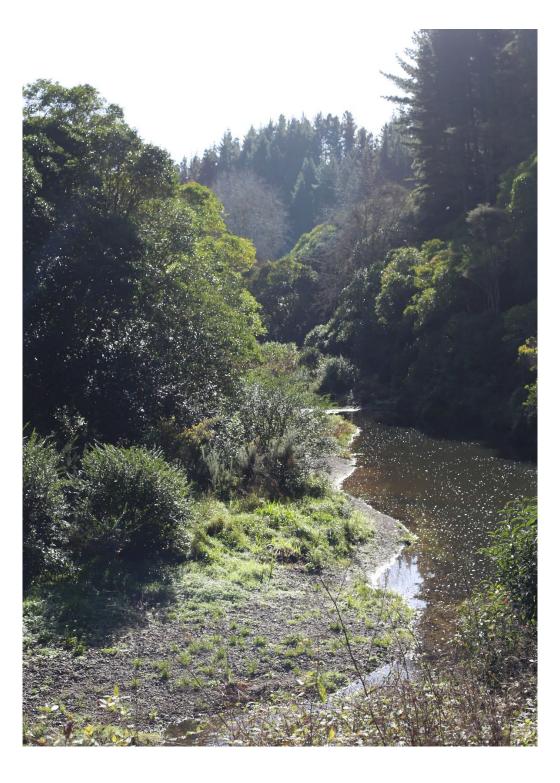


# Clevedon Quarry: McNicol Road – Private Plan Change

Landscape and Visual Effects Assessment Prepared for Stevenson Aggregates Ltd

27 June 2022





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### Document Quality Assurance

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# **CONTENTS**

1.0	Introduction	1
2.0	Background	2
3.0	Methodology	4
4.0	Landscape and Statutory Context	5
5.0	Visibility Analysis	8
	Visibility of Landform within Proposed Quarry Zone Area	8
6.0	Assessment of Landscape and Visual Effects	9
7.0	Screening and Site Rehabilitation	10
8.0	Summary	10

# **Appendices**

Appendix 1: Figures 1-9

Appendix 2: Photos of Existing Quarry, Proposed Quarry Zone and ONF / Wairoa River Gorge

### 1.0 Introduction

- 1.1 Stevenson Aggregates Limited ("SAL") have applied for a Private Plan Change ("PPC") to Auckland Council to alter the quarry zone at Clevedon Quarry located at 564 and 646 McNicol Road and 439 Otau Mountain Road, Clevedon. In summary the PPC proposes to swap the extent of the Clevedon Quarry's Special Purpose Quarry Zone ("Quarry Zone or SPQZ") located in the northern half of 546 McNicol Road with a relocated Quarry Zone in northern part of 646 McNicol Road. The new proposed Quarry Zone is contiguous and immediately south of the existing Quarry Zone that is to remain in the southern half of 546 McNicol Road. The total area of the proposed Quarry Zone would be 73.78ha compared with the existing operative extent of 73.88ha. The location of the quarry, SAL's landholding and the existing and proposed alteration to the quarry zone is depicted on Figure 1 in Appendix 1 of this report.
- 1.2 Following the application Auckland Council have requested further information in relation to (among other things) the potential landscape and visual effects on the Wairoa River Gorge that may result from the PPC.

The request from Auckland Council states:

#### Landscape and Visual Effects

1. Policy D10.3.3(a) of the Auckland Unitary Plan requires the protection of the physical and visual integrity of outstanding natural features, including volcanic features that are outstanding natural features, by:

(a) avoiding the adverse effects of inappropriate subdivision, use and development on the natural characteristics and qualities that contribute to an outstanding natural feature's values.

In this case the feature is the Wairoa River Gorge, with two of the 5 reasons cited for its value (in the ONF Schedule) as being:

- (e) the extent to which the landform, geological feature or site contributes to the value of the wider landscape;
- (f) the extent of community association with, or public appreciation of, the values of the feature or site;

I note that Policy D10.3(4) requires the protection of the visual integrity of ONFs (subject to a range of matters). This means that sometimes (and in no way prejudging the outcome here), development located outside the ONF footprint may affect the visual integrity of the ONF. For these reasons, it is requested that a full Landscape and Visual Effects Assessment of the requested plan change (prepared by a NZILA Registered Landscape Architect) be provided.

1.3 This report assesses the potential landscape and visual effects on the Wairoa Gorge Outstanding Natural Feature ("**ONF**") resulting from the PPC and associated future quarry activities within the relocated quarry zone to the south and adjacent to the

existing quarry zone. The location of the ONF, in relation to the existing and proposed quarry zones and surrounding landform is depicted in **Figures 2 and 3** of **Appendix 1**.

# 2.0 Background

- 2.1 Boffa Miskell and the writer have previously been involved in landscape and visual assessments for the Clevedon Quarry from November 2015, after firstly being commissioned by Fulton Hogan Ltd to provide a preliminary analysis of the quarry's landscape and visual context. The purpose of the analysis, which included a visit on 2 November 2015, was to identify the key landscape and visual sensitivities in relation to expanding the quarry across the wider parts of No. 546 McNicol Road.
- 2.2 The analysis was used to inform a more detailed consideration of the likely effects of any quarry expansion which formed part of a statement of evidence prepared by the author and presented at the hearings for the Proposed Auckland Unitary Plan on behalf of Fulton Hogan Ltd.<sup>1</sup> In section 8.0 of that evidence, I made the following key statements in relation to visibility / visual effects:

The most sensitive potential viewing audiences within this visual catchment are those which are residential in nature. This is due to the potential duration for which views may be experienced. In such cases, the most sensitive residential audiences are those which have an outlook or specific views from within their dwellings or outdoor living areas looking towards the Site.

While these viewing locations have a higher sensitivity to change than, for example, an area of open paddock, I also acknowledge that the existing character and qualities of views towards the Site are influenced by the existing quarry operation. In my opinion, these activities have reduced the sensitivity of such views to accommodating further change.

Notwithstanding this existing visibility, as identified above, the landform within the Site remains an important feature of views south from within the wider landscape, regardless of the existing quarry operation. The upper slopes in particular are valuable in their contribution to the provision of an elevated backdrop to Clevedon and the wider valley area

Consequently, it is my opinion that the most elevated and northern parts of the Site, correspond to the highest visual sensitivities to change, as expansion in these parts would be the most prominent in views from the north-west and potentially result in the greatest visual impact.

2.3 Following confirmation of *Special Purpose* – *Quarry Zone* in the Auckland Unitary Plan ("AUP)" the writer prepared a visual assessment<sup>2</sup> as part of a resource consent to expand the quarry further east within the approved quarry zone. As the proposal was for a range of Controlled and Restricted Discretionary activities, Auckland Council reserved its control / discretion to a number of matters, which includes visual amenity and site rehabilitation.<sup>3</sup> The assessment criteria, relevant to that assessment, are listed in rule H28.7.2 and are specifically:

(b) visual amenity:

Statement of Evidence of John Goodwin for Fulton Hogan Limited in Relation to Topic 080 Rezoning and Precincts (General), 18 December 2015.

Clevedon Quarry: McNicol Road - Visual Effects Assessment, prepared for Fulton Hogan Ltd 4 May 2017

There are a number of other resource consents, such as groundwater diversion, that are assessed as restricted discretionary activity, however, none of those matters of discretion or assessment criteria relate to visual effects.

- (i) whether mineral extraction activities in close proximity to dwellings mitigate significant adverse visual amenity effects through the use of screening and landscaping; and
- (ii) whether buildings associated with mineral extraction activities are designed so that they are removable on completion of the mineral extraction activities.

#### (c) site rehabilitation:

- (i) how the site will be rehabilitated after mineral extraction activities cease.
- 2.4 On 21 November 2017 I prepared landscape and visual evidence in relation to the proposed quarry expansion at McNicol Road. This assessment concluded that "the proposed quarry expansion will not result in any significant adverse visual effects from dwellings in close proximity to the quarry operation." On 25 June 2018 a consent order ([2018] NZEnvC 96) was issued by the Environment Court for the quarry expansion within the southern part of 546 McNicol Road.
- 2.5 Following that the approval of the haul road located within the ONF was granted 2020 by consent LUC60349699. In 2021 consent (LUC60361560) was granted to widen the haul road located beyond the consented quarry extent but within the north-eastern portion of the ONF as depicted in the below images<sup>5</sup>.



Plate 1: ONF (red cross hatched area) and existing haul roads

Statement of Evidence of John Lewis Goodwin on behalf of Fulton Hogan Limited 21 November 2017

Clevedon Quarry Haul Road Widening Within an Outstanding Natural Feature and Rural Production Zone: Assessment of Environmental Effects Report July 2020



Plate 2: View form McNicol Road showing approximate extent of ONF (red line), haul road and cut batters

# 3.0 Methodology

- 3.1 This assessment has been undertaken by registered landscape architects with a methodology aligned to the Te Tangi a Te Manu Aotearoa New Zealand Landscape Assessment Guidelines.<sup>6</sup>
- The assessment of effects ratings used in this assessment are consistent with the above Guidelines. In summary, the significance of effects are based on a seven-point scale which includes very low; low; low-moderate; moderate; moderate-high; high and very high ratings.
- In undertaking this assessment of the potential landscape and visual effects on the Wairoa River Gorge, that may arise from the PPC, a desk top exercise to analyse the relationship of the proposed southern extension to the quarry zone and adjacent ONF was undertaken. This analysis provided an understanding of the relationship between the elevation and landform characteristics of the two areas (PPC and ONF) and the surrounding landscape and the predominant vegetation within and between these areas. This analysis has generated a series of maps at varying scales to inform this assessment and these are attached in **Appendix 1** and referred to below.

<sup>&</sup>lt;sup>6</sup> Te Tangi a Te Manu Aotearoa New Zealand Landscape Assessment Guidelines.

- In addition, a Zone of Theoretical Visibility ("ZTV")<sup>7</sup> analysis was undertaken of the landform of the proposed new quarry zone to determine the offsite extent of visibility of the potential future quarrying, and to guide a survey from public roads to view the relationship between the quarry zone and the ONF and to take photographs from representative public viewpoint locations. This survey which included a visit to the quarry site and the Wairoa River Gorge was undertaken on 26 May 2022 in fair weather conditions.
- In addition to these steps, a desktop review of the relevant statutory information relating to the landscape and visual aspects of the project was undertaken, with particular reference to the statutory provisions relating to outstanding natural features and landscapes. This information included:
  - Resource Management Act 1991 ("RMA");
  - Auckland Unitary Plan ("AUP").

# 4.0 Landscape and Statutory Context

- 4.1 Clevedon Quarry is located in the foothills of the Hunua Ranges, in the upper reaches of the Wairoa River valley. It is accessed via McNicol Road, which has previously served as part of the Te Araroa Trail, a national walkway spanning the length of New Zealand (refer to **Figures 1** and **2**).
- 4.2 SAL's property covers approximately 548 hectares ("ha") with the lots subject to the quarry approximately 80 hectares in area. Half of this is used for production pine, with the remainder divided between areas of regenerating native bush, areas dominated by tree privet and other weed species, and approximately seven hectares of operational quarry. The existing forested areas were retired from pastoral farming and planted in plantation pine approximately 25 years ago. The eastern portion of the ONF feature lies within or adjacent to much of the property near to its southern boundary as depicted in **Figure 2**.
- 4.3 The wider property contains a number of streams, north and south of the quarry, which flow from the northern foothills of the Hunua Ranges in an east to west direction, under McNicol Road via culverts and then into the Wairoa River. The landform surrounding these streams, apart from the ridgetops and valley floors, within the balance of the property is generally steep with many slopes steeper than 1 (vertical) in 2 (horizontal).
- The northern part of the property (apart from an area of pine trees) within the existing quarry zone is proposed to be re-zoned as Rural and contains intact native vegetation which is classified as a Significant Ecological Area ("SEA") in the AUP. Much of the ONF is also classified as an SEA particularly the valley floor and western slopes, with much of the eastern slopes containing pine forest (refer to Figure 4). The relative elevation and landform characteristics in the area between and around the PPC area and ONF is depicted in the more detailed elevation plan on Figure 5.
- 4.5 As outlined above the ONF of the Wairoa River Gorge which is identified for its geomorphological values includes an approximately 150m² overlap with the Special Purpose Quarry Zone. The PPC quarry zone adjoins the eastern boundary of the

A GIS analysis tool using topographical information combined with the elevation of project elements to determine areas in the context of a site that will obtain views of the project element

- ONF within the existing zone and further south the two areas are separated by pine forest as depicted on the aerial photo in **Figure 6**.
- The ONF is listed in Schedule 6 Outstanding Natural Features Overlay Schedule as ID 237 Wairoa River Gorge. It is identified as "Site Type" A and described as "Formed along the Wairoa fault trace, the Wairoa River gorge is one of the few good examples of steep, incised river gorges in the Auckland Region". This fault is evident in the geology map for the area attached as **Figure 7.** The feature has been determined to be an ONF based on Unitary Plan Criteria c, e, h, i, which are highlighted in bold below.
- 4.7 Relevant Objectives and policies for Outstanding Natural Features are outlined in B4 Te tiaki taonga tuku iho Natural Heritage section of the AUP as below.

#### **B4.2.1. Objectives**

- (1) Outstanding natural features and landscapes are identified and protected from inappropriate subdivision, use and development.
- (2) The ancestral relationships of Mana Whenua and their culture and traditions with the landscapes and natural features of Auckland are recognised and provided for

#### **B4.2.2. Policies**

#### Identify, evaluate and protect outstanding natural features

- (4) Identify and evaluate a place as an outstanding natural feature considering the following factors:
  - (a) the extent to which the landform, feature or geological site contributes to the understanding of the geology or evolution of the biota in the region, New Zealand or the earth, including type localities of rock formations, minerals and fossils;
  - (b) the rarity or unusual nature of the site or feature;
  - (c) the extent to which the feature is an outstanding representative example of the diversity of Auckland's natural landforms and geological features;
  - (d) the extent to which the landform, geological feature or site is part of a recognisable group of features;
  - (e) the extent to which the landform, geological feature or site contributes to the value of the wider landscape;
  - (f) the extent of community association with, or public appreciation of, the values of the feature or site;
  - (g) the potential value of the feature or site for public education;
  - (h) the potential value of the feature or site to provide additional understanding of the geological or biotic history;
  - (i) the state of preservation of the feature or site;
  - (j) the extent to which a feature or site is associated with an historically important natural event, geologically related industry, or individual involved in earth science research;
  - (k) the importance of the feature or site to Mana Whenua.
- (6) Protect the physical and visual integrity of Auckland's outstanding natural features from inappropriate subdivision, use and development.

# Management of outstanding natural landscapes and outstanding natural features

- (7) Manage outstanding natural landscapes and outstanding natural features in an integrated manner to protect and, where practicable and appropriate, enhance their values.
- 4.8 As highlighted the relevant ONF AUP criteria listed for the Wairoa River Gorge ID 237 feature are:
  - (i) the extent to which the feature is an outstanding representative example of the diversity of Auckland's natural landforms and geological features (c);
  - (ii) the extent to which the landform, geological feature or site contributes to the value of the wider landscape (e):
  - (iii) the potential value of the feature or site to provide additional understanding of the geological or biotic history (h); and
  - (iv) the state of preservation of the feature or site (i).
- 4.9 North of the gorge, the Hunua foothills recede and open out into an area of flatter land between the Hunua Ranges and the hills north of Clevedon. Historically, this wider valley was utilised for pastoral farming, with the lower river flats suited to dairying and with stock farming undertaken within the higher, more elevated surrounds. Today the valley retains a rural productive character, with a number of horticultural activities and pastoral farms remaining, interspersed with numerous 'lifestyle blocks' particularly alongside roads and around the village of Clevedon.
- As a result of the quarry's location, enclosed by steep hills to its east, south and west, combined with its northern area facing towards the flatter valley and Clevedon, its visibility is generally concentrated to the north-west. This includes land occupied by rural residential properties, farmland, urban development within the southern reaches of Clevedon village, and the publicly accessible Clevedon Showgrounds. While the existing and proposed quarry zoned land forms part of the backdrop in views to the south from these areas, the Wairoa River Gorge and the extent of the ONF is generally not visible due to its lower elevation and the enclosing ridges to the north which effectively screen the majority of the gorge from view.
- 4.11 Walkers and others using Mc Nicol Road pass the existing quarry entrance when accessing the gorge. Transitory views of the quarry entrance are afforded in relation to the northern extent of the ONF and this utilitarian character contrasts with other rural lifestyle properties along McNicol Road south of the gorge. When in the gorge the landscape is enclosed and the character dominated by the river, pine forest and indigenous vegetation.
- 4.12 In relation to the landscape and visual context the existing consented quarry and the effects that this will generate needs to be taken in to account in considering effects on the ONF as this forms part of the "existing environment". In other words of the total 29ha quarry footprint 16ha is within the consented area and from those locations with a view of the mineral extraction activities much of the proposed expansion will be seen in the context of this area. This is a relevant consideration in relation to the potential effects on the visual integrity of the ONF.
- 4.13 Views from the walkway, when looking towards the proposed area to be added to the quarry zone are obscured by the surrounding topography and existing mature pine forest on the westerly oriented slopes. (Refer to Photos in **Appendix 2**). As long as sufficient vegetation is maintained in the eastern area of the ONF (within SAG's landholding) views of any quarry activity should also be obscured avoiding adverse experiential effects on the ONF.

## 5.0 Visibility Analysis

#### Visibility of Landform within Proposed Quarry Zone Area

- 5.1 In order to determine the extent of visibility of the existing landform within the area proposed to replace the existing quarry zone as outlined above a ZTV analysis of the existing ground contour was prepared with the visibility depicted in **Figure 8.** This shows any visibility of the PPC quarry extent from within the ONF is restricted to the western side of McNicol Road and the analysis depicts this as being from the tops of existing vegetation within the SEA area. There is no visibility of the proposed quarry zone landform from the road as views are obscured by intervening landform and existing vegetation, predominantly pine trees.
- From photographs taken on the site visit views of the existing quarry, PPC area and ONF are included in **Appendix 2** of this report. They show a range of views from roads surrounding the quarry and the Wairoa River Gorge and are referenced below in the discussion regarding the relative visibility of each of these elements.
- Further away to the north within approximately 1km of the proposed quarry zone visibility is largely restricted to open farmland, apart from some dwellings accessed from and along parts of McNicol Road as depicted in **Views 1-4**. Apart from opposite the entrance to the quarry, from locations within McNicol Road the PPC area is not a visible element as views are confined to the river gorge and/or masked by existing vegetation which is generally contiguous with other areas outside the ONF.
- Between approximately 1km and 2km, some properties along McNicol Road, Pioneer Road and Highridge Road contain views of the existing quarry, the existing quarry zone to the north and/or proposed quarry zone area as depicted in **Views 5 and 10**. More elevated views of the ONF from these westerly directions are either obscured by landform and existing vegetation or look beyond the river gorge towards the proposed quarry zone. As such the landform associated with the river gorge is not a noticeable element in views from these locations.
- 5.5 Between 2km and 4km to the north there are some locations where the existing quarry excavation is clearly visible. These include near the intersection of Quinns Road and McNicol Road (View 6) the western end of Otau Mountain Road (View 7) and Tourist Road opposite a polo field (View 9). From these locations parts of the proposed quarry zone landform would also be visible (once the pine trees have been removed) beyond the existing excavation. However, the proposed quarry area and any associated quarry activities would not be seen in the context of the ONF and the Wairoa River Gorge as this feature is at a much lower elevation and obscured from these more distant views by intervening landform, vegetation and structures.
- 5.6 Beyond 4km there are a number of locations on McNicol Road and Monument Road (travelling south), on the southern edge of Clevedon township (**View 8**), and larger areas of open farmland from where the proposed quarry zone landform would be visible. From the majority of these locations, it is the upper slopes of the proposed zone area that is visible and the ONF is shielded from view by the landform and associated vegetation that extends to the north beyond the ONF and the foothills that extend down from Otau Mountain Road to Mc Nicol Road. From most other locations beyond 4km views of the proposed quarry zone are limited to the upper slopes, are from open farmland and/or very distant, with the ONF not a visible feature.

# 6.0 Assessment of Landscape and Visual Effects

- 6.1 In relation to the potential landscape and visual effects that may result in the change to the quarry zone location the following is the key consideration (from the listed criteria) that needs to be assessed.
  - "the extent to which the landform, geological feature or site contributes to the value of the wider landscape."
- The geology and landform of the Wairoa Gorge ONF is an identifiable landscape element when appreciated from the upper extent of McNicol Road, (beyond the quarry entrance) and from within the margins of the river, although it is somewhat masked by the various types of vegetation on the surface of the landform. This is consistent with landform characteristics of other valley systems within the wider Hunua Ranges.
- 6.3 The ONF feature is also likely to be identifiable from the air as an incised north / south change in the landform character contrasting with the more elevated rolling and steeply sloping landform to the east and west and the flat plains to the north. It also includes indigenous vegetation (much of which is within an SEA), pine forest and a variety of weed species.
- Based on the above visibility analysis and ground level observations the ONF geology and landform does not appear to contribute to the wider character of the landscape in any direction. From the Wairoa River plain which extends from the northern extent of the gorge to the hill country north of Clevedon it is the foothills of the Hunua Ranges which form a backdrop and enclosing element to the area and a distinguishing feature. From the more elevated land to the south, west and east of the ONF any visibility and perception of the wider landscape through and over surrounding vegetation is generally to the north across the river flats to Clevedon and beyond.
- Although not listed in the criteria the request from Auckland Council has highlighted another of the ONF criteria to be assessed. This is:
  - the extent of community association with, or public appreciation of, the values of the feature or site.
- While this criteria is not listed in Schedule 6 as one of the determining factors for the Wairoa River Gorge being an ONF, it is understood that people and the community appreciate the river gorge and access to the river and its margins from McNicol Road. While these associative values are important in relation to the gorge and its use for recreation, these values will not be impacted by the proposed PPC zoning. As outlined above from locations within the gorge, the landform and existing vegetation currently obscures views into the proposed quarry zone area and this vegetation can be managed to restrict any views of future quarrying within this area. As long as sufficient vegetation is maintained, views of any quarry activity from within the gorge should be able to be obscured avoiding adverse effects on the ONF. Contrasting with this, the current extent of Quarry Zone on the northern half of the property, if quarried, could be visible as this directly adjoins McNicol Road, whereas the PPC area of Quarry Zone would utilise part of the ONF as a visual buffer between McNicol Road and the proposed PPC zoning.
- 6.7 Based on the above analysis it is considered that the proposed alteration to the quarry zone, to be located adjacent to part of the Wairoa River Gorge ONF, and any subsequent quarrying can be managed to avoid adverse effects on the visual integrity

of the feature and thereby prevent adverse effects on the natural characteristics and qualities that contribute to its values.

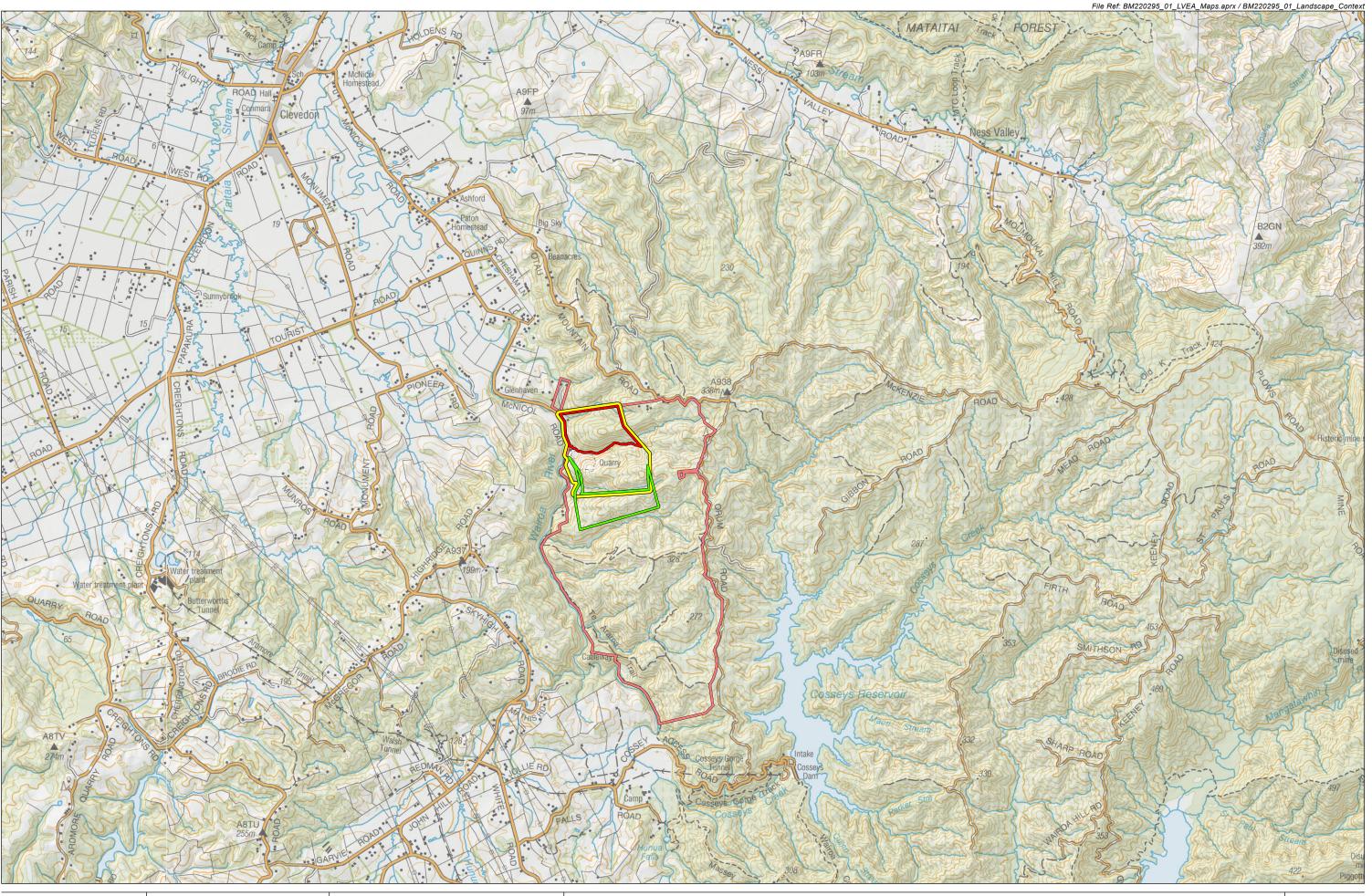
### 7.0 Screening and Site Rehabilitation

- 7.1 A key factor in avoiding perceived or experiential effects on the ONF from nearby offsite locations, and particularly from within the Wairoa River Gorge will be the retention of the natural landform and vegetative cover in areas adjacent to the proposed plan change quarry zone and future operation within the site.
- 7.2 Existing elevated landforms (up to RL140m) to the west of the proposed zone with maturing pine forest provide an effective visual screen from within the gorge. It is recommended an area of existing vegetation within the site (but beyond the proposed zone) be identified for retention and management as part of any resource consent for quarrying within the proposed zone.

# 8.0 Summary

8.1 In my opinion relevant AUP objectives and policies that require the protection of the Wairoa River Gorge ONF can be met with approval of the proposed plan change.

# Appendix 1: Figures 1-9





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Data Sources: LINZ Topo Maps, Stevenson Aggregates, BML

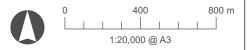
Area to be Removed from Quarry Zone
Area to be Added to Quarry Zone
Quarry Zone
Stevenson Aggregates Ltd Property

CLEVEDON QUARRY PLAN CHANGE
Landscape Context

Date: 27 June 2022 | Revision: 0
Plan prepared by Boffa Miskell Limited
Project Manager: Tom.Lines@boffamiskell.co.nz | Drawn: SGa | Checked: JGo

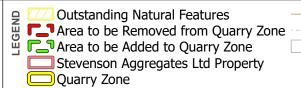
Figure 1





Data Sources: Eagle Technology, Land Information New Zealand, GEBCO, Community maps contributors, Auckland Council, Stevensor Aggregates, BML

Projection: NZGD 2000 New Zealand Transverse Mercator



Contours (50m interval) Contours (25m interval) Land Parcels

**CLEVEDON QUARRY PLAN CHANGE ONF** and Quarry Zones

Date: 27 June 2022 | Revision: 0 Plan prepared by Boffa Miskell Limited

Figure 2



1:20,000 @ A3

Data Sources: Auckland Council (2016 LiDAR), Stevenson Aggregates, BML

Projection: NZGD 2000 New Zealand Transverse Mercator

Stevenson Aggregates Ltd Property
Area to be Removed from Quarry Zone
Area to be Added to Quarry Zone
Quarry Zone
Outstanding Natural Features
Land Parcels

Elevation (m) 379

**CLEVEDON QUARRY PLAN CHANGE** ONF and Quarry Zone Elevation

Project Manager: Tom.Lines@boffamiskell.co.nz | Drawn: SGa | Checked: JGo

Date: 27 June 2022 | Revision: 0

Plan prepared by Boffa Miskell Limited





Data Sources: Eagle Technology, Land Information New Zealand, GEBCO, Community maps contributors, Auckland Council, Stevenso Aggregates, BML

Projection: NZGD 2000 New Zealand Transverse Mercator

Area to be Removed from Quarry Zone
Area to be Added to Quarry Zone
Quarry Zone
Stevenson Aggregates Ltd Property

Significant Ecological Areas **Terrestrial** 

Outstanding Natural Features Contours (20m interval) Contours (5m interval)

Land Parcels

**CLEVEDON QUARRY PLAN CHANGE** 

**ONF and Quarry Zone Contours** Date: 27 June 2022 | Revision: 0

Plan prepared by Boffa Miskell Limited





Data Sources: Auckland Council (2016 LiDAR), Stevenson Aggregates, BML

Projection: NZGD 2000 New Zealand Transverse Mercator

Area to be Removed from Quarry Zone Area to be Added to Quarry Zone Clevation (m)

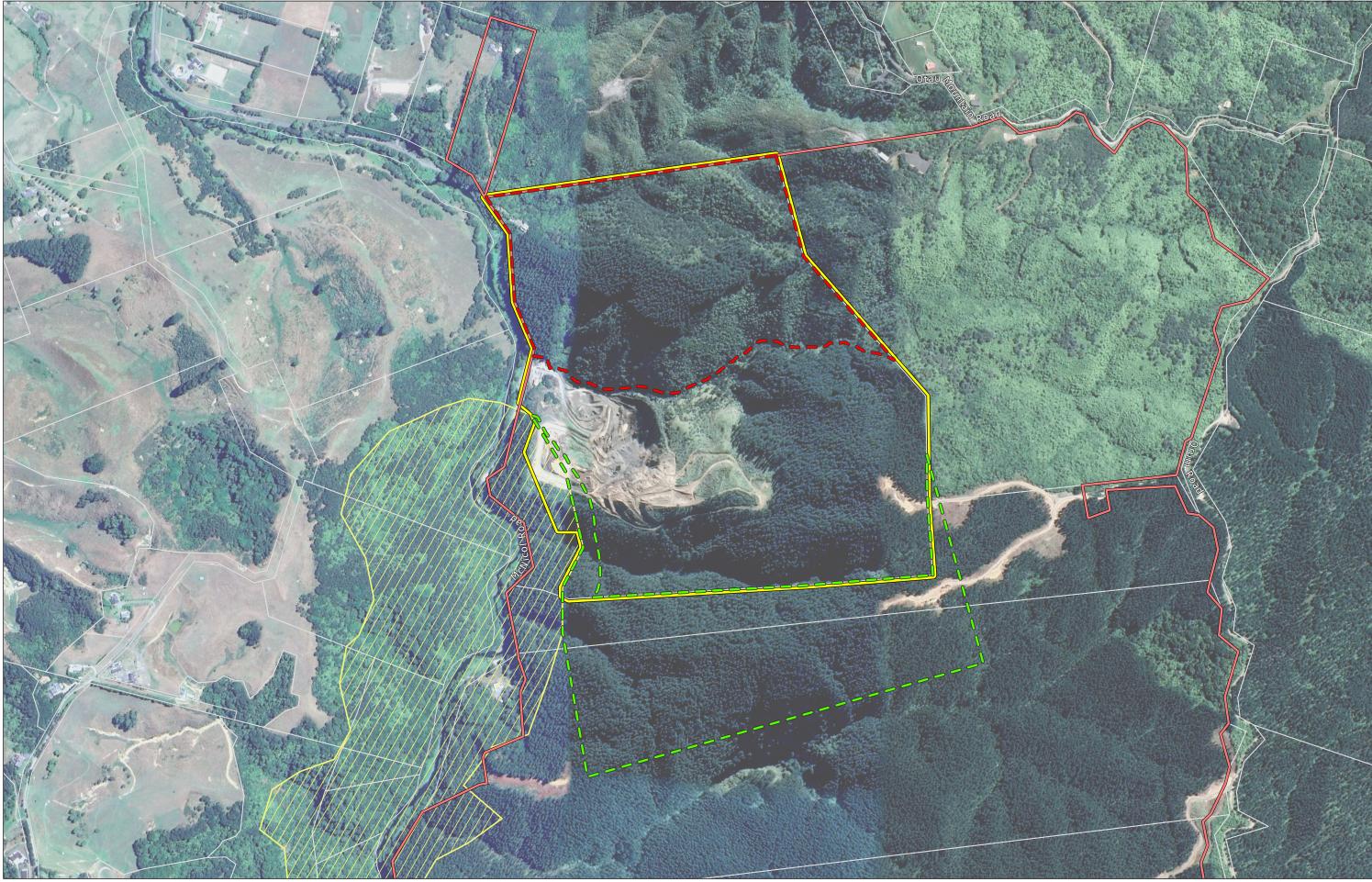
Quarry Zone
Quarry Zone
Quarry Zone
Quarry Zone
Outstanding Natural Features Stevenson Aggregates Ltd Property

Land Parcels

**CLEVEDON QUARRY PLAN CHANGE** 

ONF and Quarry Zone Detail Elevation

Date: 27 June 2022 | Revision: 0 Plan prepared by Boffa Miskell Limited Project Manager: Tom.Lines@boffamiskell.co.nz | Drawn: SGa | Checked: JGo







Data Sources: Bing Maps, Auckland Council, Stevenson Aggregates, BML

Projection: NZGD 2000 New Zealand Transverse Mercator

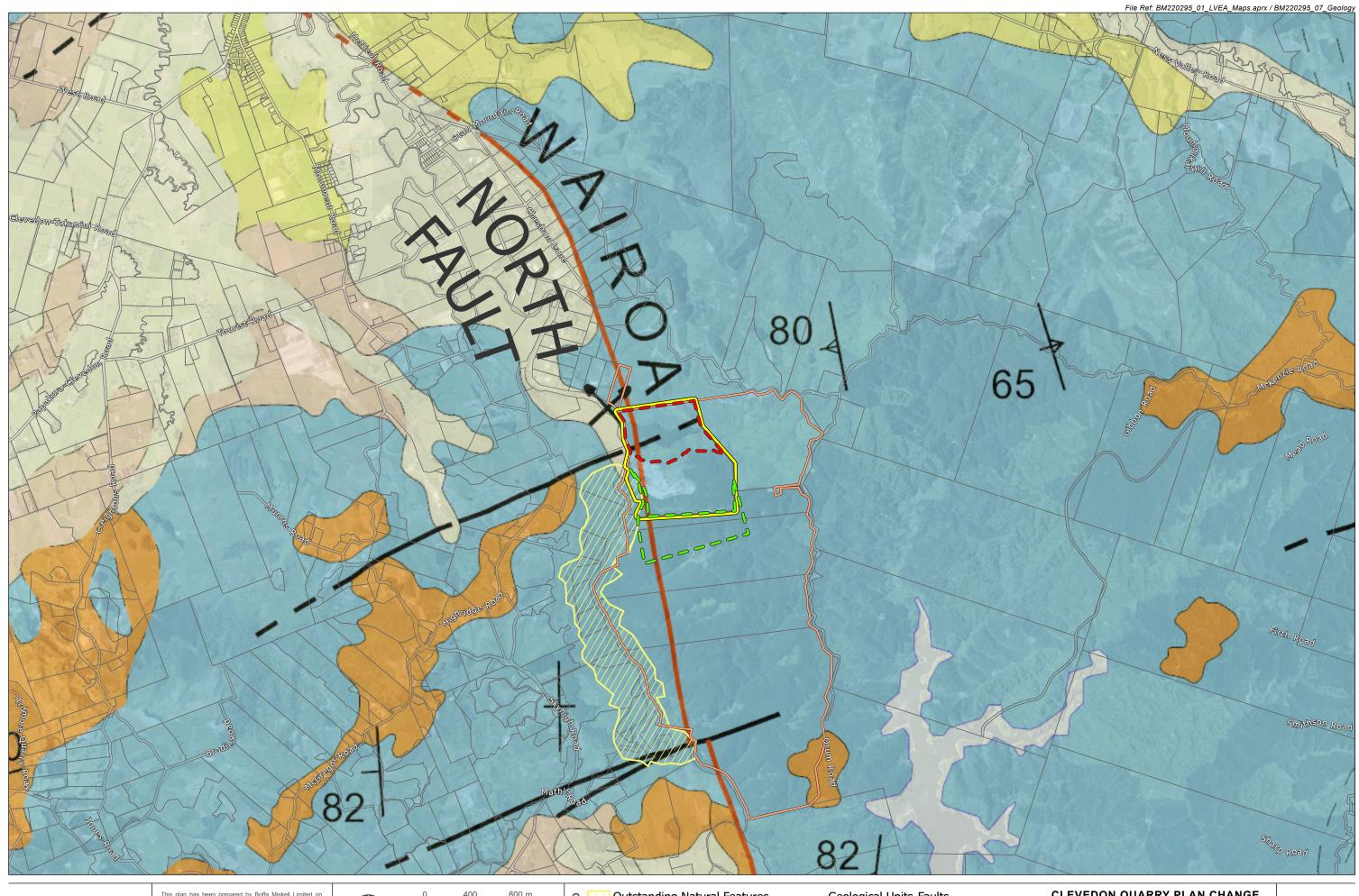
Area to be Removed from Quarry Zone
Area to be Added to Quarry Zone
Quarry Zone
Stevenson Aggregates Ltd Property
Outstanding Natural Features

Land Parcels

**CLEVEDON QUARRY PLAN CHANGE** ONF/Quarry Zone Aerial

Date: 27 June 2022 | Revision: 0

Plan prepared by Boffa Miskell Limited





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Data Sources: Eagle Technology, GNS Science, Eagle Technology, Land Information New Zealand, GEBCO, Community maps contributors, Auckland Council, Stevenson Aggregates, BML

Projection: NZGD 2000 New Zealand Transverse Mercator

Outstanding Natural Features
Area to be Removed from Quarry Zone
Area to be Added to Quarry Zone
Quarry Zone
Stevenson Aggregates Ltd Property
Land Parcels

Geological Units Faults
Greywacke Active
Turbidite Inactive
Mud

Sand

Mud

CLEVEDON QUARRY PLAN CHANGE
Geology

Date: 27 June 2022 | Revision: 0
Plan prepared by Boffa Miskell Limited
Project Manager: Tom.Lines@boffamiskell.co.nz | Drawn: SGa | Checked: JGo

Figure 7





1:40,000 @ A3

Data Sources: Eagle Technology, Land Information New Zealand, GEBCO, Community maps contributors, Auckland Council, Stevenson Aggregates, BML

Projection: NZGD 2000 New Zealand Transverse Mercator

Area to be Added to Quarry Zone
Outstanding Natural Features
Stevenson Aggregates Ltd Property
Observer Points
Probable Visibility
High (48 Observer) Land Parcels

High (48 Observers)

Low (1 Observer)

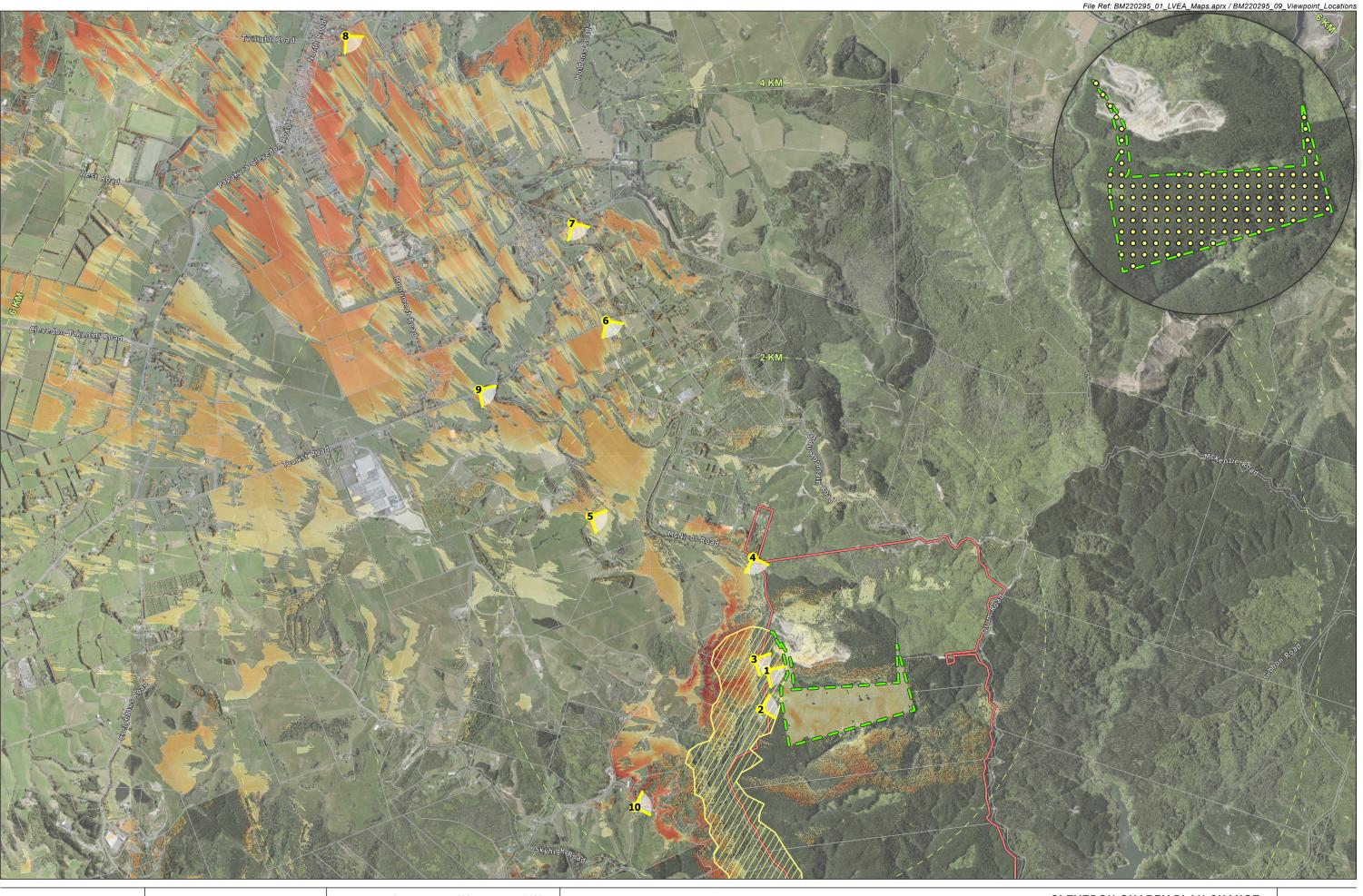
analysis was done using Auckland Council's 2016

Note\* - The visibility Above-Ground LiDAR data.

**CLEVEDON QUARRY PLAN CHANGE** Visibility Analysis

Date: 27 June 2022 | Revision: 0 Plan prepared by Boffa Miskell Limited

Project Manager: Tom.Lines@boffamiskell.co.nz | Drawn: SGa | Checked: JGo







Data Sources: Eagle Technology, Land Information New Zealand, GEBCO, Community maps contributors, Auckland Council, Stevenson Aggregates, BML

Projection: NZGD 2000 New Zealand Transverse Mercator

Viewpoint Locations

Area to be Added to Quarry Zone
Outstanding Natural Features
Stevenson Aggregates Ltd Property
Land Parcels

Observer Points
Probable Visibility
High (48 Observers)

Low (1 Observer)

Note\* - The visibility analysis was done using Auckland Council's 2016 Above-Ground LiDAR data.

CLEVEDON QUARRY PLAN CHANGE
Viewpoint Locations

Date: 27 June 2022 | Revision: 0
Plan prepared by Boffa Miskell Limited

Project Manager: Tom.Lines@boffamiskell.co.nz | Drawn: SGa | Checked: JGo

# Appendix 2: Photos of Existing Quarry, Proposed Quarry Zone and ONF / Wairoa River Gorge



View 1: Looking South-east from within ONF and Wairoa River Gorge



View 2: Looking North-east from end of McNicol Road within ONF and Wairoa River Gorge



View 3: Looking South from within ONF Adjacent to Wairoa River



View 4: View Travelling South along McNicol Road approximately 400m from ONF and Wairoa River Gorge



View 5: Looking South-east from Pioneer Road towards existing Quarry and ONF within Gorge below



View 6: Looking South towards Quarry and from Corner of McNicol Road and Quinns Road



View 7: Looking South towards Quarry and Proposed Zone Area from Corner of McNicol Road and Otau Mountain Road



View 8: Looking South towards Quarry and Proposed Zone Area from Footpath Adjacent to Clevedon Kawakawa Road



View 9: Looking South-east towards Quarry and Proposed Quarry Zone Area from Tourist Road



View 10: Looking East towards Quarry and Proposed Zone area from High Ridge Road



#### About Boffa Miskell

Boffa Miskell is a leading New Zealand professional services consultancy with offices in Whangarei, Auckland, Hamilton, Tauranga, Wellington, Christchurch, Dunedin, and Queenstown. We work with a wide range of local and international private and public sector clients in the areas of planning, urban design, landscape architecture, landscape planning, ecology, biosecurity, cultural heritage, graphics and mapping. Over the past four decades we have built a reputation for professionalism, innovation and excellence. During this time we have been associated with a significant number of projects that have shaped New Zealand's environment.