

Memorandum

TO: Kirstyn Lindsay, Senior Planner, Dunedin City Council;
Andrew Purves, Consultant Planner.

CC: Peter Kloosterman, Policy Planner, Waitaki District Council;
Chris Shaw, Otago Regional Council.

FROM: Barry Knox, Landscape Architect, Dunedin City Council.

DATE: 28th August 2016.

SUBJECT: **LUC-2016-230 482 LONGDALE ROAD. PROPOSED OCEANA
GOLD CORONATION NORTH MINE. COMMENT FROM
LANDSCAPE ARCHITECT.**

Introduction

This memorandum is in response to a request for comment on the landscape related effects of an application to undertake gold mining activity north of the existing Coronation mine. The proposed activity is based largely within Dunedin City District, and will be an extension of gold mining operations at the recently consented Coronation mine and the larger Macraes mine based further south in Waitaki District.

The proposed new site is approximately 7 km north-west of the established Macraes mine operation, 33 km inland from Palmerston, and occupying an elevated western "backblock" section of the Taieri Ridge. The activity – essentially the development of a further open cast pit and establishment of an associated nearby waste rock stack consisting of material removed from the pit, along with associated activities detailed below - would be positioned north of the present Coronation mine between the nearby elevated areas of Sisters Peaks and Highlay Hill. This is on the Shag River/Taieri River divide, and drainage from the site extends into each of these two systems. The proposed new mine would use temporary haul roads extending from Coronation mine to the established processing plant at Macraes mine to allow mechanical movement of the mined material.

The proposed Coronation North Project has been detailed in the AEE. It comprises:

1. Expansion of the consented Coronation Pit;
2. Reduction of the consented Coronation Waste Rock Stack;
3. Construction of a new Coronation North Pit;
4. Construction of a new Coronation North Waste Rock Stack;
5. A 2 km extension of the existing haul road connecting Coronation area to the process plant;
6. Providing an alternative realignment for unformed Matheson Road;
7. Potential construction of a freshwater dam;
8. Potential construction of new temporary buildings adjacent to Coronation North Pit; and
9. Associated water management comprising water takes, diversions and discharges.

Although the current activity is based largely within Dunedin City District, three consent authorities are involved in the application – Waitaki District Council (WDC), Dunedin City Council (DCC) and Otago Regional Council (ORC). Background material is well covered in the AEE text and maps, and does not need to be repeated here in detail. In Dunedin District the area covered is zoned "Rural" with an overlying landscape management area zone, the "High Country Outstanding Landscape Area" (HCOLA) covering most of the proposed mine area. In the Waitaki District the areas covered predominantly by existing mine activity are either within the "Macraes Mining Zone" or the "Rural Scenic Zone".

I visited the site twice on earlier occasions to assess the matters contained within the original Coronation mine application (25th June 2013 and 22 August 2013). More recently, on 9th June 2016, I visited the area with Kirstyn Lindsay and other involved ORC and WDC staff to review

site activity at the recently consented Coronation mine, and to assess matters associated with the proposed Coronation North mine.

Photographs were taken on both the earlier and recent site visits and a number of these are attached in Appendix 1. Some illustrate the shorter term landscape related effects of gold mining activity, with “before” and “after” photographs.

Description of the Proposed Coronation North Site

The general character of the site is well described in the AEE Appendix 16, “*Landscape and Visual Assessment*” (LVA), at Chapter 3, and other landscape related studies referred to in this report. These include “*Waitaki Landscape Study*”, Graham Densem (LVA Appendix 2); “*Dunedin Landscape Management Area Review*”, Boffa Miskell (LVA Appendix 3); and “*Rural Character Assessment, Dunedin City*”, Rhys Millar, Environments Ltd (LVA Appendix 4). They provide a good resource assessing the landscape values of the area.

The Coronation North mine pit and waste rock stack site is proposed for location in an upland landscape of fluvially dissected rolling hills of moderate relief with characteristic broad ridge crests. This forms the coastal extent of Central Otago’s basin and range topography. The broader landscape is large scale, remote and natural, with predominantly tussock grassland vegetation on the Dunedin City District (northwest) part of the site and forest plantings on the immediate Waitaki District (south east) side. At the proposed Coronation North mine site, remoteness and a complete absence of any structures or larger growing vegetation accentuates the feeling of emptiness and the characteristic large open scale of the area. Photographs appended provide some indication of this.

Pastoral farming continues to be the most predominant general land use of the area, but there is an increasing dominance of larger scale gold mining. This more recent activity is a continuation of much smaller scale gold mining which commenced in the 19th century, and which has resulted in remnant heritage structures being dotted around the landscape.

The AEE notes, “*In terms of natural character and visual amenity value,.. the Taieri Ridge forms a distinct skyline and visual backdrop to the Macraes Flat area to the south and eastern extent of the Middlemarch-Hyde basin to the north. Its block faulted ridgeline with frequent outcrops of schist is distinctive and its various incised gullies that drain to Deepdell Creek to the south and Mare Burn to the north give the ridge a rugged character. The visual amenity of the Taieri Ridge is further defined by its predominant vegetation cover of tussock grassland, which has been maintained by extensive pastoral farming practices and its elevation and isolation*”¹. I agree with this assessment.

General Comment on Landscape Effects of the Proposed Activity

I have reviewed the Landscape and Visual Assessment report² with its appendices and other relevant parts of the Assessment of Environmental Effects³. In general I consider that the AEE accurately presents the landscape related planning requirements for the proposed project, and provides a general overview of landscape related effects.

However, this AEE does not specifically address the degree of adverse landscape related effects of the proposed Coronation North Project extensions. It recognises that within the proposed mine site area there will be significant changes to the existing environment, and focuses on visual amenity with an extensive review of twelve “*salient and common viewpoints*”. Of these, all but one – the view from the north on Longdale Road – are adjudged to have effects which are “low to negligible”

The AEE focuses more on comparing the likely effects of Coronation North mine with those of the existing Coronation mine, saying these are already consented and would be similar for the extension. There is also a strong focus on mitigation measures, and the contention that in

¹ AEE p45

² “Oceana Gold (New Zealand) Ltd. Macraes Gold Project Coronation North Project Landscape and Visual Assessment” Opus April 2016.

³ “OceanaGold (New Zealand) Limited Coronation North Project Assessment of Environmental Effects” 24 May 2016.

the specific mining areas effects will be significant, but these can be mitigated appropriately. A number of mitigation measures are discussed, including design of waste rock stacks, progressive rehabilitation and site restoration.

My view of likely on-going landscape and visual adverse effects is less optimistic than that presented in the AEE. There is no doubt that the existing Coronation mine consents have provided for significant changes on site and these are abundantly evident, but it is also clear that the Coronation North mine extensions, at least in terms of adverse effects on the HCOLA, will be extensive.

The issue of whether or not the Coronation site was assessed by the applicant as an outstanding natural landscape (ONL) was addressed in the Section 92 request for further information at the original Coronation mine resource consent application. In response to this the applicant referred to the differing assessment of landscape by the respective Councils on either side of the DCC/WDC boundary. They then noted that they were inclined to accept the view presented in the Landscape and Visual Assessment that *"none of the Taieri Ridge is 'outstanding', and 'nor is (the Coronation site) located within an ONL on either side of the district boundary'"*⁴

My interpretation differs from this. The Coronation mine site within the DCC area is generally defined as an ONL in the operative plan (the High Country Outstanding Landscape Area, or HCOLA) and I consider that the established pit and waste stack parts of the site fall within this general category. This also applies to the proposed new Coronation North mine site.

It is also reasonable to say that the Coronation mine part of the site is close to being "on the cusp", close to a transition area to the north and east where high natural character values are still evident, but the landscape becomes less memorable and distinctive. Here section 6(b) issues need to be considered, but 7(c) and 7(f) matters are probably more dominant. This also applies further north around the proposed Coronation North pit area.

Boffa Miskell completed a report⁵ for DCC in 2007, excerpts of which are appended to the LVA report in the AEE. In this, a specific assessment of the Coronation site or Coronation North site was not provided, but an observation relating to the general area notes, *"The remote upper reaches of the Mare Burn landscapes towards Highlay Hill and Sisters Peaks are visually contained, although they are physically exposed landscapes. It is most likely that they will continue to be traditionally farmed, but should be protected from any future development activities that could potentially detract from the scenery and inherent natural and cultural values of the High Country landscape."*⁶ The report recommends that Taieri Ridge should be retained as an Outstanding Landscape, and that the Mare Burn area should be considered as a Rural Amenity Landscape. The Coronation North mine site is located within the upper reaches of the Mare Burn.

Maps in the Boffa Miskell report show the Coronation north site to have a recommended landscape management zone defined as "Rural Amenity". This is north of the Taieri Ridge zone which is mapped as "Outstanding". Other maps indicate the landscape significance of the specific Coronation north site. "Natural Factors and Legibility", "Cultural & Historical Associations" and "Aesthetic & Amenity" values are all defined as being "High".

Landscape assessment work completed as part of the DCC "Second Generation Plan" (2GP) endorses the Boffa Miskell approach for this area. Consultant Landscape Architect Mike Moore was involved in mapping exercises for this work, and he observes, *"I agree with Boffa Miskell re the extent of the ONL on the Taieri Ridge side. The country north of Taieri Ridge is less distinctive and should not be included. I believe that whilst Taieri Ridge is lower and less spectacular than the Rock and Pillar Range, it can be considered an ONL on the basis that it is one of the structural Central Otago ridges / ranges and is a significant large scale landscape feature with high naturalness and memorability values and a very expressive, coherent landform."*

⁴ Coronation Mine Landscape and Visual Assessment, p 13

⁵ Dunedin Landscape Management Area Review. Boffa Miskell Limited 2007. LVA App.3

⁶ Boffa Miskell report, p

These two professional views about the ONL status of the Taieri Ridge differ a little from the approach generally adopted in the AEE. As noted, my opinion is that large tracts of the Taieri Ridge area, contained within the DCC HCOLA can obviously be defined as outstanding. The Coronation North project site is located close to this area. Other outlying areas relatively close to the main pit site (especially on the WDC side of the boundary) can be defined as relating closely in character to the Waitaki District "Rural Scenic" zone, or to what the Boffa Miskell report refers to as "Rural Amenity".

In summary, although the underlying landscape categorisations do differ from one district to the other and the district boundary crosses the existing Coronation mine project site, there should be no downgrading of the importance and relative uniqueness of this landscape. I agree with the general landscape assessment of the broader area provided by the Boffa Miskell report and by Mike Moore. Although the Oceana Gold approach is less inclined to recognise that the Coronation North site is closely associated with an ONL, I think a "highest common denominator" approach is appropriate when defining the values of the surrounding landscape.

In terms of the overall cumulative landscape and visual effects of the proposed Coronation North Project, the Opus Landscape report assesses this as *"negligible to low from Macraes Flat looking north to Taieri Ridge, but..high to moderate from one viewpoint on Longdale Road looking south to Taieri Ridge"*.

Having assessed the range of proposed mitigations presented in the AEE, my opinion is that assuming all mitigation measures are put into practice as proposed, this is reasonably accurate. However, overall I consider that, given the sensitivity of the Coronation North site landscape and the extensive scale of the mining activity, the range of adverse effects would incline more to "low" than "negligible" for views from the south, and "high" for the Longdale Road view.

I agree that the effects of scale and distance, combined with established mitigation measures, will limit the visual effect of the consented waste rock stack. With time, similar treatment will also limit the visual effect of the Coronation North waste rock stack. However, the landform change brought about by the additional waste rock stack and the excavation of the Coronation North Pit will be significant, and be cumulative.

If consents were to be approved, the mitigation measures similar to those adopted for the existing Coronation mine and those advocated in the AEE, will be a very important component of the consent package.

Key Landscape Values to Protect

The AEE provides a good summary of the planning provisions and landscape assessment reports which outline key values which need to be considered for activities in the area. For Waitaki District Council the Waitaki Landscape Study by Landscape Architect Graham Densem provided the main basis for a variation to the Proposed District Plan designed to identify and protect outstanding natural landscapes within the district. For Dunedin City Council reports by Boffa Miskell were completed in 2007 and 2010, and these provided updates on the assessment of Landscape Management Areas and rural character assessment. The AEE LVA includes relevant sections from these reports. From these studies it is apparent that parts of the Taieri Ridge are assessed as significant for visual and natural character reasons.

From the Dunedin City District Plan *"Features and Characteristics to be Protected"* the following main landscape values of the High Country Outstanding Landscape Management Area (HCOLA) are noted:

- *Highly coherent natural landform under an apparently largely unmodified grassland vegetative cover.*
- *Very limited visual impact of any human imposed elements..*
- *Rock outcrops which give rise to a dramatic skyline and create particular visual interest generally.*
- *Large scale, open, expansive remote wilderness character.*

⁷ Landscape and Visual Assessment, p57

- *..Skyline almost entirely free of human structures (when viewed from the Middlemarch valley).*
- *Vegetation patterns which reinforce and reflect landform character.*
- *The fragile ecosystems, eg cushion bogs.*
- *..significant landform features.*
- *The extent and quality of the visual contribution made by areas of highly significant intact snow tussock grassland.*

The Dunedin City District Plan also identifies that the proposed Coronation North mine site would be located within a Visually Prominent Area (VPA). Landscape Management Areas within Dunedin District are categorised as being either VPA or VRA (Visually Recessive Area), which provides guidance on the impact of certain activities (such as forestry) on landscape values. VPA areas generally are those where these impacts would usually be considered to be greater, and this needs to be factored into the application.

Many of the "features and characteristics to be protected" of the HCOLA have a strong visual focus (ie, *"limited visual impact of any human imposed elements"*, *"skyline almost entirely free of human structures"* *"dramatic skyline"*) Others relate more to the general moods and impressions engendered by such a landscape (*"large scale, open, expansive remote wilderness character"*) and to more of an ecological focus (*"unmodified grassland vegetative cover"*, *"significant intact snow tussock grassland"*)

The proposed Coronation North mine pit and waste stack area is located wholly in a HCOLA area which exhibits these features and characteristics. The AEE records that this area has been considerably modified as a result of the now consented Coronation mine activity, and notes that the current assessment needs to take this new environmental context into account. I agree that the recently modified local character adjacent to the proposed Coronation North mine obviously needs to be considered when this new activity is assessed. However, it does bring into much sharper relief the importance of considering on-going cumulative effects.

For the earlier Coronation Mine AEE, the LVA noted that, relative to the Dunedin City District Plan, *"the Coronation project will affect a 'small portion' of the Taieri Ridge section of the HCOLA, and comprises an activity which has been anticipated in previous Rural Character Assessments of the area"*. In the current AEE the new LVA states, *"Relative to (the) Dunedin City District Plan, the Coronation North Project will affect a larger portion of the Taieri Ridge section of the High Country OLA under the operative District Plan and what will be Rural High Country Zone under the 2GP"*.

In my opinion the new mining activity needs to be very carefully considered in terms of cumulative effects. For the earlier Coronation Mine hearing I noted, *"The AEE outlines some elements relating to cumulative effects of combining the proposed Coronation Mine activity with existing Macraes Mine activity. What may not have been considered and perhaps should be addressed, is the cumulative effect of possible future further "small portion" encroachments into this significant landscape."*

This is a further (not so) small portion encroachment into the HCOLA, and there is no doubt that given the strong natural character elements and relatively unmodified nature of the broader surrounding landscape, there would be a significant adverse effect on these values in the specific Coronation North mining site area.

If the consents are approved, robust well monitored mitigation measures will continue to be essential, in my opinion.

Proposed Mitigation Measures and Conditions

The consistent approach from Oceana Gold in the AEE is that adverse effects of the Coronation North mine will be similar to those already encountered at the earlier established Macraes site and the recently developed Coronation mine, so this should direct the approach to be adopted with regard to mitigation measures. The AEE notes,

"Oceana Gold expects any conditions of these resource consents to mirror, or be very similar to, those that are already in place for existing open cut pits, WRS and associated infrastructure at the MGP and in particular the Coronation Project"⁸.

Reference is then made to a range of proposed draft consent conditions *"being prepared"* for consideration by the consent authorities. (This would be added to the AEE as Appendix 23)

From earlier consent conditions it can be assumed that the Coronation North mine consents, should they be approved, would include:

- ☐ *careful design of the form of the waste rock stack to integrate it with the existing landform character of the area;*
- ☐ *progressive rehabilitation of the waste rock stack;*
- ☐ *restoration of the areas disturbed around the margins of the Project; and*
- ☐ *removal and restoration of the haul roads used during closure phase of the Project.*

These measures appear to have been largely effective in mitigating the potential visual effects of the existing waste rock stacks, being the most visible of the mining elements that have so far been constructed as part of the larger Macraes Gold Project. This proposed new Coronation North mining activity is an extension of previously consented activity which in my opinion would be in a more sensitive environment, but is nevertheless a continuation of the existing mining operation in a broadly similar landscape context.

A key landscape related mitigation relates to the successful rehabilitation of the waste rock stack, and conditions related to this are particularly important. All of the points noted in the MP111 condition 4 – particularly Rehabilitation, Earth Shaping and Visual, Waste Rock Stacks, Soil, and Re-vegetation – should be adapted and strengthened if necessary to apply to Coronation North rock stack mitigation conditions.

The MP111 conditions included as Appendix 5 in the consented Coronation mine LVA also appear to me to be reasonably comprehensive and applicable to the Coronation North situation. Generally, I consider that the conditions for Coronation North mine should require a degree of diligence and care at least as stringent as those currently required for MP111.

Comment on Submissions

I have reviewed some of the submissions to the application, which as well as addressing more specific issues often refer to broader landscape character related matters. What is noted below is by no means a comprehensive summary, and particular subtleties can be obtained and appreciated by reading individual submissions. These include:

- Te Rūnanga o Otākou, Kāti Huirapa Rūnanga ki Puketeraki and Te Rūnanga o Moeraki (written by KTKO (Kai Tahu ki Otago))
 - Neither support or oppose.
 - Importance of Kai Tahu ki Otago Natural Resource Management Plans 1995 and 2005.
 - Recommended condition: *"The Council may, within 6 months of receipt of the Cultural Impact Assessment prepared by Te Rūnanga o Moeraki, Kāti Huirapa ki Puketeraki and Te Rūnanga o Otākou, serve notice of its intention to review the conditions of this consent for the purpose of amending or adding conditions to address mitigation of the effect of Coronation North on cultural values and associations".* (page 4 of submission)
- Heritage New Zealand.
 - Neither support or oppose.
 - That consent shall not be granted until appropriate measures to avoid, remedy or mitigate effects on historic heritage values have been identified and adopted by the applicant.

⁸ AEE Section 16 page 112

- That should consent be granted, the accidental Discovery Protocol attached be included as a condition on any consents for the proposed activities issued by the DCC, WDC and ORC (Point 6 of their submission)
- Department of Conservation
 - *"The adverse environmental effects of the Coronation North Project need to be appropriately avoided, remedied, mitigated, compensated for, or offset". ..*
 - *"This Coronation North proposal will result in the loss of natural values, both terrestrial and freshwater. The Director-General notes that a "net environmental gain" referred to the Impact Management Plan (IMP) for the Coronation North Proposal is Oceana Gold's Environmental Policy and the Director-General supports such an approach for this project.*
- MacRaes Community Incorporated.
 - Oppose in relation to specific project implementation details – roads, noise, rehabilitation of rock stacks, monitoring and compliance matters.

There appears to be a wish by Oceana Gold to proceed with the Coronation North mine as reasonably quickly as possible to ensure continuity of the local mining activity. In this regard there is also an indicated intent to consult with the key involved major parties like Kai Tahu, Heritage New Zealand and the Department of Conservation and arrive at appropriate mitigation measures, even although the application has already been submitted.

This situation seems counter to the usual resource consent process, where most of the measures to avoid, remedy or mitigate are outlined at the time of application. It appears that the contention is that, with the existing similar mining operations operating using well tried and acceptable mitigation, the new Coronation North mine could use similar conditions which should be sufficient to deal with similar identified effects. Any further refinement or specific measures would presumably be an improvement on the status quo.

I do not have a problem with this, except that an element of trust is involved, and sometimes, even with the best of intent, this can be misused. The answer is to ensure that the mitigation that is put in place either immediately or subsequently, should consents be approved, will be as robust and appropriate as that initiated for other parts of the scheme, or better and more refined.

A key point intimated in some submissions is one that I fully endorse – that diligent and timely rehabilitation is extremely important in this sensitive environment, irrespective of the perceived degree of isolation (or perhaps particularly because of it).

The landscape related reference from the KTKO submission (to protect the full range of landscape features of significance to KTKO) is obviously very important, but one which primarily relates to consultation between KTKO and the applicant.

The concept of setting aside nearby areas and using these to promote terrestrial and freshwater natural values lost by the mining operation should be fully supported and made an integral part of the mining operation, if consents are approved.

Concluding Comments

The site activity required for the proposed Coronation North mine has been comprehensively described and assessed in the AEE and associated application documents. I consider the Opus Landscape and Visual Assessment provides a reasonably thorough analysis and detail on the landscape character, relevant planning provisions and some proposed mitigation measures for the project. In my opinion, there may be a difference in interpretation and emphasis given to the significance of the specific Coronation North site landscape, but whatever professional assessment of this landscape is referenced, there is very little debate that landscape values are regionally significant and of high value.

One aspect of this application which becomes very clear is the importance of cumulative effects. In some regards this is the result of the economic dynamic of the activity based on

an established workforce and existing machinery. It also reflects that a particular linear zone is usually followed as the material being mined (in this case gold) is successively sought. This means that over time a greater and greater area of natural landscape is modified and in most cases restored successively as the activity proceeds. The longer time taken for such mining activity and the relatively slow incremental changes that occur can often mask how significant these changes may be when these occur over several years or decades.

If the consents are to be approved, the conditions attached to them assume considerable importance. In this situation, the consent authorities are well served by what has been established with previous consents and compliance issues at the nearby Macraes mine. Conditions for the MP111 project provide a good template which should be adapted to suit the Coronation North application.

With regard to on-going compliance, as noted in some submissions, this is also an important consideration. If consents are to be approved, conditions should be designed to ensure rehabilitation of the waste rock stack, in particular, is completed in a timely, thorough manner. This needs to be regularly assessed by the applicant and consent authorities as the project proceeds.

Other aspects of the Coronation North project which should assume high importance are the effects noted by the Department of Conservation relating to terrestrial and freshwater natural values. It appears that a "net environmental gain" approach involving preservation of similar or relatively equivalent areas to offset such losses is the preferred approach by DoC, and this is supported by Oceana Gold's Environmental Policy.

From a landscape effects perspective, it appears that such values will inevitably be lost as a result of the mining activity at the immediate site, should consents be approved. The setting aside and careful protection of similar areas to preserve and enhance equivalent natural values will be an essential approach, in my opinion.

Barry Knox
Landscape Architect

Appendix 1. Photographs of the Proposed Coronation North Mine Site and Vicinity.



Photo 1. Earlier view west from the (then) proposed Coronation mine pit area. Waste rock stack proposed for the middle distance, extending approximately 2/3 up the closest Sisters Peak, shown here. **22/8/13**



Photo 2. A similar recent view west from the now operative Coronation mine pit area. The waste rock stack is now being established in the middle distance, extending towards the closest Sisters Peak. **9/6/16**



Photo 3. Earlier view from the Coronation mine site towards the north east with Highlay Hill in the background (within Waitaki District). Coronation Pit was subsequently established in the foreground, with the waste rock stack in the middle distance and to the west [left].) **22/8/13**



Photo 4. A recent view taken from further west, near Longdale Road, with Highlay Hill in the background, to the left (north). The waste rock stack, currently being formed as part of Coronation mine operations, is to the right (south) and can be better seen in Photo 5. Simulation viewpoint 12 in the AEE shows that proposed Coronation North activity (stack and pit) would occur in the middle reaches of this photograph and have a significant initial adverse effect on visual amenity. **9/6/16**



Photo 5. A recent view taken from the same location as photo 4, near Longdale Road, looking further south. The waste rock stack, currently being formed as part of Coronation mine operations, can be seen on the horizon to the left (north). The Coronation North activity would occur to the left of this. 9/6/16



Photo 6. A recent view of the the Coal Creek catchment, proposed for a freshwater dam. 9/6/16



Photo 7. A recent view of the Coronation mine which has only been operating for around two years. This demonstrates the scale of the activity and the size of the machinery used. **9/6/16**