KINGS

QUARRY

Quarry Management Plan

Prepared by Kings Quarry Limited
August 2024

CONTENTS

DOCUMENT CONTROL

Title: Kings Quarry Management Plan

Date	Version	Description	Author	Reviewer	Authorised
4/11/21	1	Initial QMP for consent application	M Chilton	P Santos	A Semenoff
5/12/23	2	Change of company, Stage 2 of consent	M Chilton	P Santos	A Semenoff
22/08/24	3	Response to comments update	M Chilton	P Santos	A Semenoff

1 INTRODUCTION

This Quarry Management Plan (QMP) has been developed to manage the effects of quarrying at the Pebble Brook Quarry, Wainui.

This QMP addresses quarry operations including erosion and sediment control. It is written in the context of the Auckland Unitary Plan (AUP).

1.1 Contact Details

Owner	Pebblebrook Properties Limited
Operator	Kings Quarry Limited
Address	306 Pebble Brook Road, Wainui 0994
Legal Descriptions	• Lots 1, 2 and 3 DP 59502 • Allotment 71, Part Allotment 72, Part Allotment N.E. 73 and Part Allotment S.E. 73 Parish of Kaukapakapa • Allotment 28 Parish of Kaukapakapa • Lot 1 DP 414617 • Allotment 78 and Southern Portion Allotment 77 Parish of Kaukapakapa
Quarry Manager	TBC
Contact Phone	TBC
Email	alex@semenoffgroup.co.nz
Property Size	167.1089 ha

2 CURRENT SITE PLANS

The following current site plans show:

a) existing topography, contours, drainage, natural watercourses, vegetation cover and any other significant landform or features; **(Figures 1, 2 & 3)**

b) stage 1 site layout, general design and location of buildings; **(Figure 4)**

c) stage 2 site layout and general design including overburden area and sediment retention pond **(Figure 5)**

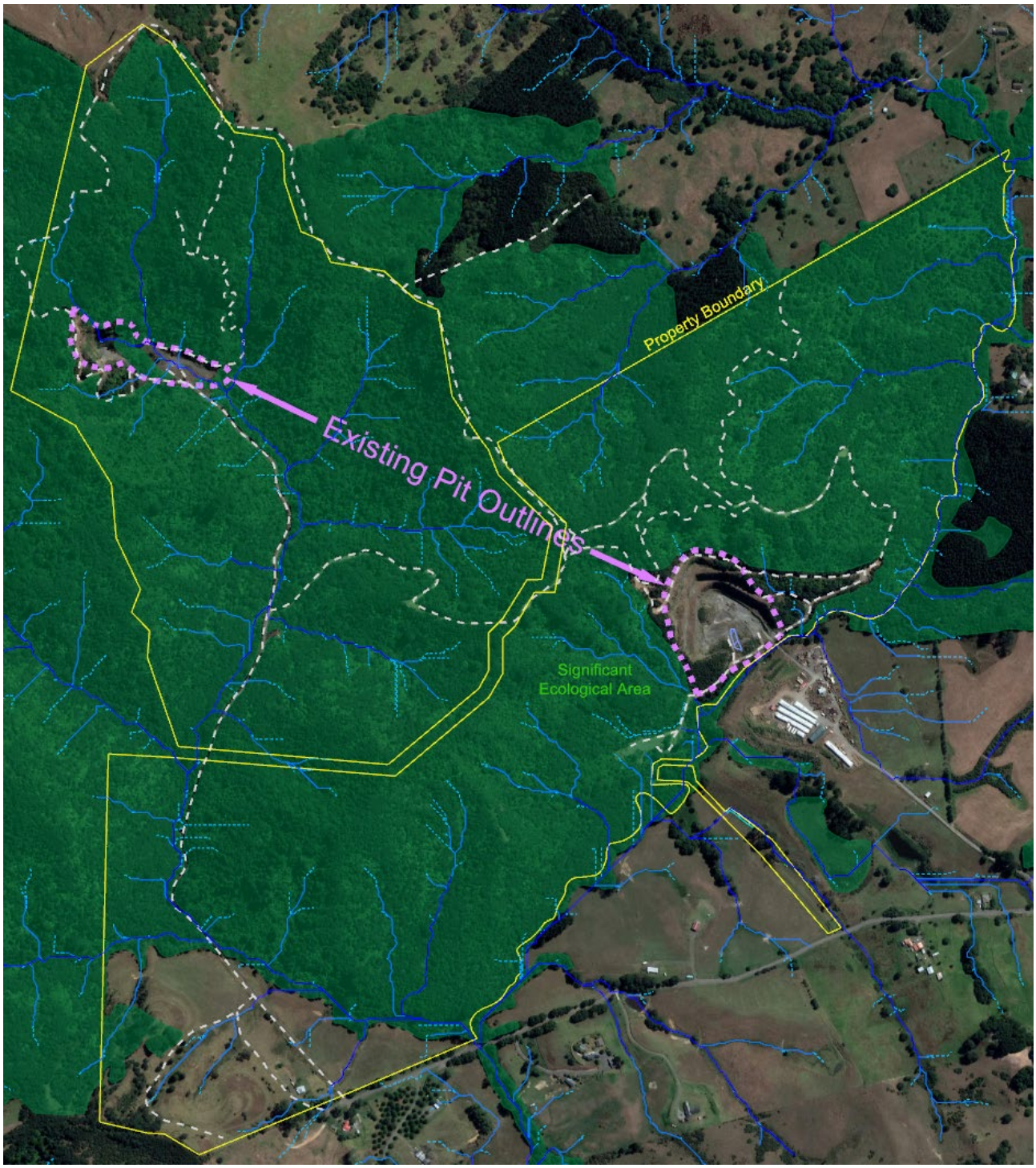

Figure 1 - Existing pit outlines, tracks, natural watercourses and SEA overlay

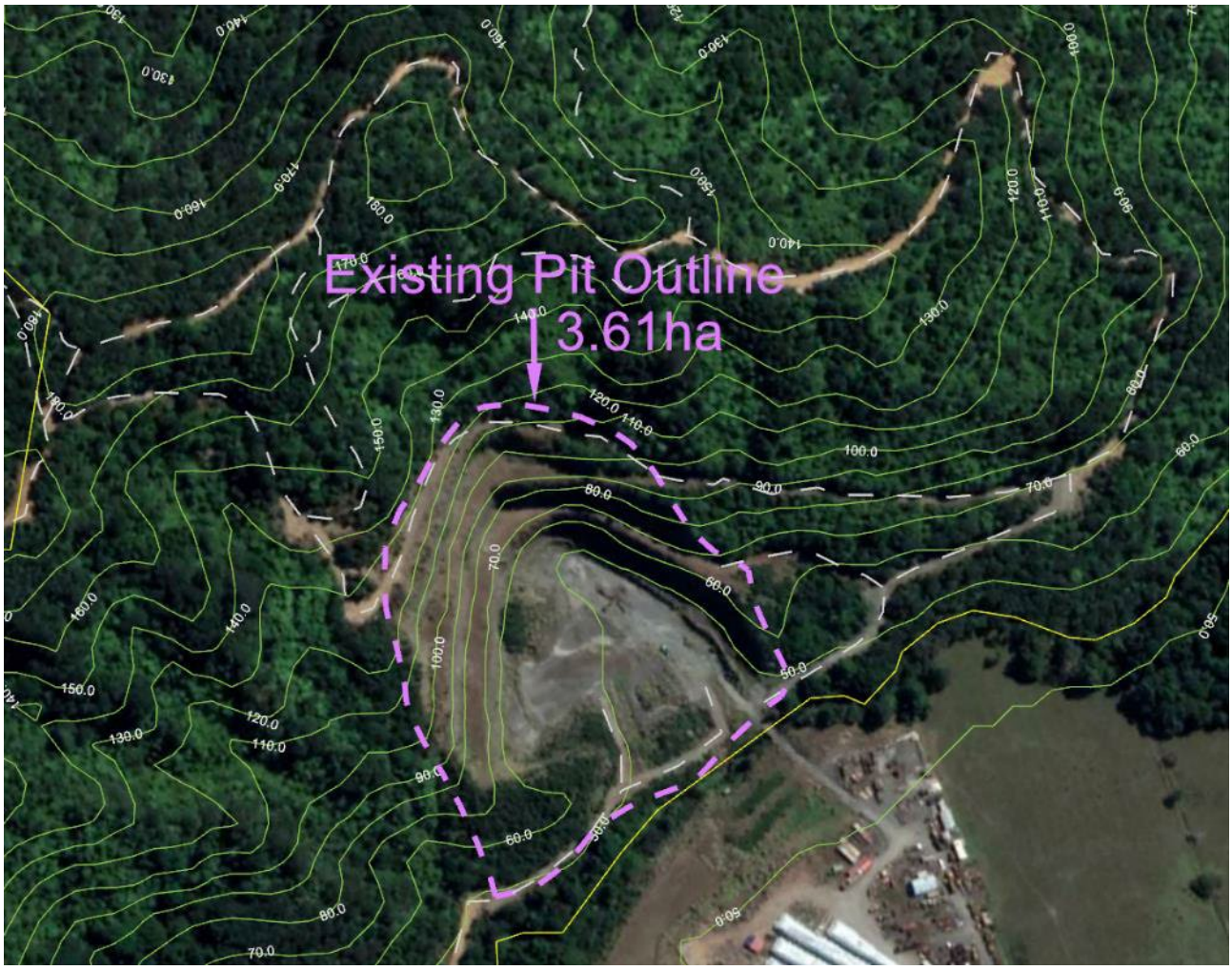

Figure 2 - 10m contours around existing main pit

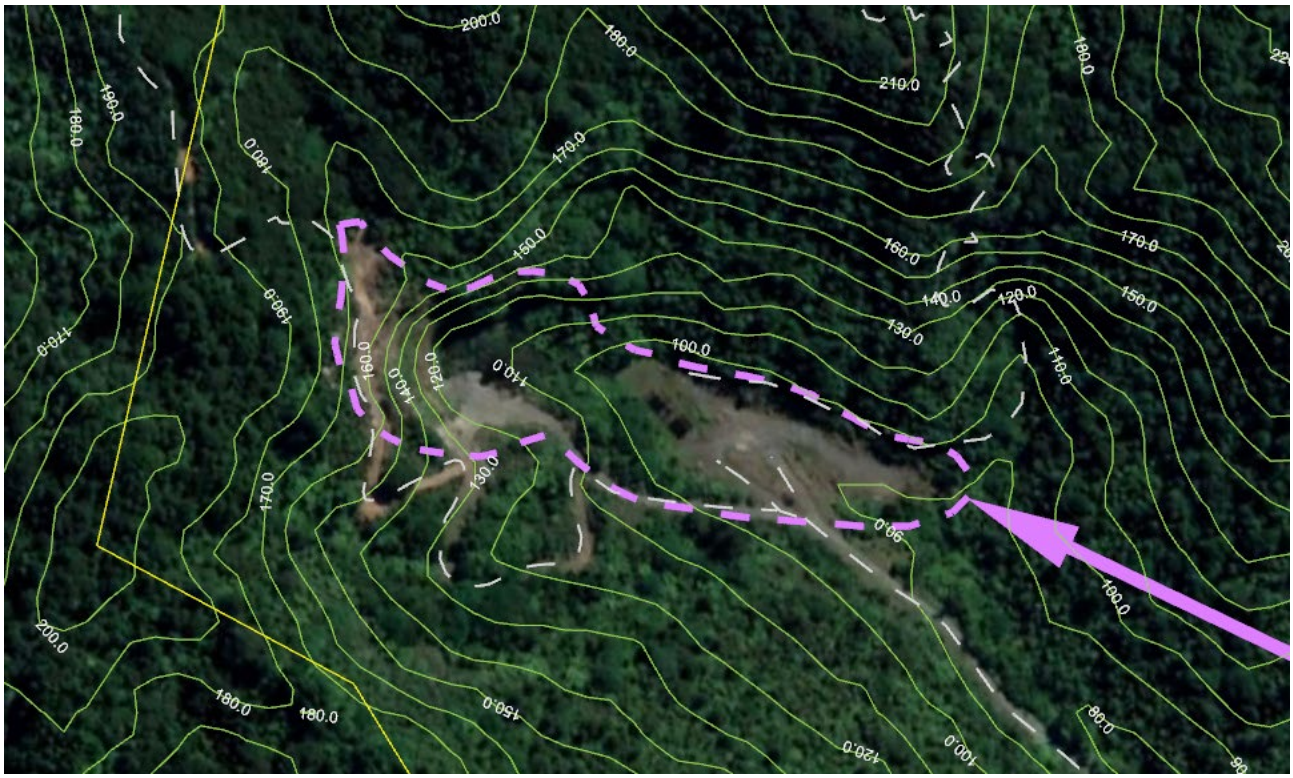

Figure 3 - 10m contours around existing western pit

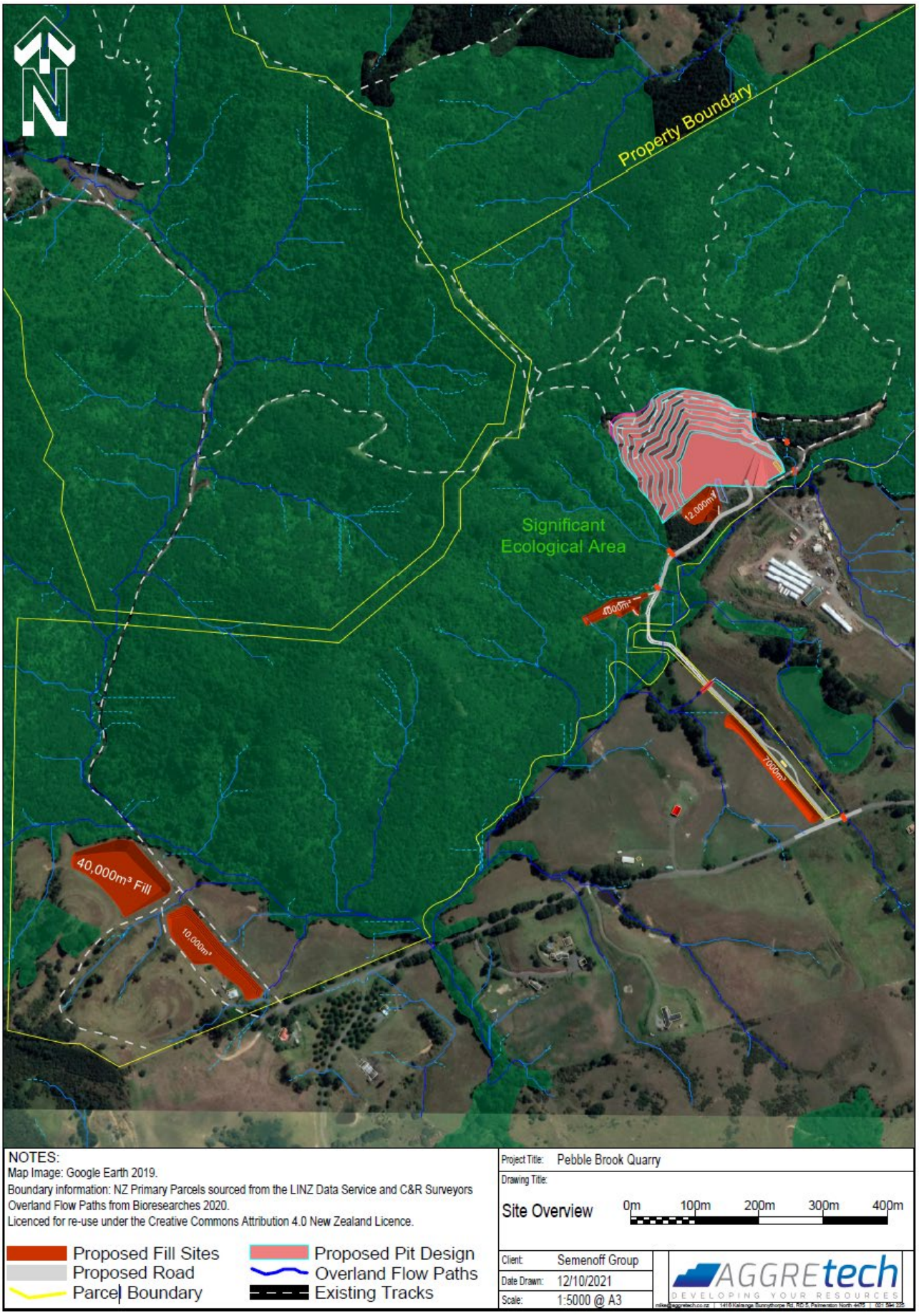

Figure 4 – Stage 1 site layout, general design & buildings (weighbridge office & site office in light brown)

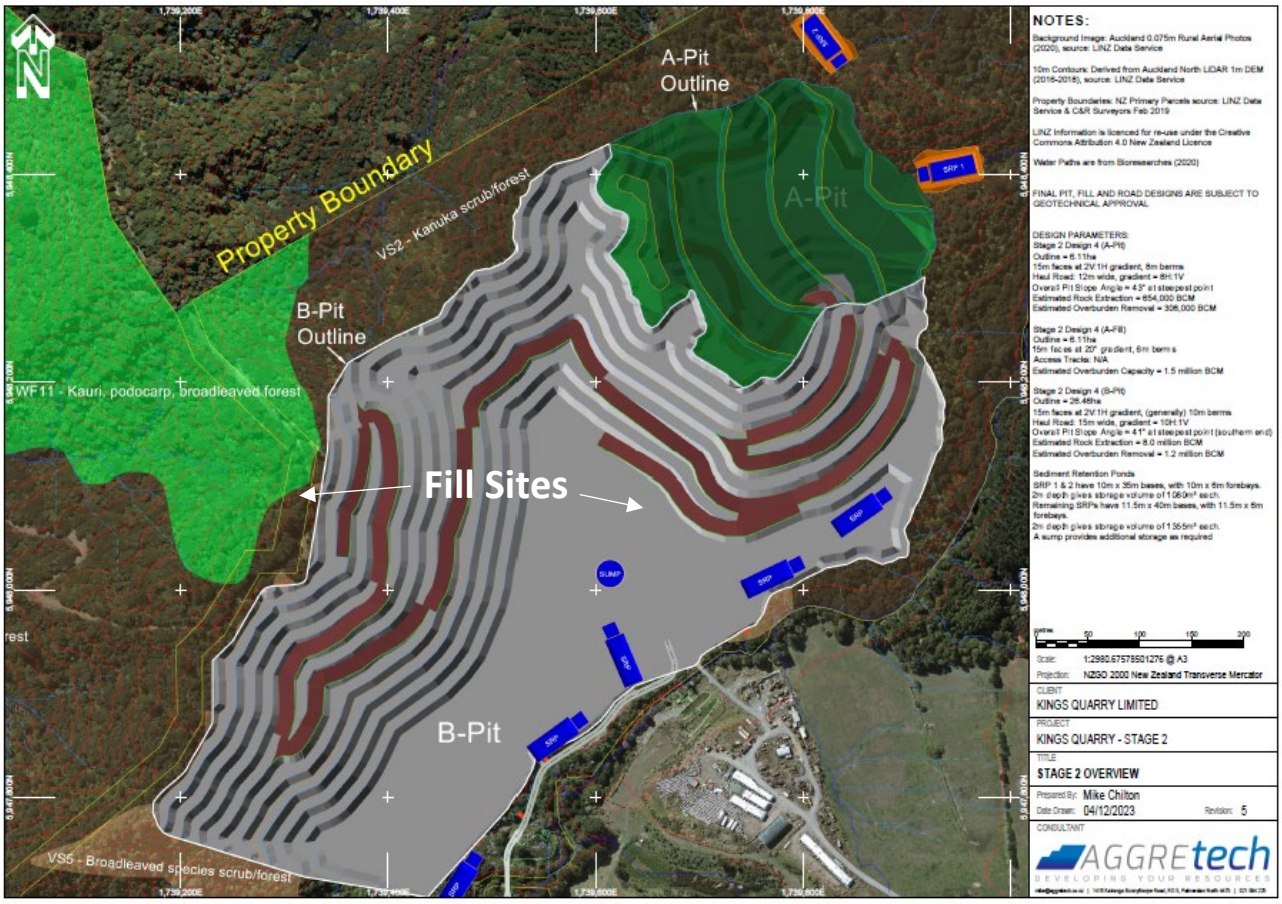

Figure 5 – Stage 2 site layout, general design including overburden area and sediment retention ponds

3 DESCRIPTION OF OPERATIONS

3.1 Hours of Operation & Staffing

The site will be open for quarrying operations as follows:

Monday to Saturday	0500 to 1900 (truck access 0630 to 1700)
Sunday and Public Holidays	Closed

The maximum anticipated staff level is five.

Notes:
1. Overburden removal shall not occur before 0700 each day.

3.2 Overburden Removal

In preparation for stripping, vegetation and topsoil will be removed using a digger loading articulated dump trucks. Deposition of vegetation and topsoil shall be managed to ensure topsoil availability for use in the future.

In the first 5 years, it is proposed to excavate approximately 6.1ha for the formation of A-Pit, and will produce approximately 306,000 bank cubic meters (BCM) of overburden which will be removed and backfilled in to the lower sections of the fill site, as the excavation progresses. The A-Pit design will have 15m faces, and a slope angle of approximately 43 degrees at the steepest point. Once completed, the A-Pit will have 15m faces at 20° gradient and 6m berms.

The main quarry pit (B-Pit) will be excavated from year 6, and will span to 26.46ha in the 45 year lifetime. Excavation will begin from the eastern ridgeline border, adjacent to the A-Pit, and progress south-west down the existing slope to meet the base of the existing Stage 1 quarry. 1.2 million BCM of overburden from the B-Pit will be removed and deposited along the haul road in the A-Pit throughout the lifetime, and approximately 8.0 million BCM of rock product will be extracted from the B-Pit overall.

3.3 Rock Extraction and Processing

The Albany conglomerate is drilled and blasted, then removed with a digger. Because there is very limited access to the pit faces from within the SEA overlay, the digger will generally side cast onto the bench below to allow loading onto dumpers and hauling down to the processing area below.

Faces will be typically 15m high, with a batter of 2V:1H. Benches are 8-10m wide. This gives an overall pit slope of 40-45°.

Processing of the rock involves crushing, washing and screening to produce the desired products. Processing equipment will be limited to mobile units.

Once aggregate is processed, stockpiles will be formed to load trucks. Stockpiles will be managed by the loader operator to ensure adequate visibility and manoeuvrability.

3.4 Traffic Management

Site access is a right turn off Pebble Brook Road. The entrance has been designed for truck and trailer units to turn in easily – the first 20m has been widened to 7m. See Figure 6 below.

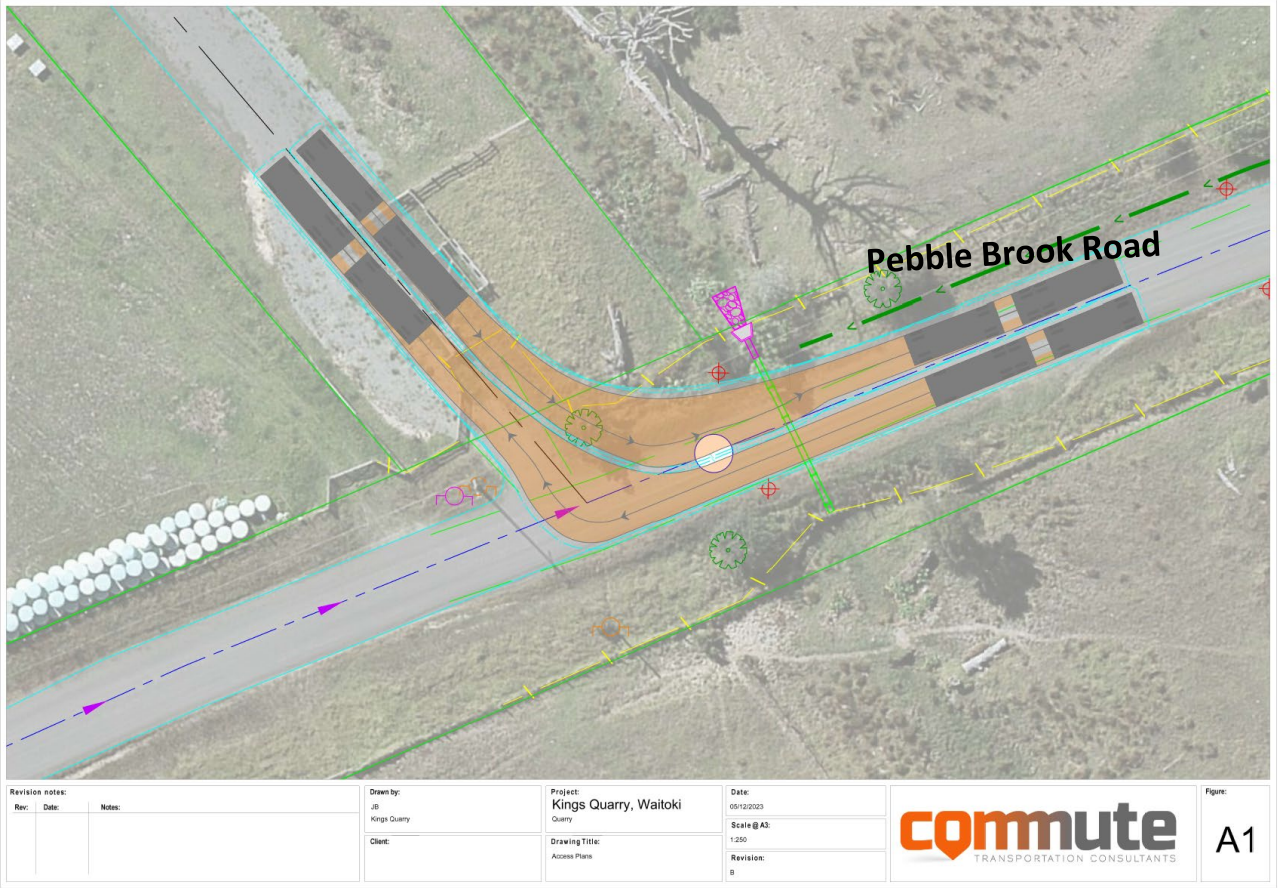

Figure 6 - Access into the site from Pebble Brook Road (Commute, December 2023)

Figure 7 below shows the heavy vehicle circulation route in the yard **in yellow**. Light vehicles will be directed to park next to the site office in the parking area.

Stockpiles will be maintained to ensure sufficient visibility between the loader and truck and trailer units.

Site transport rules are as follows:

- Activities prior to 7am shall be limited to two return truck movements to site for loading out with aggregate;
- During daytime hours (7am-9pm Monday to Friday and 7am to 4pm Saturday), trucks exporting aggregate from site will be limited to 94 return visits; and
- If audible reversing warning signals are necessary, site plant will use broadband reversing alarms.

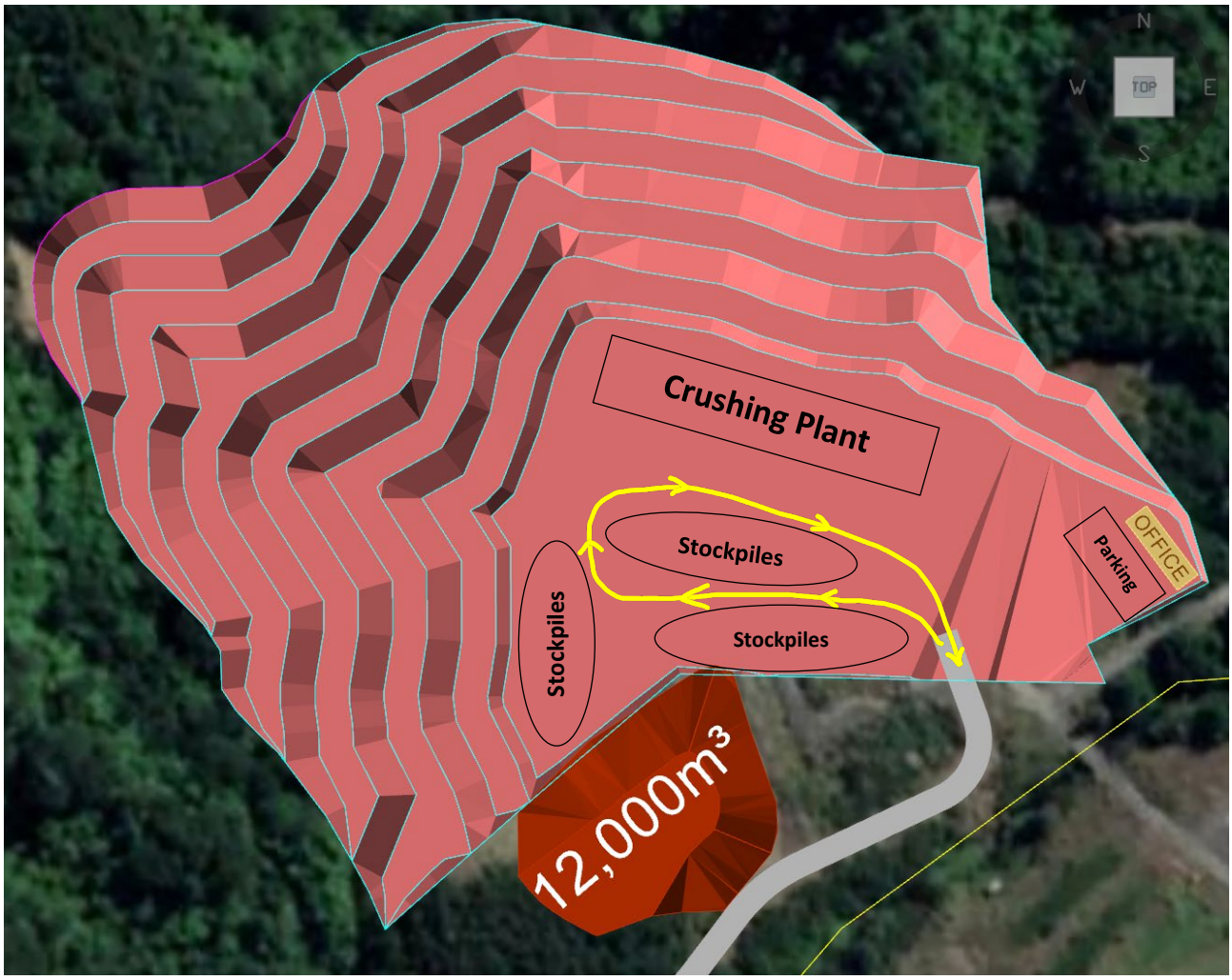

Figure 7 – Heavy traffic circulation (taken from Stage 1 but still applicable to Stage 2)

3.5 Monitoring and Reporting

3.5.1 Dust

Dust Management	
Performance Criterion	• No offensive or objectionable dust to be observed beyond the boundary of the site
Implementation Strategy	• Roads and working areas to be wetted down with a water cart or sprinklers as required • Operational hours are limited (Section 3.1) • Reduce vehicle speed as required (may be controlled with signage) • Ensure correct loading to avoid spillage from trucks onto the haul roads • Site and orient stockpiles and equipment to reduce wind exposure when possible • All disturbed areas of land resulting from the activity (except for the quarry working face) are to either be hard surfaces, metalled, sealed or have ground cover established (e.g. grassing, tree planting)

	• Be aware of weather conditions, particularly windy and dry periods.
Monitoring	• Visual monitoring • Weather monitoring
Reporting	• Any complaints are to be recorded
Corrective Action	• Modify discharge, OR • Immediately cease discharge until compliance is demonstrated to ARC's satisfaction
Reference Document	• Ministry for the Environment. 2016. *Good Practice Guide for Assessing and Managing Dust.* Wellington: Ministry for the Environment.

3.5.2 Noise

Noise Management	
Performance Criteria	• The operation of the quarry shall comply with the noise limits specified in the District Plan: ***Table H28.6.2.1.1*** *Times* / *Noise Levels* *7am – 9pm, Monday to Friday* / L_{Aeq} *55dB* *7am – 4pm, Saturday* / L_{Aeq} *55dB* *All other times and on public holidays* / L_{Aeq} *45dB*, L_{AFmax} *75dB* • Noise created from the use of explosives must not exceed a peak overall sound pressure of 128dB L_{zpeak}. (H28.6.2.2)
Implementation Strategy	• Operational hours are limited (particularly trucking hours) • Reduce vehicle speed as required (may be controlled with signage) • Limit size of blasts and use good practice (e.g. delayed holes) • Use broadband reversing alarms on mobile equipment
Monitoring	• None required
Reporting	• Any complaints are to be recorded
Corrective Action	• Identify the source of excessive noise then repair, alter, screen or otherwise muffle the noise.

3.5.3 Traffic

Traffic volumes will be monitored at the weighbridge.

4 EROSION AND SEDIMENT CONTROL PLAN

4.1 Planned Overburden Removal & Rock Extraction

The overburden removal and pit extraction areas planned are shown in Figure 5 above. The total earthworks volume is summarised below:

	Cut (m^3)	Fill (m^3)
A-Pit (6.11 ha)	654,000	306,000
B-Pit (26.46 ha)	8,000,000	1,200,000
Total (32.57 ha)	8,065,400	1,506,000

4.2 Water Sampling and Rainfall Data

Water monitoring has not been completed as the quarry is not yet in operation. Assessment of results is not applicable.

A summary of rainfall records can be seen in the following chart, taken from Auckland Council's Environmental Data Portal. 2021 has been wetter than 2020 to date.

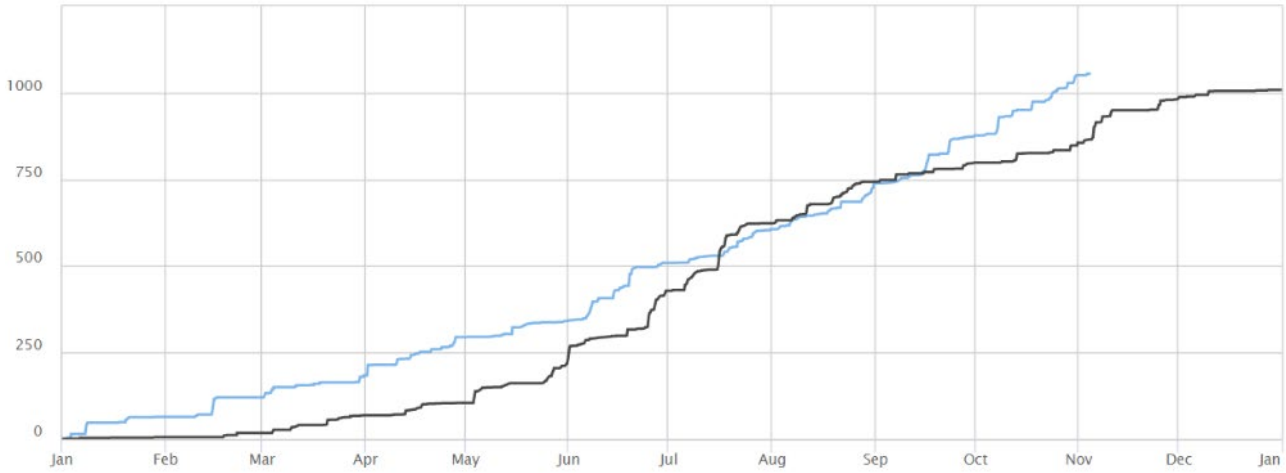

Figure 8 - Rainfall data (mm) at closest AC monitoring point, showing 2020 (black) & 2021 (blue)

4.3 Assessment of Effectiveness of ESC Measures

An assessment of the effectiveness of erosion and sediment control measures and any sediment related effects on the receiving H28 Special Purpose – Quarry Zone Auckland Unitary Plan Operative in part 9 environment (where previous quarrying has occurred within the site).

This is not applicable as Stage 2 is pre-operational.

However, erosion and sediment control measures are proposed as outlined in the Erosion and Sediment

Control Report prepare by LDE. In summary, these include:

- Ten sediment retention ponds ("SRP") for both the fill site and B-Pit, to be proposed in accordance with the quarry staging;
- No chemical treatment is proposed for the SRP's, however monitoring of water quality will be conducted when work commences and a Chemical Treatment Management Plan ("CTMP") will be put in to action if deemed required;
- Clean water diversion bunds and silt fences throughout the Site; and
- Standard daily operations including inspections, and sediment management and removal.

4.4 Discharge Standards & Responses to Non-Compliance

Any existing discharge standards, compliance measures and responses to non-compliance (where previous quarrying has occurred within the site).

This is not applicable as Stage 2 is pre-operational.