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Debbie Clarke

Coronation North Project Evidence

- ▶ I am the Senior Environmental Advisor for Oceana Gold (New Zealand) Limited (**OceanaGold**) at the Macraes Gold Project (the **MGP**).
- ▶ In my role I am responsible for site environmental related matters including monitoring, rehabilitation, heritage, ecology, reporting, management plans and ensuring OceanaGold continues to maintain a high standard of environmental excellence and fully complies with all applicable statutory requirements, in order to leave a positive legacy at the end of mine life.

- ▶ The CIA prepared by KTKO identified an interest in receiving water quality data and OceanaGold is happy to accommodate that request once it is understood what data is sought. ORC have included a consent condition requirement to submit the Quarterly Consolidated Monitoring Reports to KTKO, however OceanaGold suggests this requirement may be better incorporated into an updated MOU.
- ▶ OceanaGold is keen to work in partnership with iwi groups to create or enhance taonga species habitat. ORC consents include a condition relating to developing, submitting and implementing a koura habitat mitigation plan. I comment on this condition later.
- ▶ The 21 potential Iwi sites of interest identified by Brian Allingham have been test pitted with no Iwi related evidence identified.
- ▶ It is unlikely the project will impact on any site of significance. However, it is possible that an unrecorded or unknown site may exist within the area and an accidental discovery procedure will be utilised.

- ▶ Agreement has been reached between HNZ and OceanaGold for off-site mitigation to achieve long term preservation of heritage sites of comparable significance to those affected by the project.
- ▶ OceanaGold supports the streamlining of the accidental discovery protocol as outlined in the HNZ letter dated 28/10/16. In addition OceanaGold has requested that all protocols and references to HNZ are updated in the ORC consents.
- ▶ The design of the Coronation North WRS has been modified to avoid several archaeological sites.
- ▶ The amendments noted in the HNZ letter dated 28/10/16 relating to archaeological surveys of the project area (WDC/DCC land use consent) are acceptable.
- ▶ OceanaGold is in the process of applying for archaeological authorities for the project area.

- ▶ OceanaGold has worked with Department of Conservation and KTKO to develop an ecology mitigation package that includes the following:
- ▶ An Ecological Management Plan for Coronation North;
- ▶ Protection by conservation covenant of an approximately 289ha of land referred to as “Island Block” and an approximately 83ha of land referred to as Highlay Hill;
- ▶ Material from fifteen rare and threatened plant species located in the Coronation North Project area will be collected and used to propagate twenty plants of each species which will be planted at suitable locations determined in consultation with DoC. Plants will also be ‘rescued’ and replanted;
- ▶ A sum of \$30,000 will be made available for an appropriately qualified student to research matters relating to lizard habitat creation and the effects of mining on lizard populations;

- ▶ Ten lizard habitat areas (approximately 10m by 10m or equivalent and with margins planted on fruit bearing plants and tussocks) will be created either surrounding the Coronation North Project area or in and around the margins of the Coronation North Waste Rock Stack. Lizard colonisation of the rock piles will be monitored for a period of five years;
- ▶ In relation to the Coal Creek resource consents provision of \$40,000 for trout exclusion devices and their associated maintenance;
- ▶ Staging of the Coronation North WRS to defer or possibly avoid disturbance in the RAP area; and
- ▶ Provision of an Ecological Enhancement Fund of up to \$200,000.

- ▶ Coronation and Coronation North Pit will be left to fill as pit lakes. Filling will occur naturally over a long period. There will be no re-contouring of pit benches and no planting of lake margins due to the considerable time it takes for the lakes to fill and safety considerations. It should be noted that the pit lakes will not be suitable for recreational purposes.
- ▶ OceanaGold does not support imposition of timeframes on rehabilitation due to the need for mining operation flexibility and due to influences beyond our control – e.g. gold price, exchange rates, equipment failures etc. There are financial and bonding implications that incentivise the completion of rehabilitation along with compliance, corporate rehabilitation compliance standards and public perceptions.
- ▶ OceanaGold accepts the rehabilitation consent conditions proposed in the WDC/DCC Recommending Report.

- ▶ OceanaGold prepared a draft set of ORC conditions that were based on those approved for the Coronation Project. The rationale behind that approach was to ensure a consistent environmental management regime across the entire mine site, including Coronation North, and to apply mitigation measures that already had been approved as promoting sustainable management of resources.
- ▶ OceanaGold has met with ORC to discuss the conditions and the most recent versions incorporating comments from both parties have been presented to the panel. Agreement has been reached on the majority of conditions and the following slides outline the outstanding conditions.
- ▶ The following consents are acceptable as proposed – Coronation Air Discharge Consent RM16.138.19, Coronation North Pit Lake Consents RM16.138.06, RM16.138.12, RM16.138.14 and RM16.138.17.

- ▶ The construction of a freshwater dam in Coal Creek to supplement low flow periods in the Mare Burn is currently the most appropriate mitigation option to manage sulphate concentrations in receiving surface water bodies.
- ▶ OceanaGold acknowledges that there may be other mitigation options that could be used instead of or in conjunction with the Coal Creek Freshwater Dam that have not yet been fully investigated. Therefore, OceanaGold will prepare a "Best Practicable Options" report to address water quality mitigation options that may be utilised together with the Coal Creek Dam or instead of the dam.
- ▶ It is proposed to add a condition to the Land Use Consent for the Coal Creek Dam worded as follows: *"Prior to exercise of this consent the consent holder shall provide the consent authority with a Best Practicable Options (BPO) Report prepared by suitably qualified experts which identifies BPO for achieving compliance with water quality parameters set at MB02 and identifies whether, and the extent to which, construction of the Coal Creek Dam is required."*

- ▶ Compliance and Monitoring Schedule attached to Coronation North Waste Rock Stack consents – RM16.138.04, RM16.138.05 and RM16.138.09.
- ▶ Surface water quality compliance points are agreed upon and include a new compliance point, MB02, situated downstream of all activities and potential contaminant discharges and a new site called CCMP01 on Coal Creek immediately upstream of the confluence with Mare Burn.
- ▶ Ground water seepage collection points will be located in the Mare Burn catchment at key points draining from the Coronation North WRS. Flow will be monitored at the main seepage discharge point.
- ▶ The list of compliance criteria parameters includes eight that are additional to those in the existing Coronation Schedule and the compliance standards are in general more restrictive than those currently in place for the Coronation Project. Of the eight 'new' parameters, adding monitoring for turbidity, suspended solids, nitrate and ammonia would be acceptable. However OceanaGold does not accept the proposed compliance criteria and requests criteria consistent with those already in place for the rest of the mine.

- ▶ OceanaGold has volunteered to extend the aquatic monitoring requirements to include a visual estimation of habitat length and percentage of stream bed covered by sediment.

- ▶ Condition 5 of Coronation North Pit consents – RM16.138.11 and RM16.138.13.
- ▶ Metering of water takes from the Coronation and Coronation North Pits (for pit dewatering & dust suppression) is acceptable and metering has been undertaken as part of the existing Coronation Pit development.
- ▶ The proposed water metering conditions differ slightly from the existing Coronation consents in that they require telemetry. While water metering telemetry conditions are well established for farm irrigation takes the requirement for telemetry within the pits may be problematic as the pump sites are regularly moved as mining progresses and telecommunications from within the pit may be difficult. Modifications may be required every time the pumps are relocated.
- ▶ It would be preferable to remove the requirement for telemetry and instead require the data to be forwarded to the Consent authority by 31 July each year (like conditions on FRUG consents) or on request.

- ▶ Condition of Coal Creek Dam consents – RM16.138.07 and RM16.138.16, Coronation North Waste Rock Stack consents – RM16.138.03, RM16.138.04 and RM16.138.20 and Coronation North Pit consent RM16.138.15.
- ▶ Requirement for an Erosion and Sediment Control Plan – wording is different from existing Coronation consents, requires certification from a “chartered professional engineer” that the proposed erosion and sediment control measures comply with the conditions of the consent and requires the plan to be submitted for Council acceptance at least three weeks prior to commencement of soil disturbance.
- ▶ OceanaGold requests that this condition should either be consistent with the existing Coronation consent condition or modified to make reference to the ‘Coronation North Project Erosion and Sediment Control report dated 29 April 2016’ prepared by Engineering Geology Limited and submitted with the application. Reference to the EGL report should negate the requirement for certification by a chartered professional engineer.
- ▶ The risk of the current clause is that some of the site specific design criteria may not meet the ECAN guidelines when we know from experience they are suitable for the Macraes site.

Koura and Galaxias Translocation Condition

- ▶ Condition of Coal Creek Dam consent – RM16.138.02 and Coronation North Waste Rock Stack consents – RM16.138.01, RM16.138.09 and RM16.138.20.
 - » Prior to the first exercise of this consent the consent holder shall, in consultation with the Consent Authority and Kai Tahu ki Otago Limited, develop, submit and implement a Mitigation Plan that achieves the translocation of freshwater crayfish (Koura) and Taieri flathead galaxias (*Galaxias depressiceps*) from areas affected as a result of Coronation North Project to below the confluence of Coal Creek.
- ▶ Translocation of aquatic fauna brings its own challenges, however if required OceanaGold will accept this condition.
- ▶ The wording of the condition requires OceanaGold to develop, submit and implement a Mitigation Plan in consultation with the consent authority and KTKO prior to first exercise of consent.
- ▶ The requirement to implement the plan prior to first exercise of consent is problematic as it takes time to identify populations and suitable translocation sites, permits need to be sought (can take up to 6 months) and translocation may be preferable at certain times of the year (seasons, climatic conditions etc).
- ▶ OceanaGold requests the requirement to implement is removed from the condition and an additional condition is added that states “The consent holder shall implement the programme of activities specified in the Mitigation Plan developed under Condition X”.

Koura Habitat Mitigation Plan Condition

- ▶ Condition of Coronation North Waste Rock Stack consents – RM16.138.01 & RM16.138.09.
 - » Before the first exercise of this consent, the consent holder shall develop and implement a Koura habitat mitigation plan in consultation with the Department of Conservation and the Consent Authority.
- ▶ The condition relates to habitat protection and enhancement of a taonga species and could be included as a requirement of an updated MOU with Iwi rather than a condition.
- ▶ The wording requires OceanaGold to develop and implement a Mitigation Plan in consultation with DOC and the Council prior to first exercise of consent. The requirement to implement the plan prior to first exercise of consent is problematic.
- ▶ We request the requirement to “implement” is removed from the condition and instead added in a separate condition “The consent holder shall implement the programme of activities specified in the Koura Habitat Mitigation Plan developed under Condition X”.
- ▶ The translocation & koura habitat mitigation plan conditions could be consolidated into one condition.

- ▶ Condition of Coronation North Waste Rock Stack consent – RM16.138.05
 - » Within the first 5 years of the exercise of this consent the consent holder shall engage suitably qualified individual to undertake chronic and acute toxicity testing trials to determine the appropriate toxicity concentration protection thresholds for Taieri flathead galaxias (galaxias). The trial design and execution shall be undertaken by a suitably qualified individual and in consultation with the Consent Authority. Trials shall include, but not limited to:
 - » i) The galaxias susceptibility to varying concentrations of sulfate, arsenic and nitrogen; and
 - » ii) Trials on larvae, juvenile and adult galaxias
 - » The consent holder shall submit results and a report of the toxicity trials including appropriate concentration protection thresholds for chronic and acute toxicity to the Consent Authority within 1 month of the trials being finalized and reported on
- ▶ The requirement to undertake toxicity testing should be restricted to sulfate, there is no indication arsenic and nitrogen are parameters of concern for galaxias.
- ▶ The lifestages of galaxias to be tested should be determined in the trial design process and not be set as a consent condition.

- ▶ Condition of Coal Creek Dam consents – RM16.138.02 and RM16.138.18
 - » (a) Prior to the exercise of this consent, the consent holder shall establish a fund of NZ\$30,000 for provision of trout exclusion devices to protect native fish habitat, particularly Taieri flathead galaxias (*Galaxias depressiceps*). Within 6 months the consent holder shall commence consultation with the Department of Conservation to determine suitable locations for the trout exclusion devices, with some preference to be given to locations within the Mare Burn catchment.
 - » (b) The consent holder shall provide the Consent Authority with details of the determined locations of the trout exclusion devices.
 - » (c) The trout exclusion devices shall be designed or supplied by a suitably qualified person.
 - » (d) The trout exclusion devices shall be installed within 24 months of the locations being determined.
 - » (e) The trout exclusion devices shall be maintained in good working order for the duration of this consent. Records shall be kept of all inspections and maintenance and those records shall be provided to the Consent Authority upon request
- ▶ The proposed condition needs to be revised and confirmed with Department of Conservation.

- ▶ Condition of Coronation North Waste Rock Stack consent – RM16.138.01
 - » Underdrains shall be constructed in the natural channels that form the unnamed tributaries of Maori Hen Creek, Trimbells Gully, Mare Burn and Coal Creek beneath the footprint of the Coronation North Waste Rock Stack by placement of large rocks covered by appropriately graded material to provide sufficient filtering to prevent blockage of the drains by finer material
- ▶ The requirement to install underdrains beneath the footprint of the WRS should be made more flexible to take into account the outcome of the Best Practicable Options Report.
- ▶ Recommend adding the words “unless it is identified in the “Best Practicable Options Report” required by Condition X of Consent RM16.138.XX that underdrains should be constructed differently or not be constructed at all”, or words to similar effect.

- ▶ Condition of Coal Creek Dam consents – RM16.138.02 and RM16.138.08
 - » “A discharge flow of at least 5 litres per second shall be maintained in Coal Creek immediately downstream of the dam embankment site at all times.”
- ▶ We question why the requirement to maintain a discharge flow downstream of the embankment is included on the land use consent to construct the dam (RM16.138.02) and consider that this condition would be better moved to consent RM16.138.18 to dam water for the purpose of operating the Coal Creek Dam.
- ▶ The requirement to maintain a discharge flow of at least 5l/s in Coal Creek downstream of the dam embankment should be expanded to include the words “unless the consent holder obtains written consent from the Consent Authority to a lower discharge flow”. This would allow flexibility should it be determined as part of the “Best Practicable Options Report” that a lesser discharge will ensure compliance with water quality parameters.

- ▶ I request that the resource consents required for the Coronation North project be granted to OceanaGold, subject to appropriate conditions of consent that take into account OceanaGold's comments.



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