

Before the Waikato Regional
and Hauraki District Councils

Under the Resource Management Act 1991 (**RMA**)

In the matter of An application for resource consents to extend the Waihi Gold Mine via underground and open pit mining methods known as Project Martha

By **Oceana Gold (New Zealand) Limited**
Applicant

Statement of evidence of Rhys Girvan for Oceana Gold (New Zealand) Limited

28 October 2018

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Qualifications and experience

- 1 My name is Rhys James Girvan.
- 2 I am a landscape planner and senior principal with Boffa Miskell Limited. I have a Master's Degree in Landscape Architecture from Lincoln University and a Bachelor of Arts Degree majoring in psychology from the University of Canterbury. I am a Registered Member of the New Zealand Institute of Landscape Architects.
- 3 I have practiced as a landscape planner for over 14 years, having previously worked for Queenstown Lakes District Council and a large multi-disciplinary planning and design practice in the United Kingdom. My experience includes the assessment of development projects of many scales including residential subdivisions, commercial and tourism developments, utilities, transmission lines, quarries, gravel extraction, roading and other infrastructure uses. I have been a landscape planning consultant with Boffa Miskell since 2012, providing consultancy services for a range of clients in the lower North Island and other parts of New Zealand.
- 4 In preparing this evidence I have reviewed:
 - (a) The reports and statements of evidence of other experts giving evidence relevant to my area of expertise, including:
 - (i) Project Martha Waihi, Assessment of Noise Effects Hegley Acoustic Consultants, May 2018
 - (ii) Project Martha Transportation Assessment, Traffic Design Group, May 2018
 - (b) The parts of the section 42A report relevant to my area of expertise,
 - (c) Submissions relevant to my area of expertise.
- 5 I have read the Code of Conduct for Expert Witnesses in the Environment Court Practice Note 2014. This evidence has been prepared in accordance with it and I agree to comply with it. I have not omitted to consider material facts known to me that might alter or detract from the opinions expressed.

Scope of evidence

- 6 I have been asked by Oceana Gold (New Zealand) Limited (**OGNZL**) to prepare evidence in relation to visual and landscape impacts of Project Martha. This includes:
 - (a) A description of the landscape context.
 - (b) Analysis of the statutory planning context.

- (c) An assessment of the landscape and visual effects of Project Martha.
 - (d) Proposed mitigation measures to address effects.
- 7 I confirm that my evidence relates to the proposal known as Project Martha as described in Chapter 3 of the Assessment of Environmental Effects dated 25 May 2018 (**AEE**).
- 8 I confirm that I am the author of a report dated 17 May 2018 entitled Project Martha Landscape and Visual Effects attached as Appendix D to the AEE.

Executive summary

- 9 OGNZL seeks resource consent for Project Martha, which constitutes a combination of open pit and underground mining over a period of approximately 12 years. Excess material generated during mining activity will be used to backfill underground mining operations or disposed of in the existing Rock and Tailings Storage Area (RTSA). I note that the use of the RTSA is already authorised and not part of the activities requiring resource consents as part of Project Martha
- 10 The existing character of Waihi is influenced by its proximity to established mining activity, which includes the Martha Pit near the town centre. Beyond the Martha Pit, references to mining artefacts and residual garden areas which have resulted from previous mining activity also influence the character of the town. Despite the physical proximity of mining, there are limited direct views of mining activity from nearby urban areas.
- 11 During operation, above ground mining as part of Project Martha will continue largely within the northern area of the Martha Pit. This will entail modifying a localised area adjoining the existing pit rim to reinstate a series of benches and access roads along the north wall as well as relocating an existing noise bund and road corridor along the pit rim. Proposed works will also accommodate access to underground mining and associated temporary stockpiles within the base of the Martha Pit during later stages of the project.
- 12 During operation of the pit, extracted material will continue to be transported between the pit and the existing Process Plant and RTSA via the existing conveyor through Union Hill. The proposed expansion of underground mining activity will remain entirely concealed except for one fresh air portal and one return air shaft (another return air portal is consented as part of another project - Martha Drill Drive Project) formed within the confines of the existing pit. Ore and rock from underground will be transported underground to the existing Process Plant and RTSA area via the Favona Portal. Above ground, water vapour from the air return shaft and portal may also be visible, similar to smoke from chimneys and water vapour from the existing Trio Vent Shaft generated during cold mornings.

- 13 The potential for adverse landscape and visual effects primarily occurs during the commencement of the project as a result of the construction of a noise bund and the diversion of Cambridge Road within a localised urban area adjoining Martha Pit. This activity also includes provision to reinstate the Pit Rim Walkway along the proposed pit edge. Over longer distance, the expansion of mining activity along the north wall may also be visible from parts of the pit rim and from areas to the north-east and south-east of Waihi, however this will typically maintain existing views of the mine seen along the foothills of the Coromandel Ranges and avoids any potential for significant adverse effects.
- 14 Following the life of this project, rehabilitation of the mine will be guided by the established Closure Plan. This will include the diversion of high flows from the Ohinemuri River to hasten the establishment of the Pit Lake as part of this rehabilitation process. An outlet water structure will also be required into the Mangatoetoe Stream to assist with managing resultant lake levels over the longer term. Any localised effects on natural character which occur in these areas are already authorised by existing consents and can be managed to ensure built structures remain appropriate within the modified waterway contexts within which they will occur.

Landscape Context

- 15 The existing Martha Pit has been established adjacent to the urban area of Waihi and maintains a strong mining influence within the town. Despite its proximity, mining activity has not resulted in major visual impacts on adjoining areas, primarily due to the topography and vegetation which provides an effective screen along the pit rim.
- 16 Waihi extends along the foothills of the Coromandel Range which typically comprises of a series of gently rounded spurs and gullies to the south-east of the main ridgeline. The former Martha Hill, within which Martha Pit is now located, previously formed part of this broader foothills landform prior to its transformation through mining activity.
- 17 The existing excavated form of the Martha Pit forms a distinctive topographic feature of Waihi, the base of which is currently some 220 metres below the surrounding ground level and approximately 100 metres below sea level. The northern edge of the pit forms the highest part of the mine. The urban area surrounding Martha Pit is typically flat to gently undulating between 80 and 160 - metres above sea level.
- 18 The location of the proposed above ground mining works primarily involves the north-western face of the existing open pit mine. This area was subject to a slip which initially occurred in 2015 and halted production in the open pit. Beyond the pit rim, low density residential development extends along Cambridge Road towards Savage Road on land that slopes to the west and away from the mine. To

the east of Martha Pit, there are several existing operational facilities including an existing magazine building, crusher plant and entrance to the conveyor.

- 19 Martha Pit is connected to an existing Process Plant via a low profiled conveyer which passes through a tunnel formed through Union Hill. The Process Plant occupies a terrace to the west of the Ohinemuri River and remains relatively well enclosed from surrounding areas by a sequence of surrounding hills including Union, Winner and Black Hills. The Rock and Tailings Storage Area (RTSA) is connected to the Process Plant via the existing conveyor which continues across the Ohinemuri River. The RTSA incorporates several large ponds which extend outwards from the adjacent landform backdrop.
- 20 Waihi's Town Centre is located to the south of Martha Pit, beyond a narrow band of land along the existing pit rim that includes the relocated Cornish Pumphouse (which forms a prominent local landmark in this area). The landscape surrounding Waihi undergoes a transition into flat to gently undulating primary production lowlands which adjoin the foothills of the Coromandel Range.

Statutory Planning Context

Resource Management Act

- 21 The relevant landscape matters identified in the RMA and addressed in my evidence cover the following:

Section 6(a) - the preservation of the natural character of... wetlands, and lakes and rivers and their margins, and the protection of them from inappropriate subdivision, use, and development

Section 7(c) - the maintenance and enhancement of amenity values

Section 7(f) – maintenance and enhancement of the quality of the environment

- 22 No outstanding natural features or landscapes have been identified or are considered likely to occur in the area affected by Project Martha in terms of Section 6(b) of the RMA.

Waikato Regional Policy Statement

- 23 Chapter 12 of the Waikato Regional Policy Statement sets out the relevant policies in relation to landscape, natural character and amenity. These are documented in full in the evidence of Mr Kyle, although I note that Policy 12.1 relates to outstanding natural features and landscapes, none of which have been identified or are considered likely to occur within the adjoining urban and working rural landscapes at either the regional or district levels, taking account of the approach identified in Section 12B.

- 24 Policy 4.4 refers to regionally significant industry and primary production and requires that:

The management of natural and physical resources provides for the continued operation and development of regionally significant industry and primary production activities by:

...

c) ensuring the adverse effects of regionally significant industry and primary production are avoided, remedied or mitigated;

...

g) promoting positive environmental outcomes.

- 25 Policy 12.2 relates to preserving natural character and seeks to ensure that activities within rivers and their margins are appropriate in relation to the level of natural character. The following specific policies are relevant:

...

(b) where natural elements/influences are dominant, activities should avoid significant adverse effects and avoid, remedy or mitigate other adverse effects on natural character;

(c) where man-made elements/influences are dominant, it may be appropriate that activities result in further adverse effects on natural character, though opportunities to remedy or mitigate adverse effects should still be considered;

(d) promote the enhancement, restoration, and rehabilitation of the natural character of the coastal environment, wetlands and lakes and rivers and their margins; and

(e) regard is given to the functional necessity of activities being located in or near the coastal environment, wetlands, lakes, or rivers and their margins where no reasonably practicable alternative locations exist.

- 26 Policy 12.3 seeks to maintain and enhance areas of amenity value. In landscape terms, such areas may include areas along inland water bodies, such as the areas where inlet and outlet structures are proposed. Other landscapes or natural features are also discussed in this policy however no such classification has been made or is considered likely to occur given the urban location of Project Martha and its proximity to an existing open pit mine.

- 27 The Waikato Regional Plan sets out policies relevant to river and lake bed management associated with the proposed inlet and outlet structures along the respective Ohinemuri River and Mangatoetoe Streams (which are also documented in the evidence of Mr Kyle). This includes the following relevant policies:

Policy 1: Enable Low Impact Structures

Enable through permitted activity rules the use, erection, reconstruction, placement, alteration, extension, removal or demolition of structures, in, on, under or over the beds of rivers or lakes which:

...

- (d) do not adversely affect the natural character of river and lake beds (including caves)

...

Policy 2: Management of Structures

Control through resource consents the use, erection, reconstruction, placement, alteration, extension, removal and demolition of those structures in, on, under or over river and lake beds that:

...

- (e) may cause significant adverse effects on the natural character of river and lake beds (including caves), or

Policy 5: Natural Character

Recognise and, where relevant, provide for the following characteristics when considering the preservation of the natural character of river and lake beds and their margins and the protection of them from the inappropriate use, erection, reconstruction, placement, extension, removal or demolition of structures in, on, under or over river and lake beds:

- (a) Diversity and composition of aquatic and riparian habitat.

- (b) Topography and physical composition of river and lake beds and the course of the river.

- (c) The natural flow characteristics and hydraulic processes (such as sediment transport) of rivers and streams or the pattern and range of water level fluctuations that occur naturally in rivers and lakes.

- (d) Any significant natural features of the bed or banks.

Hauraki District Plan

- 28 As is discussed in more detail in the evidence of Mr Kyle and illustrated in Figure 4 of my Landscape and Visual Effects report included as Appendix D of the AEE (attached as **Figure RG 1**), most of the above ground earthworks associated with Project Martha will take place within the Martha Mineral Zone in the Hauraki District Plan. This zone provides for the utilisation of mineral resources in a sustainable manner.
- 29 A small part of the Phase 4 Pit will extend along the edge of an adjoining urban area beyond the Martha Mineral zone. Approximately 0.14 hectares of Residential Zone land and 0.52 hectares of Low Density Residential zone land will be required to extend the existing pit and construct a new noise bund. Such zones form part of Waihi's urban area within which the role of mining and tourist industries is recognised alongside maintaining an attractive residential environment. The outcomes sought in the Hauraki District Plan's urban zones, are also discussed in the evidence of Mr Kyle.
- 30 In addition, the scale and location of site earthworks across all District Plan zones should ensure adverse visual effects and off-site effects are avoided, remedied or mitigated¹.

Assessment of Landscape and Visual Effects

- 31 Landscape and visual assessments are separate, although linked, procedures. The existing landscape and its existing visual context all contribute to the existing 'baseline' for landscape and visual assessments. The assessment of potential landscape effects is carried out as an effect on an environmental resource (i.e. effects on physical landscape features and effects on landscape character). Visual effects are assessed as one of the potential interrelated effects on people. My assessment also considers natural character impacts in terms of effects resulting from the potential modification of lakes and rivers and their margins.
- 32 The nature of effects can be summarised as follows:

(a) **Physical Effects:**

Effects of changes in the physical landscape, including landform and land cover

¹ Ibid, Section 7.8.

(b) **Visual Effects:**

Effects of change to specific views which may change the visual amenity experienced by people

(c) **Landscape Character Effects:**

Effects of changes to the characteristics, qualities and values of the landscape

(d) **Natural Character Effects:**

Effects of changes in the level of natural character along lakes, rivers and their margins

Physical Effects

- 33 In physical terms, Project Martha will increase the overall footprint of the Martha Pit by approximately 2.4 hectares from the existing mine's open footprint of approximately 54 hectares. This will increase the overall volume of material extracted from within the mine to approximately 43,000,000m³ and reinstate access to the base of Martha Pit as well as underground mining activity.
- 34 In addition to the extension of the existing mine, the relocation of the existing noise bund along the northern pit rim will require an additional 0.6 hectares beyond the Martha Mineral Zone. This aspect of the project, will also facilitate reinstating the Pit Rim Walkway along the crest of the noise bund which passes along the periphery of the mine through this area. In addition, the diversion of part of Cambridge Road will occupy part of three low density residential properties to the north.
- 35 The proposed construction of the noise bund along the modified pit rim and diversion of part of Cambridge Road will generate localised physical effects at the commencement of the project. Following this, the Pit Rim Walkway will be reverted back along the pit rim accompanied by landscape rehabilitation planting. Within the Martha Pit, changes will involve a more gradual process during which mining will re-establish benches along the north wall. This is expected to occur over a period of approximately 11 years.
- 36 Given the localised modification of landform in the context of an existing open pit mine and the limited removal of vegetation along the pit rim, it is my opinion that no more than **low adverse** effects are anticipated from the proposed physical change during operation. Following this, I consider that there will be **moderate beneficial** effects once the Pit Rim walkway is reinstated along the pit rim.

Visual Effects

- 37 Despite the proximity to urban areas, views of the proposed extension of Martha Pit will remain limited. It should also be emphasised that the visibility of a change or modification does not necessarily equate to an adverse visual effect. Visual impact is not always negative and consequently a change in view may not be automatically unacceptable.
- 38 Of the physical changes which result from Project Martha, the proposed modification within the urban area adjoining the north wall has the greatest potential to generate adverse visual effects. Such effects are localised given the nature of intervening landform and established vegetation in this area. Several adjoining properties are also owned by OGNZL meaning any potential adverse effects can be disregarded in accordance with Section 104(3) of the RMA.
- 39 At the time of reporting, my assessment assumed OGNZL's successful negotiation of the sale and subsequent relocation of 77 Bulltown Road necessary to facilitate part of the realignment of Cambridge Road which has now been confirmed. The adjoining properties with potential views (including 4 Bulltown Road and 11 and 12 Cambridge Road) are already under the ownership of OGNZL meaning visual effects from those properties can be disregarded. Since the application was lodged, the property at 14 Pitt Street² has also been purchased by OGNZ, meaning temporary moderate-low adverse effects identified from this area can be disregarded.
- 40 Beyond the pit rim, views are more generally concealed by intervening landform and established areas of vegetation or otherwise significantly reduced by substantial viewing distances. From areas to the south-east of Waihi, including the town centre, there will be no noticeable changes beyond existing views afforded along the pit rim walkway. Where visible from the pit rim walkway, views towards the Martha Pit will entail reconfiguring the existing slip visible along the north wall with batters and haul roads normally expected within an operational mine. Such views are considered benign in the context of the wider mine which is visible, generating **low neutral effects**.
- 41 To the east of Martha Pit there is potential to observe changes to the north wall from land which rises to the east of Waihi including part of the residential area to the north-east of Waihi, the eastern approach into Waihi along State Highway 2 and elevated areas on Union and Black Hills through gaps in vegetation. From such areas, mining activity associated with the existing north wall is already apparent and typically viewed against a more distant backdrop of the Coromandel Range. Accordingly, from such long-distance views, Project Martha will remain

² Also known as 5 Cambridge Road.

largely consistent with visual effects which already occur and generate either **low** or **very low neutral** effects.

- 42 In addition to views of Martha Pit, any views of water vapour generated from underground mining vents will remain limited and comparable to surrounding domestic influences generated by smoke from home fires visible at similar times. Likewise, the change in composition of rock and ore stockpiles accumulated in association with the existing Process Plant will not appear unusual or uncharacteristic in this context and remains consistent with consented volumes. Accordingly, I consider there is no material change in the level or nature of indirect visual effects generated in such areas.

Landscape Effects

- 43 In terms of landscape character, the proposed extension of Martha Pit will remain well contained within the foothills of the Coromandel Range and represents a very limited expansion of an existing substantially modified landform. Whilst a small area not presently mined will undergo substantial modification, the resultant extended pit will continue to remain visually well contained and limit the potential for any more significant landscape character effects. Given this established modified context within which landscape change remains contained, I consider wider landscape character effects will represent no more than **very low adverse** effects.
- 44 The proximity of the Martha Pit to Waihi will continue to influence townscape character during operation. Despite its close physical relationship with the Town Centre, the extended mining operation will continue to have very limited direct visual presence within the town. Potential views will be primarily limited to areas of access along the pit rim which will continue to enable views into an operational mine. During operations this will generate **low neutral** effects in terms of immediate effects on Waihi, and represent an enduring aspect of Waihi's townscape which remains visually well contained.
- 45 To the south-west of the proposed extension of the pit rim, the majority of the mature garden remnants referred to locally as the "Historic Gardens"³ will be retained. Combined with this, the amended landform introduced by the noise bund to the north-east of this area provides an opportunity to extend replacement planting in association with the realigned pit rim walkway and soften the resulting interface with the adjoining residential zone. Accordingly, any localised landscape effects in this area will be low and can be satisfactorily managed as outlined in the indicative landscape mitigation plan included as Figure 6: Landscape Mitigation of

³ "Historic Gardens" have no formal statutory recognition.

my Landscape and Visual Effects report in Appendix D of the AEE and attached to my evidence as **Figure RG 2**.

- 46 At completion, the rehabilitation of the Martha Pit will be guided by the established Closure Plan which will seek to enhance the recreation and habitat opportunities associated with the pit lake and modifications along an extended pit rim walkway. This will further improve the context and character associated with former mining activity and generate beneficial landscape outcomes in the longer term.

Natural Character Effects

- 47 As part of the project closure, an inlet structure will be constructed along the Ohinemuri River to assist with the filling of the pit lake. This will reflect a localised disruption associated with an existing treated water outlet pipe and previously consented inlet pipe within a modified rural area. Similarly, once the lake is filled, a new outlet pipe will be constructed beneath Moresby Avenue and enable overflow into Mangatoetoe Stream upstream from the existing walkway bridge along Walker Street. In both instances disturbance to the existing river bed should be minimised and ensure built structures remain low key and embedded within surrounding areas of vegetation. Accordingly, no more than **low adverse** natural character effects are anticipated in the context of the existing modification which occurs.
- 48 At the completion of the mining operation, the creation of the pit lake will be an entirely new inland waterbody and will therefore generate an improvement in natural character associated with a rehabilitated mine.

Mitigation

- 49 During operation, localised landscape and visual effects associated with the extension of Martha Pit can be readily addressed through implementing and maintaining an appropriate landscape plan which is in general accordance with the Landscape Mitigation Plan included in the Landscape and Visual Effects Assessment and reproduced as Figure RG 2. In addition, water inlet and outlet structures should ensure that disturbance along stream beds is minimised and include planting designed to soften any necessary built elements so that they appear visually integrated within adjoining riparian areas.
- 50 To ensure such landscaping associated with Project Martha will be appropriate and effective in the long term, I recommend the following condition of consent should be applied:

Prior to the project commencing, a landscape plan shall be submitted to the Manager Resource Consents for certification in general accordance with the landscape mitigation concept plan included with the resource consent application. The certified landscape plan shall be implemented within the first available planting season following completion of the works and maintained in accordance with the approved plan. This plan shall detail the following:

- (i) Relocation of the Pit Rim Walkway between Miners Place and Cambridge Road;
- (ii) Ensure all disturbed areas outside the operational mine are planted to soften changes in landform and complement adjoining areas of vegetation;
- (iii) Ensure water inlet and outlet structures minimise disturbance along stream beds and soften any necessary built elements with planting which appears integrated within adjoining riparian areas;
- (iv) Indicate the species, size and number of proposed plants within identified planting areas; and
- (v) Outline maintenance and replacement requirements for the first 3 years following establishment to promote plant survival.

Rehabilitation and Closure Plan

- 51 The existing conditions of consent require the preparation of a Rehabilitation and Closure Plan that is updated on an annual basis. The revised updated Draft Closure Concept Plan (Figure 2 of the Rehabilitation and Closure Plan 2017) envisages the creation of a pit lake with a surface level of around 1,104m and the development of an integrated parkland around the lake focussing on an extensive area accessible to the lake edge on its eastern side. Revegetation and amenity plantings along with extensive walkways and recreational features are also envisaged.
- 52 As noted above, the landscape and visual effects of the current application are primarily confined to the restoration of the area adjoining the north wall. Accordingly, there will be no material effects on the updated Draft Closure Concept Plan, other than some confined earthworks and the provision of a noise bund along a section of the north wall. The Proposed Development will also provide an opportunity to relocate the Pit Rim Walkway from its current temporary alignment along Savage and Cambridge Roads and represent a more appropriate pit edge location for this path compared with its current alignment along public roads following the 2015/16 north wall slip.

Section 42A Report

- 53 Hauraki District Council's Section 42A Report adopts the findings of a peer review of my assessment of landscape and visual effects prepared by landscape architect Dave Mansergh in **Appendix 6**⁴.

⁴ Dave Mansergh (October 2018) OceanaGold – Project Martha Landscape and Visual Effects Reporting

54 The peer review of Mr Mansergh generally concurs with my assessment stating⁵:

In general, the effects on landscape and visual amenity, character and natural character (in and around the Ohinemuri River) will be low. The exception is in and around the Pitt Street, Cambridge Road and Bulltown Road area, where effects will be moderate, until proposed mitigation becomes established. This is considered to be a temporary effect associated with the realignment of the Cambridge/Bulltown Road intersection, construction of a new noise bund and wall and the relocation of the pit rim walkway. Following the establishment of the proposed planting, effects are expected to reduce to low.

55 Mr Mansergh also notes that no submissions were received that specifically raised issues with effects on landscape or visual amenity.

56 In seeking to further reduce identified temporary adverse effects, Mr Mansergh recommends amendments to landscape mitigation conditions in relation to screen planting. The proposed amendment to condition 57(c) seeks to:

“...replace any existing planting lost as a result of the realignment of Cambridge / Bulltown Roads, and to screen at least 80% of the noise wall from view from adjacent residential areas when viewed from Cambridge Road and Bulltown Road.

57 Similarly, Mr Mansergh seeks to address concerns with loss of privacy through the addition of condition 57(d) that requires:

“The measures to ensure that privacy of existing dwellings adjacent to the pit rim walkway (where relocated as part of b. above) is maintained.”

58 Mr Mansergh identifies the adjacent residential properties at 14 Pitt Street and 77 Bulltown Road as the only private properties physically affected by the application and subject to temporary moderate adverse effects⁶. In addition, Mr Mansergh notes opportunities to overlook the property at 11 Cambridge Road owned by the applicant⁷. Since the application was lodged, I have been advised by OceanaGold that all these properties have now been purchased and effects on these persons can be disregarded.

59 In response to recommendations seeking additional screening in this area, I also note that the noise wall represents a maximum height of 2 metres which will not appear unusual or uncharacteristic within this residential context. The noise bund

⁵ Ibid, page 17

⁶ Ibid, page 12.

⁷ Ibid, page 13.

will also be planted to soften the changes in landform and complement adjoining vegetation enabling an appropriate change in the configuration of planting in this area. Accordingly, I do not consider any additional screening necessary or beneficial in this context.

Conclusion

- 60 Above ground landscape change associated with the Proposed Development predominantly results from remedying an existing slip along the north wall of Martha Pit. This necessitates modifying a small adjoining residential area. While this will generate some local adverse landscape and visual effects, such effects will be temporary and occur in a relatively short period of time. Landscape mitigation associated with such work will ensure the resultant pit rim is effectively softened by planting and will retain an appropriate residential scale commensurate with existing modification along the periphery of an operational mine.
- 61 During operation, the potential for adverse landscape and visual effects will be limited as planting continues to establish along the pit rim and mining within the open pit remains visually well contained. Beyond the pit rim, views of the Proposed Development will remain limited generating fleeting low or very low neutral effects. Realigning the Pit Rim Walkway to a more appropriate 'pit edge' location will generate beneficial effects during operation and does not conflict with broader opportunities identified within the Rehabilitation and Closure Plan Concept.



Rhys Girvan

28 October 2018

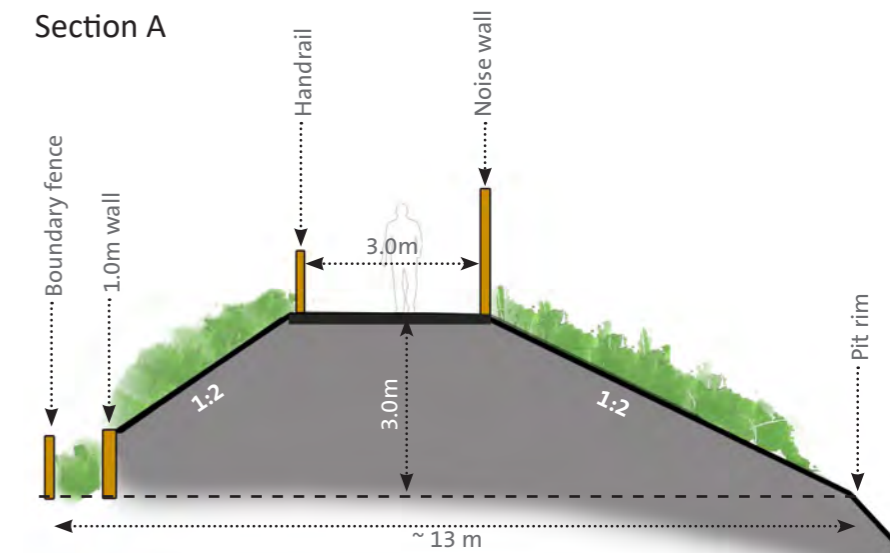
This plan has been prepared by Boffa Miskell Limited on the specific instructions of our Client. It is solely for our Client's use in accordance with the agreed scope of work. Any use or reliance by a third party is at that party's own risk. Where information has been supplied by the Client or obtained from other external sources, it has been assumed that it is accurate. No liability or responsibility is accepted by Boffa Miskell Limited for any errors or omissions to the extent that they arise from inaccurate information provided by the Client or any external source.



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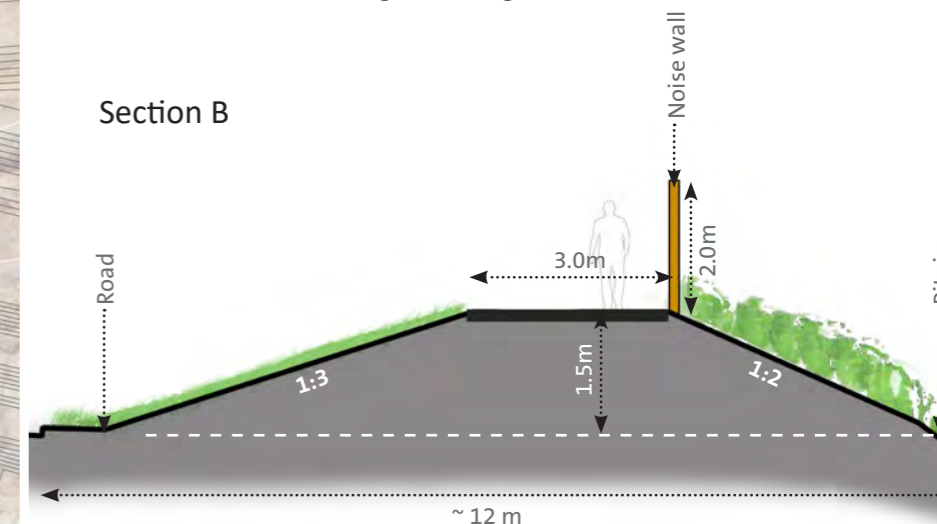


Section A



- A cantilevered timber retaining wall may be required to avoid encroachment over boundary. A 3m offset from the boundary is optimal
- 3.0m path along top of bund (Pit Rim Walkway)
- Security fence / noise wall on pit side of path enabling viewing opportunities
- NOTE: Final noise mitigation height TBC.

Section B



Using a combined bund and noisewall approach minimises visual impact of the noisewall.

- 1:3 batter up from road
- 3.0m path along top of bund (Pit Rim Walkway)
- Noise wall on pit side of path with glass/perspex viewing holes
- NOTE: Final noise mitigation height TBC.