Applicant Responses to Relevant Comments from Owners and Occupiers on the Waihi North Project

This document contains the key comments from the following parties:

- Bentham Farms – Comment 1;
- John Perrins – AJ Arabains, AJ Pro, Perrins Robertson Partnership – Comments 2 to 19;
- Chris Batten – Comments 20 to 23;
- B & B Ross – Comments 24 to 27;
- B & S Cameron – Comments 28 to 43;
- Bryce Ede Praedium – Comment 44;
- Martin Barber – Comment 45;
- B M Morrison – Comment 46;
- Andrew and Rachel Wharry – Comments 49 to 57;
- Waihi Community Focrum (including Mary O'Donoghue) – Comments 58 to 97;
- Gloria Sharp – Comments 112 to 142;
- R E Malone – Comment 143; and
- Peter and Jessie Rogers – Comments 331 to 346.

Comments from Bentham Farms

Comment Number	Comment	Applicant Technical Input	Where Addressed in the Application Documents	Response
1	Will our water supply become affected by spring diversions?	Hydrology, Hydrogeology	H.06 - Wharekirauponga Underground Mine Water Management Plan	Any potential effects on groundwater are confined to the Wharekirauponga Catchment, with effects anticipated to be low and refined to small sections of streams. Nonetheless, a management plan is proposed in relation to groundwater (application document H.06). Refer to the statement provided by Mr Christopher Simpson, appended as **Appendix G**.
	Have tried to contact the applicant with no luck, how can I contact the company?	Administrative	-	The applicant has previously corresponded with Bentham Farms via email. Contact details for the applicant can be found at this website: https://www.waihinorth.info/find-more-info.html

Comments from John Perrins - AJ Arabains, AJ Pro, Perrins Robertson Partnership

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2	There has been no recognition of the effects on equine breeding, either in this application or any historical application by the applicant.	Animals	-	Refer to the statement provided by Mr Andrew McLean, appended as **Appendix U.**
3	No assessment has been undertaken on the impacts on horses.	Animals	-	Refer to the statement provided by Mr Andrew McLean, appended as **Appendix U.**
4	Approval of the application would impact jobs, property use and investment potential in the community.	Social Impact	-	Refer to the statement provided by Ms Hilary Konigkramer, appended as **Appendix F.**
5	The mine is an incompatible activity in the rural zone and does not recognize the sensitivity of the landscape.	Landscape, Natural Character and Visual	B.54 - Boffa Miskell - Landscape, Natural Character and Visual Effects Assessment	This matter is considered in application document B.54.
6	The mine is a conflicting land use to neighbouring properties and industries.	Landscape, Natural Character and Visual	B.54 - Boffa Miskell - Landscape, Natural	The construction and operation of the mine will not interfere with the lawful activities that can be undertaken at private properties. Nor will it damage the surface of land, cause loss or damage or have prejudicial effects on the use and enjoyment of the land, now or in the future.

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			Character and Visual Effects Assessment	
7	Effects on residential properties within the rural zone, to the west, have not been addressed.	Planning	-	Assessments of amenity effects undertaken in relation to the application have considered only those areas where likely or potential effects are anticipated.
9	The applicant has not addressed the effects on animals in their application.	Animals	-	Refer to the statement provided by Mr Andrew McLean, appended as **Appendix U.**
10	The proposed remedy and mitigation is insufficient when considering impacts on business, animal health and behaviour.	Economics, Animals, Social Impact	B.51 – Eaqub & Eaqub – Economic Effects; and B.57 – WSP – Social Impact Assessment	Refer to the statement provided by Mr Andrew McLean, appended as **Appendix U.** Refer to the statement provided by Ms Hilary Konigkramer, appended as **Appendix F.**
11	Staff and horses are at risk of injury by the flight response of horses triggered during blasting activities.	Noise	-	Refer to the statement provided by Mr Andrew McLean, appended as **Appendix U.**
12	The noise assessment is incomplete and inadequate as it relates to both human and equine comfort.	Animals, Noise	B.56 – Marshall Day Acoustics – Assessment of Noise Effects	It is considered that application document B.56 appropriately and sufficiently considers noise impacts on humans. Refer to the statement provided by Mr Andrew McLean, appended as **Appendix U** for consideration of noise impacts on equine comfort.
13	The monitoring programme is insufficient.	Noise	-	Refer to the statement provided by Mr Andrew McLean, appended as **Appendix U.**
14	Dust has well known adverse effects on equine respiratory health.	Air Discharge	-	Refer to the statement provided by Mr Andrew McLean, appended as **Appendix U.**
15	The area of the proposed Gladstone Open Pit is compromised.	Geotechnical	-	Refer to the statement provided by Mr Trevor Matuschka, appended as **Appendix S.**
16	The benefits of the project are not enforced by any consent conditions.	Economics, Social Impact	-	It is not orthodox for consent conditions to include conditions relation to benefits, but rather conditions reflect the management of environmental effects of the project.
17	Surface and groundwater systems may be permanently damaged by the proposal.	Hydrology, Hydrogeology	-	Various technical assessments have been undertaken to assess the impact of the Waihi North Project on surface water and groundwater. Where required further monitoring and subsequent contingency measures will be implemented to manage groundwater and surface water.

Comments from Chris Batten

Comment Number	Comment	Applicant Technical Input	Where Addressed in the Application Documents	Response
20	Proximity to mining operations.	Noise, Vibration, Landscape	B.56 – Marshall Day Acoustics – Assessment of Noise Effects; B.53 – Heilig & Partners – Blasting and Vibration Assessment; and B.21 – BECA – Waihi Facilities – Air Discharge Assessment	The technical assessments confirm that noise, vibration and dust effects at the property will be compliant with the associated thresholds of the Hauraki District Plan. Nonetheless, mitigation and monitoring will be in place to mitigate any effects on this receiver. The proposed works located within close proximity to the property are within existing surrounding working rural areas. Activities in this area will be contained behind Union and Winner Hills and screened during operation by retention measures and enhanced periphery vegetation.
21	No lawyer or technical expert has been provided to the public to help understand the complexity of the application.	Procedural	F.01 – Waihi North Project Consultation Summary	The applicant has offered 'Meet the Expert Days' as set out in application document F.01, where people could meet with the technical consultants working on the project, and discuss the findings of their assessments. Further, during the s54 commenting period, the applicant provided an independent planner to meet with stakeholders and help them understand the Fast-track process (https://www.facebook.com/share/p/1GxvaUjUcP/)
22	The effects (dust, noise, vibration and traffic) of the project will devalue our home.	Noise, Vibration, Traffic	-	Refer to the statement provided by Mr Doug Saunders, appended as **Appendix R.**
23	Oceana should be planting trees to act as a buffer to noise and dust for neighbouring properties.	Noise, Air Discharge	B.56 – Marshall Day Acoustics – Assessment of Noise Effects; and B.21 – BECA – Waihi Facilities – Air Discharge Assessment	Section 6.1.3 of application document B.56 identifies the modelling parameters which assumes no noise losses from vegetation attenuation and as such has not been considered as noise mitigation in favour of other bespoke noise screening equipment for individual sources. The existing dust management practises in addition to the measures proposed within the draft Air Quality Management Plan will ensure any air discharges effects will be adequately avoided in line with existing practises which are not significantly affecting ambient air quality and can be appropriately mitigated without the need for planting as concluded within Section 8.1-8.2 of application document B.21.

Comments from Barry and Beverley Ross

Comment Number	Comment	Applicant Technical Input	Where Addressed in the Application Documents	Response
24	The depth of the tunnel is concerning given the proximity of the house to the activities. Concern over damage to underground services that may not be apparent until after tunnelling is completed.	Geotechnical, Settlement, Blasting and Vibration	B.13 – EGL – Ground Settlement Report; B.30 – WWLA – Tunnel Elements; and B.53 – Heilig & Partners – Blasting and Vibration Assessment	The access tunnel depth is restricted to 120 m, increasing with the horizontal offset at the properties to the west to approximately 140 m. Application document B.13 states that settlements are expected to be in the order of 10 to 100 mm with these not expected to be material or for them to result in damage to residential dwellings. Section 3.4.8 of application document B.30 states that no dewatering effects are expected beyond those which already occur / have occurred due to existing mining activities, with depressurisation occurring immediately around the tunnel with no settlement risk considered likely. Any effects from blasting to construct the access tunnel beneath residential properties along Barry Road will achieve compliance with HDP's vibration standards, ensuring appropriate amenity, while also minimising chance of property damage as identified in Section 5 of application document B.53. Section 6.4 of application document B.53 talks to controlling vibration limits to avoid damage to infrastructure, including by replicating vibration guidelines and criteria that have been applied without incident on many other projects (i.e. AS2187-2006 and BS7385.2-1993 being the most applicable standard for protection of infrastructure and existing structures). Refer to response provided to Comment 27 with regard to property damage.
25	Compensation to the tenant of the property would need to be made for discomfort during blasting and any resulting damage.	Blasting and Vibration, Social Impact	B.53 – Heilig & Partners – Blasting and Vibration Assessment	The vibration contours presented in Appendix A of application document B.53 indicate perceptible vibration may be experienced near to the alignment but within the prescribed Hauraki District Plan Vibration Limits. Blasting will progress quickly with vibration expected to persist for not more than several months with 50 m advancements occurring per week. Tunnelling from both ends will lead to faster overall construction. Further, a description of the proposed Amenity Effects Programme is provided here: http://https//www.waihigold.co.nz/uploads/waihi-north-project/FactSheet-PropertyEffects-2024-FIN.pdf?_cchid=cacfc5f97a975f56d99310f294c32d52
26	Request for a Branz report to be completed.	Social Impact, Blasting and Vibration	-	Numerous reports have been completed over the life of the existing mining activities providing a baseline. Given the low level, and transient, vibration effect, the undertaking of further reports are considered unnecessary.
27	We do not wish for the tunnel to progress given we will need to prove damage (to property) was caused by mine blasting.	Blasting and Vibration	-	Compliance with vibration criterion specified in the Hauraki District Plan and the conclusions of Section 6.1 of B.53 determines that vibration will be incapable of inducing damage to any structures or buildings around blasting areas with low to marginally perceptible levels of vibration experienced. The applicant has proposed consent conditions for vibration that are in line with the conditions of other mining operations in proximity to residential Waihi and will ensure vibration levels are well below the level where property damage could occur. Nevertheless, the company has a 'We Break, We Pay' procedure in place to assist owners if they believe their property may have been damaged. As part of this process, if it is determined that property damage is attributable to the applicant's activities, they will remedy the damage at their cost. The process includes provision for a third party to investigate the complaint for both the homeowner and the company.

Comments from Brigid and Steve Cameron

Comment Number	Comment	Applicant Technical Input	Where Addressed in the Application Documents	Response
28	Proximity to Explosive Magazine.	Noise, Blasting and Vibration, Hazardous Substances	B.19 – Tonkin + Taylor – Storage and Use of Hazardous Substances at Willows Road Site and the Wharekirauponga Underground Mine	It is noted in section 8.2.1 of application document B.19 that the magazine buffer zones do not enter the Cameron's property. Nevertheless, the risks to people, property and the environment from an unintended detonation at the proposed explosives storage locations is assessed as low and will be managed through site and equipment design (e.g. separation distances to off-site locations and other explosives stores, provision of fire protection systems and certification of the explosives storage magazines) and management controls (personnel access restrictions, security monitoring, staff training and handler certification, and emergency response plans).
29	Neighbouring farm becoming a hive of activity and materialisation of the site being used as a helicopter site.	Noise/Traffic	B.56 – Marshall Day Acoustics – Assessment of Noise Effects	As per section 14.5 of application document B.56, individual helicopter operations will be clearly audible for some receivers in proximity to the helicopter bases and the overflying tracks and will be noticeable above the existing ambient noise environment. However, considering the large periods of respite between events and the ambient noise environment in the vicinity of nearby receivers, as well as the other noise sources present, Marshall Day considers that helicopter noise effects on people as a result of the project are reasonable.
30	Concerns with the topography of the site being located above the household propagating noise to the lower lying household that would be unsettling and stressful.	Noise	-	Refer to response provided to Comment 29.
31	Concerns around the effects of airborne dust during windy or drier summer months having respiratory effects.	Air Discharge	B.24 – Southern Skies – Erosion and Sediment Control Assessment Report; and B.22 – Beca – Wharekirauponga Underground Mine – Air Discharge Assessment	The operational activities that have the ability to generate dust will be undertaken in accordance with site-specific Erosion and Sediment Control Plans to minimise dust generation to mitigate risk of dust generation to a low level. In addition to this, the effects of dust and particulate matters have been assessed in application document B.22 (as being within the Resource Management (National Environmental Standards for Air Quality) Regulations 2004 ("NES Air") guideline values and current consent limits and as such respiratory effects will be low. In addition to this, all works will be undertaken in accordance with the Air Quality Management Plan.
32	Blasting, truck movements and machinery operations leading to excessive noise and frequent vibrations that will be disruptive and occurring 24/7 leading to effects on sleep and wellbeing.	Blasting and Vibration, Traffic, Noise, Social Impact	B.56 – Marshall Day Acoustics – Assessment of Noise Effects	Operation noise will meet the limits in New Zealand Standard 6802:2008 Acoustics – Environmental Noise ("NZS6802:2008") and be consistent with the recommendations for daytime noise published by the World Health Organisation. In addition to this, the applicant proposes to implement a comprehensive Operational Noise Management Plan for each project area to ensure all operational activities are undertaken in such a way so as to achieve compliance with the recommended noise limits at all adjoining sites.
33	Previous noise monitoring has been measured at the road gate and not the property itself which the commentor finds insulting.	Noise	B.56 – Marshall Day Acoustics – Assessment of Noise Effects	Noise monitoring will be undertaken in accordance with the requirements of the District Plan and the proposed Noise Management Plan.
34	Concerned about the dust effects of the stockpiling and topsoil storage as rainwater system has been installed at the house collecting roof runoff which will be exposed to dust.	Air Discharge	-	Refer response provided to Comment 31.
35	Property value affected by the mine.	Social Impacts	-	Refer to statement provided by Doug Saunders, appended as **Appendix R.** In addition to the information provided in **Appendix R**, the applicant has voluntarily put forward a Top Up management measure, described in detail here: https://www.waihigold.co.nz/uploads/waihi-north-project/FactSheet-PropertyEffects-2024-FIN.pdf?_cchid=cacfc5f97a975f56d99310f294c32d52
36	Having experienced helicopter operations previously that are noisy the location of the helipad in proximity to the dwelling is unsettling particularly during take offs and landings which will interrupt the peace and quiet currently enjoyed.	Noise	-	Refer to response provided to Comment 29.
37	Safety concerns from helicopter operations such as risk of accident and emergency landings on their property.	Noise	-	All helicopter activities and operations will be undertaken in accordance with best practice guidelines. Any emergency landings in the area would utilise the applicant owned farm on Willows Road.
38	Loss of privacy and enjoyment of outdoor amenity and gardens as introduction of new aerial activity with sightlines from above will affect how they use outdoor space.	Planning/Landscape	-	It is acknowledged that there may be effects associated with loss of privacy and aerial activities, however any such effects will be intermittent in nature with large periods of respite between events.
39	Concerns around increased traffic movements from helicopter pad including vehicles associated with helicopter operations and passengers.	Traffic	B.50 – Stantec – Transportation Assessment Report	Based on the recommended mitigation and management measures proposed to manage traffic in section 15 of application document B.50, including: • Road upgrades; • Dispersal of day shift time;

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				• Monitor the workforce travel patterns and associated effect on the adjacent road network and adapt management of traffic to suit, where identified as required; • The provision of adequate parking within the site(s); and • Implementation of a Project Traffic Management Plan. Stantec concludes the effects on the transportation network arising from the WNP (as a whole) to be acceptable.
40	Concerns around accidental explosions originating within explosive magazine causing serious injury, death, property damage and contamination highlighting the primacy of proper storage and handling.	Hazardous Substances, Blasting and Vibration	-	Refer to response provided to Comment 28.
41	The siting of the explosive area which is easily accessible and with inadequate security measures will make the site vulnerable with access from Highland Road.	N/A	-	Refer to response provided to Comment 28.
42	The potential for theft of explosives and unauthorised access from undesirable community members as the mine farm becomes an attractive target.	Hazardous Substances	-	The magazine compound area is securely fenced with motion sensor video surveillance. Each individual magazine is designed and built to AS/NZS standards, with double acting lock mechanisms. Keys are non-replicable keys. Detection sensor cameras are installed, linked to the 24h staffed Gate House Security. Only approved handlers, with a Controlled Substance License issued by WorkSafe are permitted into the compound. Visitors must be constantly supervised within magazine. Only personnel vetted and approved by the Mine Manger are permitted to enter. Personnel must call security before entering magazine and exiting. Explosive types: Detonators are programmable type detonator, and therefore if stolen cannot be detonated. Majority of bulk explosives will be Emulsion which is an oxidiser and not explosive until mixed, which is done in the blast hole.
43	Risk of explosives transportation to and from magazine can pose a risk as within direct line of sight and proximate to dwelling.	Hazardous Substances	B.19 – Tonkin + Taylor – Exploratory Works Within the Coromandel Forest Park	As set out in Section 8.2.4 of application document B.19, any transport of hazardous substances by road will be in accordance with the Land Transport Rule: Dangerous Goods 2005 and, when on site, all transport of explosives is carried out under the supervision of a Certified Handler. Transport of hazardous substances via helicopter will adhere to the Civil Aviation Rule Part 92 – Carriage of Dangerous Goods. These measures are considered sufficient to ensure that the environmental effects arising from the transport of hazardous substances will be less than minor.

Comments from Bryce Ede - Praedium Limited

Comment Number	Comment	Applicant Technical Input	Where Addressed in the Application Documents	Response
44	Concerned around groundwater as property has five natural springs which is why it was purchased. Worried about cumulative takes impacting water security which would make the property untenable and unsaleable.	Hydrology/Hydrogeology	B.27 – WWLA – Assessment of Groundwater Effects – Wharekirauponga Deposit	Refer to response provided to Comment 1. Section 4.6 of application document B.27 states that where mine dewatering will take place is 5 km distance from the closest groundwater uses and water bores are too distant to be affected by development of the mine.

Comments from Martin Barber

Comment Number	Comment	Applicant Technical Input	Where Addressed in the Application Documents	Response
45	As long as the applicant continues with regular and accurate monitoring of vibration, noise and dust the commentor will be satisfied	Noise, Blasting and Vibration, Air Discharge	B.53 – Heilig & Partners – Blasting and Vibration Assessment; B.56 – Marshall Day Acoustics – Assessment of Noise Effects; and B.21 – Beca – Waihi Facilities – Air Discharge Assessment	As set out in application documents B.53, B.56, and B.21, substantial and ongoing monitoring will be undertaken with regard to vibration, noise, and dust.

Comments from Bruce Morrison

Comment Number	Comment	Applicant Technical Input	Where Addressed in the Application Documents	Response
46	Requests a boundary adjustment and surrender of easement that was granted following the increase in RL to the crest height of TSF1A which is described as a poor solution to loss of sunlight despite it allowing for a water take from S4 once construction of TSF1A finished and it was no longer a collection pond because of the sites ample summer rainfall.	N/A	-	The applicant acknowledges this comment and is interested in progressing the adjustment as suggested, in exchange for the surrender of the easement. The applicant intends to commence this process immediately; however, it notes that this matter is outside the scope of the proposed Waihi North Project and is not directly linked to the effects of the project.

Comments from Andrew and Rachel Wharry

Comment Number	Comment	Applicant Technical Input	Where Addressed in the Application Documents	Response
49	Construction of tunnel is clearly prejudicial under Section 57 Crown Mineral Act definition of "entry of land" to land and property rights as it will interfere with landowners lawful right to access groundwater for domestic and livestock water supply and would prejudicially affect the recovery of privately owned minerals.	Legal	Refer to appendices to the submission.	As set out in Paragraph 8 of Pip Walker's letter dated 26 August 2022 provided with the submission, the construction tunnel will not unreasonably interfere with the lawful activities that can be undertaken at the property. Nor will it damage the surface of land, cause loss or damage or have prejudicial effects on the use and enjoyment of the land, now or in the future. Accordingly, no access arrangement is required. Also refer to the statement provided by Mr Stephen Christensen, appended as **Appendix H.**
50	Landowner comments state the Crown Minerals Act Section 25(6) Minister must not grant exploration or mining permits in respect of privately owned minerals except as provided for under Section 84 of the Marine and Coastal Area (Takutai Moana) Act 2011.	Legal	Refer to appendices to the submission.	As set out in the letter from Kyle Welten dated 8 August 2022 provide with the submission, the Crown retains mineral rights over gold and silver at the Wharry's property. The Crown has subsequently granted a mining permit to the applicant to mine for gold and silver (provided other authorities such as resource consents are sought). These rights can co-exist with the private mineral rights held by the Wharry's and as such, Crown Minerals Act Section 25(6) is not applicable.
51	Section 54(2) of Crown Minerals Act provides that the holder of a permit (excluding petroleum) must not prospect, explore or mine under land without a written access arrangement agreed to by each owner and occupier of the affected land and proceeding without such consent would be contrary to legal requirements set out in the Act and would infringe upon property rights and mineral rights.	Legal	-	Refer to response provided to Comment 49.
52	The proposed tunnel corridor 500 m beneath 15 hectares of landholdings across five titles and three residential dwellings identified for future residential development raises serious concerns around limiting the ability to subdivide and generate additional homes.	Social Impact	-	Refer to response provided to Comment 49.
53	The commenter raises concerns around the potential and unknown impacts of underground tunnel including dewatering, vibration, noise, reduced property values, insurance and liability implications, imposition of conditions on the titles presenting unacceptable risk to family, property and the long-term viability of the land.	Hydrology/Hydrogeology/Blasting and Vibration/Noise/Social Impact	Refer to appendices to the submission.	As set out in Paragraph 4 of Pip Walkers letter dated 26 August 2022 provided with the submission, the applicant has developed property value agreement measures for residents who are potentially impacted by the applicant's Operations. This has been prepared in response to concerns of the residual effects of the mining activities. Paragraph 4a-c outlines those relevant to the Wharry's property.

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54	Landowner claims OGNZ has consistently dismissed their input leaving concerns unaddressed and the EPA should not deviate from the requirement of private landowners and occupiers having to provide consent.	N/A	Refer to appendices to the submission.	As set out in Paragraph 5 of Pip Walkers letter dated 26 August 2022 provided with the submission, the applicant repudiates any suggestion of inadequate engagement and the dismissal of input from the Wharry's. Specifically, the Wharry's had the ability to review Lyfestyle Research Reports and provide comments back to Tefler Young (who prepared the report) which they were not interested in doing. It is noted however, the applicant provided the comments to Tefler Young, and a response was provided to the Wharrys. The applicant welcomed the Wharry's input, but note there is a difference in opinions that has not been resolved.
55	The landowner feels the proposed underground access tunnel is most pertinent to them and could be alternatively constructed beneath land already owned by OGNZ between Golden Valley and State Highway 25 avoiding impacts to privately owned land.	Options Assessment	B.01 – EGL - Tailings Storage and Rock Disposal Volume 1 - Natural Hazards and Options Assessment; B.04 – EGL - Tailings Storage and Rock Disposal Volume 3 - Proposed Tailings Storage Facility - Storage 3 RL155; B.05 – EGL - Tailings Storage and Rock Disposal Volume 4 - Northern Rock Stack RL 173 Proposed Rock Disposal Facility; B.09 – EGL - Willows Rock Stack Technical Report; and B.02 – GHD – Gladstone Pit TSF Design Report	Alternative siting and design options for the various components of the WNP were considered by the Applicant, as described in application documents B.01, B.04, B.05, B.09 and B.02. It was determined that the numerous overlapping technical and operational characteristics that bear on the siting of these features demonstrate a functional need to occupy their proposed locations.
56	The commentor states that the route in aligning with the upcoming service trench construction appears to have been selected based on construction cost efficiencies with insufficient regard for the rights and interests of private landowners, occupiers and mineral title holders.	Options Assessment	-	Refer to response provided to Comment 55.
57	The commentor states that the supporting documents emphasize the positive aspects while downplaying potential adverse effects using phrases such as "less than minor" or "unlikely to be noticeable" with many of the assessments based in Australia or the South Island lacking the direct understanding of local context.	Procedural	-	The substantive application and accompanying technical reports have been prepared in accordance with the legislative frameworks (e.g., FTAA, RMA etc) and all corresponding wording is consistent with these documents. In addition to this, all potential adverse effects and positive effects have been addressed within Section A.09 of the substantive application. Where required to assess the effects, reference to assessment criteria or data from other areas has been utilised. This is considered to be consistent with general practice.

Comments from Waihi Community Forum (and Mary O'Donoghue)

Comment Number	Comment	Applicant Technical Input	Where Addressed in the Application Documents	Response
60	The Forum notes the complexity of draft conditions and the reliance of these on management plans require some sort of independent experts to understand and comment on draft conditions giving greater confidence that conditions are robust and reflective of their interests especially pertaining to residential amenity (noise, vibration, blasting and air quality).	Procedural	-	Refer to response provided to Comment 21.
61	Forum and residents fear that management plans that are required to be certified could be changed without further community input increasing effects on local residents and requests future amendments are reviewed in terms of potential effects on residents.	Planning	-	Any amendments to management plans can only be made if they do not generate / result in effects that are greater than those anticipated at the time of any approvals being granted.

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62	Residents in favour of making Condition C4 advice note "amendments should be consistent with the objective in the approved management plan" into an enforceable condition to provide greater certainty and protection to residents.	Planning	-	Refer to response provided to Comment 61.
63	Forum supports Ecology and Landscape Management Plan acknowledges visual amenity effects and requests screen and buffer planting of fast-growing natives in first instance before works commence to reduce visual impacts.	Landscape	A.09 – Substantive Application, Section 6.7; H.02 – Waihi Area Ecology and Landscape Management Plan, Section 5; and B.54 – Boffa Miskell – Landscape, Natural Character and Visual Effects Assessment.	The planting as outlined in the Waihi Area ELMP is proposed to be undertaken through a multi-staged approach which is conductive with plant growth and health. Planting outside of this schedule has the potential to lead to the planting (as subsequent screening) being unsuccessful. In addition to this, the visual effects associated with the WNP have been assessed by Boffa Miskell as not being significant due to the underground nature of the mining at WUG and the remaining area being predominantly an established mining area. As such it is considered the approach to planting proposed within the application is appropriate.
64	Forum suggests blasting windows similar to existing production blasting windows be imposed for the GOP, Borow Pit, Willows Access Tunnel and WUG production as a condition of consent (7.00am - 8.00am, 1.00pm - 2.30pm, 7.00pm-8.00pm).	Blasting and Vibration	-	This matter is discussed further in the memorandum prepared by Mr John Heilig, appended as **Appendix 1**.
65	The Forum supports the measures proposed in the consent conditions for reducing the effects of dust.	Air Discharge	-	-
66	Residents raise concerns around lighting outside of daylight hours for Gladstone Open Pit, Willows Road area, potentially NRS and TSF3 and recommend a condition be set to ensure light spill is minimised and a planting screen is used where possible to protect nearby residents amenity.	Lighting	-	HDC, in reviewing the consent conditions, have requested a Lighting Management Plan. The applicant has accepted this request. The Lighting Management Plan will manage the light spill outside of daylight hours to mitigate any potential effects on amenity values.
67	Forum acknowledges measures the applicant have taken to address concerns around helicopter noise, but residents raise concerns about noise impacts on livestock and request flight times be limited between 7.30am and 8.00pm, resident friendly restrictions on height, direction and times as a consent condition.	Noise	-	Refer to the memorandum prepared by Mr Gary Walton and Ms Laurel Smith, appended as **Appendix 2**.
68	Forum raises concerns about 85 m Northern Rock stack and concerns about its impacts on natural topography of the land during its construction.	Landscape	B.54 -Landscape, Natural Character and Visual Effects Assessment	The Northern Rock Stack will be screened from its closest public view by a grass-planted bund along the Golden Valley Road boundary. The effect and resulting view are simulated by Boffa Miskell in its Visual Simulations, Appendix 6 to application document B.54 – refer to VS15, VS15A and VS25B.
69	Forum raises concerns about the necessity of the GOP and concerns include property damage, noise and vibration as well as impacts on amenity and the natural topography of the land.	Economics/Noise/Blasting and Vibration/Landscape	B.56 - Marshall Day – Assessment of Noise Effects.	Construction noise levels remain compliant in almost all circumstances with appropriate management in place for localised exceedances. Operational noise in the vicinity of Gladstone Open Pit will result in some 27 receivers where operational noise is slightly above 50 dB LAeq with proposed conditions in the Noise Management Plan ensuring noise levels do not exceed this threshold at any residence through noise mitigation options such as quieter machinery, restrictions on operating hours, bespoke screening of individual sources, screening of noise sensitive receivers and noise monitoring programmes. As such noise emissions are considered reasonable by Marshall Day. The scale of blasting for the Gladstone Open Pit over a 6 year duration will promote environmental compliance with vibration restrictions, and the applicant has over the last 30 years undertaken blasting practices with 99% of blasts generating less than 5mm/s. The envelope of impact for the Gladstone Open Pit is estimated to be around 50 properties who will be subject to low and marginally perceptible levels of vibration (which already generally relate to prevention of threshold cosmetic damage in the most susceptible of materials). The effects of overpressure are expected to remain low and separation between blast areas mean no persons or properties will be affected by flyrock. Refer to response provided to Comment 27 with regard to property damage.
70	The Forum list unemployment, growth and education statistics and view the WNP as an opportunity through entering contract agreements with contractors to employ local labour as mentioned in the Social Impact Assessment as well as the Skills Development and Training Action Plan aligning with Hauraki District Council's Manaaki Toiora Strategy's priority of growing skills and the local workforce. Forum supports Top-Up Scheme for properties identified in the WNP assessment as a condition of consent and further request residents	Social Impacts	-	Refer to statement provided by Hilary Konigkramer, appended as **Appendix F.** Refer to the statement provided by Doug Saunders, appended as **Appendix R.** In addition to the information provided in the statements outlined above, it is noted the consent conditions address employment in relation to the WNP in detail and in accordance with Hauraki District Council's Manaaki Toiora Strategy.

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	outside of the proposed Top-Up scheme area be able to apply as determining who is clearly affected will require a clear and robust set of parameters suggesting the Independent Review Panel currently charged with Property Purchases in the Correnso Underground Mine to determine whether a resident outside the proposed area is clearly affected, based on set parameters.			
71	Forum requests the Amenity Effect Programme (AEP) be included within consent conditions as a mandatory requirement.	Social Impact	-	Refer to HDC Conditions 34-41.
72	Forum would like the applicant to contribute ahead to the Streets Ahead Fund to improve the area and well-being of the community where mining takes place.	Social Impact	-	The applicant continues to support the forum through funding their coordinator and covering their administrative costs. Two applicant representatives also serve on the forum. Notably, the applicant recently contributed $150,000 toward the successful PumpTrack Project. The company remains interested in hearing about future WCF projects and discussions regarding potential contributions, should it choose to participate. However, these conversations are outside the scope of the proposed Waihi North Project and its predicted effects.
73	Highlights that the economic report does not look at what happens economically after mining ends addressing what happens once WNP finishes.	Economic	B.57 - WSP – Social Impact Assessment.	This matter is considered in application document B.57, with associated effects provided for by consent conditions relating to social closure factors (HDC Condition 109).
74	Given the Rehabilitation and Closure Plan outlines seven social impacts of mine closure it is requested that OGNZ could be asked to work with Council, Central government and iwi for planning of the future of Waihi after mining with enough lead time so there is time to manage transition in 10 years time as a condition of consent as a Post Mining Transition and Community Resilience Plan.	Social Impact	B.57 - WSP – Social Impact Assessment.	The social impacts of the mines closure have been identified and assessed in the Social Impact Assessment. This report includes assessment on: > Direct employment; > Reduced community stability; > Change in sense of place; and > The impact on wellbeing. There is also a consent condition which relates to social closure factors (HDC Condition 109).
75	The Mine Rehabilitation and Closure Plan mentions the WNP or activities related and there are no maps showing TSF3, TSFGP, NRS and Table 1 Rehabilitation Areas doesn't include the areas for TSF3, TSFGP or the Northern Rock Stack either.	Management Plan	-	It is assumed there is some confusion on this matter and that the plans being referred to are the planting plans, rather than the Rehabilitation and Closure Plan. Refer to response to Comment 76 for further details of the Rehabilitation and Closure Plan.
76	Commenter queries whether the Mine Rehabilitation and Closure Plan is for both the current mine areas and the proposed WNP or just one?	Management Plan	-	The Rehabilitation and Closure Plan provided with the application was in draft form. The plan provided for certification will be integrated with the Rehabilitation and Closure Plan that applies to the applicants other mining operations in the Waihi Area.
78	Comment notes how mine affects their life detrimentally and has potential to make the farm property worthless.	Property Value	-	Refer to statement provided by Doug Sanders, appended as **Appendix R.**
79	Currently affected by mine helicopter flying overhead during sunrise to sunset, noise from heavy machinery, light from spotlights and dust where until recently the landowner had lovely rural views of grass and trees which is now rock piles and machinery which will get worse if the WNP goes ahead.	Noise, Light, Landscape	B.21 – Beca – Waihi Facilities – Air Discharge Facilities; B.22 – Beca – Wharekirauponga Underground Mine – Air Discharge Assessment; B.56 – Marshall Day Acoustics – Assessment of Noise Effects; A.09 – Substantive Application, Section 6 – Effects Assessment; and B.54 – Boffa Miskell – Landscape, Natural Character and Visual Effects Assessment.	The effects of noise, dust, light and effects on landscape values have been addressed in the technical reporting, the following conclusions are noted: > Dust will comply with the applicable standards; > Marshall Day (B.56) considers that helicopter noise effects on people as a result of the project are reasonable; > Operational noise will be managed to achieve appropriate standards that will protect the amenity values of surrounding properties; > Lighting will be managed in accordance with the Lighting Management Plan (required by HDC Condition 54A); and > The visual effects associated with the WNP have been assessed by Boffa Miskell (B.54) as not being significant due to the underground nature of the mining at WUG and the remaining area being established mining activities.
80	Notes the Surface Portal from WKP Underground Mine and associated surface facilities at the Willows Road property will greatly alter views and introduce dust, noise, machinery, traffic, and lighting effects demonstrated within OGNZ had exploration rigs onsite with huge spotlights shining into the property owners home.	Landscape, Air Discharge, Noise, Traffic, Lighting	-	Refer to response provided to Comment 79.
81	The landscape changes from greenery to rock piles and buildings will take away natural character of rural views and glare has the potential to affect a dark sky outlook at night as well as a loss of privacy as surface facilities will have viewshafts into their home.	Landscape	A.09 – Substantive Application – Section 6 – Effects Assessment; and B.54 – Boffa Miskell –	The natural character of the WNP have been assessed by Boffa Miskell and it has been determined: > In the Wharekirauponga area mining activities are predominantly underground, with natural character effects largely avoided and / or minimised; and

Comment Number	Comment	Applicant Technical Input	Where Addressed in the Application Documents	Response
			Landscape, Natural Character and Visual Effects Assessment.	> Beyond the WUG, those new elements of mining operations proposed as part of this application have been sited to largely avoid adverse visual effects and features such as TSF3 and the Waste Rock Stack will be sited and finished to integrate into the host environment to appear as natural as possible.
82	Comment notes as proposal is planned to be worked 24/7, there needs to be many restrictions and conditions on activities especially outside of usual work hours of 8am to 5pm.	Noise, Traffic, Lighting, Operations	-	Restrictions are proposed throughout the conditions to ensure that appropriate controls are in place to manage likely and potential effects associated with the mining activities and associated operations.
83	Submitter notes the potential effects of proposed groundwater takes having the potential to affect water takes from bores.	Hydrology, Hydrogeology	A.09 – Substantive Application, Section 6 – Effects Assessment; B.25 – GDH – Water Management Studies; and B.27 – WWLA – Assessment of Groundwater Effects – Wharekirauponga Deposit.	The applicant has committed to managing its mining activities so that potential effects on surface and groundwater are minimised as far as practicable. This includes monitoring of groundwater in and around the Willows SFA, the implementation of trigger levels and mitigation/contingency measures where trigger levels are exceeded. Section 4.6 of application document B.27 states that the location of mine dewatering will take place is 5 km distance from the closest groundwater uses and water bores are too distant to be affected by development of the mine.
84	Comment notes that the area is a High Rainfall area so a high chance of potential water contamination.	Water Quality	B.24 – Southern Skies – Erosion and Sediment Control Assessment Report	All works will occur in accordance with best practice erosion and sediment control measures, as set out in application document B.24, and supported by associated conditions and management plans. As such it is considered that contamination as a result of rainfall is not a significant risk.
85	Commenter requests guarantee that the applicant will compensate them if their water is affected by mining, dewatering or explosive activities as water takes within the area for rural domestic supply, farm dairy shed and stock water are permitted within the Waikato Regional Plan.	Hydrology, Hydrogeology, Water Quality	B.27 – WWLA – Assessment of Groundwater Effects – Wharekirauponga Deposit	Section 4.6 of application document B.27 states that the location of mine dewatering will take place is 5 km distance from the closest groundwater uses and water bores are too distant to be affected by development of the mine. Further, the applicant is aware that the activities they undertake cannot adversely impact lawfully established water takes.
86	The landholding of this resident borders the Ohinemuri River and is worried that mining activity has potential to contaminate and urges the panel ensure risk of contamination is eliminated.	Water Quality	B.25 – GDH – Water Management Studies	As set out in application document B.25, the water quality of the Ohinemuri River has the ability to be impacted by the GOP TSP discharge and the discharges from the Water Treatment Plant. However, in summary: > Changes to the Ohinemuri River water quality as a function of the GOP TSF discharge, even when excluding potential attenuation of contaminants during migration to the river, is predicted to be negligible and within the existing receiving water quality criteria. > The existing water quality standards that are implemented at the WTP are essential for maintaining water quality of the Ohinemuri River. The proposed WTP upgrades have been designed to enable the applicant to continue to adhere to the water quality standards that currently apply to the existing WTP approvals.
87	The landowner notes they will be affected by dust and noise and changes to landscape and outlook resulting from the Northern Rock Stack and Conveyor System.	Air Discharge, Noise, Landscape	-	Refer to response provided to Comment 79.
88	Map C10 showing mitigation (riparian planting) located within this landowners property who has not seen this plan nor discussed it with the applicant or have given consent to allow for property access and requests riparian planting not be located within their land without agreement and payment of compensation.	Ecology	-	The applicant has assessed the riparian planting in question and can confirm that no planting is proposed on the property of the commenter.
89	Landowner notes the existing helicopter noise over property occurs from Baxter Road site to WKP exploration site from sunrise to sunset 7 days a week and seeks a reduction in the proposed helicopter flights to 100 hours per month and flights restricted to Monday to Friday between the hours of 8am to 5pm, no flights during public holidays and the flight path to avoid residential properties by 3km to reduce noise and loss of privacy effects.	Noise	-	Refer to the memorandum prepared by Mr Gary Walton and Ms Laurel Smith, appended as **Appendix 2**.
90	The landowner notes the landscape character visual effects assessment takes no photographs from private land and thereby no account has been made for visual effects on this property owners view or changes to landscape or topography when they already contend with noise, dust and reduced privacy with existing operations.	Landscape	-	Refer to the statement prepared by Mr Rhys Girvan, provided as **Appendix O**.
91	The view of rural paddocks, hills and trees is going to be greatly altered and change the rural character experienced at this property.	Landscape	-	Refer to the responses provided to Comment 63 and 81.

Comment Number	Comment	Applicant Technical Input	Where Addressed in the Application Documents	Response
92	Landowner believes selected viewpoints VS6 and VS15 understate the level of visual effects as they believe the effects will be high and request they be fully assessed and reported to the panel.	Landscape	-	Refer to the statement prepared by Mr Rhys Girvan, provided as **Appendix O**.
93	Commenter states that OGNLZ royalties need to go back into local community as the grants they give are minimal compared to company profits.	Social Impact, Economics	B.51 – Eaqub & Eaqub – Economic Effects	Royalties in New Zealand are set by the government, specifically under the Crown Minerals Act and managed by MBIE. Mining companies do not control the rates, or how the royalties are allocated. Regardless, Gold mining in Waihi continues to be a source of jobs and prosperity for the local economy. For example, in 2022, the applicant spent more than $53M locally. Further to this, The average income at OceanaGold Waihi is over $100,000 a year, and 79% of our employees live locally. Waihi Social Impact Management Plan 2021-2022 Monitoring Report. Once underway, the expanded Waihi Operation's contribution to the New Zealand economy would grow significantly, with expenditure in the Hauraki District alone expected to be over $1 billion.
94	OGNZ bring in specialist staff from overseas or on short-term contracts and many do not live in the Waihi Township so personal spending does not go back into local economy as some live in different councils or the greater Waikato area.	Social Impact, Economics	-	Refer to the statement provided by Mr Shamubeel Eaqub, appended as **Appendix B.**
95	Commenter notes that it is unfair for lay people to have to read and understand all information in the application in a limited timeframe and without specialist help.	Procedural	-	Refer to response provided to Comment 21.
96	Commenter does not think that operations should be 24/7 especially activities on surface areas.	Noise/Traffic/Lighting	-	Refer to response provided to Comment 82.

Comments from Gloria Sharp

Comment Number	Comment	Applicant Technical Input	Where Addressed in the Application Documents	Response
112	This application has far-reaching impacts and ramifications on the people and town of Waihi.	Social Impact	-	Refer to the statement provided by Ms Hilary Konigkramer, appended as **Appendix F.**
115	The air input vents for the Martha Pit were changed to extrusion vents and now hazardous air tunnels towards town.	N/A	-	We note that commenter has provided photographs of water vapour plumes and made some general comments and queries regarding them. We have appended an assessment of the visual effects of the vapour plumes associated with the Waihi North Project (provided as Attachment 1 to this response table) to provide additional information / detail of the plumes.
118	There should be a permanent independent monitoring auditor resident in Waihi.	Monitoring	-	The applicant takes the monitoring requirements of their consents and approvals extremely seriously and has a strong record of compliance with these requirements. As referred to in the response to Comment 25, a wide range of monitoring is proposed as part of this application to ensure any likely or potential effects on Waihi residents are appropriately managed.
122	Mining operations can pollute local waterways with sediment and has/will create waste rock stacks (tailings dams) prone to acid mine drainage.	Freshwater Ecology, Geochemistry	B.24 – Southern Skies – Erosion and Sediment Control Assessment Report; B.14 – AECOM – Tailings Geochemistry	All works will occur in accordance with best practice erosion and sediment control measures, as set out in application document B.24, and supported by associated conditions and management plans. As such it is considered that the pollution of waterways as a result of the project is not a significant risk. Further, a fulsome assessment of the potential for acid mine drainage has been undertaken, as detailed in application document B.14. As a result of the applicant's existing mining activities in the area, it is considered likely that spoil material in the areas of the proposed works will behave in a manner that is geochemically similar to spoil associated with existing operations. With the implementation of appropriate control measures, acid generation can be minimised and appropriately managed.
123	Processing ore to extract gold can lead to the arsenic, mercury and cyanide pollution.	Geochemistry, Hazardous Substances	-	Refer to the statement provided by Mr Robert Van de Munckhof, appended as **Appendix A**. Refer to the statement provided by Mr Ian Jenkins, appended as **Appendix C**.
124	Are you sure the town's water supply and rivers will not be affected by the proposal?	Water Supply	-	WRC has also made comments relating to protection of the towns water supply. Additional conditions have been proposed in relation to this.

Comment Number	Comment	Applicant Technical Input	Where Addressed in the Application Documents	Response
126	The blasting and vehicle noise associated with the mining of the gladstone open pit will be immense and the application should be declined.	Blasting and Vibration, Noise	-	Refer to the memorandum prepared by Mr John Heilig, appended as **Appendix 1**. Refer to the memorandum prepared by Mr Gary Walton and Ms Laurel Smith, appended as **Appendix 2.**
127	"Will not result" is an insufficient argument	N/A	-	Statements concluding the level of an effect associated with the project are supported by various technical assessments which summarise substantial bodies of technical research and assessment. Further to this, the substantive application and accompanying technical reports have been prepared in accordance with the legislative frameworks (e.g., FTAA, RMA etc) and all corresponding wording is consistent with these documents.
128	Has CO2 emissions been addressed in the application?	Climate Energy and Greenhouse Emissions	B.08 – OGNZL – Climate Energy Greenhouse Management	The effects of greenhouse gas emissions, including carbon dioxide, are addressed application document B.08.
129	The impacts of mining of the residents of the area has caused significant health issues from stress and other adverse effects.	Social Impact	B.57 - WSP – Social Impact Assessment.	The effects of the application on health and wellbeing are provided in application document B.57.
130	Negative impacts on property values	Social Impact	-	Refer to the statement provided by Doug Saunders, appended as **Appendix R.**
131	There will be damage to property from dust and toxic dust	Air Discharge	B.21 – Beca – Waihi Facilities – Air Discharge Facilities	A thorough assessment of potential air quality effects is provided in application document B.21. It is anticipated that the proposed activities will comply with the permitted activity conditions relating to air quality, however for certainty the applicant has applied for approval for air discharge activities and is proposing monitoring and mitigation measures to ensure any discharges are appropriately managed.
132	There are personal costs involved in monitoring property for damage and obtaining legal expertise to remedy effects	Blasting and Vibration	-	OGZNL has proposed consent conditions for vibration that are in line with the conditions of our other mining operations in proximity to residential Waihi and will ensure vibration levels are well below the level where property damage could occur. Nevertheless, it is recognised that there can be concern around what OGZNL would do if mine-related activity caused property damage. As such, the company has a 'We Break, We Pay' procedure in place to assist owners if they believe their property may have been damaged. As part of this process, if it is determined that property damage is attributable to the applicant's activities, the company will remedy the damage at our cost. The process includes provision for a third party to investigate the complaint for both the homeowner and the company, at OGZNL's cost.
134	How valid is the stated number of jobs over the sites?	Economics	-	Refer to the statement provided by Shamubeel Eaqub, appended as **Appendix B.**
135	How do the economic benefits stay in NZ when the mining companies are internationally owned?	Economics	-	Refer to the statement provided by Shamubeel Eaqub, appended as **Appendix B.**
136	Closure of public roads restricts public access to right-of-way to the Coromandel Forest Park.	Recreation, Traffic	-	The application is not proposing to close any public roads.
138	No plans have been made / provided for when the mining in Waihi ceases.	Social Impact	-	Refer to response provided to Comment 73.
141	Property owners within the area of impact should be able to sell their property to the Mining Co at market price plus TopUp plus 10%.	Social Impact	-	Refer to the statement provided by Doug Saunders, appended as **Appendix R.**

Comments from Rodney Malone

Comment Number	Comment	Applicant Technical Input	Where Addressed in the Application Documents	Response
143	No objection to the application and is looking forward to it being approved by the EPA.	N/A	-	-

Comments from Peter and Jessie Rogers

Comment Number	Comment	Applicant Technical Input	Where Addressed in the Application Documents	Response
331	Regard was not given to the direct impact of residents living in close proximity to the Mine extension areas.	Landscape, Noise, Blasting and Vibration, Transport, Air Discharge		The comprehensive application includes a thorough assessment of a wide range of effects, including those relating to amenity effects for those living in close proximity to the mine. Appropriate controls and mitigation measures have been proposed to manage these effects, ensuring that potential impacts are addressed.
332	The requirement to put up with "exceeded" noise levels is unacceptable.	Noise	A.09 – Substantive Application – Section 6 – Effects Assessment	The effects of construction noise will remain compliant in all circumstances with localised exceedances managed through appropriated management plans. Operation noise will meet the limits in New Zealand Standard 6802:2008 Acoustics – Environmental Noise ("NZS6802:2008") and be consistent with the recommendations for daytime noise published by the World Health Organisation. In addition to this, the applicant proposes to implement a comprehensive Operational Noise Management Plan for each project area to ensure all operational activities are undertaken in such a way so as to achieve compliance with the recommended noise limits at all adjoining sites. The Operational noise effects were assessed using selected representative receivers (in close proximity to Mr and Mrs Rogers's dwelling i.e. 10 Moore Street) with additional dwellings requiring consideration for activities at Gladstone because of localised discrete areas where noise may potentially exceed 50 dB. Figure 15 within wthin application document B.56 demonstrates (without mitigation) that Mr and Mrs Rogers's will experience operational noise less than 50 dB LAeq (below the district plan compliance limit) with no adverse impacts to the level of amenity currently experienced.
333	No engagement was undertaken with the residents to discuss or seek approval for exceedance in the noise and vibration limits.	Noise/Blasting and Vibration		No exceedances are expected as part of the mining operation. Refer to the response provided to Comment 332.
334	The noise assessment is based on averages and hear-say and not directly evidence based.	Noise	B.56 - Marshall Day – Noise Effects Assessment	The Noise Assessment (application document B.56) assessed the effects of noise on sensitive receivers by selecting representative receivers for each aspect of the project and reporting discrete noise levels at each receiver. The selected receivers were chosen because of their likelihood to be most adversely affected by noise generated from different parts of the WNP, including how close the receiver is to the project. They therefore represent the reasonable worst-case locations and thus if noise levels are compliant at these representative receivers, they will be compliant everywhere else.
337	It is expected that this will cause a significant devaluation to our new builds, my kids new 3 homes, and existing dwellings located in this vicinity.	Social Impact	-	Refer to statement provided by Doug Saunders, appended as **Appendix R.**
338	The blasting effects people's nervousness and causes them to sell their houses due the noise and vibration effects. This is not reflected in the reporting and no objective reporting has been undertaken.	Blasting and Vibration	B.57 - WSP – Social Impact Assessment. B.56 - Marshall Day – Noise Effects Assessment B.53 – Heilig - Blasting and Vibration Effects Assessment	The WSP Social Impact Assessment (application document B.57) undertook significant engagement with community stakeholder groups, and individuals to understand the social effects of the WNP, both positive and negative. The assessment recommends that in addition to the mitigation measures in the noise and vibration assessments, social mitigation measures to ensure the social effects were appropriately avoided, remedied or mitigated. The social measures proposed which relate to nervousness around noise and vibration effects are: > Continued implementation of the applicant's 'Top Up' policy to mitigate the potential impact of perceptions of mining on property values. > Continuation of the applicant's existing communication and engagement strategy. > Continuation of the applicant's complaints registration and feedback process. Furthermore, in addition to complying with the noise limits identified in application document B.56 and the vibration and overpressure limits identified in application document B.53 as being appropriate for protecting amenity and building integrity, the applicant proposes providing compensation to potentially affected landowners. This compensation comprises the continuation and extension of an existing Amenity Effect Programme which makes six monthly payments to the owners of occupied residences affected by vibration based on the number and level of vibration and number of blast events they experience, and offering an ex-gratia payment to the registered proprietor of any residence that the Wharekirauponga Access Tunnel passes directly beneath which is equal to 5% of the that property's market value. While no property damage effects are expected, the applicant also proposes conditions which require it to remedy any damage at its cost as soon as practicable and to the reasonable satisfaction of the property owner.

Comment Number	Comment	Applicant Technical Input	Where Addressed in the Application Documents	Response
339	No extension for the open mining is wanted as this will create more noise, and vibrations, especially heavy vehicle usage along Moore Street, which appears to not be up to standard and wide enough to accommodate this.	Noise, Blasting and Vibration, Transport	-	Refer to response provided to Comment 331.
341	The mine extension will be a direct negative effect to the development of residential housing in Waihi.	Social Impact	-	Refer to the statement provided by Ms Hilary Konigkramer, appended as **Appendix F.**
342	Concerned that once the mining operations were to start that new cracks in buildings and roading will appear.	Blasting and Vibration	-	The company has a 'We Break, We Pay' procedure in place to assist if it is believed property may have been damaged as a result of the company's activities. As part of this process, if it is determined that property damage is attributable to the applicant's activities, they will remedy the damage at their cost. The process includes provision for a third party to investigate the complaint for both the homeowner and the company.
343	Due to the noise and vibration effects, they should be considered adversely affected parties.	Noise, Blasting and Vibration	-	The noise and vibration assessments conclude that these effects will be no more than the existing effects at the mine. Refer to response provided to Comment 332.
344	The mitigation measures proposed are also considered to be insufficient regarding noise, visual amenity, potential dust and vibration.	Noise, Landscape, Air Discharge, Vibration	-	The proposed mitigation measures and management plans are considered appropriate by technical experts to manage any adverse effects from the mine. Refer to response provided to Comment 331.
345	Additional taller noise bunds should be provided to significantly reduce noise and dust with tall plantings along the crest and sides. There is also concerned that the 4 properties are considered to be directly affected by this mining proposal and are not on the Gladstone Pit Top Up area map for property values.	Noise, Air Discharge	-	Refer to statement provided by Doug Saunders, appended as **Appendix R.**
346	In summary, we request full recognition of all our four properties as directly affected within all of the reporting including but not limited to vibration, noise, dust, visual effects, inclusion on the Gladstone Pit Top Up area map for future compensation/value protection, adequate/additional mitigation and consultation for the strong objection to conveyor reactivation and mine expansion, especially the Gladstone project and adjacent activities.	Blasting and Vibration, Noise, Air Discharge, Landscape, Social Impact	-	Refer to statement provided by Doug Saunders, appended as **Appendix R.**

Attachment 1

Appendix 7: Plume Assessment

- Memo Prepared by Boffa Miskell, dated 1 December 2022
- Report Prepared by Tonkin and Taylor, dated November 2022
- Graphic Supplement supporting plume assessment

Boffa Miskell

Memorandum

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Attention:	Rory McNeil
Company:	OGNZL
Date:	1/12/2022
From:	Rhys Girvan
Message Ref:	Visual Effects of proposed Waihi North Vapour Plume within Coromandel Forest Park
Project No:	BM210482C

This memorandum provides an assessment of potential visual effects of a proposed water vapour plume which may occur in association with the proposed underground Wharekirauponga Mine and associated vent raise located within the context of the Coromandel Forest Park. This assessment is based on the understanding that early morning following sunrise and just prior to sunset in winter, and to a lesser extent, similar times of the day in spring, represent the times with the greatest likelihood of a visible plume during daylight hours and that under worst case conditions (cold, calm winter days) a visible plume may extend approximately 175 m above ground level[1].

The Coromandel Forest Park is recognised as an outstanding natural landscape at both the regional and district levels for which s.6(b) of the RMA applies. In landscape terms, the potential for visual effects must be considered in the context of potential changes to such important landscape values. Such values include physical aspects relating to underlying formative volcanic processes and the almost homogenous forest cover and associated fauna. Important perceptual and associative landscape values include the resultant mountain backdrop visible from literally hundreds of views from surrounding areas and frequently representing a vivid and striking skyline. Within the Forest Park, wilderness associations remain apparent in the context of previous forestry and mining activity including artefacts associated with such activity which remain. Sites of significance to tāngata whenua are also recognised including important local landmarks, urupā and rare ecosystem.

Based on the identified parameters for which a plume may occur, a zone of theoretical visibility (ZTV) analysis identified that potential views of a 175-metre-high vapour plume would remain limited by the nature of the surrounding topography within the Forest Park (**see Figure 1** in the attached graphic supplement). Within the context of the Forest Park, any plume would remain largely concealed beyond the intervening canopy of forest vegetation and limits the potential for any material visual effects. Beyond the Forest Park, theoretical views were identified along the coastal hills which extend between Waihi Beach and Whangamatā. No potential views occur to the west of the Coromandel Range including views across the Hauraki Plains or from within the primary production lowlands surrounding Waihi.

To assess the potential for visual effects, a site visit was undertaken on the 15 February 2022 to review the ZTV analysis. During the site visit, publicly accessible areas with potential views were visited to assess the nature of available views and potential for visual effects. This assessment was undertaken on a clear summer day with excellent visibility however recognised that views of a potential plume would only occur during colder times of the year when other ephemeral atmospheric and seasonal changes may also occur that influence the availability of such potential views. Based on this site visit, four representative worse case

[1] Tonkin and Taylor (2022) Assessment of the frequency and height of visible water vapour plume associated with mine vents.

views were identified from which visual simulations were prepared to assess the likely level of visual effects. These are included in the attached graphic supplement and described below:

Viewpoint 1 is taken from Poets Corner at the eastern end of Heard Road and represents the view from an enclave of elevated rural lifestyle development, from which long distant views of the Coromandel Ranges are visible along the skyline. From here, any visibility of a plume up to 175 metres would remain concealed within the vegetated folds of topography of the Forest Park and below the horizon resulting in negligible visual effects.

Viewpoint 2 is a representative view from within the settlement of Whiritoa Beach along Fishermans Bend. As a beach front settlement, most available views are directed east and towards the ocean with parts of the Coromandel Range backdrop visible from some areas such as identified in this view. In such views, a potential plume would similarly remain below the horizon and primarily concealed with the folded vegetated topography of the Forest Park and adjoining rural areas. Accordingly, negligible visual effects are also identified for residents within Whiritoa Beach.

Viewpoint 3 is a representative view obtained from within the residential area of Whangamatā along Hampton Road. This is representative of the view from parts of Whangamatā, from which the Coromandel Range forms a striking backdrop along the skyline seen above and beyond intervening development and vegetation in the foreground. In this context, any visibility of a plume is located within the periphery of the more striking skyline and principally concealed within the folded topography of the Forest Park below the horizon. When combined with the nature of residential development and vegetation within the surrounding residential area above which the Coromandel skyline remains visible, any potential plume is unlikely to be seen. Accordingly, views from residents or visitors to Whangamatā would result in very low or negligible visual effects.

Viewpoint 4 is a very long-distance view obtained through a gap in vegetation adjoining the Peninsula Road Scenic Lookout over a distance of approximately 12 kilometres. In effect, this represents an isolated instance from which views of a potential vapour plume may be seen during parts of colder clear days. Such viewing opportunities are removed from residential areas and peripheral to broader panoramic views along the coastline which are more typically the focus of visitors to this area. Where visible, the resultant plume would not breach the skyline and would remain largely incidental to the Coromandel's striking vegetated backdrop which remains apparent beyond Whangamatā and its adjoining rural landscape. It is also anticipated that the timing of such views may create similar ephemeral atmospheric effects such as smoke from home or farm fires across intervening areas during such colder times of the year. Given the considerable viewing distance and isolated, transient and seasonal nature of such views, any associated visual effects would remain very low.

Based on the very limited views within which a potential vapour plume may be observed in the context of the broader vivid and striking backdrop of the Coromandel Range, the overall visual effect of a plume up to 175 metres is assessed as very low.

REPORT

Tonkin+Taylor

Assessment of the frequency and height of visible water vapour plume associated with mine vents

Waihi North Project

Prepared for
Oceana Gold (NZ) Limited
Prepared by
Tonkin & Taylor Ltd
Date
November 2022
Job Number
1017908

WAI-985-000-REP-LC-0051_RevA
TECHNICAL REPORT
WAIHI NORTH PROJECT – ASSESSMENT OF FREQUENCY & HEIGHT OF VISIBLE WATER VAPOUR PLUME ASSOCIATED WITH MINE VENTS
GENERAL AREA 000

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Nov 22	2	Final	R Chilton	J Simpson	J Simpson

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Table of contents

1 Introduction

Oceana Gold (NZ) Limited (OGNZL) is seeking resource consents for its Waihi North Project (WNP), which includes a new underground mine, the 'Wharekirauponga Underground Mine' (WUG). The WUG is located approximately 11km north-west of the current Processing Plant under land administered by the Department of Conservation (DOC) (Coromandel Forest Park).

The site infrastructure supporting the WUG will be located on OGNZL-owned farmland at the end of Willows Road, with only minimal surface features within the forest, in the form of fenced vent raises, on a legal road owned by the Hauraki District Council.

The vent raises will exhaust the ventilation air from within the mine. At times this ventilation air will be warmer than the ambient temperature and more humid. Consequently, the exhaust will give rise to a visible water vapour plume on occasions.

This report seeks to characterise the frequency at which a visible plume may be created from the vent and the likely maximum height above ground level that a plume might be visible. Its purpose is to inform a visual amenity being prepared by Boffa Miskell Limited for OGNZL as part of resource consent applications for the WNP.

The general approach used in this assessment is as follows:

- Calculation of meteorological conditions under which the vent exhaust would likely be visible to provide information on the frequency that a plume would be visible by season and day.
- A qualitative assessment of the potential height above ground level of the plume during daylight hours based on photographs of the existing Union Hill mine vent.

This report has been prepared by Tonkin & Taylor Limited (T+T) for OGNZL in accordance with our letter of engagement dated 16 June 2021.

2 Frequency of vent discharges giving rise to a visible plume

2.1 Method

A visible plume from a mine vent exhaust can form when the relatively warm and moist exhaust air from inside the mine tunnel mixes with the surrounding colder ambient air under certain meteorological condition.

The likelihood of visible emissions occurring can be predicted using a psychrometric chart that enables an evaluation of dry bulb and specific humidity conditions of the discharge relative to ambient air conditions to determine whether those conditions will result in the discharge being above the 100% saturation line. This concept is illustrated in Figure 1, which is reproduced from Li and Flynn 2021[1]. It shows there being the potential for a visible plume to occur where a straight line drawn from the condition for the 'exhaust air' (point 2) to the ambient air (point 1) passes beyond the curved line representing 100% saturation (shown as the black shaded area in Figure 1).

The WUG vent exhaust parameters used for our assessment have been based on the following weighted-average measured conditions provided by OGNZL for the Union Hill vent raise:

- dry bulb temperature of 24.7 ^{o}C;
- relative humidity of 93.2%;
- atmospheric pressure of 1,026 hPa

[1] Li S and Flynn M R 2021. Cooling tower plume abatement and plume modelling: a review. Environ Fluid Mech, vol. 21, no. 3, pp. 521–559, Jun. 2021.

From these parameters, the specific humidity of the vent exhaust is calculated to be 18.1 g/kg.

Ambient meteorological conditions for the location of the WUG mine vent have been extracted from a meteorological model (CALMET) developed for the year 2016 that was prepared by T+T for the evaluation of mine vent discharges.[2]

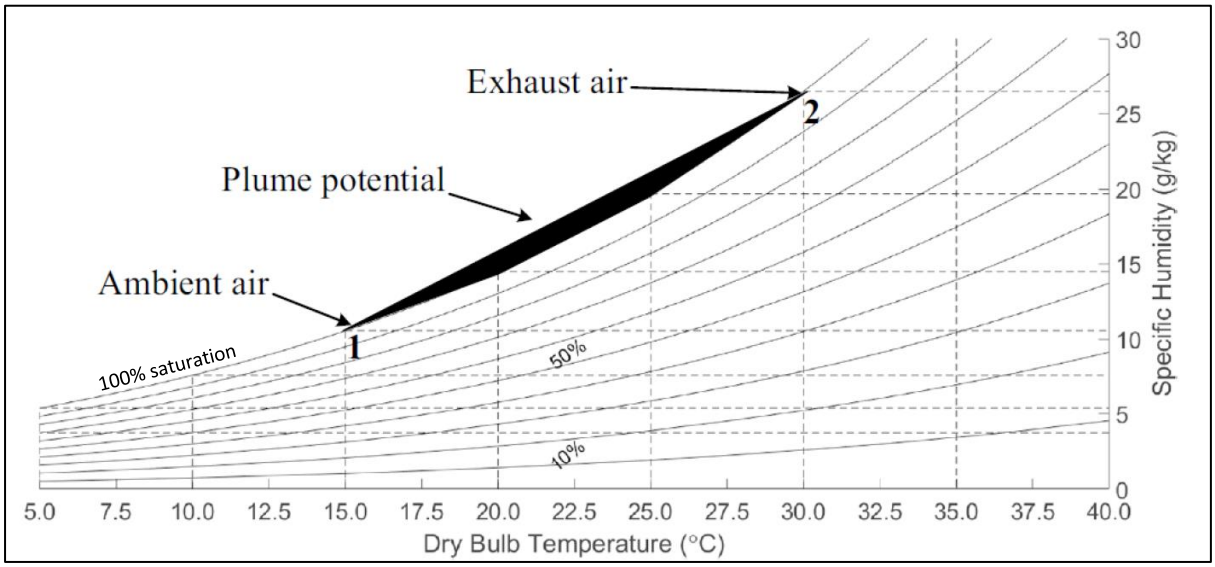

Figure 1: Typical psychrometric chart showing mixing of exhaust air with ambient air (reproduced from Li & Flynn 2021).

2.2 Results

The analysis is presented on a psychrometric chart in Figure 2. This shows:

- the conditions in the vent exhaust as a red circle;
- a 'red' line running tangentially from the vent condition to the 100% saturation line; and
- hourly varying ambient conditions:
  - black dots that fall below the red line illustrate hours where there is no visible plume; and
  - blue dots that fall above the red line illustrate hours where the plume is likely to be visible.

Within the subset of hours where a plume may be visible based on the psychrometric chart, there are hours where the plume is likely to be indistinguishable from cloud or fog (taken as conditions where the ambient relative humidity is 98% or more). These hours have been removed from the subsequent, more detailed evaluations of frequency of plume visibility.

Further analysis of the results by time of day and season is presented as two graphs in Figure 3. The top graph presents the probability of a visible plume for all hours of the day. From this, it is evident that the vast majority of meteorological conditions under which a visible plume could occur are in winter and spring and at night-time. By contrast, visible emissions in summer or autumn are comparatively infrequent.

[2] T+T 2021. Assessment of mine vent air quality impacts to inform an assessment of ecological effects on Hochstetter's Frog. Report prepared for Oceana Gold (NZ) Limited by Tonkin & Taylor Limited. Job number 1017908.

The bottom graph of Figure 3 presents the same data as the top graph, but with the values that occur before sunrise and after sunset removed (i.e., at night-time when any plume would not be visible). From this graph the following conclusions can be made:

- Winter, and to a lesser extent Spring, represent the seasons with the greatest likelihood of a visible plume during daylight hours.
- A visible plume will be most apparent during early morning following sunrise and again just prior to sunset. During Winter months, this may be as frequent as 60% of the time (8 am).
- A visible plume will be apparent throughout the day for approximately 10% - 15% of the time in winter and spring.
- Visible emissions during Summer and Autumn months will be very infrequent – less than 2% of the time for a given hour of the day.

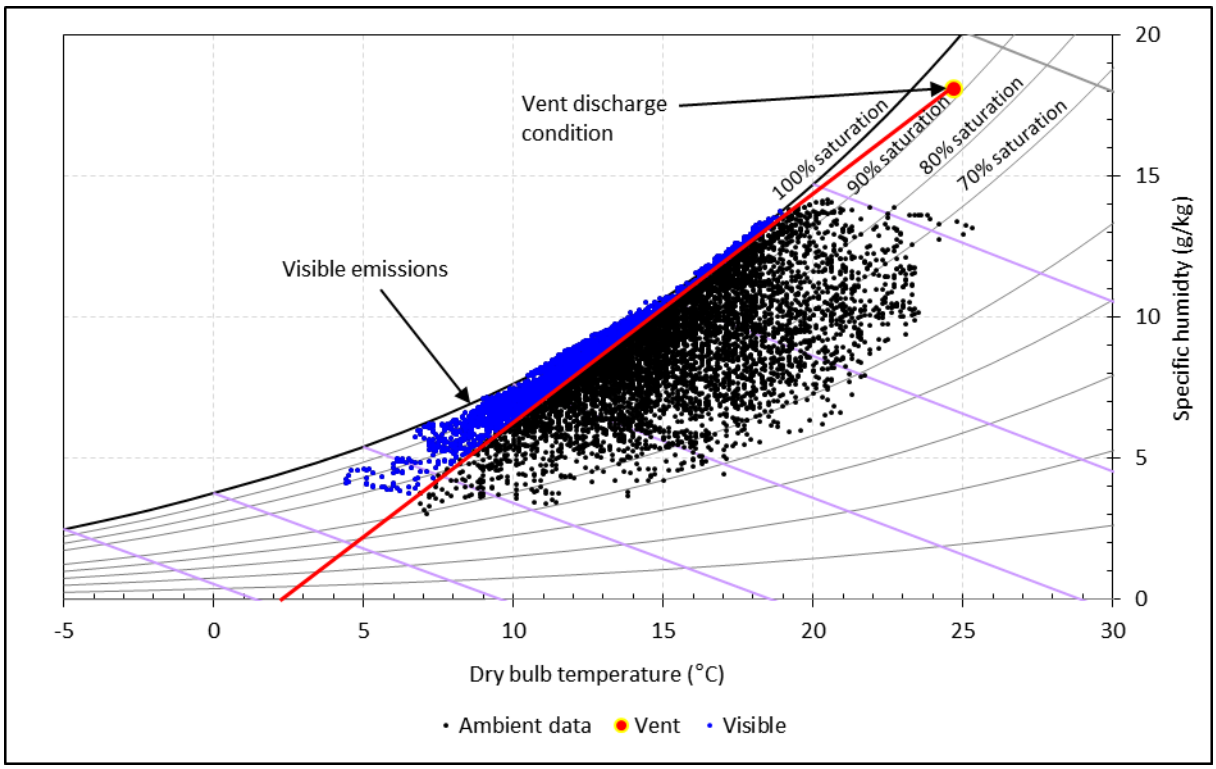

Figure 2: Psychrometric chart of modelled dry bulb temperature and specific humidity for the location of the vent raises, showing the corresponding conditions for discharges from the vent raise, a line from the vent raise condition tangential to the 100% saturation line (i.e., 100% relative humidity), and ambient conditions under which vent raise emissions will be visible (blue).

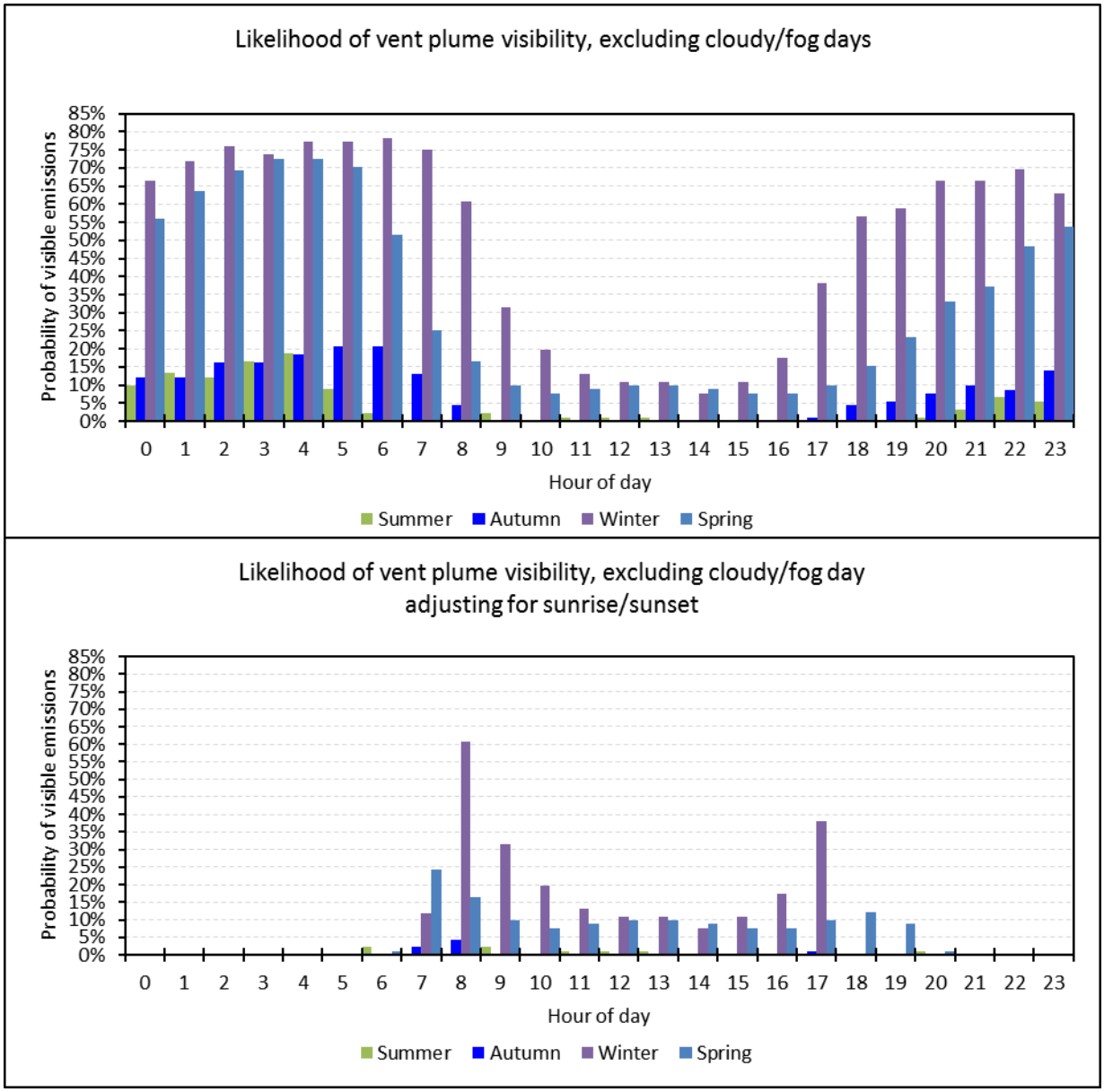

Figure 3: Probability that a given hour of the day in each season will have visible emissions from a vent raise (top) for all hours of the day, and (bottom) for hours after sunrise and before sunset.

3 Height of visible plume

The height above ground level that a visible exhaust plume may be observed is assessed qualitatively based on T+T's experience and photographs of the Union Hill vent provided by OGNZL. As a plume rises into the atmosphere, it will cool and mix with the ambient air until such point that the water vapour in the plume disperses and evaporates such that the plume is no longer visible.

Four example photos of a visible exhaust plume from the existing Union Hill vent are provided in Figure 4 (labelled A through to D). These photos show the plume in the context of tall mature pine trees surrounding the vent (notably photos B and C). These pine trees provide a useful basis for inferring the height that a plume may rise. In this regard, mature radiata pine trees in New Zealand can reach heights of approximately 50 m above ground level.[3]

[3] Galicia O 1999. Height growth of Pinus Radiata in New Zealand. New Zealand Journal of Forestry Science. 29(1): 131-145.

Photo D (Figure 4) provides a useful perspective looking at a visible plume from a distance and enables an approximation of the height a plume might rise to relative to the surrounding pine trees. The base of the vent, the height of the surrounding pine trees and the height of the plume are annotated in yellow on Photo D. From this it is estimated that the visible plume in that instance extended approximately 125 m above ground level.

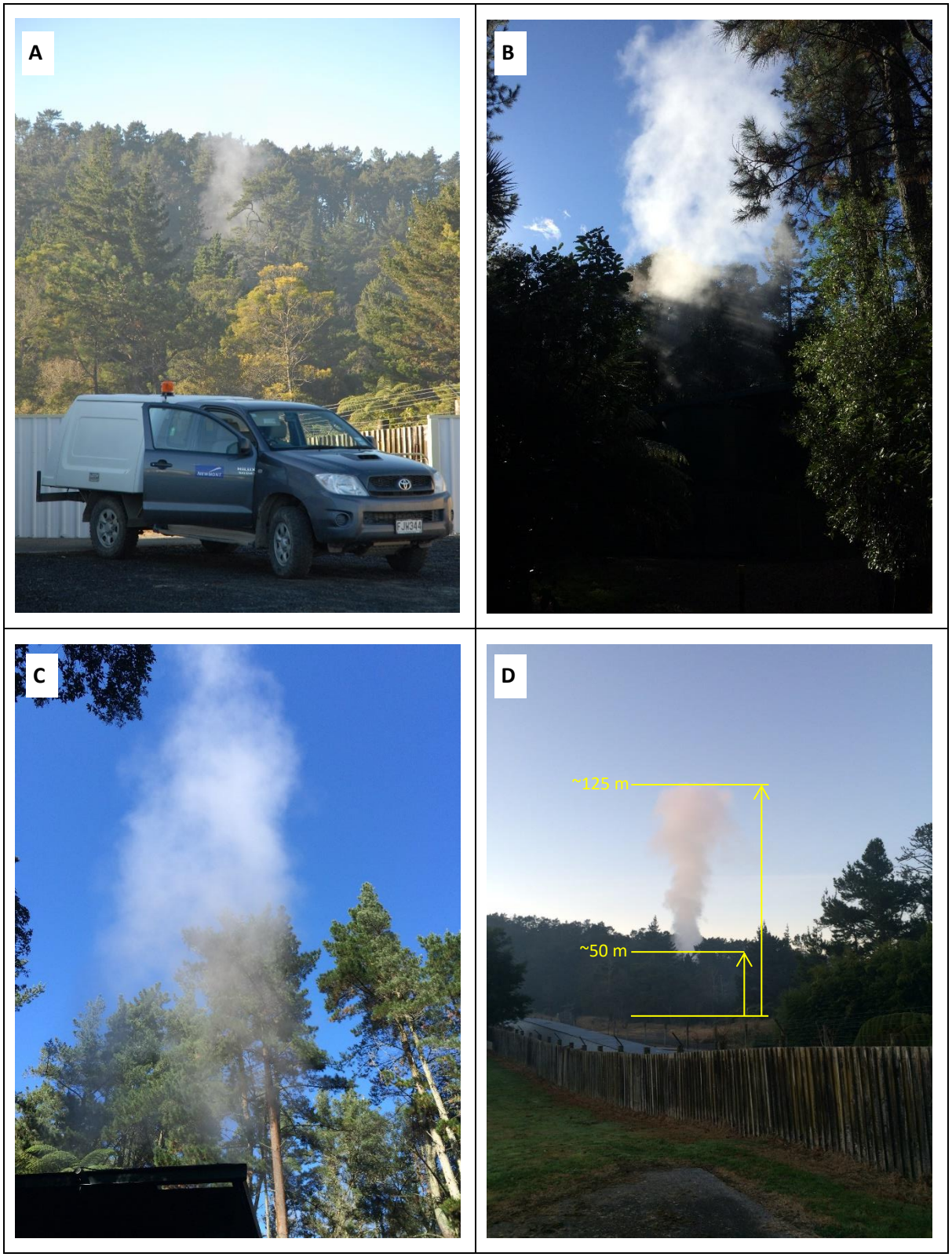

Figure 4:: Photographs of visible exhaust plume from the Union Hill mine vent (source: Oceana Gold).

Allowing for some uncertainty in the qualitative approach, we estimate that a visible plume may extend a further 50 m from that determined above under some particularly cold winter time conditions. Given this, we estimate that a worst-case estimate is that a visible plume may extend approximately 100 to 175 m above ground level.

4 Conclusion

This assessment has been prepared to provide guidance on the frequency of occurrence of visible water vapour plumes from proposed mine vents to be located on Department of Conservation estate land and associated with OGNZL's Waihi North Project. The purpose of the assessment is to inform a visual amenity assessment being prepared by Boffa Miskell.

The main conclusions of the assessment are as follows:

- Winter, and to a lesser extent Spring, represent the seasons with the greatest likelihood of a visible plume during daylight hours.
- A visible plume will be most apparent during early morning following sunrise and just prior to sunset. During Winter months, this may be as frequent as 60% of the time (8 am)
- A visible plume will be apparent throughout the day for approximately 10% - 15% of the time in Winter and Spring.
- Visible emissions during Summer and Autumn months will be very infrequent – less than 2% of the time for a given hour of the day.
- Under worst case conditions (cold, calm winter days) a visible plume may extend approximately 175 m above ground level.
- The plume is not expected to be discernible during periods of low cloud or fog.

5 Applicability

This report has been prepared for the exclusive use of our client Oceana Gold (NZ) Limited, with respect to the particular brief given to us and it may not be relied upon in other contexts or for any other purpose, or by any person other than our client, without our prior written agreement.

We understand and agree that our client will submit this report as part of an application for resource consent and that Waikato Regional Council as the consenting authority will use this report for the purpose of assessing that application.

Tonkin & Taylor Ltd

Report prepared by:	Authorised for Tonkin & Taylor Ltd by:
	
.....	.....
Richard Chilton	Jenny Simpson
Technical Director – Air Quality	Project Director

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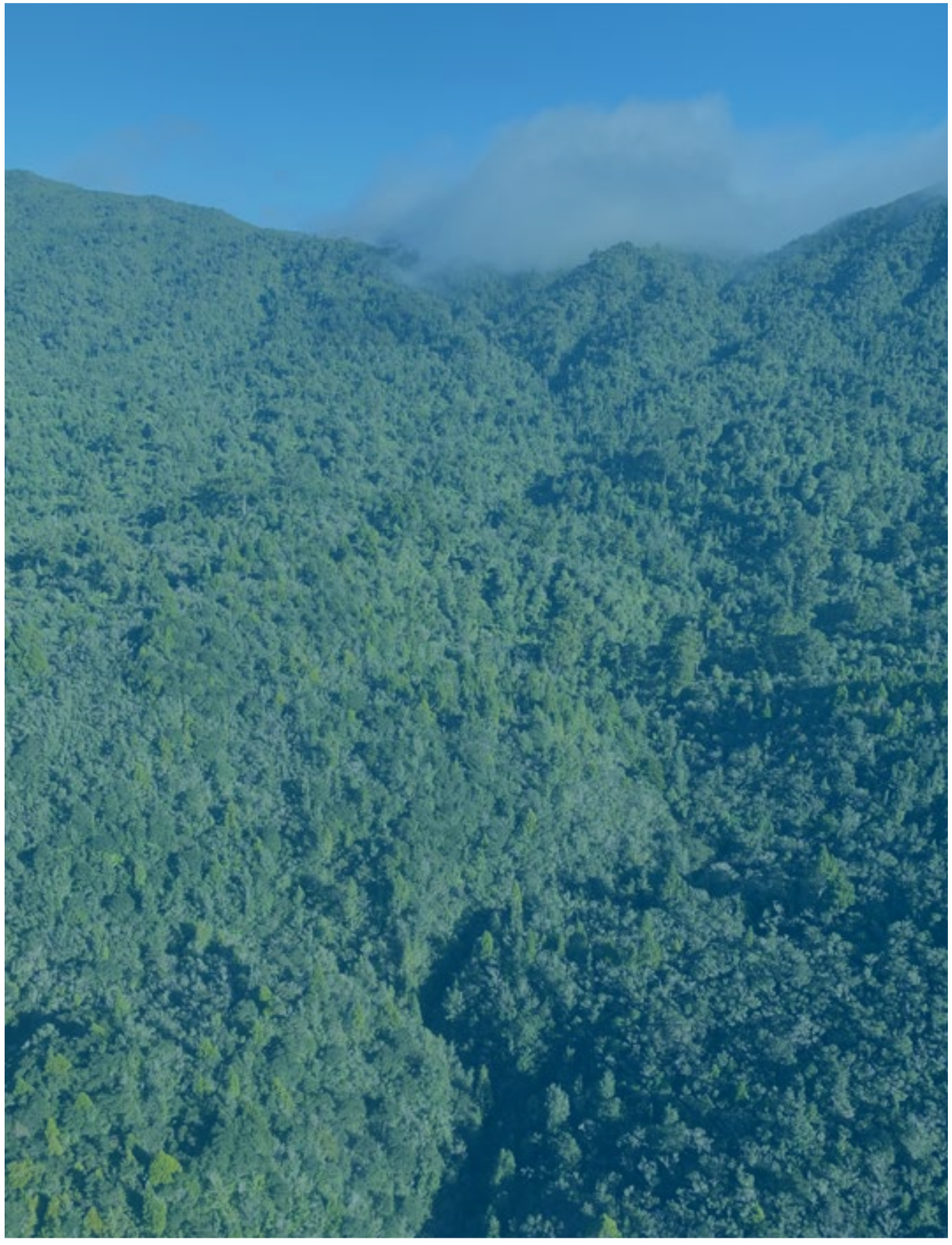
Boffa Miskell

WAIHI NORTH VAPOUR PLUME VISIBILITY

GRAPHIC SUPPLEMENT

1 DECEMBER 2022

WAIHI NORTH VAPOUR PLUME VISIBILITY



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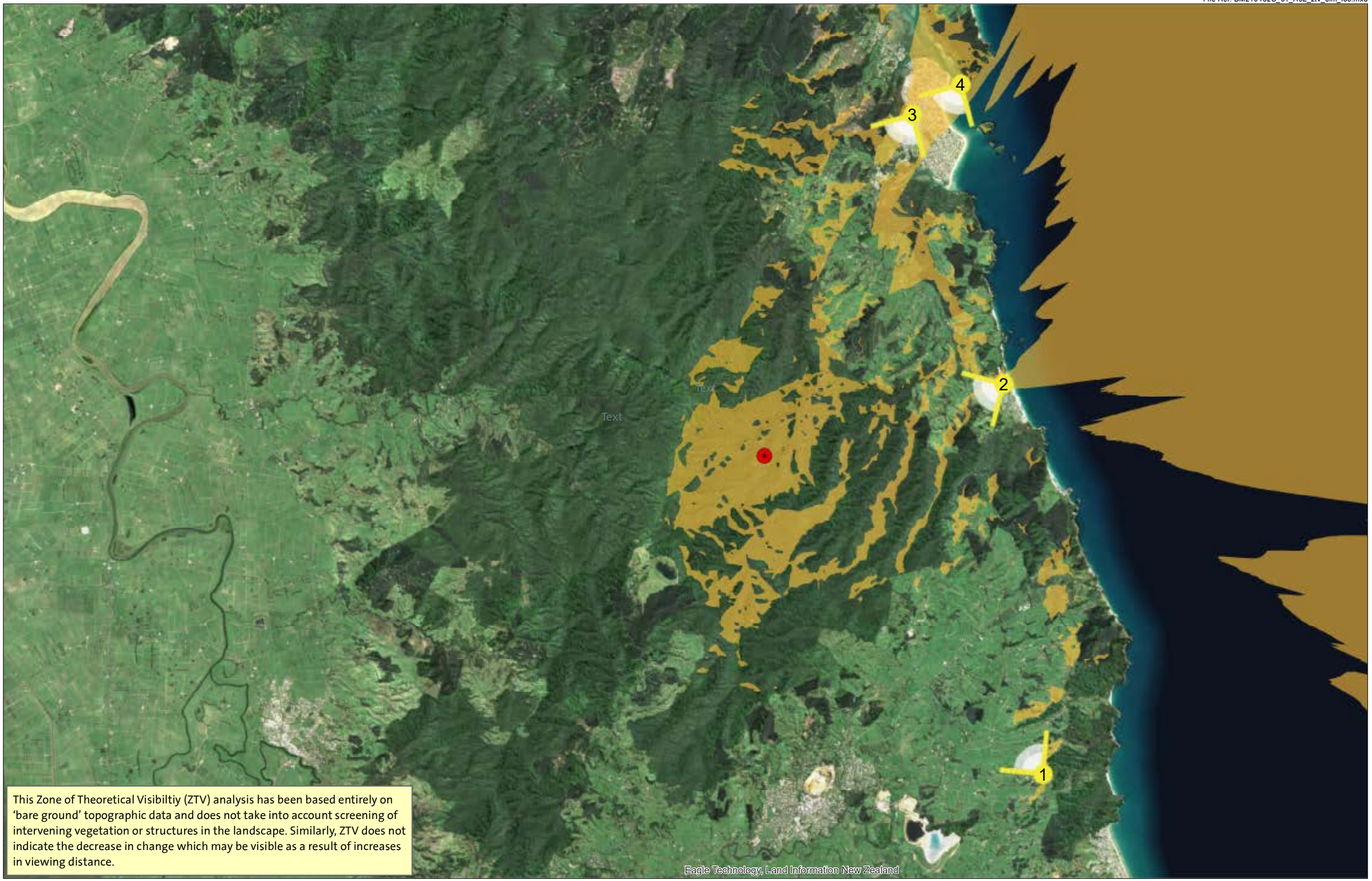

Boffa Miskell

www.boffamiskell.co.nz

0 4 km

1:100,000 @ A3

Data Sources:

Projection: NZGD 2000 New Zealand Transverse Mercator

LEGEND

- Proposed Vent/Plume
- Zone of Theoretical Visibility of Plume up to 175m
- Viewpoint

WAIHI NORTH

Viewpoint Location

Date: 22 February 2022 | Revision: 0

Plan prepared for Oceana Gold by Boffa Miskell Limited

Project Manager: Rhys.Girvan@boffamiskell.co.nz | Drawn: CMu | Checked: RGi

Figure 1

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Viewpoint Details

NZTM Easting	: 1 858 238.9 mE	Horizontal Field of View	: 40°
NZTM Northing	: 5 858 786.6 mN	Vertical Field of View	: 25°
Elevation/Eye Height	: 273.6m / 1.6m	Projection	: NA
Date of Photography	: 9:13pm 15 February 2022 NZDT	Image Reading Distance @ A3 is 50 cm	

Data Sources: Modelled using NZ 8m Digital Elevation Model source from LINZ. Plume modelled to 175m high, 20m at base and 50m at top.

WAIHI NORTH

Poets Corner

Date: 22 February 2022 | Revision: 0

Plan prepared for Oceana Gold by Boffa Miskell Limited

Project Manager: Rhys.Girvan@boffamiskell.co.nz | Drawn: CMu | Checked: RGi

Viewpoint 1

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Viewpoint Details

NZTM Easting	: 1 857 093.1 mE	Horizontal Field of View	: 40°
NZTM Northing	: 5 870 073.7 mN	Vertical Field of View	: 25°
Elevation/Eye Height	: 5.9m / 1.6m	Projection	: NA
Date of Photography	: 9:52pm 15 February 2022 NZDT	Image Reading Distance @ A3 is 50 cm	

Data Sources: Modelled using NZ 8m Digital Elevation Model source from LINZ. Plume modelled to 175m high, 20m at base and 50m at top.

WAIHI NORTH

Whiritoa Beach - Fishermans Bend

Date: 22 February 2022 | Revision: 0

Plan prepared for Oceana Gold by Boffa Miskell Limited

Project Manager: Rhys.Girvan@boffamiskell.co.nz | Drawn: CMu | Checked: RGi

Viewpoint 2

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Viewpoint Details

NZTM Easting	: 1 854 448.4 mE	Horizontal Field of View	: 40°
NZTM Northing	: 5 877 865.2 mN	Vertical Field of View	: 25°
Elevation/Eye Height	: 13.2m / 1.6m	Projection	: NA
Date of Photography	: 10:53pm 15 February 2022 NZDT	Image Reading Distance @ A3 is	50 cm

Data Sources: Modelled using NZ 8m Digital Elevation Model source from LINZ. Plume modelled to 175m high, 20m at base and 50m at top.

WAIHI NORTH

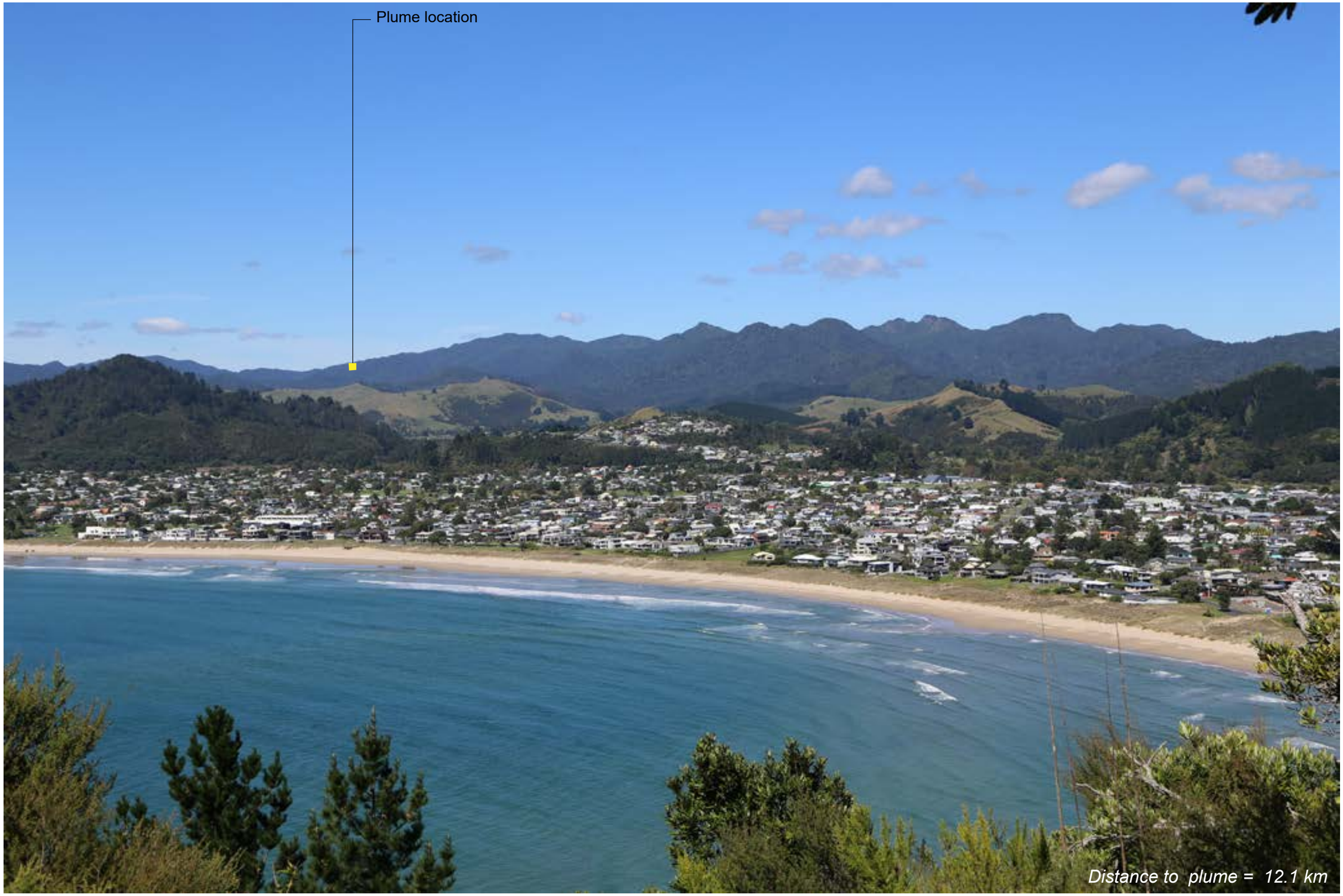
Whangamata - Hampton Road

Date: 22 February 2022 | Revision: 0

Plan prepared for Oceana Gold by Boffa Miskell Limited

Project Manager: Rhys.Girvan@boffamiskell.co.nz | Drawn: CMu | Checked: RGi

Viewpoint 3



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Viewpoint Details

NZTM Easting	: 1 855 845.9 mE	Horizontal Field of View	: 40°
NZTM Northing	: 5 878 746.4 mN	Vertical Field of View	: 25°
Elevation/Eye Height	: 12.4m / 1.6m	Projection	: NA
Date of Photography	: 11:23am 15 February 2022 NZDT	Image Reading Distance @ A3 is 50 cm	

Data Sources: Modelled using NZ 8m Digital Elevation Model source from LINZ. Plume modelled to 175m high, 20m at base and 50m at top.

WAIHI NORTH

Peninsula Road Scenic Lookout

Date: 22 February 2022 | Revision: 0

Plan prepared for Oceana Gold by Boffa Miskell Limited

Project Manager: Rhys.Girvan@boffamiskell.co.nz | Drawn: CMu | Checked: RGi

Viewpoint 4