.

We trust that the above responses answer the questions from Tonkin & Taylor and that the Council can now publically notify the applications.

Yours Sincerely
OCEANA GOLD (NEW ZEALAND) LIMITED



Jackie St John / John Bywater
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