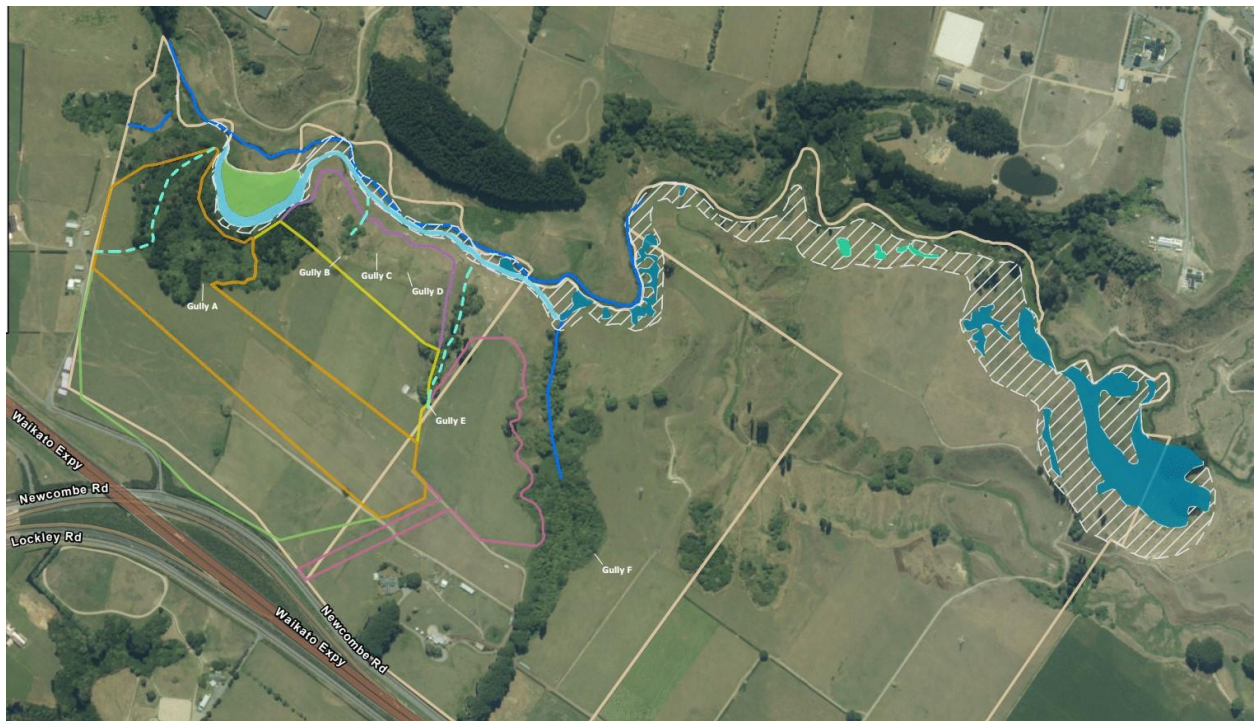


Cultural Impact Assessment

Newcombe Road Quarry



Norman Hill
Te Hira Consultant Ltd

Disclaimer: This information was created for the specific purpose of providing a Cultural Impact Assessment Report for the Newcombe Rd Quarry proposal. This information cannot be used for any other purpose without the express permission of Ngaati Korokii-Kahukura and Ngaati Hauaa, and in no way substitutes the need for future engagement with taangata whenua.

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Executive summary

RS Sand Ltd is applying to the Waikato Regional Council and Waipā District Council to establish and operate a sand quarry on a rural property at 77 Newcombe Road, Cambridge. The Site is located on three records of title which have a total area of 134.67 hectares, although the quarry is only proposed on approximately 27 hectares in the western portion of the properties. The quarry is made up of a 23 hectare pit area towards the western boundary and a 4 hectare plant area (for processing and stockpiling) to the east of the pit.

Te Hira Consultant Limited engaged with taangata whenua to develop this Cultural Impact Assessment Report. There are three Iwi who have confirmed rights and interests within the application area. Following the 1995 Waikato Raupatu Claims Settlement Act, a tribal authority on behalf of Waikato-Tainui was established, now recognised as Te Whakakitenga o Waikato-Tainui. However, the mana (occupational and historical authority) is implicitly held by Ngaati Korokii-Kahukura Trust and Ngaati Hauaa Iwi Settlement Trust.

This Cultural Impact Assessment Report was developed to inform the Applicant and decision makers under the Resource Management Act 1991 and the Heritage New Zealand Pouhere Taonga Act 2014, capturing the following:

- The interests of taangata whenua in the consent application area;
- Significant cultural, economic, social and environmental matters that support iwi considerations for the resource consent application;
- Evidence of genuine engagement with taangata whenua;
- Recommendations and conditions to restore and protect the impacts of the consented activities and associated water bodies;
- Overall decision to support or decline the application from taangata whenua.

Te Whakakitenga o Waikato-Tainui endorses the recommendations and position of Ngaati Korokii-Kahukura and Ngaati Hauaa Iwi Trust, as taangata whenua of the area where the proposed activities are situated.

Ngaati Korokii-Kahukura supports/opposes the application for resource consents based on the acceptance of conditions and recommendations by the applicant.

Ngaati Hauaa Iwi Trust supports/opposes the application for resource consents based on the acceptance of conditions and recommendations by the applicant.

PROJECT BACKGROUND

RS Sand Ltd is applying to the Waikato Regional Council and Waipā District Council to establish and operate a sand quarry on a rural property at 77 Newcombe Road, Cambridge. The Site is located on three records of title which have a total area of 134.67 hectares, although the quarry is only proposed on approximately 27 hectares in the western portion of the properties. The quarry is made up of a 23 hectare pit area towards the western boundary and a 4 hectare plant area (for processing and stockpiling) to the east of the pit. The pit area is estimated to contain 7,409,700 tonnes (4,116,500m³) of sand resource, comprising a mixture of pit sand and concrete sand. The quarry is proposed to extract and process up to 400,000 tonnes of sand from the pit area per year (depending on demand) for approximately 25 years, based on the following stages:

Stage 1. Years 1 to 1.5 2.8ha 452,700 tonnes (251,500m³).

Stage 2. Years 1.5 to 6.4 3.7ha 1,450,800 tonnes (806,000m³).

Stage 3. Years 6.4 to 13.4 6.8ha 2,110,500 tonnes (1,172,500m³).

Stage 4. Years 13.4 to 20.2 6.3ha 2,049,300 tonnes (1,138,500m³).

Stage 5. Years 20.2 to 25 3.0ha 1,346,400 tonnes (748,000m³)

Excavations of the pit area will begin 10-15m from the Karapiro Stream and move towards Newcombe Road. The stages are approximately 120m wide and will excavate approximately 35m below the existing ground level of the existing terrace. The bottom of the pit area will be approximately 10m above the level of the Karapiro Stream bank. An internal haul road will link the pit and plant areas. The proposed plant area includes a processing plant (approximately 6m high and 20m wide) towards the middle of the area and a water recycling pond towards the north. The plant building will use and discharge water to and from there cycling pond to grade the sand with spirals, screens, conveyors, and pumps on multiple levels. Graded sand will be stockpiled around the plant area. The southwestern portion of the plant area will contain an office and breakroom building, maintenance workshop, car parking, weighbridge, and wheel wash facility.

Access

Access from Newcombe Road to the quarry will be provided via a new vehicle crossing approximately 150m to the west of the Site's existing access and 660m from the Newcombe Road – Tirua Road intersection. For Stages 1–4 (Years 1–20.2), a 20m wide internal road will be constructed from the new vehicle crossing to the weighbridge and stockpiling area. The road will initially be positioned over Stage 5 to limit the impact on the existing dairy farm and dwelling on the Site. For Stage 5 (Years 20.2–25), the internal road will be realigned to the south to provide access to the sand beneath Stage 5.

Establishment

To establish the quarry, the top 2m of ground of the plant area will be stripped to form a level and stable platform, while the top 7.5m of Stage 1 will be stripped to access the sand beneath. The stripped material is assumed to comprise of 50% overburden and 50% pit sand. Overburden from the plant area will be used to form bunding along the western and southern boundaries of the pit area, the eastern boundary of the plant area and the internal access road from Newcombe Road to screen the activities. The bunds around the pit area and along the internal access road are proposed to be approximately 5m high (in relation to existing ground level), except for 200m next to the dwellings on 41 Newcombe Road (western boundary of the pit area), which will be approximately 2.5m high (in relation to existing ground level). The bunds along the eastern boundary of the plant area will be approximately 3m high in relation to existing ground level (5m above the stripped level of the plant area). The bunds will be approximately 10m wide and will be planted with vegetation capable of growing up to 2-3m high. Topsoil and some overburden from Stage 1 will be placed along the northern boundary of Stage 2 up to 5m high (in relation to existing ground level) and re-grassed for screening and storage for the future reinstatement of Stage 1. Pit sand excavated to form the plant area and Stage 1 will be (where necessary) processed and stockpiled at the processing area and sold.

Ecological Mitigation and Compensation

- 1.2ha of native mitigation planting will be undertaken along the northern boundary of the site which is aimed to reduce the potential for adverse effects on adjacent wetlands.
- 12.5 ha of habitat restoration and enhancement will be undertaken within the Karapiro stream floodplain and associated gully slopes along the northern boundary of the site to:
 - Create additional habitat and ecological connectivity for bats and other native forest fauna.
 - Link two Significant Natural Areas.
 - Provide buffering and ecological connectivity of floodplain and gully seepage wetlands through the native revegetation of associated wetland margins.
- The restoration, enhancement and planting areas will be fenced to exclude livestock and managed to control pest species (both fauna and flora).

Operation

The quarry is proposed to operate for up to 50 weeks of the year on the following basis:

- Monday to Friday – 7:00am and 5:00pm.
- Saturday – 7:00am and 12:00pm.
- Sundays and public holidays – Closed.

A 30-50 tonne excavator will be used to extract sand from the pit area, while 30-40 tonne articulated dump trucks will transport the sand to the plant area via the internal pit road.

An average of 71 trucks per weekday and up to a maximum of 200 trucks could visit the site on the busiest day (depending on the demand for sand).

Quarry Management, Dust Management, Erosion and Sediment Control, and Traffic Management plans will be used to avoid, remedy, and mitigate the operational effects of the quarry.

The following maintenance plan will be undertaken on Newcombe Road for 3 years.

1. Rut filling and pothole repairing (Annually).
2. Flushing of the chip seal and localised watercutting.
3. Rehab proposal based on 25 year design life.

Water Take

Extraction of groundwater is required to operate the plant and suppress dust associated with the proposed quarry. The required daily take is likely to be a maximum of 1,200m³, which results in an annual groundwater take of 360,000m³.

The groundwater take sought considers the percentage of areas expected to open at any one time and comprises of the following:

- 600m³water per day at 185 litres per second for the plant building.
- 600m³water per day for dust suppression of the plant area (Stage 4 and internal roads being the greatest area open).

Rehabilitation.

On the completion of each stage, the excavated pit floor and final faces will be reinstated as part of the Site's rural activity (currently dairy).

On completion of mining all buildings associated with the quarry will be removed and the processing area reinstated. The bunds will be either re-spread to form final batter slopes no greater than 3:1 or left in situ. The entire quarry area will be re-grassed prior to removing the erosion and sediment controls and the quarry's vehicle crossing onto Newcombe Road will be removed.

Summary

The proposed quarry has been designed and will be built with the most up-to-date systems and technology, particularly relating to environmental management. This includes dust suppression systems that will minimise dust and contain it within the site. A 3 metre high bund planted in native plants will act as a buffer between the quarry and Newcombe Road and will screen the site from neighbours. Bunding and native forest will separate the quarry and the Karapiro Stream.

In addition, a 10 hectare native forest and wetland rehabilitation along the Karapiro Stream will improve biodiversity, sequester carbon and improve water quality. As the proposed quarry is located in sand above the groundwater table, water run-off will be minimal, and any storm water will be cleaned in treatment ponds before being returned to the stream. The quality of this water will be closely monitored and will be within standards that will be set in resource consents. At the completion of each stage of quarrying the land will be rehabilitated back to pasture and returned to farming.

Proposed Quarry Site

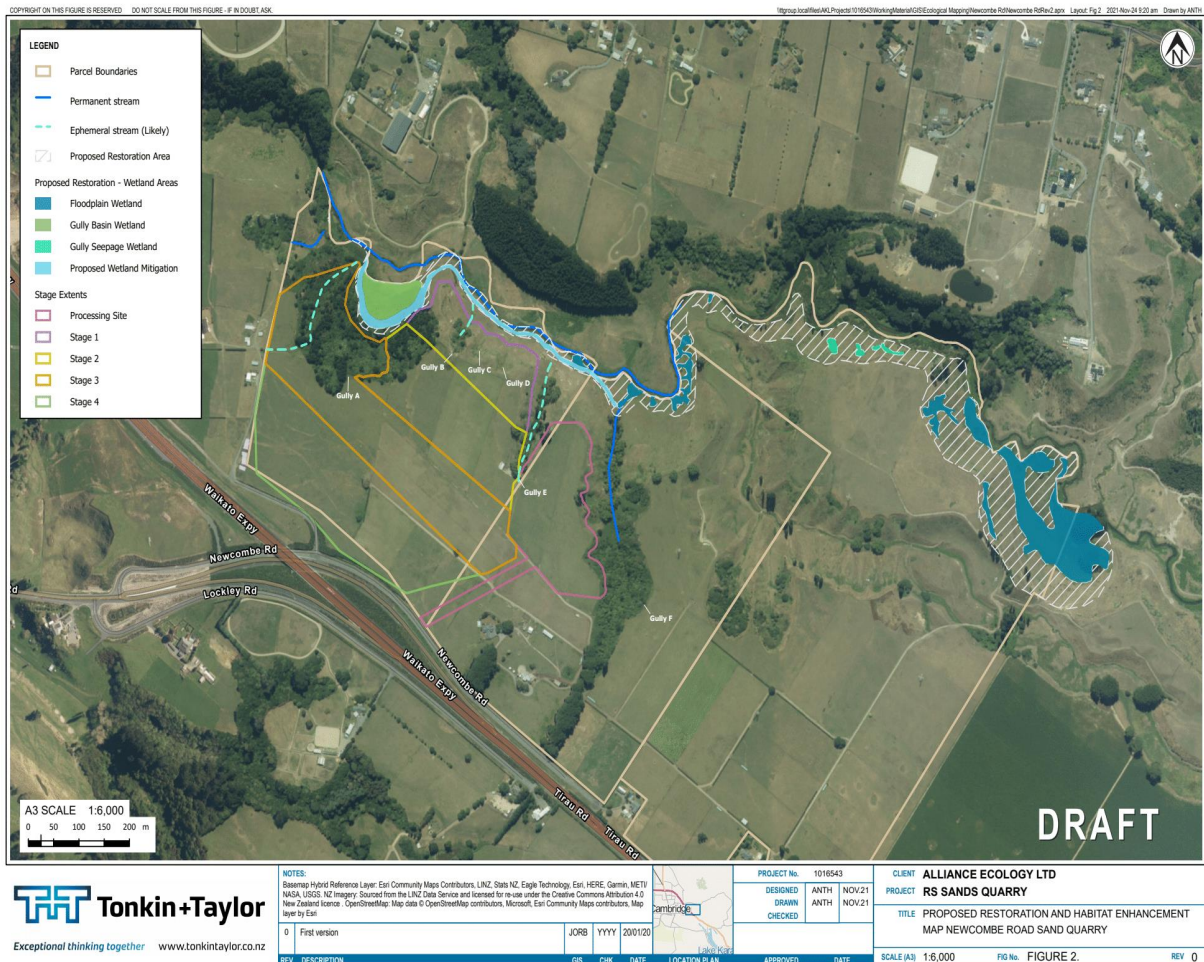


Figure 1 Proposed quarry site.



Figure 2 Proposed quarry footprint.

CULTURAL IMPACT ASSESSMENT

This Cultural Impact Assessment Report (the Report) to support documentation to the Waipa District Council, Waikato Regional Council and Heritage New Zealand Pouhere Taonga (if required). The Report does not cover a wide scope of matters that decision making authorities would expect in a Cultural Values Assessment (CVA) or Cultural Impact Assessment (CIA). This Report reflects the nature of the activity, limited extent of impacts beyond the site and range of parties involved. The purpose of engagement and presenting this Report is to:

- Carry out genuine engagement with Ngaati Hauaa, Ngaati Korokii Kahukura and Waikato-Tainui;
- Inform discussions with the project team, coordinate and share information;
- Reflect issues and opportunities presented by taangata whenua;
- Articulate the position of taangata whenua in relation to the activity; and
- Present the Report to accompany associated applications for consents.

Recommendation 1: When determining a decision, in consideration of activities associated with the Newcombe Road Quarry, the decision makers should 'recognise and provide for' this Report. The Report should also satisfy the engagement requirements for authorisations (if any) to Heritage New Zealand Pouhere Taonga.

Dialectal Conventions

The author hold affiliations with Waikato-Tainui as a descendant and through work collaborations. For this report the double vowel dialect has been adopted, except for direct quotes where tohutō (macrons) have been adopted.

WAIKATO-TAINUI

The iwi of Waikato-Tainui comprises 33 hapuu and 68 marae with over 80,000 registered tribal members. Waikato-Tainui are tāngata whenua and exercise mana whakahaere within their rohe (tribal region) and including the proposed subdivision area. The Waikato-Tainui rohe is bounded by Auckland in the north and Te Rohe Potae (King Country) in the south and extends from the west coast to the mountain ranges of Hapuakohe and Kaimai in the east. Significant landmarks within the rohe of Waikato include the Waikato and Waipā Rivers, the sacred mountains of Taupiri, Karioi, Pirongia and Maungatautari, the west coast harbours of Whaingaroa (Raglan), Manukau, Aotea and Kaawhia moana, the eastern areas of Tikapa Moana (Firth of Thames), and New Zealand's longest river, Te Awa o Waikato and the lower reaches of the Waipaa River.

Waikato-Tainui acknowledges and affirms its intrinsic relationship with the natural environment. The iwi, hapuu and marae of Waikato-Tainui are kaitiaki of our environment and consider the holistic integrated management of all elements of the environment (including flora, fauna, land, air and water) to be of utmost importance.

Prior to the unlawful invasion of the Waikato by the Crown in 1863 and the consequent confiscation of Waikato-Tainui lands in 1865, Waikato-Tainui marae, hapuu, and iwi exercised mana whakahaere without challenge. Mana whakahaere refers to the authority that Waikato-Tainui has established in respect of the Waikato-Tainui rohe over many generations. Mana whakahaere entails the exercise of rights and responsibilities to ensure that the balance and mauri (life force) of the rohe is maintained. It is based in the recognition that if we care for the environment, the environment will continue to sustain the people.

In customary terms, mana whakahaere is the exercise of control, access to, and management of resources within the Waikato-Tainui rohe in accordance with tikanga. For Waikato-Tainui, mana whakahaere has long been exercised under the mana of the Kiingitanga. Waikato-Tainui managed its resources, including the fisheries and lands, in a sustainable manner, guided by maatauranga, tikanga and kawa.

TAANGATA WHENUA

There are three Iwi who have confirmed rights and interests within the proposed Newcombe Road Quarry activity area. Their rights and interests do not need to be proven to decision making authorities.

Te Whakakitenga o Waikato-Tainui (Waikato-Tainui) is the Iwi Authority on behalf of the 68 Marae and its 80,000 tribal beneficiaries¹. Ngaati Korokii-Kahukura and Ngaati Hauaa, on behalf of their beneficiaries are taangata whenua and hold mana (power and authority derived from whakapapa, continued occupation and use) for this area.

Taangata whenua, in simple terms, are naturally the people of the lands. Taangata whenua have a historic and spiritual affiliation to the lands, waters and all the taonga that they embrace. Ngaati Korokii-Kahukura and Ngaati Hauaa iwi continue to occupy and acknowledge their affiliation and interests to the Cambridge and wider community areas. Ngaati Korokii-Kahukura and Ngaati Hauaa are also established Iwi authorities, who are representative of their hapuu and whaanau in matters related to local and central Government, fisheries, aquaculture, farming, education, environmental, social and other affairs. Both Iwi hold political and occupational authority over this space that was determined by whakapapa (genealogical ties) and secured by ahi kaa (continued occupation).

Consensus support of this Statement is required by all three Iwi. The following statements reflect the area of responsibility, rights and interests of Ngaati Korokii-Kahukura and Ngaati Hauaa.

Ngaati Korokii-Kahukura

Ko Maungatautari too maatou maunga	Our mountain is Maungatautari
Ko Waikato too maatou awa tuupuna	Our ancestral river is Waikato
Ko Ngaati Korokii-Kahukura maatou	We are Ngaati Korokii Kahukura
Ko Maungatautari, ko Poohara oou maatou marae	Our marae are Maungatautari and Poohara

Ngaati Korokii descends from the high chief Korokii, a descendant, 16 generations removed from Hoturoa, captain of the Tainui canoe. Ngaati Kahukura descends from the high chieftainess Kahukura, also a descendant 16 generations removed from Hoturoa. Joined together through common ancestry and lineage their descendants are Ngaati Korokii-Kahukura (Ngaati Korokii-Kahukura, 2017).

The ancestral tribal rohe of Ngaati Korokii-Kahukura spans from Southern Hamilton City, following the Waikato River to the northern end of Lake Arapuni, inland to western Te Awamutu and through again to southern Hamilton City encompassing Mount Maungatautari and many kaainga settlements. Korokii along with his allies conquered the Ngaati Kauwhata and Raukawa under Taowhakaio taking control of the Maungatautari region and the stretch of the Waikato River from Arapuni northward to Te Parapara.

Maungatautari is the tuupuna maunga and living taonga to the people of Ngaati Korokii-Kahukura. His forests offered shelter to the people in hard times and provided foods such as birdlife and native flora and fauna. Maungatautari is a symbol of mana for Ngaati Korokii-Kahukura. The Waikato River is the

¹<https://waikatotainui.com/learn-post/governance/>

tuupuna awa and also a living taonga to Ngaati Korokii-Kahukura. The waters of Waikato had traditional healing powers; yielded aquatic foods such as fish and tuna and the Arapuni region was coined 'te rohe o te tuna – the region of the plentiful eels'. The Waikato River was the principle highway of trade and transport taking Ngaati Korokii-Kahukura wheat, flax and potatoes as far as Auckland to be exported to Sydney and the Americas (Ngaati Korokii-Kahukura, 2017).

Ngaati Korokii-Kahukura has several hapuu: Ngaati Waihoru, Ngaati Ueroa, Ngaati Huakatoa, Ngaati Houruamua, Ngaati Werewere and Ngaati Poorangi. All of these hapuu lived around the base of Maungatautari and alongside various areas around the Waikato River. Ngaati Korokii-Kahukura exercised tikanga to manage, defend and develop their tribal area for the benefit of all its members.

Ngaati Hauaa

Hauaa is the eponymous ancestor of Ngaati Hauaa. His father Koroki married Tumataura and had two sons, Hape through whom Ngaati Koroki descend; and Hauaa from whom Ngaati Hauaa descends. Whilst Ngaati Koroki remained in the Maungatautari area, Ngaati Hauaa encompassed the lands and waters within the east and north of Maungatautari, in particular Tamahere, Tauwhare, parts of Hamilton City, Morrinsville up to Te Aroha across the kaimai ranges into Matamata and Hinuera.

The historical description of the Ngaati Hauaa area of interest can generally be associated with the location of maunga. These maunga are Taupiri, Maungatautari and Te Aroha. The following tauparapara acknowledges their maunga and other Iwi and Hapuu who straddle the boundaries of Ngaati Hauaa. Namely Ngaati Hinerangi, Ngaati Paoa, Ngaati Mahuta, Ngaati Wairere, Ngaati Raukawa, Tamatera and Ngaati Koroki. It is generally accepted that Ngaati Hauaa occupies the space in between the maunga.

Ngaati Hauaa Kaumatua Eru Kaukau describes the historical geography of Ngaati Hauaa in the following tauparapara:

Titiro mai nga kohatu o Ngaati Hauaa

Mai Te Aroha Maunga mai i te raki, tera Tamatera nga kaitiaki

Titiro ki te rawhiti, Ngaati Maru tera

Tona korero mai Te Aroha ki Katikati ki Ngaa Kuri a Wharei ki tikirau

Te hauauru mai Te Aroha ki Taupiri, tena a Ngaati Paoa me Wairere

Titiro mai ki te tonga Te Aroha ki Wairere, tena a Ngaati Hauaa e mihi mai nei

Titiro ki Wairere ki Maungatautari

Ka huri ahau ki te patetere ki Raukawa ki te Ihingarangi ki Ngaati Koroki nga kaitiaki tena o tena maunga

Engari, titiro ki Maungatautari ki te raki ki Taupiri e ngunguru e mihi mai nei

Ngaati Hauaa i waenganui ko tona korero he piko, he taniwha te maunga o nga Kiingi

Ka hoki mai i nga korero o Tawhiao

"Waihotia te kaumarua moku te kua mohi ko hau ki roto

Ko te Atua toku piringa ka puta ka ora

Nga korero o Rawiri noku roimata hei kai moku i te ao i te po ite ao i te po.

Ko wai tou Atua"

Look to the mountain rocks from te Aroha to the north.

I see the hapu of Tamatera taangata whenua, taangata kaitiaki.

Look to the beginning of the sun to the east, Ngaati Maru, Ngaati Pukenga from Te Aroha to Katikati as taangata whenua and kaitiaki, from the howling dogs of Te Arawa.

Te Arawa to the outskirts of Mataatua we humbly beseech thee.

Look from the west, from Te Aroha to Taupiri, Ngaati Paoa, Ngaati Wairere.

Look to the south Te Aroha ki Wairere. Ngaati Hauaa we greet you within.

Look to the western side from Wairere to Maungatautari amongst our neighbours Te Arawa., Mataatua, Ngaati Raukawa Te Ihingarangi o Ngaati Koroki.

"We come back to the passing thoughts of Tawhiao.

Leave me the twelve prophecies. The Ten Commandments, eleven with me in it, there will be only one God for me and my people.

I turn to Psalm 42.3 *My tears are my food day and night, while all day long they ask me, where now is your God."*

CULTURAL HERITAGE

It is important for the Applicant and decision makers to understand what “cultural heritage” means, so that they better understand the universal and holistic factors that taangata whenua consider when undertaking assessments and site visits.

Culture

According to Pappas & McKelvie (2021), culture is the ‘*characteristics and knowledge of a particular group of people*’ and includes but is not limited to practices and beliefs, traditions, identity, values, ideals, language, arts and crafts. For the Ministry of Social Development (2016) culture refers to ‘*customs, practices, languages, values and world views that define social groups such as those based on nationality, ethnicity, region or common interests*’. While the Ministry of Culture and Heritage adds that culture can include ‘*a sense of community, space and place (such as the built environment and landscapes*’²

There is general consensus from the literature that culture encompasses inter alia:

- Practices and beliefs
- Values and ideals
- World views
- Behaviour
- Traditions
- Language
- Objects
- Knowledge
- Identity
- Arts and Crafts
- Rituals

The UNESCO Declaration on Cultural Diversity (2001) expands on this list to include:

‘the set of distinctive spiritual, material, intellectual, and emotional features of society and that it encompasses, in addition to art and literature, lifestyles, ways of living together, values systems, traditions and beliefs’

Heritage

Culture is based on *what people create*, while ‘heritage’ is *what the people inherit by nature, by history, by culture* (Upen, 2018). Heritage is inherited from our tupuna (ancestors), like oral traditions, tikanga, kawa and values. It is ours to value in the present, and to preserve and pass on to future generations.

Heritage is generally understood as:

- the tangible - our historical sites, waahi tapu, buildings, wharenuui, monuments, tuahu, objects, taonga, artefacts, and physical information, archives; and
- the intangible - our customs, tikanga, sports, music, dance, history, myths, folklore, crafts, skills, and traditions.

Article 2 of the UNESCO Convention for the Safeguarding of Intangible Cultural Heritage (2003) states that for the purpose of the convention that intangible cultural heritage means:

² Ministry for Culture & Heritage. *Cultural Well-Being and Local Government Report 1: Definitions and contexts of cultural wellbeing*, p3

'...the practices, representations, expressions, knowledge, skills – as well as the instruments, objects, artefacts and cultural spaces associated therewith – that communities, groups and, in some cases, individuals recognize as part of their cultural heritage...' (ibid).

The Convention further proposes five broad 'domains' in which intangible cultural heritage is manifested:

- Oral traditions and expressions, including language as a vehicle of the intangible cultural heritage;
- Performing arts;
- Social practices, rituals and festive events;
- Knowledge and practices concerning nature and the universe;
- Traditional craftsmanship (ibid).

A third – natural heritage – is also considered a key element of the broader definition of heritage. This is described as waterways, landscapes, woodlands, bogs, uplands, native wildlife, insects, plants, trees, birds and animals. Importantly, for taangata whenua, these 3 descriptors of heritage are considered simultaneously with each other to fully understand the impact of activities on our cultural heritage. The association of each element is well described below:

Tangible, intangible and natural heritage and all the associated myths, legends, traditions, and memories provide us with a common language and insight that enables us to communicate on a deep level with each other and to express ourselves in a unique way to the outside world (ibid).

Cultural Heritage

Based on the above articulations of cultural heritage, the manifestation of the Maaori view and interpretation of their world to be reflected and protected in activities that affect generations of knowledge, is incomprehensible to many. This Report attempts to reflect consideration of Maaori cultural heritage against the proposed activities but acknowledges that there will be gaps. This is why a relationship with landowner is important, so that taangata whenua can continue to learn about the activity and inform the landowner of any new considerations that may have been missed at the lodgment of the consents.

Recommendation 2:

Taangata whenua encourage an ongoing relationship with the landowner beyond the consenting process and for the duration of operation and decommissioning of the activity. This may include annual updates, site tours to encourage rangatahi into the sector, alongside any discoveries that may occur.

ENGAGEMENT RECORD

The methodology applied for the development of this report include:

- Hui representatives of NHIT, NKK in August 2021
- Site visits in August 2021, Feb 2022
- Skype conversations with iwi representatives

We first contacted Ngā Iwi Tōpū O Waipā NITOW in relation to the proposal in December 2020 and the first Site walkover in January 2021.

Liaison continued throughout 2021.

Second Site walkover in February 2022

Engaged representatives to prepare a CIA in April – Dec 2022.

Review and completion of CIA in March 2023

Iwi endorsement of CIA May 2023

MATTERS OF SIGNIFICANCE

The following matters were noted in considering the application and undertaking the site visit:

1. There could be the potential for Archaeological findings. Appendix 2 and Appendix 3 of this report should be implemented if this occurs.
2. The location of Wetlands and the Karapiro stream within and near the site area. Ecological mitigation and compensation developed by RS Sands will help with the restoration and enhancement of the site area.
3. The site visit by the cultural advisor (tohunga) for taangata whenua revealed that there are no spiritual matters of concern for the site or activity.
4. Much of the activities and its impacts will be managed on site. There is an opportunity for taangata whenua to be involved in the rehabilitation of the site in the future and the wider vision for the area.
5. Extraction of groundwater will be required to operate the plant.

KNOWN SITES OF SIGNIFICANCE TO TAANGATA WHENUA

The following section is provided by Te Huia Natural Resources Ltd in support of this cultural impact assessment.

Horotiu Paa

Location: approximately 1.5km – 2km west of the project area.

Circa 1600, Te Ihingarangi built a pa (a fortification near Lake Karaapiro where the water reservoirs are today) called Te Tiki o Ihingarangi. He later moved to Maungatautari and his son's tribe became known as Ngaati Raukawa. Te Rauparaha persuaded the Ngaati Raukawa to go south with him. Koroki lived on the south side of the Waikato River near Cambridge, at a pa called Horotiu. From his sons descended the Ngaati Hauaa and Ngaati Koroki. Horotiu Paa is extensive and its activities are not limited to the archaeological site shown on the below map.

Paa – Sentry Lookout

Location: approximately 800m northwest of the project area.

The paa site is believed to be a sentry lookout point and enabled Iwi to move quickly to prevent unwanted visitors from reaching the peaceful Paa of Horotiu across the karaapiro stream gully.

Te Paa o Taowhakaio

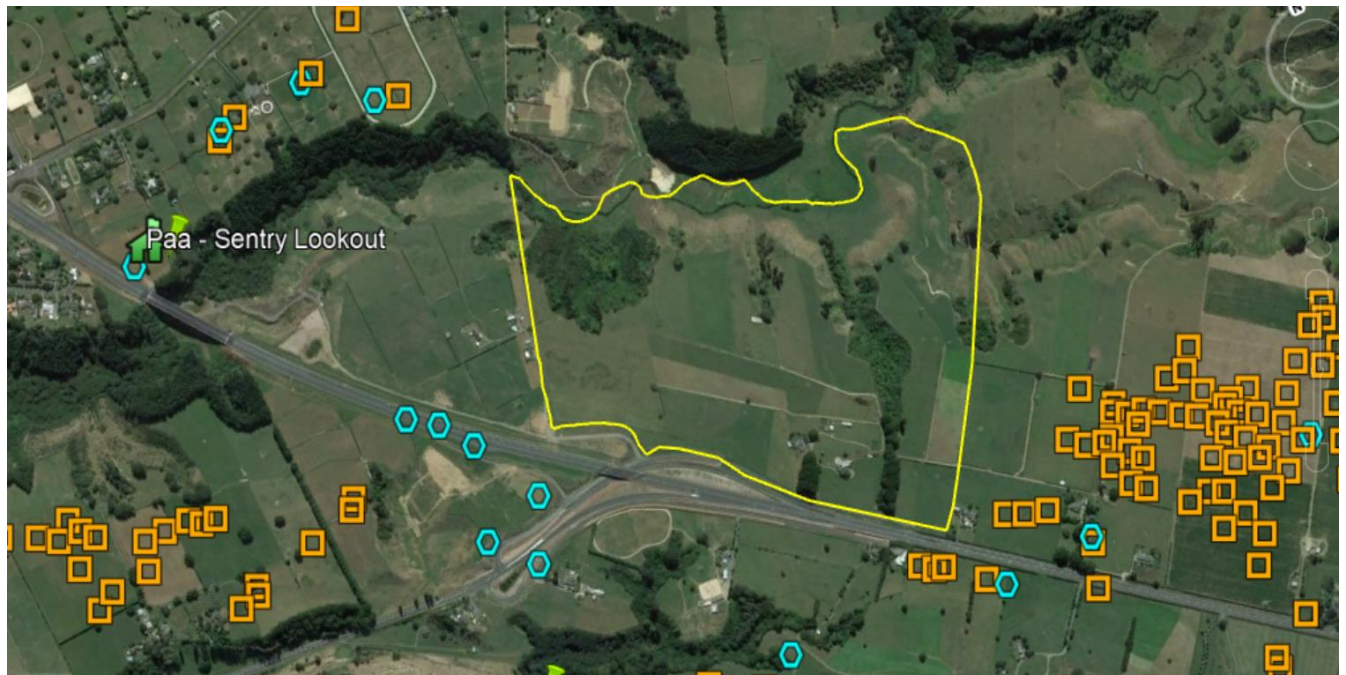
Location: approximately 1.8km west of the project area.

This is the pa of Taowhakaio a chief of Ngāti Kauwhata. This is where Taowhakaio was settled before the war between him and Koroki happened.



Borrow Pits and Archaeological Sites

It should be noted that the area is populated with borrow pits and historic occupation sites as shown on the diagram below. You can see that there are many borrow pits (orange squares) and archaeological sites (blue hexagon) around the project area. These areas have been surveyed, while it's the authors understanding that the project area has not been surveyed for archaeological evidence. However, with the surrounding areas being populated with archaeological sites and borrow pits, there is a high likelihood that the taonga may be discovered within the project area. The application of attached protocols should be implemented.



ASSESSMENT OF THE APPLICATION AND RECOMMENDATIONS

To support an assessment of the proposed activities to excavate sand and replace the excavated space with clean fill, Te Hira Consultant Ltd assessed the activities against the matters outlined above, and against the following documents:

- Te Ture Whaimana o te Awa o Waikato – the Vision and Strategy for the Waikato River
Te Ture Whaimana o te Awa o Waikato is the primary direction setting document for the Waikato River and all it embraces. Section 9(2) of the Waikato-Tainui Raupatu Claims (Waikato River) Settlement Act 2010 (the Settlement Act) states that:
“The vision and strategy applies to the Waikato River and activities within its catchment affecting the Waikato River.” [emphasis added]
- Tai Tumu, Tai Pari, Tai Ao – the Waikato-Tainui Environmental Plan
Section 40(2) of the Settlement Act also notes the following with regard to the Waikato-Tainui Environmental Plan:

“A consent authority considering an application for a resource consent under section 104 of the Resource Management Act 1991 must have regard to the Waikato-Tainui environmental plan, if it considers that section 104(1)(c) applies to the plan.”

Given the proximity of the proposed activities, an assessment against these two unique documents is appropriate.

Te Ture Whaimana o te Awa o Waikato – Vision and Strategy

Te Hira Consultant Ltd provides the following comments and proposed recommendations (bulleted points) in relation to the activities, to achieve the objectives of Te Ture Whaimana:

Objectives of Te Ture Whaimana	Comments/Recommendations (Bulleted Points)
(a) The restoration and protection of the health and well being of the Waikato River.	Te Ture Whaimana must be given effect to. The applicant has considered opportunities to further the Vision and Strategy for the Waikato River <ul style="list-style-type: none"> • Ecological Mitigation and compensation on adjacent wetlands and Karapiro stream floodplain.
(b) The restoration and protection of the relationship of Waikato-Tainui with the Waikato River, including their economic, social, cultural, and spiritual relationships.	Both Ngaati Korokii-Kahukura and Ngaati Hauaa continue to practice their relationships with the Waikato River and its resources. <ul style="list-style-type: none"> • Taangata whenua should be engaged in all conditions noted in this table to provide for the restoration and protection of their relationship with the whenua and its waterbodies.
(c) The restoration and protection of the relationship of Waikato River iwi according to their tikanga and kawa, with the Waikato River, including their economic, social, cultural, and spiritual relationships.	Refer to the points noted against Objective (b).
(d) The restoration and protection of the relationship of the Waikato region's communities with the Waikato River including their economic, social, cultural and spiritual relationships.	Refer to the points noted against Objective (b).
(e) The integrated, holistic and coordinated approach to management of the natural, physical, cultural and historic resources of the Waikato River.	Understanding the history and significance of the area can better improve work practices and care onsite. <ul style="list-style-type: none"> • Taangata whenua to lead cultural induction and cultural safety training to onsite staff. This will improve awareness of the area and its cultural importance to the Iwi. • Protocols to be explained by taangata whenua to staff.
(f) The adoption of a precautionary approach towards decision that may result in significant adverse effects on the Waikato river, and in particular those effects that threaten serious or irreversible damage to the Waikato River.	The applicant has demonstrated a desire to minimise any future impacts of the activities. Taangata whenua are supportive of the following actions: <ul style="list-style-type: none"> • 10 to 15 metre setback from the Karapiro Stream or any natural inland wetland. • No quarrying within 200 metres from the nearest dwelling. • All excavation activities will be undertaken above natural water table. • There will be no direct discharge of sand wash water from the quarry operation to the local stream.

	<ul style="list-style-type: none"> Ground soakage of quarry site stormwater will be promoted and any surplus stormwater will be treated through appropriately sized and designed retention ponds prior to leaving the site.
(g) The recognition and avoidance of adverse cumulative effects, and potential cumulative effects, of activities undertaken both on the Waikato River and within its catchments on the health and wellbeing of the Waikato River.	Refer to points noted against Objective (f).
(h) The recognition that the Waikato River is degraded and should not be required to absorb further degradation as a result of human activities.	Refer to points noted against Objective (f).
(i) The protection and enhancement of significant sites, fisheries, flora and fauna.	<p>This objective provides an opportunities for resource users to contribute to the improvement of significant sites, fisheries, flora and fauna.</p> <ul style="list-style-type: none"> That restorative planting occur in the most appropriate places (water sources, streams) to improve stability in surrounding soils and minimise impacts on water courses. <p>Although there are no known archaeological sites within the project area, there is still the possibility of finding taonga or kooiwi. If these are found then:</p> <ul style="list-style-type: none"> The attached protocols must be applied to the entire working site. Ngaati Korokii-Kahukura and Ngaati Hauaa are traditional custodians of any newly discovered taonga or artefacts. Ngaati Korokii-Kahukura and Ngaati Hauaa will be notified immediately if any kooiwi (bones) are discovered onsite. <p>At the completion of activities, or decommissioning of the project, the site will be returned to a designed state, reflective of its surrounding environment and cultural heritage.</p> <ul style="list-style-type: none"> Ngaati Korokii-Kahukura and Ngaati Hauaa should be included in redesigning the site, once excavation is completed, to reflect the surrounding environment.
(j) The recognition that the strategic importance of the Waikato River to New Zealand's social, cultural, environmental and economic wellbeing is subject to the restoration and protection of the health and wellbeing of the Waikato River.	Recommend that the developer continue to grow opportunities for the benefit of the community and taangata whenua, including education and employment where appropriate. Continued engagement should continue.
(k) The restoration of water quality within the Waikato River so that it is safe for people to swim in and take food from over its entire length.	The proposed conditions related to the activity may not improve the water quality of the Waikato River, but the author is satisfied that it will not be degraded any further.
(l) The promotion of improved access to the Waikato River to better enable sporting, recreational, and cultural opportunities.	The property is private and is unlikely to provide for sporting or recreational purposes.

(m) The application to the above of both maatauranga Maaori and latest scientific methods.	Taangata whenua have applied tikanga Maaori to the activity through the site visit and application of protocols to protect cultural values.
Authors Analysis: The application is not inconsistent with the Vision and Strategy.	

TAI TUMU, TAI PARI, TAI AO – WAIKATO-TAINUI ENVIRONMENTAL PLAN

The following section focusses on the issues and objectives related to this application, in particular section 28 – Mining and Quarrying Oil, Gas and Minerals. Issues noted in the Environmental Plan include:

- 28.2.1 Mining and the effects of mining have contributed to the pollution and deterioration of the health of the environment including the Waikato River, its surrounding environment, and has impacted on the fisheries and plant life of the river.
- 28.2.2 Landscapes may be forever altered, particularly in the case of open cast mining. There is concern that arguably ‘low-impact’ mining may result in unintended or unanticipated long-term effects. For example, if the removal of iron sand or limestone from an area altered the ecosystem characteristics so the ecosystem’s capacity or capability to support certain flora and fauna changed. This could be a positive or negative effect on an ecosystem’s life supporting capacity and capability.
- 28.2.3 Waahi tapu and sites of significance may be intentionally or accidentally altered or destroyed.
- 28.2.4 Mining activity is often relatively long life, and mine operators have an ongoing part to play in mitigating the effects of their operations. It is not sufficient to wait until consents expire; there needs to be an ongoing effort to investigate ways to minimize the adverse effects of mining.

Te Hira Consultant Ltd provides the following comments and proposed recommendations in relation to the activities, to ensure they have regard to the policies of the Waikato-Tainui Environmental Plan.

Tai Tumu, Tai Pari, Tai Ao	
28.3.1 – In partnership with Waikato-Tainui existing and new mining activities effectively manage adverse social, cultural, spiritual, environmental and economic effects.	
Methods	Comments / Recommendations (Bulleted Points)
a) Generally, there is a precautionary approach to mining, particularly when the mining activity or methodology is new to the Waikato-Tainui rohe.	The precautionary approach is considered in the Vision and Strategy assessment under Objective (f).
(b) Mining activities are developed or operated in a manner consistent with this Plan, particularly the sections that are relevant to the proposed or existing mining activity.	This assessment, and recommendations included in the Vision and Strategy Assessment will ensure consistency.
(c) Mining activities occur using the best practicable option to manage adverse effects.	The application adheres to current practices and standards.

(d) Where any environmental effects occur, they are confined to the site of the mining activity.	It is the authors assessment that the activities will be confined to the site.
(e) Transported minerals or mining waste are covered or sealed to prevent transported material escaping into the surrounding environment.	A condition to the resource consent should include sealed or covered material when being transferred from the site. Or a practice that minimises material escaping the transport, such as wetting the product.
(f) Research and innovation that promotes lowered reliance upon mined materials is supported.	
(g) Reuse and recycling of mined materials (e.g. copper, gold etc) is supported.	Where possible, materials should be recycled.
Analysis: It is the view of the Author that the application gives regard to the Waikato-Tainui Environmental Plan.	

KOHA ATU - BETTERMENT

The applicant will be required to satisfy the objectives and rule of the Waikato Regional Plan and associated District Plans. Achieving those objectives will provide for a balance of the activities against its impact on the environment, based on western science knowledge. It is the view of Taangata Whenua that the conditions associated with those planning documents does not satisfy the obligations of the taangata whenua as kaitiaki to the whenua (land), wai (water), arorangi (air), taonga kararehe (treasured fauna), taonga tupu (valued flora) and Atua associated with these realms and domains.

Taangata Whenua seek a koha (gift) beyond the conditions of the planning documents, that leaves a legacy of 'betterment' and 'gifting' to the taonga that are impacted by the proposal. This should be discussed directly with Taangata Whenua, separately to resource management act processes.

DECISION

Te Whakakitenga o Waikato-Tainui endorses the recommendations and position of Ngaati Korokii-Kahukura and Ngaati Hauaa Iwi Trust, as taangata whenua of the area where the proposed activities are situated.

Ngaati Korokii-Kahukura and Ngaati Hauaa Iwi Trust **provide a neutral position** to the application for resource consents based on the acceptance of conditions and recommendations by the applicant.

Furthermore, an established MOU between the applicant and Ngaati Korokii Kahukura and Ngaati Hauaa Iwi Trust provides for future partnership outcomes going forward.

APPENDIX 1: PRE-CONSTRUCTION PROTOCOLS

Prior to undertaking any works associated with the project, the following process should be undertaken:

Site Blessing Ceremony

Ngaati Korokii-Kahukura and Ngaati Hauaa should be invited to perform a blessing prior to works beginning onsite. It will be at the discretion of the taangata whenua as to whether this will occur. Given the comfort levels associated with this project and the whenua, the taangata whenua may not see the need to perform an opening ceremony for works. Taangata whenua will provide guidance on the most appropriate manner to do this, in conjunction with the project manager and site manager. The purpose of the blessing is to acknowledge the lands, waters and its taonga and seek confirmation, through spiritual consciousness, for support of the proposed works. The blessing will also provide a protective veil over the working area and safety of staff.

Staff Induction

Staff working on site should be inducted by Ngaati Korokii-Kahukura, Ngaati Hauaa or their representative prior to beginning works. The induction will provide an insight to the history of the area and encourage culturally safe practices if an issue arises such as discovery of taonga, artefacts or kooiwi (bones). Ideally, as many staff as possible should attend the induction, where practicable.

Waahi Tapu / Site of Significance

There are no known waahi tapu, or sites of significance, associated with the project site. However, if unknown sites of significance, are discovered within the project area, the Work Site Manager shall provide the following information and opportunities for taangata whenua:

1. No less than 14 working days, prior to any excavation, disturbance or works near newly discovered sites, a schedule of dates for excavation events, their sequence and duration.
2. The Site Manager shall then invite Ngaati Korokii-Kahukura and Ngaati Hauaa to attend any portion of monitoring or earthworks.
3. If taonga, artefacts or kooiwi are discovered, the relevant protocols will be followed, as provided in Taonga Tuku Iho Discovery and Kooiwi Discovery Protocols.

APPENDIX 2: TAONGA TUKU IHO DISCOVERY

Ngaati Korokii-Kahukura and Ngaati Hauaa are Temporary Custodians of Taonga Tuuturu, as defined under the Protected Objects Act 1975. Therefore, at the point of discovery, within the project area, they are custodians of the found Taonga, until ownership is determined and arrangements made for the transfer of ownership and/or custodianship to a jointly agreed owner. Taangata whenua will be handed custodianship, where they will determine who should safely house the taonga until ownership is determined. The following process shall be adhered to upon discoveries during works under an archaeological authority without an archaeologist or kaitiaki present:

1. The area of the site containing the taonga will be secured in a way that protects the taonga as far as possible from further damage. This means that work in the vicinity shall cease immediately.
2. If a Kaitiaki appointed by Ngaati Korokii-Kahukura and Ngaati Hauaa is not present, they shall be notified immediately, by the Site manager, before the taonga is moved.
3. Only the Kaitiaki will undertake appropriate actions.
4. Work may resume when advised by the Kaitiaki.
5. The archaeologist will record, measure, and photograph the taonga prior to the taonga being secured by Ngaati Korokii-Kahukura and Ngaati Hauaa.
6. The Kaitiaki will determine the appropriate action for the taonga once it has been recorded. This may include reburying the taonga in an appropriate location, or storing in an appropriate location.
7. The archaeologist will notify Te Manatū Taonga – Ministry for Culture and Heritage, of significant finds, within 28 days to inform the Ministry of its actions.
8. If the taonga requires conservation treatment (stabilisation), the artefact will be removed immediately for conservation to an approved facility, in discussion with the Archaeologist and Kaitiaki.
9. For the avoidance of doubt subject to any laws of New Zealand any newly discovered taonga shall be the property of Ngaati Korokii-Kahukura and Ngaati Hauaa who shall hold and use those taonga (including the return of them to Marae) as they, in their sole discretion, see fit.

Contact persons for taangata whenua are:

- Karaitiana Tamatea mtamatea@waikato.ac.nz
- Lisa Gardiner lisa@ngatihauaiwitrust.co.nz

APPENDIX 3: KOOIWI DISCOVERY

There may be a chance that during earthworks, kooiwi or human bones, may present themselves. This is a serious matter to taangata whenua, as there may be a reason why the kooiwi has become visible. This will be covered in more detail during the staff induction workshop. If staff uncover bones, of any kind, the tikanga (cultural protocols) of Ngaati Korokii-Kahukura and Ngaati Hauaa must be upheld by undertaking the following discovery process:

1. The area containing the kooiwi shall be secured in a way that protects the kooiwi from any damage. This means that work in the vicinity shall cease immediately.
2. If a Kaitiaki appointed by Ngaati Korokii-Kahukura and Ngaati Hauaa or the Project Archaeologist is not present, they shall be notified immediately, by the Site manager, of the discovery.
3. The archaeologist shall confirm if the find is human.
4. If the find is human, then the kaitiaki will be immediately contacted.
5. The archaeologist will contact the local Police (call 105), Coroner and Heritage NZ.
6. There is a minimum investigation requirement of kooiwi for the archaeological authority that will be met by the archaeologist.
7. The Kaitiaki and the Project Archaeologist will arrange for appropriate people to be involved.
8. Guidance will be provided from the Kaitiaki and the Project Archaeologist to undertake the following:
 - a. Hold appropriate cultural customs to remove the kooiwi.
 - b. Provide an appropriate vessel to uplift the kooiwi. Note that food storage vessels are not appropriate.
 - c. Determine a place of reburial, with the approval of the Coroner.
 - d. Ensure a full plan is developed and fulfilled to see the burial of discovered kooiwi.
9. Once tikanga has been fulfilled, work may continue as guided by the Kaitiaki and the Project Archaeologist.



Michael Briggs
Senior Planner
Kinetic Environmental

Via email: michael@kineticenvironmental.co.nz

18th September 2020

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Archaeological Appraisal, Newcombe Rd, Cambridge

Brief Project Details

RS Sands are assessing the potential to form a sand quarry over Section 61 Survey Office Plan 510550 and Lot 2 Deposited Plan 520523, in Cambridge, Waikato. Initial design plans have been provided and are reproduced in part in Appendix A.

This is an appraisal of the potential archaeological values of the land and is intended as an initial guide of heritage management in line with statutory requirements. This appraisal has included desk top research and a field visit. Research has included historic aerial imagery, survey plans, maps, NZAA database, and available on-line literature.

Limitations

This appraisal does not present the views of local iwi regarding the significance of the area to them. Such assessments can only be made by tangata whenua as Maori concerns may encompass a wider range of values than those associated with archaeological sites.

This advice is only for the project description provided and does not account for any changes to project scope or design unless otherwise stated. This is only a preliminary guide to identify potential risk and is not a complete archaeological assessment.

If the assessment of risk does not indicate that a site visit and/or application to HNZPT for an archaeological authority is required, the works should still be undertaken under the provisions of an Accidental Discovery Protocol (ADP).

Archaeological Overview

The study area is to the north of the true right bank of the Waikato River and is bounded to the north by the Karapiro Stream. Figure 1 shows the distribution of NZAA recorded archaeological sites in the vicinity of the proposal. Those within c.500m are summarised in Table 1.

The database indicates that the archaeological landscape is dominated by Maori-era horticultural activity, namely borrow pits, garden soils, fire features and storage pits. Paa sites are recorded on high ground and along the main watercourses. The closest recorded paa to the study area is T15/19, which is c.510m to the south-west. There are no archaeological sites currently recorded within the project footprint. It is likely that the study area has not been surveyed by an archaeologist in the past.

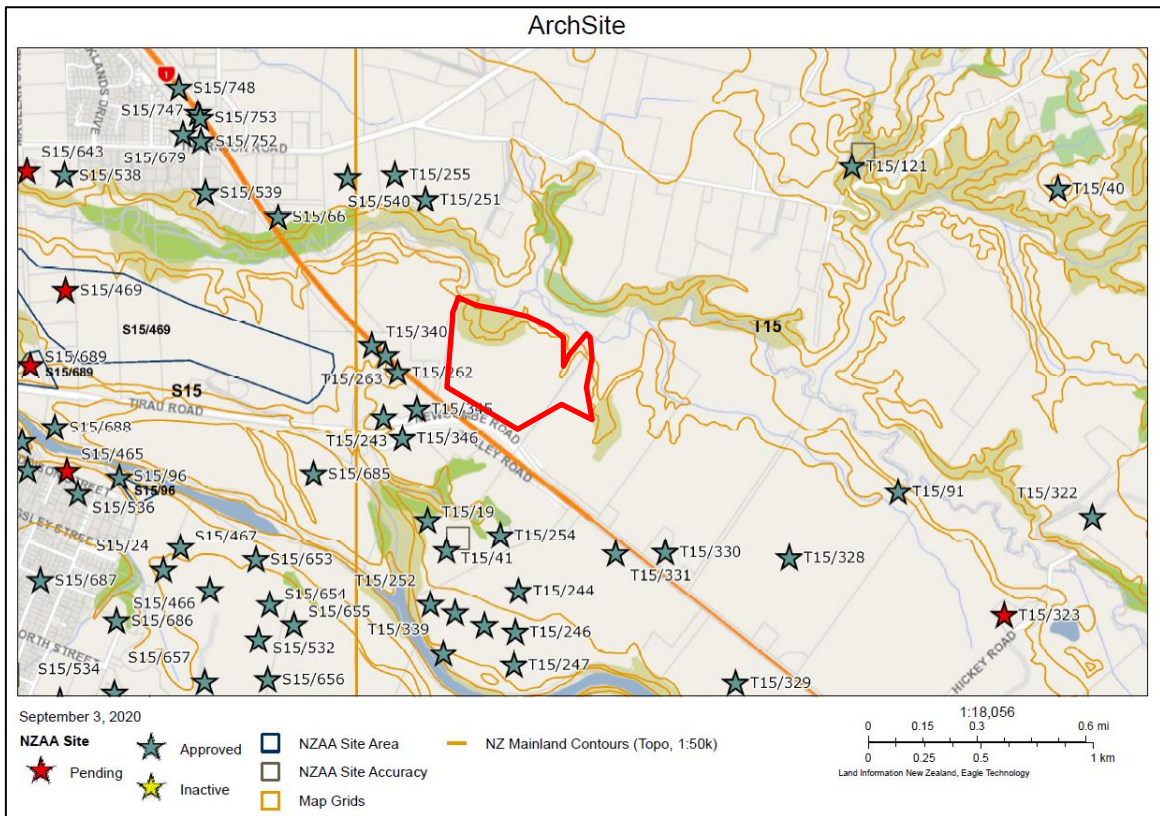


Figure 1: Map showing the distribution of recorded archaeological sites within the vicinity of the proposal (red box). Source: ArchSite.

Table 1: Table summarising the recorded sites within 500m of the project works.

NZAA Site	Type	Distance from project footprint	Risk (Y/N)
T15/243	Two borrow pits	c. 325m	N
T15/262	Maori-era ovens and pits	c. 200m	N
T15/263	Maori-era ovens and pits	c.265m	N
T15/340	Historic ditch & bank fence	c.330m	N
T15/345	Maori-era ovens and postholes	c.240m	N
T15/346	Borrow pits	c.340m	N

Historic Survey Plans

Survey plans have been analysed to determine the presence/ absence of annotations of archaeological interest.

The earliest plan retrieved is dated to c.1866 and likely represents the earliest formal survey of the study area. It identifies the main geological features and the first layout of the country sections outside of Cambridge with associated roads. The plan was produced following the confiscation of land after the Waikato Wars, and annotations of tenants or landowners indicates the allotted plots given to the British soldiers. Within the subject site the names P. Troy, Jas. Jarvie, and Thos Henery are annotated; the neighbouring property to the west is named for Benjamin Heaslip, and to the east Hugh Duffy. The Cambridge Museum website lists Patrick Troy, Thomas Henery (Henry), Hugh Duffy, James Jarvie, and Benjamin Heaslip as soldiers of the 3rd Waikato Militia. No annotations of archaeological interest are visible on

this plan and there is no evidence on this plan to suggest any of the allotted soldiers had immediately occupied these sections.

SO2847 is dated to 1898, the main geological features are annotated along with the surveyed lots and roads. The owners/ tenants are not identified and there are no annotations of archaeological interest visible on this plan within the subject site. In the wider plan area (not shown) some structures are annotated suggesting the surveyor included contemporary buildings where present.

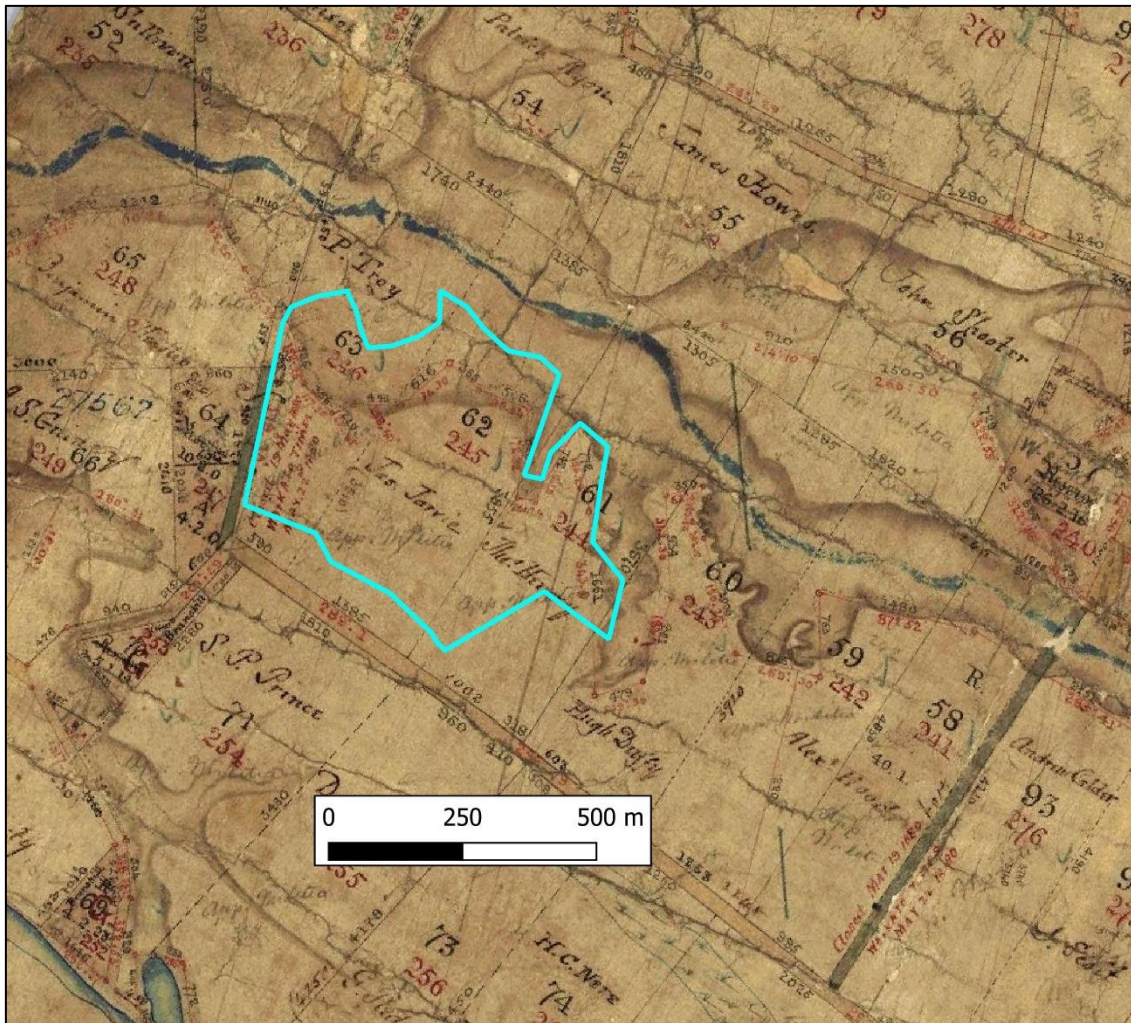


Figure 2: PART SO97_4.

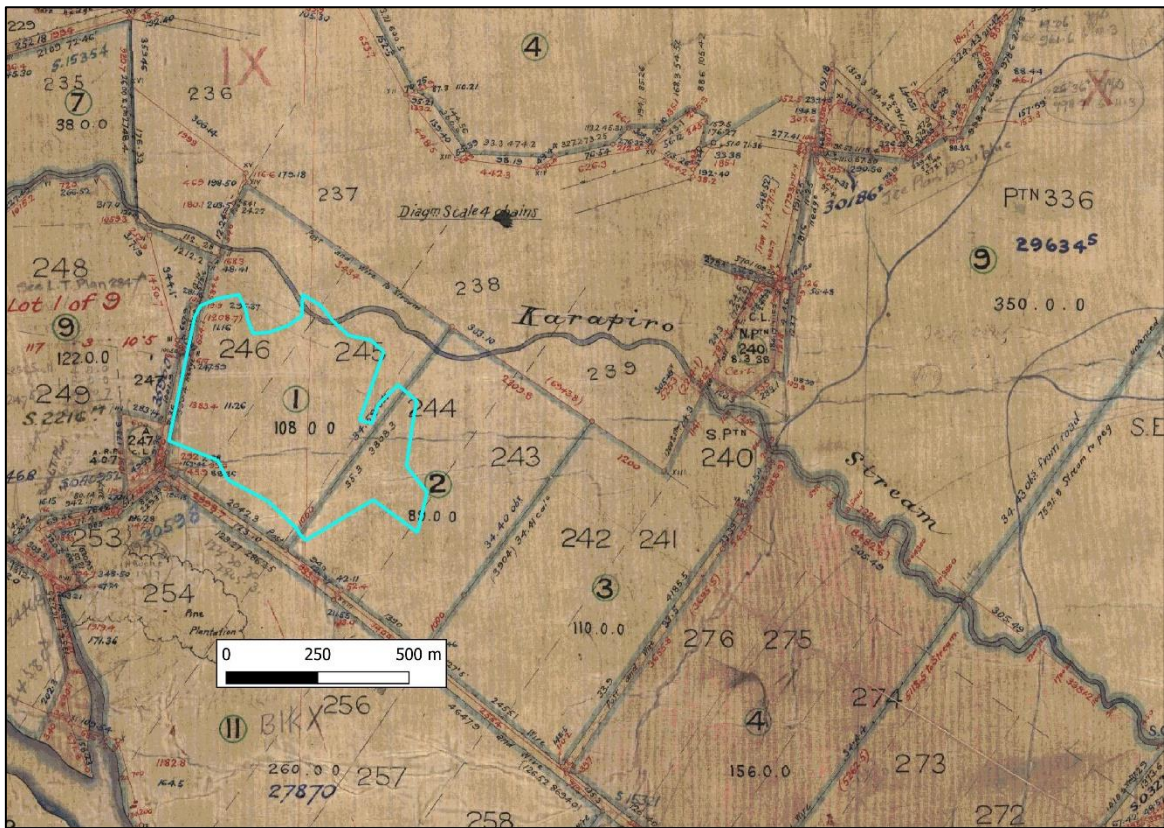


Figure 3: PART S02847.

Other Pictorial Sources

In the 1870s Captain Newell produced a sketch plan of the Waikato indicating the location of known contemporary homesteads and industrial/ agricultural infrastructure. The plan has been reproduced from the original and this later version was obtained from the Waikato Museum Archives. The plan is not to scale and the accuracy is limited to Newell's contemporary knowledge and memory; for this reason, a level of considered interpretation is required.

An extract of this plan is provided below (Figure 4). Within the study area the plan shows the Waikato River, the Karapiro Stream, and tracks/roads. A residence annotated with Heaslip is indicated on the south side of the Karapiro Stream. Assuming this residence is on the land identified in the first formal survey plan as belonging to Benjamin Heaslip (provided in Figure 2) the current study area is to the east and in an area free from annotations. This further suggests that Troy, Jarvie, and Henry did not develop their properties in the 1800s. Additionally a residence on the Heaslip site is shown on the 1940s aerial photograph (Figure 5), although it is not known if this building is dated to the 1870s and is the same as shown in Newell's map. The building currently present in this location appears from a cursory understanding to be 20th in date, although it has not been visited for this appraisal.



Figure 4: PART Captain Newell's Sketch Map of The Waikato. Approximate study area within white box. Source: Reproduction from the Waikato Museum.

1940s Aerial Imagery

Aerial imagery from the 1940s series has been examined for features of archaeological interest (Figure 5). The imagery shows open farmland in pasture with development limited to field boundaries, shelterbelts, and small buildings (probably farm sheds) and water troughs. There is no clear evidence for pre-1900 archaeological activity on the images assessed.

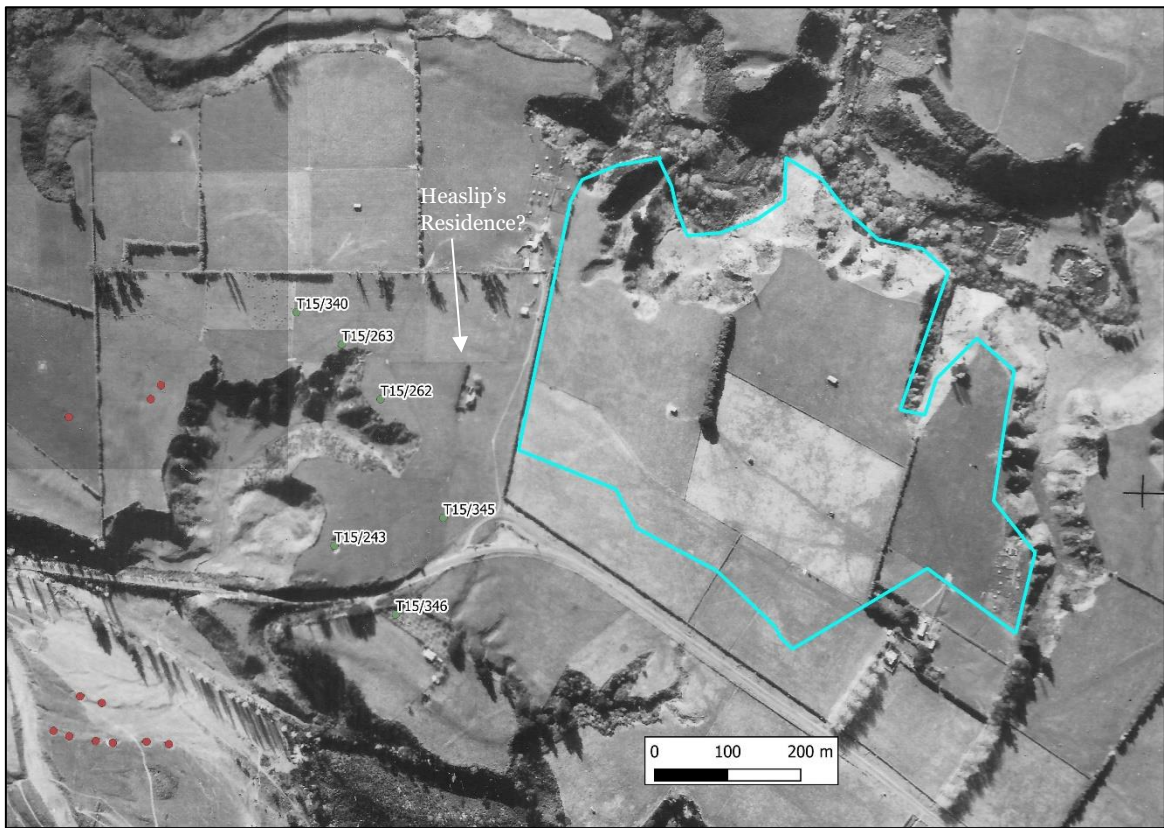


Figure 5: 1940s Aerial Imagery

LiDAR

LiDAR imagery has been examined to determine if anomalies are present within the land which may indicate the presence of archaeological sites and features (*Figure 6* and *Figure 7*). The land is shown to be relatively flat with evidence of field drains and ploughing. There are four anomalies visible which may represent borrow pits within the study area. The anomalies are sub-circular/ oval and are visible as depressions. Three of these depressions are situated along the eastern side of the subject site and are focused on a former levee of the underlying Hinuera Surface. Levees are high points created by the underlying former braided river system and were often targeted by Maori for sand and gravel extraction prior to European settlement.

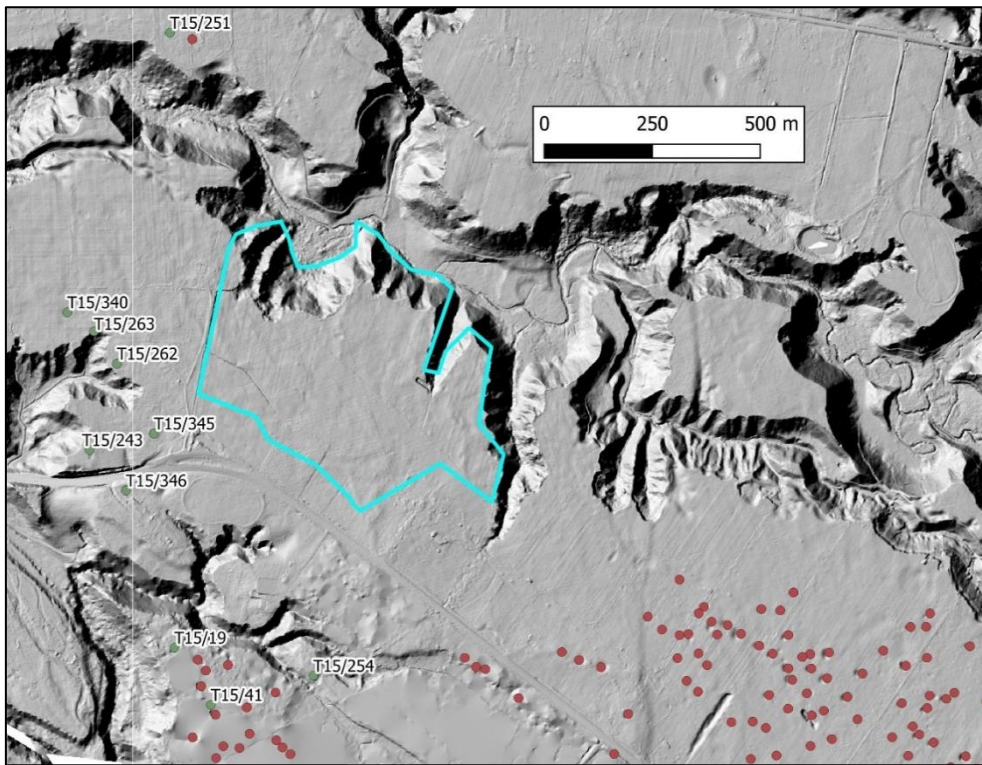


Figure 6: LiDAR image showing the distribution of borrow pits (red dots) within the vicinity of the proposal (blue box). Source: WRC/ NZAA.

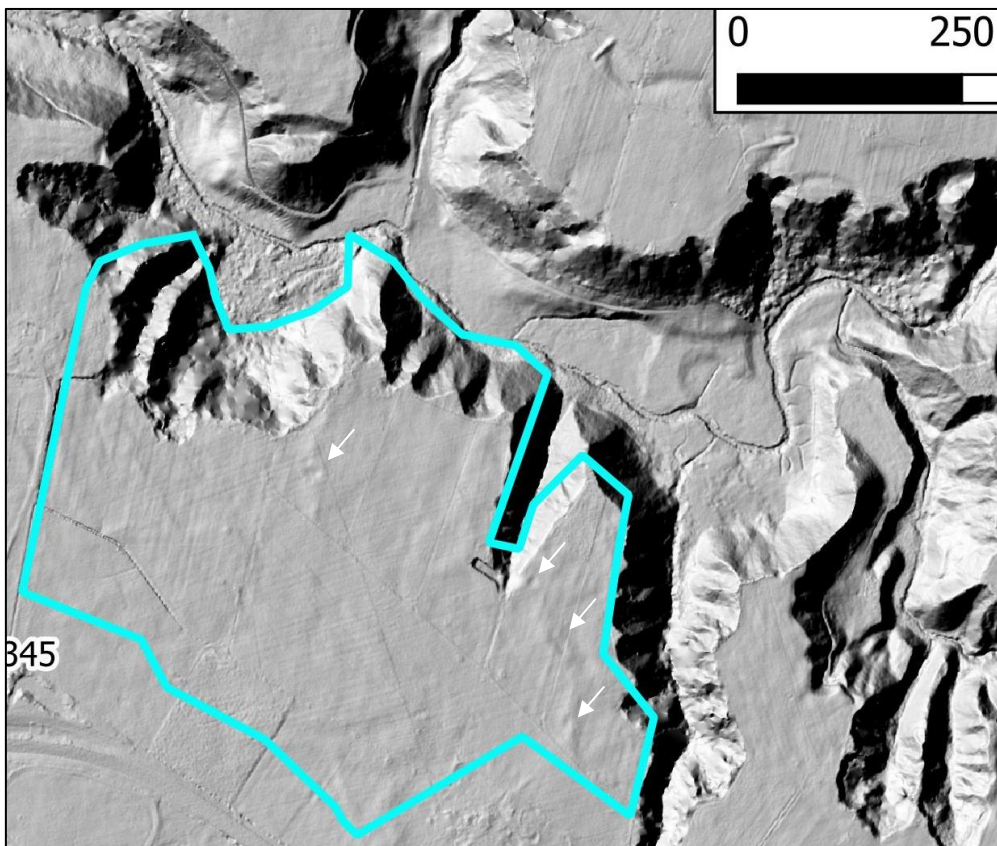


Figure 7: LiDAR close-up with potential archaeological features arrowed. Source: WRC.

Historic Publications

A search of online resources targeting the place names of Karapiro Estate¹ and the names annotated on the historic survey plans has been undertaken. Resources include the National Library archive (Papers Past) and the Cambridge Museum. No accounts of archaeological interest for the subject site were uncovered.

Site Visit

A site visit was undertaken on the 14th September 2020. The land was in relatively short grass and with the exception of the north east end of the site, all of the land was accessible, the former having a bull in the field.

A visual pedestrian survey was undertaken, focused on the margin of the gully and in areas highlighted on the LiDAR as potentially holding heritage values. Minor spade-cut test pitting and hand-auguring was employed to determine the nature of the subsoil, the soils profiles, and to look for evidence for horticultural activity.

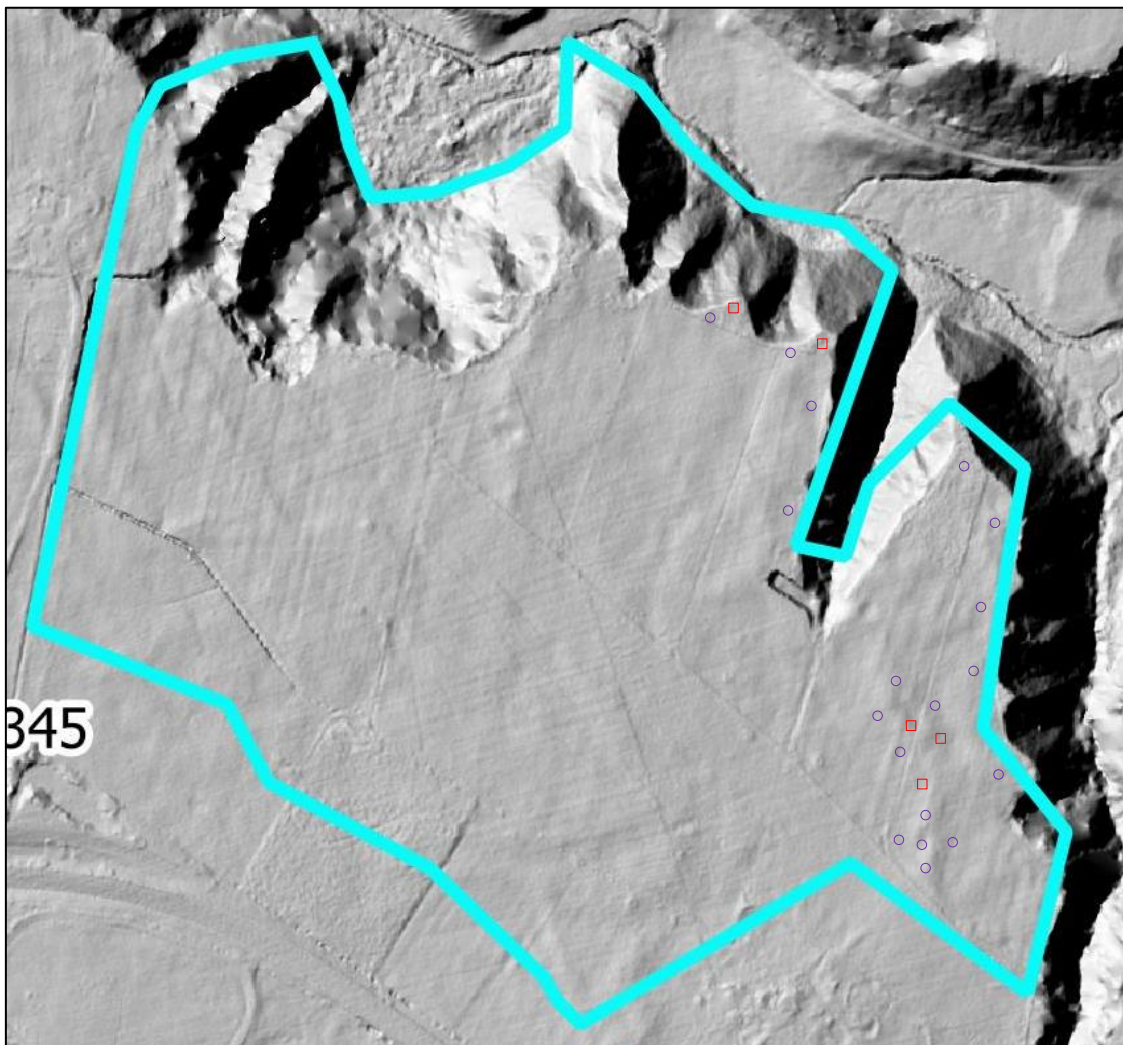


Figure 8: Test pit and approximate augur locations, red boxes and green circles respectively.

¹ Based on the name given to the area on the first survey plan

The depressions noted in the LiDAR were tested, and the land surrounding each depression was tested. The investigations did not lead to the identification of modified garden soils, nor did they suggest that the depressions are the result of pre-European quarrying. With the exception of one augur, all of the results indicated a soil profile consistent with natural development. Each test indicated topsoil formed of organic material and parent subsoil overlying natural tephra, the latter dominated by the Horotiu Series. One augur located in the centre of south-eastern most depression (Figure 8) has a fill deposit deeper than the length of the augur (<0.8m). There is no immediate explanation for this, however the lack of evidence for sand in the surrounding ground does not support that it represents a borrow pit, and the explanation may be due to more recent activity.

The gully margins were the focus of further testing. Two test pits were excavated at the northern edge along the scalloped gully margin (Figure 8). One to the east provided a natural soil profile similar to that already described, one to the west indicated a possible cut edge with a fill deposit similar to pit fill and suggestive, although not conclusive, of archaeological activity.

No visible field evidence for archaeological activity was identified across the remainder of the land inspected.

Discussion

There is evidence for pre-European archaeological activity in the wider landscape, however no sites are known within the current proposal. There is no known archaeological activity from the post-contact European era recorded for the subject site. The soil profiles tested indicate that the land is intact, and so if archaeological activity is present it has probably survived in good condition beneath the topsoil.

The geographic location of the quarry suggests a relatively favourable aspect for pre-European activity. Specifically with access to the Karapiro Gully/ Waikato River.

Summary and Conclusions

The scale of the project is extensive, and a significant section of the gully margin will be impacted. There is potential for archaeological evidence to be located in this area of the proposal, evidenced by the general attractiveness of the location and the potential pit features identified in the test pit, additionally the proximity of extensive gardens and recorded paa in the wider landscape.

It is recommended that an authority is sought from HNZPT as a precautionary measure. This will enable better management of archaeological risk and prevent potentially costly time delays in having to obtain an authority should archaeological material be encountered. The authority should cover as a minimum the gully edge to within 40m of the gully.

RISK LEVEL:

RED: recorded site within the project footprint – site visit and authority application

Recommendation:

- **Archaeological Assessment of Effects Report & Authority Application as a precaution**
-

AMBER: Recorded sites within c. 100m and landform/location suggests sites may be present – site visit to better determine risk

GREEN: No known risk – works can proceed under an ADP

Project Risk Level: AMBER

Please let me know if you have any queries or comments.

Ngā mihi,



Sian Keith
Principal Archaeologist

Appendix A – Provided Design Plans

Revital Area A – stage 4 (Years 16.7 to 24.8)

