

Cultural Impact Assessment - Macraes Phase 4 (Stage 3) [MP4 (RMA)]

B.04

This Cultural Impact Assessment (2025 CIA) was solely prepared for the MP4 resource consent applications which were applied for in 2024. OGNZL acknowledges the disclaimer that the 2025 CIA was specific to those applications, however because it is referred to in the Substantive Application and because the 2025 CIA provided a platform from which further engagement with Kā Rūnaka occurred and further mitigation and remediation of effects was developed, the 2025 CIA is considered relevant. The 2025 CIA is publicly available, however for convenience it is considered appropriate to attach it to this application.

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Cultural Impact Assessment

Macraes Phase 4 (Stage 3)

Oceana Gold (NZ) Ltd



***Ka whakawhārikitia e tātou te huarahi mō rātou a muri ake nei,
kia takahia kā tapuwae o kā tīpuna¹***

¹ To set a pathway for our mokopuna so they might walk in the footsteps of our tīpuna.

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Acknowledgement

The preparation of this cultural impact assessment for the expansion of the Macraes Gold Project was undertaken with the assistance of the following individuals and groups:

- Kāti Huirapa Rūnaka ki Puketeraki (Te Rōpū Keritaka)
- Suzanne Rodger, Environment and Social Performance Manager, OceanaGold
- Matthew Curran, Senior Advisor – Consenting, OceanaGold.

Front cover photo: OceanaGold Macraes Gold Project, Macraes, excluding the Golden Bar waste rock stack and pit to the southeast (Source: Google Earth).

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	Report For OceanaGold Limited

² The Macraes Phase IV project is referred to as 'the Project' in this report.

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Toitū te Mana, Toitū te Whenua: Kā Rūnaka

This report has been prepared on behalf of Kāti Huirapa Rūnaka ki Puketeraki, who are recognised as mana whenua in the project area. Two further Rūnaka, Te Rūnanga o Moeraki and Te Rūnanga o Ōtākou, have interests in the proposal due to the potential impacts on the whenua and wai of Waihemo and Taiari.

Te Rūnanga o Moeraki

The takiwā of Te Rūnanga o Moeraki centres on Moeraki and extends from the Waitaki to the Waihemo (Shag River), and inland to Kā Tiritiri o te Moana (Main Divide). This includes shared interests with other Papatipu Rūnanga in Te Manahuna (Mackenzie Basin) and Tuawhenua (Queenstown Lakes and Central Otago).



Kāti Huirapa Rūnaka ki Puketeraki

Our Waitaha, Kāti Māmoe, and Kāi Tahu tūpuna (ancestors) were drawn to East Otago by the abundance of food and resources that made it an ideal location for permanent settlements.⁴ The descendants of Waitaha, Kāti Māmoe and Kāi Tahu who settled this area remain to this day.

The hapū (subtribes) that have prominence within Kāti Huirapa Rūnaka ki Puketeraki are Kāti Huirapa, Kāi Te Ruahikihiki, Kāi Taoka, and Kāti Moki Tuarua. The descendants of these four hapū hold mana ki te whenua (authority or prestige to the land) over the project area.



The takiwā of Kāti Huirapa Rūnaka ki Puketeraki centres on Karitāne and extends from the Waihemo to Purehurehu, north of Heyward Point. Their takiwā extends inland to the Main Divide, sharing interests in the lakes and mountains to Whakatipu-wai-māori.

Te Rūnanga o Ōtākou

The coastal rūnaka of takiwā of Te Rūnanga o Ōtākou centres on Ōtākou on the Otago Peninsula and extends from Purehurehu to Te Mata-au. The inland reaches of their takiwā includes shared interests in the lands and mountains to the western coast with rūnaka to the north and south. The Taiari is a significant awa for Ōtākou. Potential impacts of the Project on the Lower Taiari via the Mareburn are at the basis of Ōtākou's interests.



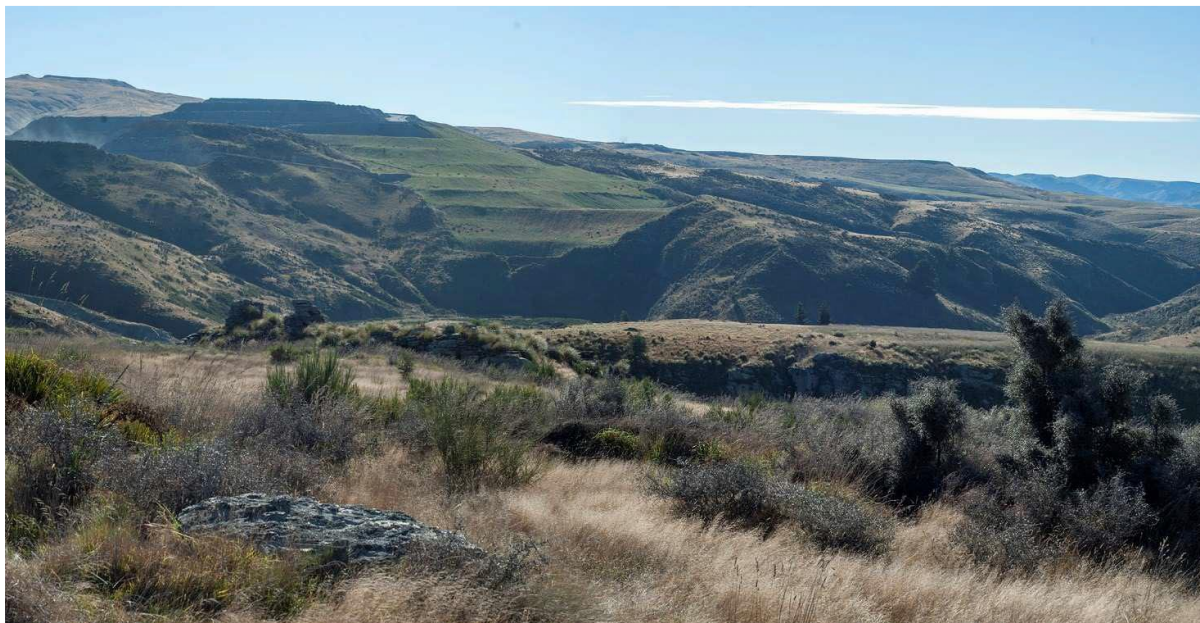
⁴ See appendices 1 and 2 for a glossary of Māori terms, and a list of abbreviations used in this report.

1. He Kupu Arataki: Introduction

Ka ora te wai, ka ora te whenua, ka ora ai te tākata.

When the water is healthy and the land is healthy, then the people are healthy.

This assessment conveys the expectations of Kāi Tahu as mana whenua in the location of the proposed activity and the related catchments of the Taiari, Waikouaiti, and Waihemo.⁵ The health of our communities reflects the health and vitality of our environment, a principle that mana whenua are duty-bound to uphold under their rakatirataka and kaitiakitaka responsibilities.



Whakaahua 1: Deepdell East remediated waste rock stack⁶



Whakaahua 2: Frasers Pit⁷

For mana whenua, the land is fundamental to tribal identity.⁸ The survival and strength of our tīpuna were derived from the depth of their relationship to, and respect for, te taiao. Through whakapapa connections back to the atua, all natural resources, such as water, air, earth, sea, and landscape features, are recognised as tīpuna and taoka that require the highest level of regard and care. At the heart of the relationship with te taiao is the knowledge that the longevity and wellbeing of Kāi Tahu

⁵ Waihemo / Shag River.

⁶ WSP (2023a) Macraes Phase IV Expansion, Landscape and Visual Assessment

⁷ WSP (2023a) Macraes Phase IV Expansion, Landscape and Visual Assessment

⁸ TRONT, 1997.

lies in protecting our environment for the mokopuna to come. Thus, a clean, healthy, and bountiful environment is a source of mana and pride for the people.

Since European contact and settlement, mana whenua have seen a different approach to resource management at play, one that views environmental resources as commodities to be stripped away in service of human consumption and as a means of creating wealth. Alongside this economic model, the wellbeing of our environment has degraded, our waterways have been modified and polluted, and the whenua degraded. Many of the bountiful sources of mahika kai are now gone or are highly depleted. At the root of this behaviour is a fundamental disrespect for te taiao, and an apparent failure to see awa like the Waikouaiti and Waihemo as entities worthy of our protection and respect.

The East Otago area was and is of cultural importance to the Waitaha, Kāti Mamoe, and Kāi Tahu people as a source of mahika kai, a place of settlement, a burial place, and as a cultural landscape that embodies the ancestral, spiritual, and religious traditions of mana whenua. East Otago is, therefore, an important taoka tuku iho for the Rūnaka who hold mana whenua status and have interests in the area.

Kāi Tahu view consultation with resource users as a fundamental means of achieving recognition and protection for cultural values in the management of environmental effects. The practical implementation of kaitiakitaka by Kāi Tahu is dependent upon open and informed discussion with resource users, from which sound judgments can be made on a project's potential impacts on Kāi Tahu cultural values.

The original application for the Macraes Gold Project (the 'Project') was made in 1988 for hard rock mining at Macraes Flat, East Otago, by a predecessor to Oceana Gold (NZ) Ltd. (OGL). The Project has progressively developed from 1988 to today, and a fourth expansion is now planned. The cumulative impacts of the Project on cultural landscapes, wai māori and wai tai, and indigenous biodiversity are issues of concern for Kāi Tahu.

The development of Macraes Phase 4 (MP4)⁹ provides an opportunity for Kāi Tahu, in partnership with OceanaGold, to review the impacts of this phase of the MGP on Kāi Tahu cultural values, and to identify opportunities for the recognition and protection of these values going forward.

OceanaGold has engaged Aukaha Ltd to prepare a Cultural Impact Assessment that:

- Identifies the effects of the Project on the cultural values, interests, and associations Kāi Tahu hold with East Otago and its associated waterways.
- Identifies methods, where it is possible, to avoid, remedy, or mitigate adverse effects of the Project on Kāi Tahu cultural values, interests, and associations within the East Otago area.
- Provides a basis for ongoing consultation between Kāi Tahu and OceanaGold.

This report should not be seen as Kāi Tahu approval of this project, but as a basis for ongoing engagement and discussion between OceanaGold and Kāi Tahu in the context of this stage of the Project. Furthermore, the expectation is that OceanaGold will compensate Kāi Tahu where impacts on cultural values cannot be avoided, remedied or mitigated.

⁹ Macraes Phase 4 has three stages. This assessment is focused on the balance of the Stage 3 consents.

2. He Kaikape ā-Mahi: Methodology

The methodology for this report is based on a kaupapa Māori model of research, through which kaimahi at Aukaha developed, drafted, and finalised the report under the mandate and direction of mana whenua representatives. The mahi was undertaken in three poutama:

2.1 Te Poutama Tuatahi: Desktop Review/Review of Literature

A review of literature, available online resources and the application was undertaken by Aukaha kaimahi to build an understanding of the cultural and environmental context for the Project, and the key elements of the Macraes Phase 4 (Stage 3) Project. This mahi rakahau included consideration of the following key sources:

- Macraes Phase 4 Project Assessment of Environmental Effects and supporting technical reports¹⁰
- Cultural Impact Assessment Macraes Phase III Oceana Gold (NZ) Ltd (May 2013)
- Iwi Archaeological Assessment, prepared by Brian Allingham for MPIII CIA
- Kāi Tahu ki Otago Natural Resource Management Plan
- Ngāi Tahu Claims Settlement Act 1998
- Cultural reports and evidence held on file in the Aukaha archives
- Cultural, archaeological, and ecological maps
- Relevant legislation, national and regional policies, and regional and district plans
- Other material identified through the review of literature.

2.2 Te Poutama Tuarua: Cultural Values Assessment

A cultural values assessment identifies key mana whenua values in the area affected by the proposed activity. The assessment for this project was particularly focused on the values of the Taiari, Waikouaiti and Waihemo Catchments.

2.3 Te Poutama Tuatoru: Cultural Impact Statement

A cultural impact statement identifies the impacts of the proposed activities on the cultural values identified, and proposes recommended actions and expectations to protect these values. In the case of this Project, cultural impacts in terms of the following are a focus of this assessment:

- a. Mana
- b. Mauri
- c. Tapu
- d. Whakapapa

The cultural values statement provided below was reviewed by mandated representatives from Te Rūnanga o Moeraki, Kāti Huirapa Rūnaka ki Puketeraki (Te Rōpū Keritaka) and Te Rūnanga o Ōtākou to ensure that the final statement accurately reflects the position of mana whenua.

¹⁰ The Application as updated on 18 February 2025.

3. He Whakamārama: Expansion of the Macraes Gold Project

3.1 Macraes Gold Project

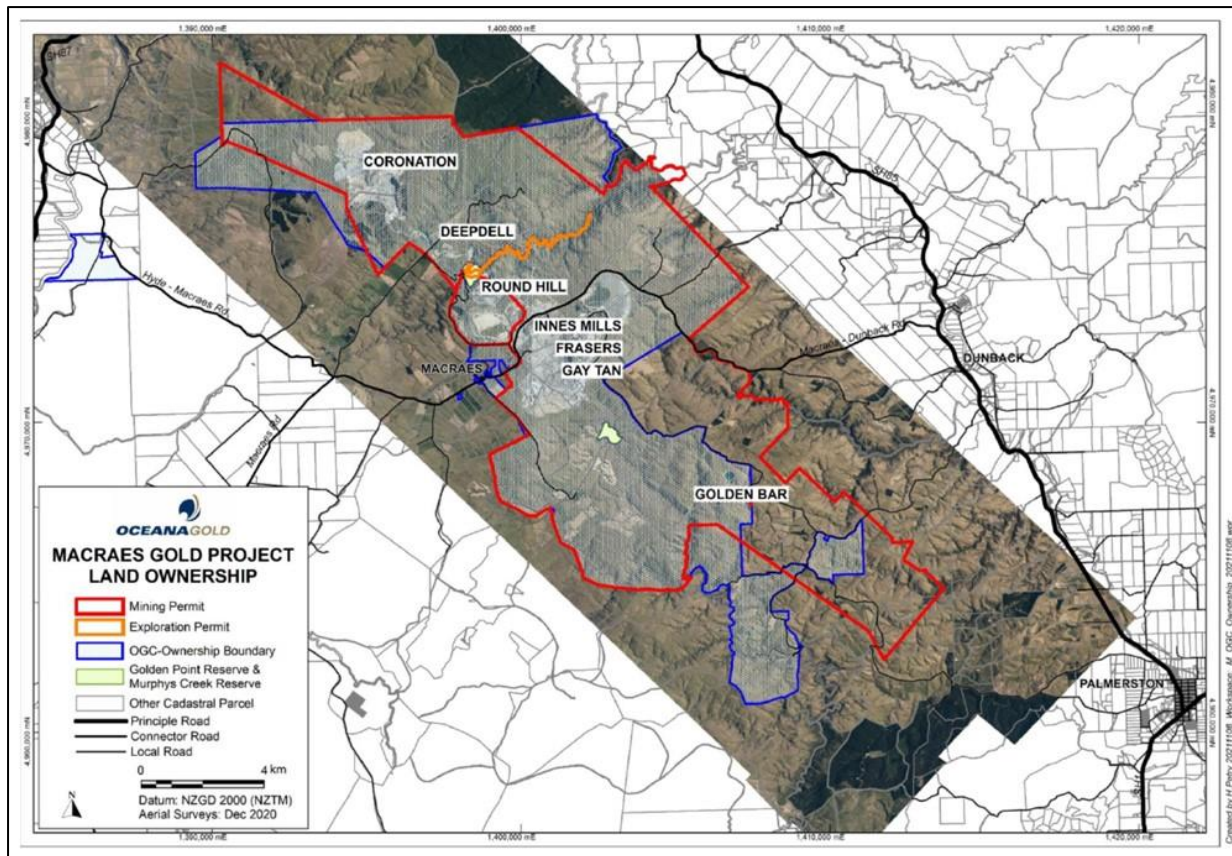
The Macraes Gold Project has progressively developed from 1993 to the present day. Key elements of the Project have included:

- Various open pits
- Two underground mines (Frasers and Golden Point)
- Waste rock stacks
- A network of haul roads and general service tracks;
- A processing plant which extracts gold and produces tailings;
- Four tailings storage facilities, two of which are currently active (Top Tipperary and Frasers)
- A network of water management infrastructure including diversion drains, silt ponds, and water storage reservoirs;
- Two consented water storage reservoirs that have not been constructed, namely Camp Creek Dam and Coal Creek Dam; and
- Associated infrastructure to support ongoing operations in the form of district roads, powerlines, workshop facilities and offices and associated water and amenity facilities.



Whakaahua 3: Macraes mine and processing plant ¹¹

¹¹ GHD (2024c) *MP IV Frasers TSF, Innes Mills, and Golden Point Cumulative Effects Assessment*

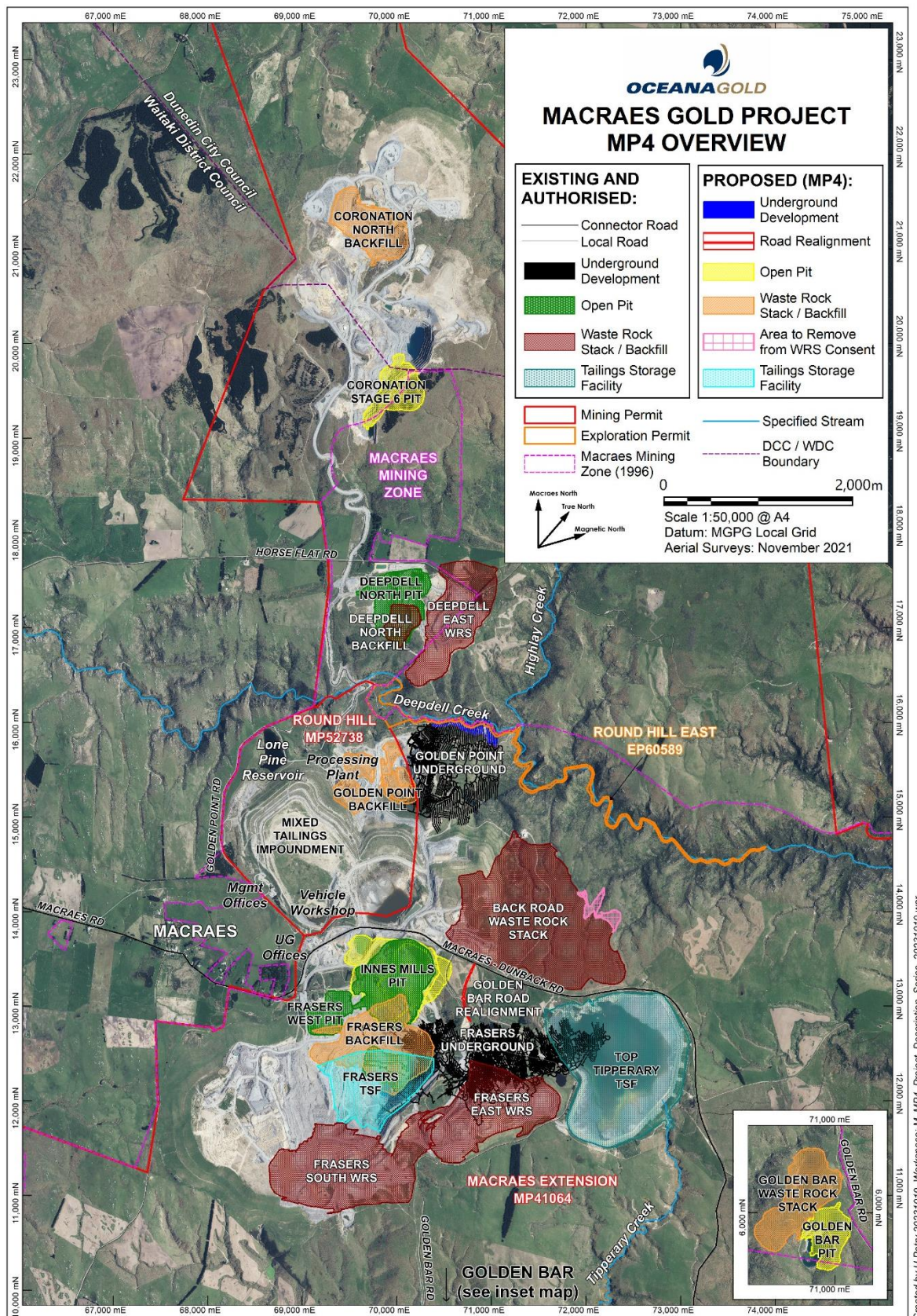


Whakaahua 4: Layout of the Macraes Gold Project

3.2 Overview of Macraes Phase 4

The latest proposal to extend the mine life is referred to as the “Macraes Phase 4 Project” (“MP4” or “the Project”), which has three stages. Resource consent has already been granted for Stages 1 and 2 and for part of Stage 3 as follows:

Macraes Phase 4: Resource consent granted for:	
Stage 1:	Renewal of consents associated with the Back Road Waste Rock Stack (BRWRS), Top Tipperary Tailings Storage Facility (TTTSF), Frasers Waste Rock Stack, Frasers Underground Mine and Coronation Open Pit.
Stage 2:	Raising the height of the TTTSF and co-disposing of dry tailings and waste at Frasers Pit
Stage 3:	- The Golden Point Underground mine expansion and extension (“GPUG”), and - The Continuity Consents Project (“CCP”), involving an extension of Innes Mills Pit and development and initial disposal of tailings in Frasers Tailings Storage Facility (“FTSF”) in Frasers Open Pit.



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Whakaahua 5: Macraes Phase IV Project

OceanaGold is now applying for the relevant resource and building consents for the balance of Macraes Phase 4 Stage 3 to extend the mine life at Macraes to approximately 2030:

Macraes Phase 4: Resource consent application for:	
Stage 3:	• Down dip extension of three open pits (Innes Mills, Coronation and Golden Bar) and their associated backfills (“BF”) and waste rock stacks (WRS). • Backfilling of the Coronation North Pit following the completion of the mining. • Rehandling of waste rock from Northern Gully WRS to Golden Point Pit. • Realignment of the Golden Bar Road. • A second stage of tailings disposal in the Frasers Tailings Storage Facility (FTSF) to support the open pit extensions and current consented mines. • Ancillary features such as topsoil stockpiles, low-grade ore stockpiles, silt ponds, areas for pit infrastructure and access roading; and • Activities associated with the mitigation, remediation, and offsetting of the effects of the above activities, including amenity effects, water quality and ecological effects management (via the Murphys Ecological Enhancement Area).¹²

A summary of each element of MP4 Stage 3 is set out in Appendix 3.¹³ The effects on wai māori are and terrestrial ecology are summarised below.¹⁴

3.3 Effects on Wai Māori

Coronation Pit	• Discharges from the Coronation area may reach the Taiari River via the Mare Burn and the Waihemo via the Deepdell catchment. • After 90 years post-closure, water from the Coronation Pit Lake will seep through the Trimbells WRS to Trimbells Gully and the Mare Burn Catchment, with seepage increasing as the pit lake fills. • After 200 years post-closure, the Coronation Pit Lake will overflow to the headwaters of Highlay Creek and the Deepdell Creek Catchment. • The groundwater contaminant plume will primarily impact Trimbell’s Gully, the upper reaches of the Mare Burn and the upper reaches of Coal Creek. • Sulphate and Nitrate-N concentrations within Trimbells Gully and Mare Burn are predicted to increase post closure.
Innes Mills Pit Golden Point Pit Backfill	• The groundwater and surface water assessment focuses on the cumulative effects of the Innes Mills, Golden Point Pit backfill, and the Frasers Tailings Storage Facility (FTSF) on Deepdell Creek and the North Branch of the Waikouaiti River.

¹² OGL, Macraes Phase 4 Assessment of Environmental Effects (18 February 2025)

¹³ A full description of each part of MP4 is provided in the application and is adopted for this assessment.

¹⁴ The cultural impacts of the Project are not exclusively related to wai māori and ecology as discussed in Section 5.

Frasers Tailings Storage Facility	• After approximately 50 years post-closure, the Innes Mills Pit Lake will merge with the Frasers Pit Lake, forming the Frasers-Innes Mill Pit Lake (FRIM). • Seepage from the FRIM Pit Lake may reach Deepdell Creek (a tributary of the Waihemo), Murphys Creek and the headwaters of the North Branch of the Waikouaiti River. • The groundwater contaminant plume (illustrated using sulphate) will primarily impact Deepdell Creek (from a combination of WRS seepage and Pit Lake overflow). • The Waikouaiti River North Branch (NBWR) will receive sulphate sourced directly from WRS seepage.
Golden Bar	• Discharges from the Golden Bar Pit and WRS will primarily impact the North Branch of the Waikouaiti River (via Clydesdale Creek, a tributary of Murphys Creek) and Golden Bar Creek. • Contaminants sourced in the Golden Bar area may also reach the Waihemo via McCormicks Creek.

The mitigation proposed to address these effects on wai māori include the construction of dams on Coal Creek and Camp Creek to augment flows in the Mare Burn and Deepdell Catchments (respectively) and dilute contaminants.

3.4 Effects on Terrestrial Ecology

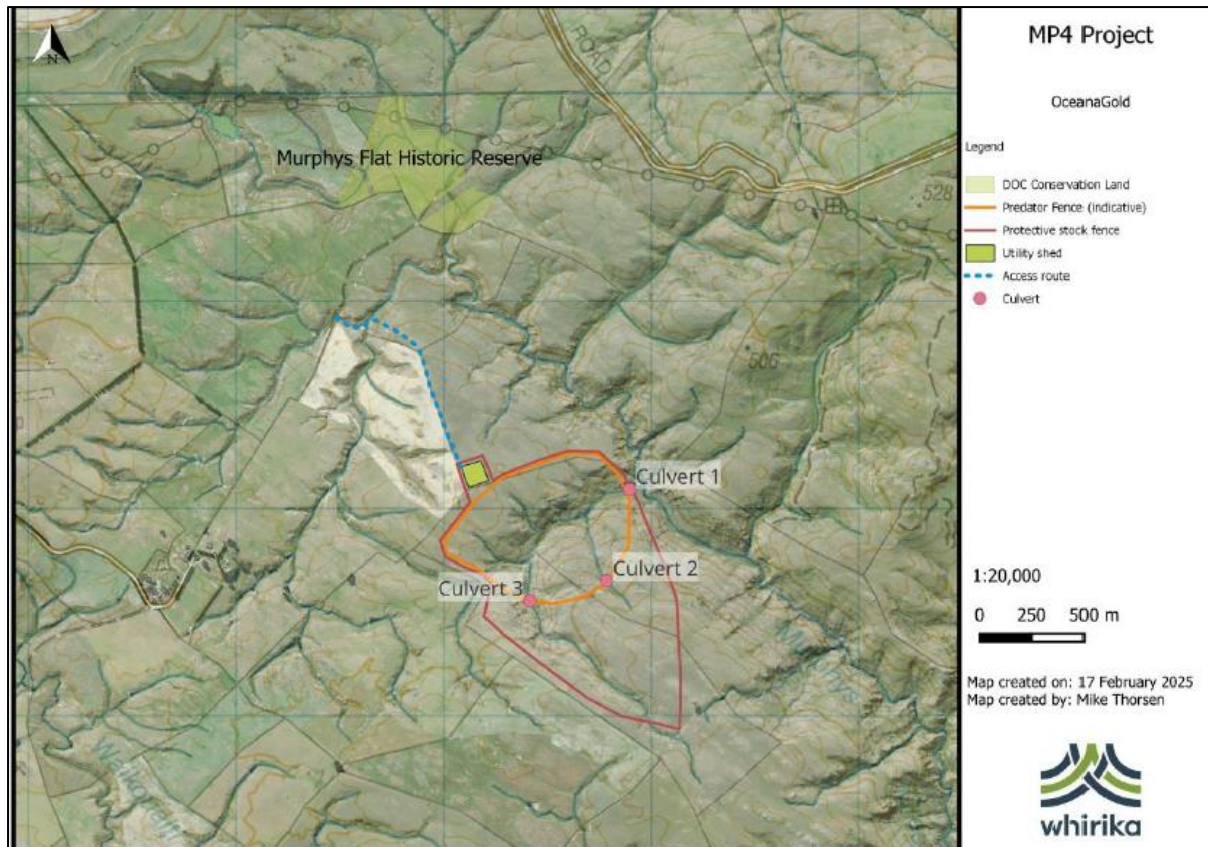
Coronation Pit	• An approximate 250 m expansion of the Coronation Pit to the southeast over predominantly tussockland and three small natural inland wetlands. • Permanent removal of 3 ha of narrow-leaved tussock grassland. In addition, there may be effects on 7.3 ha of indigenous vegetation within a 100m buffer area. • Permanent loss of 0.03 ha of riparian / wetland vegetation mosaic and changes to around 0.2 ha of the vegetation community within the buffer area, including the eventual loss of more water-dependent species such as the pukio. • Permanent removal of one previously impacted ephemeral wetland that is 0.06 ha in area and further changes to 0.16 ha of ephemeral wetland within the buffer area. These wetlands will be lost entirely.
Innes Mills	• The proposed extension footprint will encompass existing mine haul roads and access roads, areas previous disturbed by mining, and remnant areas of pasture/tussock. • An area of natural wetland exists within 100 m of the proposed eastern extension and may be completely or partially drained.

Frasers Tailing Storage Facility	• Permanent loss of 0.2 ha of tussock grassland, 0.07 ha of wetland, and 0.03 ha of riparian vegetation as well as 7.3 ha of pasture communities. The loss of vegetation will lead to the temporary loss of habitat for pipit, spur-winged plover and paradise shelduck.
Golden Bar Road Realignment	• Permanent loss of 0.1 ha of narrow-leaved tussock grassland and potential effects on 0.3 ha of sparse narrow-leaved tussock grassland in the buffer area. • The alignment of the new road may be located within 100 m of a natural inland wetland which is fenced and protected in accordance with the Waitaki District Council (WDC) land use consent for MP3. No drainage effects are anticipated on the wetland.
Golden Bar Open Pit Expansion	• The proposed pit and extension of the WRS will modify a previous area of successful rehabilitation. • The pit extension will permanently remove a 120m section of headwater gully that contains a mosaic of riparian and wetland vegetation, including up to 0.008 ha of natural inland wetland. • Permanent loss of 27.3 ha of narrow-leaved tussock grassland, with further effects on 35.9 ha in the 100 m buffer. In addition, 0.06 ha of shrubland is expected to be permanently lost from the area. • The loss of vegetation described above will subsequently result in loss of habitat for the New Zealand falcon, pipit, harrier hawk, spur-winged plover and paradise shelduck. • Overall, the expansion of the Golden Bar Pit will have more than minor residual adverse effects on the tussockland vegetation community and on one threatened 'Nationally Vulnerable' moth species (Crambidae: <i>Orocrambus sophistes</i>). • The proposed extension of the Golden Bar WRS involves approximately 26 ha of disturbance outside the footprint of the existing rehabilitated WRS. The extension of the WRS requires the reclamation of approximately 430 m of river extent in the Clydesdale Creek catchment that runs along part of the toe of the existing rehabilitated WRS and a small area of natural wetland vegetation (approximately 0.114 ha).

3.5 Murphys Ecological Enhancement Area ("MEEA")

An offset and compensation package that addresses the residual adverse ecological effects of the MP4 Project, and to provide a protective benefit to lizards, will be implemented in accordance with an Ecological Impact Management Plan. This package includes an Ecological Enhancement Area in the Murphys Creek catchment referred to as the Murphys Ecological Enhancement Area ("MEEA")

The MEEA will provide 45 ha of predator fenced lizard habitat, 39 ha of tussock grassland and space to establish 0.5 ha of new shrubland including areas of riparian / wetland vegetation.



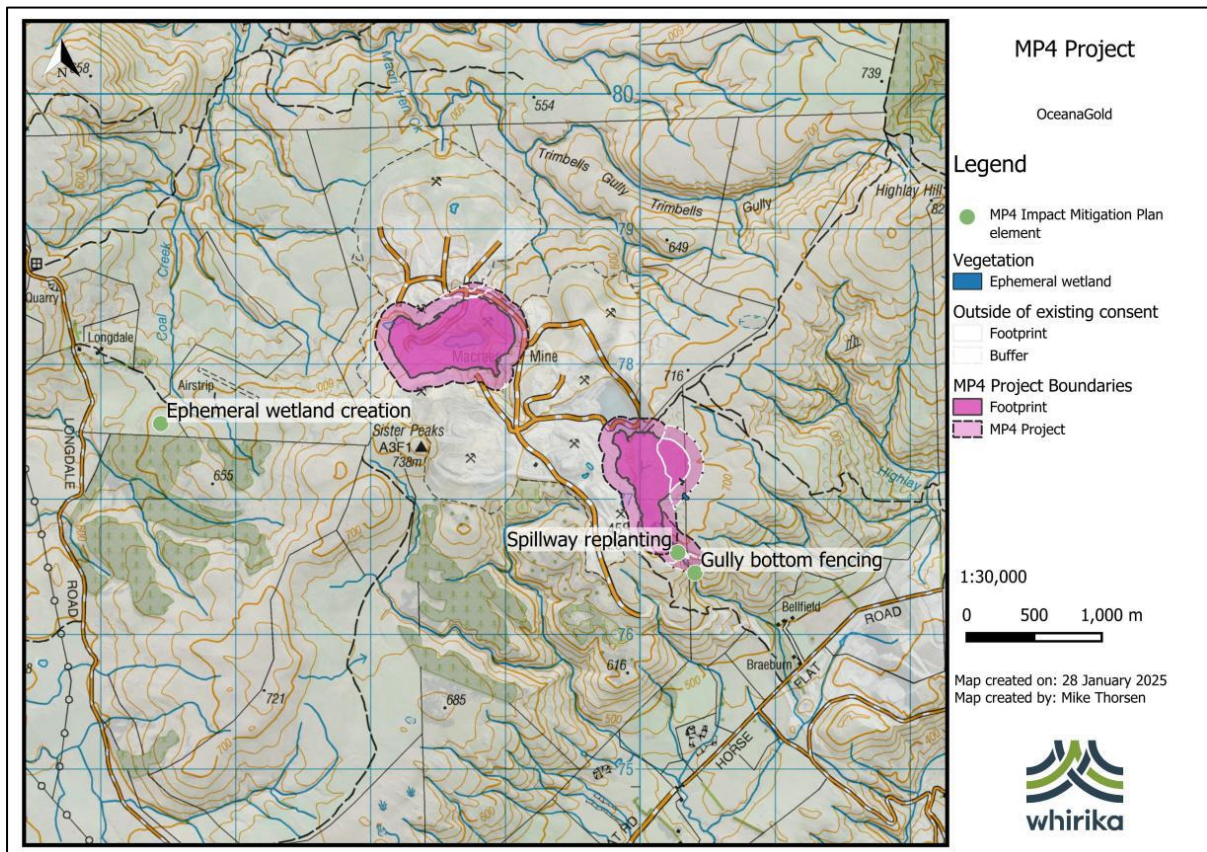
Whakaahua 6: Indicative location of the Murphys Ecological Enhancement Area subject to lease holder feedback

Activities proposed as part of the offset and compensation package within the MEEA include:

- Legal protection of the MEEA;
- An all-weather access track;
- Fencing of the MEEA to exclude stock and installation of predator fencing around part of the EEA, including maintenance tracks around the perimeter and culverts at the points where the predator fence crosses major drainage gullies;
- Construction of a site office, equipment sheds and park up area;
- Revegetation (including the rescue and replanting of identified rare plants) and lizard habitat enhancement within the MEEA (including the creation of replacement rock tors);
- To compensate for the loss of stream length at the Golden Bar WRS, 860m of watercourse habitat will be protected within the MEEA.
- Weed management within the MEEA;
- A mammalian predator control operation inside part of the MEEA to protect and enhance lizard survival. This part of the MEEA will be the primary recipient site for lizards salvaged as part of the MP4 activities;
- Baseline monitoring of lizard populations and long-term monitoring to measure lizard response against population enhancement targets; and
- Contingency triggers and adaptive management procedures to ensure lizard response targets are achieved in the desired timeframes.

3.6 Ephemeral Wetlands

OceanaGold proposes to create an area of ephemeral wetlands covering approximately 0.3 ha on the flat sloping exotic grassland dominated spur on the Taiari Ridge, 3.5 km west of the Coronation 6 Pit. This will be achieved by excavating shallow gently sloping concave scrapes into the bedrock, filling these with commercial peat material and seeding these with ephemeral wetland and wetland plant species onto the peat base to form a near continuous cover of native plant community before weed species become established. Two of these will be excavated to a deeper depth and with a deeper peat base to recreate the more intact impacted wetland example.



Whakaahua 7: Approximate location of the ephemeral wetlands (green dots) on the Taiari Spur, relative to the footprint of the Coronation Pit

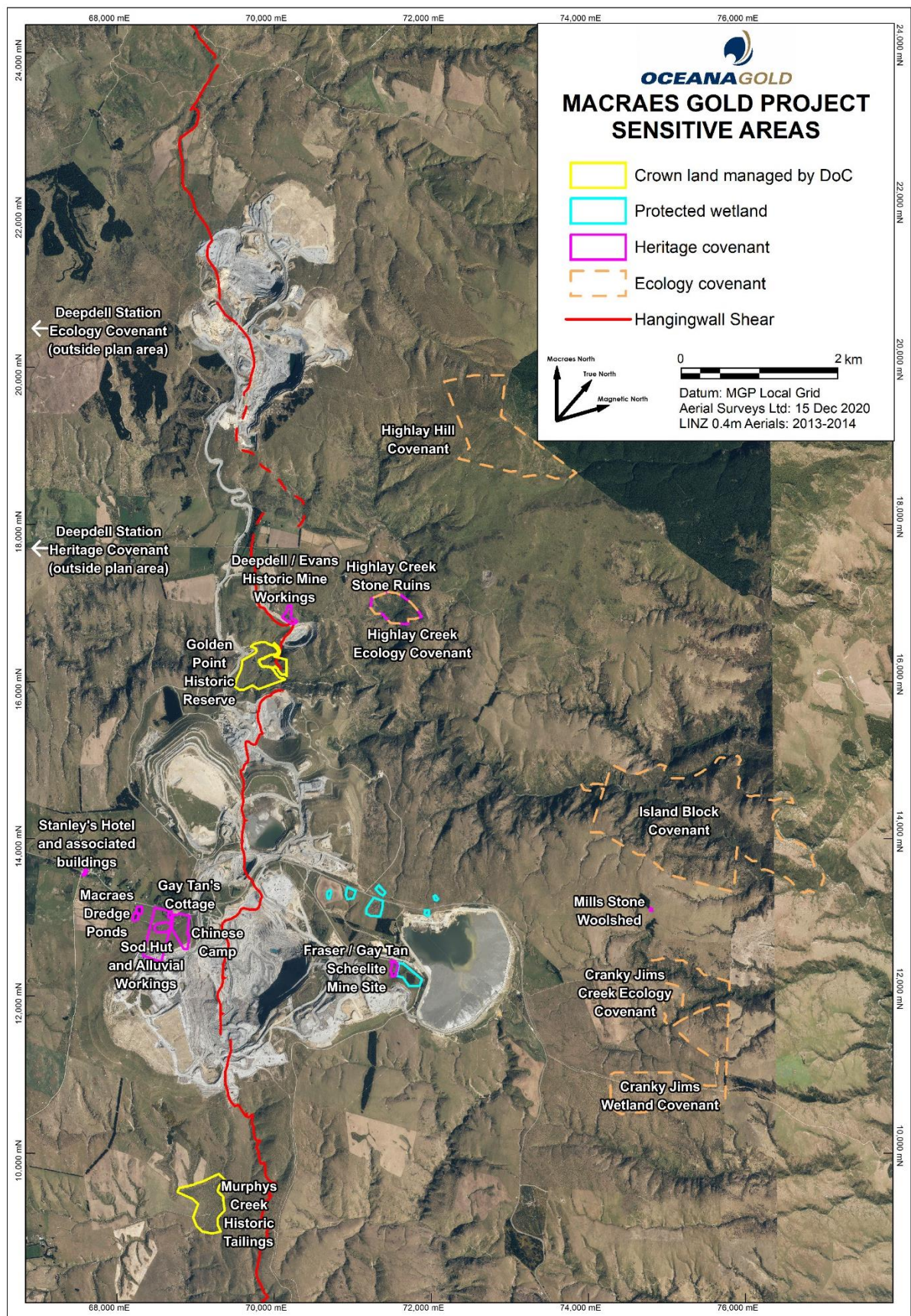
There will also be an offset for the two wetlands totalling 0.07 ha that will be dewatered by the extension of the Innes Mills Pit. This loss will be offset by creating a new wetland of 0.1 ha and with 50% cover by indigenous wetland species at the margin of the MEEA predator fence.

3.7 Ecological covenants and protected wetlands

OceanaGold currently manages 6 ecological covenants, with two further covenants in development, and seven protected wetlands near the Macraes site, covering a total of 655 ha, including:

- Deepdell Station Ecology Covenant
- Highlay Hill Covenant
- Highlay Creek Ecology Covenant,
- Island Block Covenant
- Cranky Jim's Creek Ecology Covenant,

- Cranky Jim's Wetland Open Space Covenant

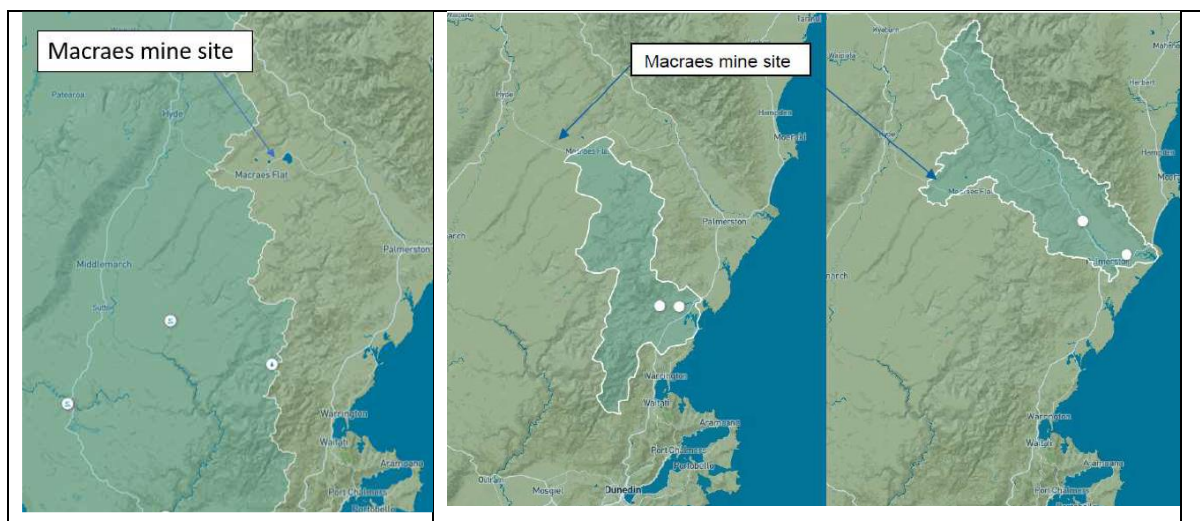


Whakaahua 8: Location of ecology covenants and protected wetlands

4. Te Mana o te Wai

4.1 Introduction

The catchments affected by the MP4 activities are primarily the Mare Burn in the Taiari Catchment, North Branch of the Waikouaiti River, and Deepdell Creek in the Waihemo Catchment.



Whakaahua 9: The Taiari, Waikouaiti River North Branch and Waihemo catchments (left to right) ¹⁵

OceanaGold uses the Mine Water Management System (MWMS) to achieve compliance with water quality standards during operations. Various mitigation measures are prescribed in the Water Quality Management Plan to enable water quality standards to be met over the long term. These include:

- Rehabilitation of waste rock surfaces;
- Implementation of passive treatment systems for waste rock stack and tailings storage seepages; and
- Augmentation of stream flows using one or more freshwater sources, including the proposed Coal Creek and Camp Creek Dams.

4.2 Taiari Freshwater Management Unit

The Taiari¹⁶ Freshwater Management Unit (FMU) covers the entire Taiari River catchment, reaching from Taiari Mouth across the Taiari Plain into the Strath Taiari and Maniototo Basins.

The catchment area encompasses all or parts of several mountain ranges, including the Rock and Pillar Range, Lammermoor and Lammerlaw Ranges, the eastern slopes of Rough Ridge, the southern slopes of the Kakaunui Mountains, the lower crests of Taiari Ridge and Maukaatua (Maungatua).

The Coronation pits and waste rock stacks are located at the northern end of the Taiari Ridge, in the headwaters of Trimbells Gully Creek and Māori Hen Creek. These creeks are tributaries of the Mare Burn which flows into the Taiari River to the east of Hyde. Trimbells Gully Creek, Māori Hen Creek and an unnamed tributary between these creeks drain the western sides of the Sister Peaks and Highlay Hill. The Taiari Ridge divides the Taiari and Waihemo catchments.

¹⁵ GHD (2024a) Coronation – Surface and Groundwater Assessment, Figure 3.1

¹⁶ Taiari is the correct spelling for the Taiari River. From its source, the Taiari River flows almost entirely around Pātearoa (the Rock & Pillar Range) before discharging into Te Tai-o-Āraiteuru (the Otago coastline)



Whakaahua 10: Schist outcrops on the banks of Māori Hen Creek¹⁷

4.3 North Otago Freshwater Management Unit

The Waihemo is one of the major catchments within the North Otago FMU, which extends southward from the Waitaki bridge to the northern boundary of the Waikouaiti River catchment.

Land use in this FMU has tended towards water-demanding activities including dairy, with concurrent water quantity pressures during dry and low-flow periods.¹⁸

Waihemo Catchment

The area of the Waihemo catchment (42,500 ha respectively) makes up one third of the North Otago FMU.¹⁹ The awa rises in the Kakaunui Mountains and flows approximately 90km southeast, entering the coast just south of Matakāea. The northern tributaries of the Waihemo arise on the slopes of the Kakaunui Mountains and Horse Range, while the southern tributaries drain rolling hill country. The total area for the catchment is 550 km² and encompasses valley flats, rolling hillsides, and steeper mountain ranges.

¹⁷ B. J. Allingham (2016) *The Coronation North Project 2016 – OceanaGold Archaeological Assessment Report on Remains of Māori Origin*

¹⁸ ORC, 2024, North Otago FMU.

¹⁹ LAWA, 2024, Shag River; LAWA, 2024, Waikouaiti River; ORC, 2024, North Otago FMU.

The main tributaries of the Waihemo impacted by the Project include Deepdell Creek, Cranky Jims Creek, Tipperary Creek and McCormicks Creek. Deepdell Creek is the largest single tributary of the Waihemo, draining from the Taiari Ridge near Macraes Flat.²⁰

Average annual precipitation in the Waihemo catchment is 595 mm,²¹ but recent conditions have seen a drought declared in many areas of Te Waipounamu including North Otago and significant hotspots identified in East Otago.²² This has seen the Waihemo fall below its minimum flow for a significant period from late January 2024 through to at least early March of the same year.



Whakaahua 11: Waihemo River Mouth

4.4 Dunedin and Coast Freshwater Management Unit

The Dunedin and Coast FMU comprises the water bodies that flow to Otago Harbour and to the coast north and south of Dunedin, from the Waikouaiti River to the Tokomairaro River (but excluding the Taiari River). The mahika kai values of the Waikouaiti River and the coastal receiving waters for this FMU are recognised through the establishment of the East Otago Taiāpure and the Waikouaiti and Ōtākou Mātaitai Reserves.

Waikouaiti River Catchment

The Waikouaiti is the third largest catchment in Otago at 425 km², with the north branch covering 283 km², and the south branch covering 86 km². The two branches converge roughly 8 km upstream from the mouth at Karitāne, which is located about 25 km south of the mouth of the Waihemo.²³

The headwaters of the North Branch of the Waikouaiti River are located on the flats between the Macraes township and the Frasers East Rock Stack. The excavation of the Frasers Pit and

²⁰ Olsen & Ozanne, 2014.

²¹ LAWA, 2024, Shag River.

²² NIWA, 2024, Hotspot Watch 1 March 2024.

²³ LAWA, 2024, Waikouaiti River.

construction of waste rock stacks reduced the catchment area of the North Branch of the Waikouaiti River by 350ha.²⁴

The boundaries between the Waihemo and Waikōuaiti catchments, and those with the catchment zones to the west and north, are indistinct due to a lack of dividing ranges. To the west of the Waikōuaiti it is bordered by the Nenthorn Stream catchment, Three O’Clock Stream catchment, and other small catchments that drain to the lower Taiari River. To the south the Waikouaiti is bordered by the Silverpeaks.²⁵ The Waihemo and the Waikōuaiti share headwaters with Te Hikapupu.²⁶



Whakaahua 12: Huriawa pā and Waikōuaiti River mouth, Karitāne



Whakaahua 13: Local rakatahi paddle on the Waikouaiti (Photo courtesy of Suzi Flack)

²⁴ KTKO Ltd Consultancy (2013) Cultural Impact Assessment of Macraes Phase III, p.5

²⁵ LAWA, 2024, Waikōuaiti River.

²⁶ Pleasant River

Current land use reflects the fertile soils in the area, including pastoral and arable farming, and to a lesser extent forestry and horticulture. The mining activities at the MGP site are also a significant feature of the catchment.²⁷

Vegetation in the Waikouaiti catchment has undergone considerable modification over the past 150 years; what was previously extensive forest and tussock lands has now largely been replaced with high- and low-producing grasslands interspersed with pockets of remnant broadleaf and native and exotic forest. Upstream of the confluence between the north and south branches of the awa, low-producing pastures dominate, with gullies populated by mānuka, kānuka, and introduced scrub. At a higher elevation in the Silverpeaks, the headwaters of the south branch of the Waikouaiti, remnants of mānuka, kānuka, and indigenous broadleaf forest persist.²⁸

4.5 Climate Change

Climate change impacts in East and North Otago foreshadow increased pressure on freshwater systems like the Waihemo and Waikouaiti (see Tūtohi 1 below).²⁹ These impacts are likely to be divergent and complex, ranging from hotter, drier conditions leading to increased risk of drought and ensuing pressures on water availability, through to increased intensity of weather events that amplifies the risk of flood events in rivers like the Waikouaiti.³⁰

Tūtohi 1: Predicted climate change impacts for North Otago³¹

Increased annual mean temperature	Annual mean temperature is projected to increase by 1.5-3.5°C, with the largest changes occurring inland during the summer months, with an increase of 2.0-5.0°C. An annual increase of 10-60 hot days is projected.
Increased annual rainfall	Annual rainfall is projected to increase by 20-25%, with winter rainfall increasing considerably by 15-40% for some areas. A decrease in summer rainfall of 5-15% is projected for inland areas. Extreme, rare rainfall events are also likely to increase in intensity.
Sea level rise	The sea level is projected to rise by about 0.8m above present-day levels, with an increase of 0.9-1.2m in sea level.
Increased likelihood of wildfires	Wildfires will become more likely, as hotter, drier summers occur. Rural areas will be more highly exposed.
Increased drought potential	Drought potential is likely to increase. Decreases in annual dry days of 2-6 days are projected for coastal areas, with increases of 2-10 more dry days per year for other areas.
Increased likelihood of extreme weather events	Extreme weather events (e.g., severe storms) are likely to happen more often. Inland areas are projected to observe an increase of 6-12% wind, with coastal areas projecting a 0-4% decrease.
Increased sea-surface temperatures	Projections suggest that sea-surface temperatures in New Zealand will increase by 0.8°C-2.5°C by the end of this century

²⁷ LAWA, 2024, Shag River.

²⁸ LAWA, 2024, Waikouaiti River.

²⁹ Macara, Woolley, Zammit, Pearce, Stuart, Wadwha, Sood, & Collins, 2019, p. 112; WDC, 2023, p. 2.

³⁰ Carter, 2019.

³¹ Carter, 2019.

Decreased flow reliability	It is anticipated that surface water reliability will be less certain in North Otago, which may put constraints on availability of water supply.
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5. He Manawa Kāi Tahu: Mana Whenua Values

5.1. Values Framework

Mana whenua values provide a cultural framework for whānau to identify and communicate te ao Māori perspectives. Values identified by mana whenua provide a cultural baseline that is derived from the natural state of the environment, which can be used as a tool for assessing the impact of an environmental event or activity.³² For Kai Tahu, the wellbeing of the people and the wellbeing of the environment are integrally linked. The values framework for this assessment (see Tūtohi 2) emphasises this interconnectedness and the expression of these values across the environmental, cultural, social, and economic spheres.

Mātauraka underpins the definitions of mana whenua values. Every iwi, every hapū, every Rūnaka, has its own understanding of these values and their application, based on the mātauraka handed down to them through whakapapa.

Tūtohi 2: Values framework³³

	Autūroa	Auora	Autikaka	Autākata
	Mana	Mauri	Tapu and Noa	Whakapapa
Value	<i>Tūroa is about longevity, ongoing influence and leadership in our community</i>	<i>Ora is about health and wellbeing, not only in people but also in the land and waterways</i>	<i>This is about the protection of resources, people and particular areas, enabling us to look forward sustainably</i>	<i>Tākata is people, and whakapapa is about genealogy. In a Māori world, we take the past with us and whakapapa is forever generative.</i>
Key Intent	The mana of Te Rūnanga o Moeraki, Kāti Huirapa Rūnaka ki Puketeraki and Te Rūnanga o Ōtākou is upheld within their takiwā.	The mauri of the whenua and wai is restored and enhanced including but not limited to the Taiari, Waikouaiti and Waihemo.	Balance is restored, and the future of our people and resources are protected.	The traditional authority of mana whenua in the Taiari, Waikouaiti and Waihemo is recognised through partnerships based on reciprocity and respect.
Environmental	Kāi Tahu are leaders in the management of our natural resources and built environment.	Mātauraka is incorporated through the co-design and co-management of our environment and resources	The environment is regenerated, and a sustainable future is secured.	Te Ao Māori informs policy, planning and decision-making

³² Harmsworth, Awatere, & Robb, 2016.

³³ Adapted from Dunedin City Council (2025) Te Taki Haruru, Māori Strategic Framework

Cultural	Kāi Tahu will participate and demonstrate leadership in the community.	Kāi Tahu heritage and culture is visible, celebrated, protected and future proofed.	Communities, resources and customary practices are protected through responsible regulatory measures and processes.	Kāi Tahu values frameworks are embedded within consent conditions, restoration initiatives and mine practice.
Social	Kāi Tahu will have access to opportunities that enable social equity.	Whānau are thriving and connected	We are guided by tikaka and kawa (protocols) for the wellbeing of our whānau and wider community.	The social impacts of the Macraes Gold Project on the kaik of Kāti Huirapa ki Puketeraki are managed to meet the cultural needs, practices and values of whānau.
Economic	Kāi Tahu are active across all sectors of the economy.	Economic directions consistently enhance outcomes and equality for Kāi Tahu.	The Kāi Tahu economy is recognised as a critical part of our collective wellbeing.	Kāi Tahu networks are well connected and supported to build a prosperous future.

This section provides an explanation of each value, with a summary of how these values are linked to the areas affected by the proposed activity with reference to Kāi Tahu history and associations in the wider cultural landscape.

5.2. Mana

Mana is the word used to describe the authority and prestige that is passed down through lines of whakapapa and that originated with the creation of the world by atua, who are the original ancestors of the many aspects of te taiao, including people. The phrase ‘mana whenua’ has two meanings, firstly denoting the people who are recognised as the rightful holders of that authority and prestige and the representatives mandated by them, and secondly to express the exercise of that authority within a defined takiwā. In this context, mana whenua status primarily sits with Kāti Huirapa Rūnaka ki Puketeraki and extends to include Te Rūnanga o Moeraki and Te Rūnanga o Ōtākou who share interests in catchments that are affected by Oceana Gold mining activities.

Mana whenua status is acquired and maintained through actions like mahi taunaha, the process of discovering and naming land and resources, and tūturu te noho, maintaining rights through ongoing occupation and settlement. Tūturu te noho is underpinned by the concept of ahikāroa, referring to the long-burning fires of occupation.

In Te Waipounamu, rights of discovery are generally attributed to Rākaihautū, an early ancestor of Kāi Tahu whānui associated with the Waitaha people and the Uruao waka. Rākaihautū travelled on foot through the hinterland, digging and naming the lakes as he went using his kō named Tūwhakarōria. This process of shaping and naming the land was a means of establishing mana whenua status. Kāi Tahu ancestors subsequently assimilated Waitaha whakapapa and culture into the tribe, thus asserting Kāi Tahu as the mana whenua of much of Te Waipounamu.

Tūturu te noho was one of the primary means that mana whenua status was maintained by whānau in the days before European settlement. Kāika, pā, and nohoaka were established across the takiwā connected by ara tawhito. Settlement sites were chosen for political, economic, social, and practical reasons, often opting for places that were close to food and natural resources. Heke were undertaken across the year to visit remote areas of the wider estate, enabling seasonal practices to take place such as mahika kai, and treating and trading with other hapū and whānau. Moreover, these practices enabled the reaffirmation of ahikāroa through the warming of hearths across their takiwā.



Whakaahua 14: Huriawa Peninsula, where Te Wera's pā was located.

The exercise of mana gives rise to rights and responsibilities in relation the natural environment, and which must be kept in balance. These are expressed through the concepts of rakatirataka and kaitiakitaka, which are the means through which mana is exercised in the natural world.

Rakatirataka refers to the exercise of mana to give effect to Kāi Tahu culture and traditions in accordance with tikanga. The term pūtake-mauka is also used to refer to Kāi Tahu rangatiratanga entitlements over wai māori. Pūtake-mauka is a unique Kāi Tahu term recorded in whakapapa books, that relates to the ancestral source of rights from the mountains (which are our tīpuna).³⁴

In the management of the natural world, rakatirataka is underpinned by the obligations placed on mana whenua as kaitiaki. The duty of kaitiakitaka is not merely about guarding or caretaking, it involves acting as an agent for environmental protection and decision-making, on behalf of tīpuna and mokopuna. The focus of kaitiakitaka is to ensure environmental, social and economic sustainability for future generations.

For Kāi Tahu, the state of the environment and the bounty of resources are significant measures of the mana of the people. Under the tenets of kaitiakitaka, mana whenua consider it their duty to protect and sustain te taiao for future generations. This includes caring for taoka species and their

³⁴ Pūtake (meaning both 'source' and 'ancestor') and 'mauka' (mountains)

habitats and striving for the restoration of waterways like the Taiari, Waikouaiti and Waihemo and the whenua. These actions are an expression of their mana and enable the fulfilment of rakatirataka and kaitiakitaka roles handed down from the tīpuna.

5.3 Mauri

Mauri refers to a life force that all things possess. It connects the physical and spiritual aspects of our world and the objects and beings within it and is reflected in abundance, health, and vibrancy. Mauri is an observable expression of tapu and mana, and protection of mauri is the primary resource management principle for Kāi Tahu. Concepts such as tapu, noa and rāhui are applied by mana whenua to protect the mauri of a resource.

The mauri of the natural environment can be affected and depleted through human activities that do not balance development with the needs of te taiao. This degradation of mauri can be seen in the loss of indigenous biodiversity, changes to the landscape, and the impacts on freshwater, estuarine and coastal systems. For example, the mauri of a waterway is unable to protect itself against unnatural actions and interventions such as damming, diversions, altered flow regimes, discharges, and activities that impact on the riverbed. When the mauri of wai is degraded, there are multiple impacts. Physical effects may be noticeable in the environment, through changes in the āhua of the water, such as appearance, smell, colour, or taste. Changes in chemical composition or flow of water may also be present. These physical changes are also likely to affect animal and plant species that live in surrounding ecosystems, including loss of native habitat and creation of conditions that favour non-native species.

Such changes undermine the connection of mana whenua with wai and whenua, as mahika kai uses may become unsustainable. From here, a loss of knowledge can occur, as the opportunities to share the associated stories, practices, and histories diminish due to the lack of connection.

Whānau have seen this pattern take place over and over throughout the history of European settlement in Te Waipounamu, with many behaviours and actions that undermine and degrade the mana and the mauri of our waterways, taoka and whenua still in evidence today.

5.4 Tapu

Tapu is an all-pervading force that has been passed down through whakapapa to the people of today. Every natural element possesses a level of tapu derived from their connection to atua and tīpuna, who themselves were imbued with powerful tapu. The tapu status of people, places, and resources establishes expectations for the behaviour of whānau. Consequently, tapu operates much as any legal system, with prohibitions and restrictions acting as means of protecting and respecting the tapu of the environment, indigenous plants and animals, and the people themselves. Tapu also acts to influence human behaviour and conduct and is a customary form of legal system.

The obligation to respect and protect the environment is derived from the significant tapu of te taiao. Natural elements like water, earth, and air are very early ancestors that came into being at the time of the atua and the creation of the world. As a result, their tapu is heightened, as is the obligation to protect them as taoka handed down from tīpuna and held in trust for mokopuna to come.

5.5 Whakapapa

Kāi Tahu are bound to the land, water and all life supported by them by whakapapa. The word whakapapa references the build up of layers, a metaphor for the layering of generations from the past to the present, and into the future.

The following account of Kāi Tahu whakapapa and creation stories is sourced from the words of the famed Kāi Tahu leader, Matiaha Tiramōrehu.³⁵

Nā Te Pō, ko Te Ao	<i>From the night came the day</i>
Nā Te Ao, ko Te Ao Marama	<i>From the day, the bright day</i>
Nā Te Ao Marama, ko Te Ao Tūroa	<i>From the bright day, the longstanding day</i>
Nā Te Ao Tūroa, ko Te Koretewhiwhia	<i>From the longstanding day, the unattainable void</i>
Nā Te Koretewhiwhia, ko Te Koreteraweā	<i>From the unattainable void, the intangible void</i>
Nā Te Koreteraweā, ko Te Koretetamaua	<i>From the intangible void, the unstable void</i>
Nā Te Koretetamaua, ko Te Korematua	<i>From the unstable void, the parentless</i>
E moe ana Te Mākū i Mahoranuiātea	<i>Te Mākū, the damp, lay with Mahoranuiātea, the great expanse of light</i>
Ka puta ko Raki	<i>And the Raki the Sky was born</i>
Tuatahi e moe ana Raki i Pokoharuatēpō	<i>First, Raki lay with Pokoharuatēpō</i>
Tuarua, e moe ana Papatūānuku.	<i>Next, he lay with Papatūānuku the earth.</i>

Wai is a central element in Kāi Tahu creation traditions and is present very early in the whakapapa of the world. In this kōrero, darkness gives rise to the light, and through an abyss of nothingness, moisture materialises as the first iteration of wai.

The whakapapa continues down to Rakinui and his wives, Pokoharuatēpō and Papatūānuku. The children of Rakinui and his wives created the elements of te taiao, including mountains, rivers, forests, and seas, and all living things. Kāi Tahu claim the same descent from Raki and his wives and are therefore connected to all things by whakapapa. Kāi Tahu tribal whakapapa thus links the cosmological world of the atua to present and future generations, giving rise to a spiritual relationship with te taiao and a respect for the mauri of that environment.

Similarly, whakawhanaukataka is expressed in the resource management approach “Ki Uta Ki Tai”, emphasising the holistic management of the interrelated elements within the natural environment. Water released by Raki makes its way into rivers, which in turn connect the entire landscape from the mountains to the sea. From the sea, water evaporates, condenses, and falls again on Papatūānuku, an eternal holistic cycle. MGP is situated in the headwater streams of Taiari, and Waikouaiti, Waihemo catchments. Therefore, under a Ki Uta ki Tai understanding of freshwater management, wāi māori in the headwaters should be in its purest form where it falls from Raki and flows from the mountains to the sea.

³⁵ From Tiramōrehu, Van Ballekom, & Harlow, 1987.

Whakapapa links whānau of today with te taiao through the actions of tīpuna in the past. From the stories of the shaping and naming of the land by Rākaihautū, to the mātauraka gained over generations, the connection to the whenua and the awa of Taiari, Waihemo and Waikouaiti continues.

6. He Pūkeka Wai: Mana whenua associations and connections

Layers of history, kōrero, mātauraka, and recorded knowledge can be examined to elicit the associations that tīpuna had with te taiao in the past. Mahika kai practices are a crucial component of mana whenua associations and connections with te taiao. Wāhi tīpuna and ara tawhito, and archaeological and ecological evidence, combine to provide an environmental context from which to elicit the associations of our tīpuna with the Project site. By looking at the key themes and activities that whānau are known to value in the context of the wider landscape, the activity and behaviour of whānau in the past becomes more obvious. Movement and travel through the landscape were key components of Kāi Tahu culture, driven by the practice of mahika kai.

This history of associations provides a blueprint for whānau to follow, as a guide for their aspirations and intentions in te taiao, now and into the future.

6.1 Mahika Kai

Mahika kai is a central element of mana whenua connections in the catchments within which the proposed activities are located. Mahika kai, a term that literally means ‘food workings,’ refers to the knowledge, activities, practices, places, and species associated with the gathering of natural resources, including kai, medicines and source materials like fibre and stone. Consequently, the term should be looked at holistically as referencing practices far beyond food gathering.



The practice of mahika kai has formed the basis of Kāi Tahu economic activity for hundreds of years and is still a core component of tribal economic and cultural development today.

Waterways like the Taiari, Waihemo and Waikouaiti were central to the practice of mahika kai, as sources of water, food, and other materials and as transport routes. These economic activities are linked to the natural patterns of target mahika kai species, and as a result, involved regular and systematic movement from the coast inland and back again. Known as heke, these seasonal migrations were undertaken by following ara tawhito with major rivers like the Waihemo, Waikouaiti, and Taiari providing important routes, leading from the coastal kāika to the headwaters. Trails were established based on accessibility and availability of infrastructure to support the heke, including campsites and settlements, and reliable sources of food, water, and resources.

Mahika kai resources provided the building blocks upon which Kāi Tahu life and identity have been built (see Appendix 6 for a full list of taoka mahika kai in the area). Mahika kai activities have a dual focus, both as a means of honouring ancestors, both human and non-human, and as a way of ensuring intergenerational sustainability for the uri yet to come. The sustainability of mahika kai is a fundamental priority to Kāi Tahu, and the restoration and sustainability of mahika kai is required to uphold the core values of mana, tapu, whakapapa, and mauri.

Kāti Huirapa Rūnaka ki Puketeraki, as kaitiaki understand that the health of the awa and whenua in the headwaters must be restored to protect and maintain mahika kai in the lower reaches and have put considerable effort into monitoring and restoration work with this aim. Restoration initiatives include He Pātaka Wai Ora, a Rūnaka-led monitoring and restoration project, the East Otago Taiāpure, and the Waikouaiti Mātaitai. He Pātaka Wai Ora was developed in 2014 to protect the health of Waikouaiti River, and its catchment, and the aim is to maintain the mana of the Waikouaiti and therefore the mana of whānau and hapū.

Kāti Huirapa Rūnaka ki Puketeraki have a long history of expressing concern about the state of the Waikouaiti awa. The estuary was the initial focus for this, as this was the most accessible.

Applications were made to establish customary fishing areas including the establishment of the East Otago Taiāpure in 1999, and an overlapping Waikouaiti Mātaitai in 2016. The aim is to manage and protect Kāi Tahu fisheries resources and mahika kai in the lower reaches of the Waikouaiti River.

Establishing these areas took years of time and effort indicating the commitment of Kāti Huirapa ki Puketeraki to the Waikouaiti and to rakatirataka and kaitiakitaka - protecting and enhancing connection to the environment and honouring whakapapa for future generations.

We realise that because of the lack of access, our backs were turned to the health of the awa. People could see the degradation increasing and felt impotent to do anything about it. Kāi Tahu has taken ownership of the issues rather than looking for someone else to blame.

He Pātaka Wai Ora speaks of Kāti Huirapa ki Puketeraki seeking to re-establish its relationship with the awa, physically, spiritually, and in terms of rebuilding knowledge.

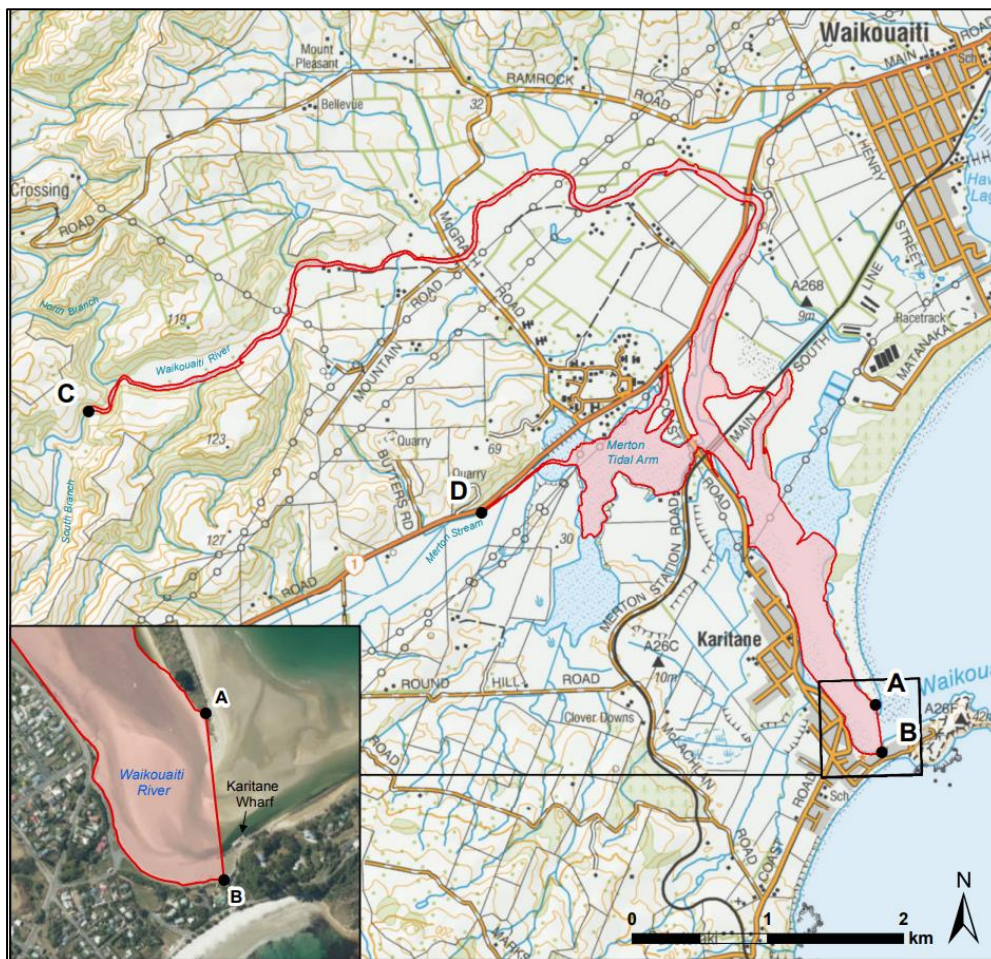
He Pātaka Wai Ora understands the importance of the practice of mahika kai in terms of maintaining mātauraka – recognises that mātauraka is passed on by active practicing and the physical act of being there, rather than by learning via other methods.

Brendan Flack, Kāti Huirapa Rūnaka ki Puketeraki, 2023.

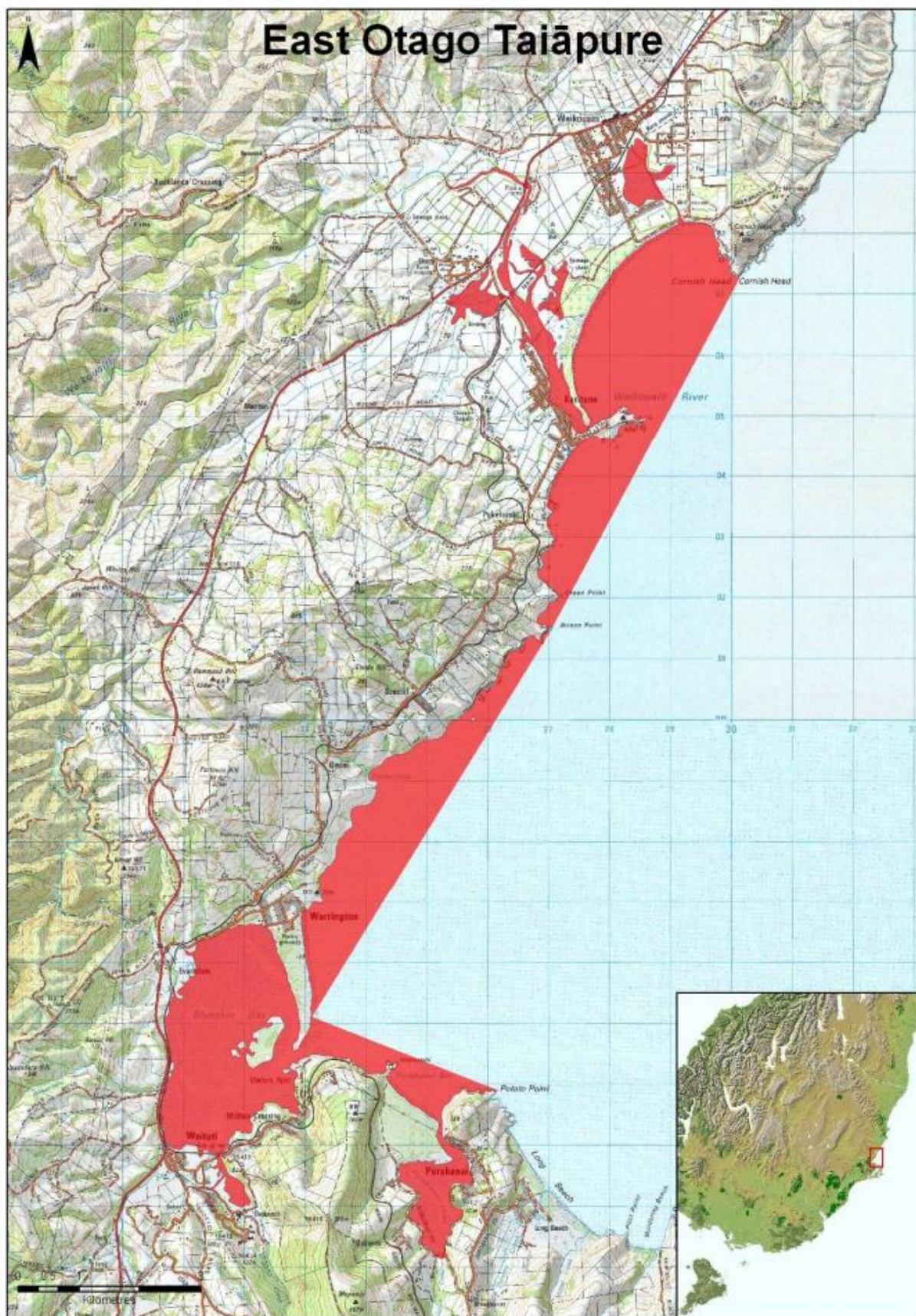
Similar concerns regarding the restoration and sustainability of mahika kai are held by mana whenua in respect to the Taiari and Waihemo catchments.



Whakaahua 16: Rakatahi doing restoration planting at Merton Tidal arm on the Waikouaiti Māori Trust Reserve, with Hikaroroa in the background (Photo courtesy of Suzi Flack)



Whakaahua 17: Waikouaiti Mātaitai Reserve



6.2 Wāhi Tīpuna and Ara Tawhito

Wāhi Tūpuna are landscapes and places that embody the relationship between mana whenua, their culture and traditions with their ancestral lands and waters, and their associated taoka. Ara tawhito are ancient trails formed by tīpuna following their arrival in Te Waipounamu that were entrenched through repeated use as trade routes and travel ways. Ara tīpuna connected wāhi tīpuna across the takiwā of Kā Rūnaka, enabling access to gather important resources through mahika kai practices.

The multitude of wāhi tīpuna in the East Otago area is indicative of the level of activity and association that mana whenua has with the area. Several key themes can be elicited from the history of these sites, particularly related to mahika kai and the naming of landscape features. Within these kōrero, the sinking of the Araiteuru waka at the mouth of the Waihemo feature strongly, with many sites named for waka crew he moved inland to explore and were turned to stone, becoming hills and mountains that now bear their names. See Appendix 4 for a full list of wāhi tīpuna.

Fundamental to the lifeways of whānau in the practice of heke, whereby whānau would travel from the coast to the inland areas. Access to the hinterland was provided by ara tawhito, well-trodden paths created by the feet of generations, enabling access to the upper lakes.

Heke enabled mana whenua to reaffirm ahikāroa by visiting the inland areas of their takiwā to ‘warm their hearths.’ Ahikāroa was the key means through which mana whenua retained the rights of tūturu ki te noho, referring to the rights of settlement. These rights were derived from the whakapapa link to Rākaihautū, an early tīpuna who lit the first fires in Te Waipounamu, naming the land and digging the many lakes as he travelled. Cultural practices like heke enabled these rights to be maintained across an extensive estate for generations.

Paths in and around the Waikouaiti and East Otago supported movement north and south along the coastline, with other travel-ways linked the coast with the inland areas. Both the Waihemo Valley and Waikouaiti River are recognised ara tawhito which facilitated passage from the coast to the inland regions³⁶. Archaeology evidence just south of the MGP site and the complex networks of settlement and mahika kai activities surrounding the site provide clear evidence that whānau were accessing these areas extensively and for many generations in the past.

Taiari

The Taiari (Taieri) River meanders down through three plains now known as Mānīatoto (Maniototo), Strath Taiari, and Taiari, with hills and ranges between. The zig-zag nature of its twists and turns is reputed to be the result of the taniwha Matamata wriggling around looking for its lost master, Kāti Māmoe chief Te Rakitauneke. The taniwha finally reposed where Saddle Hill is now and remains as the peaks Turi Makamaka and Puke Makamaka. The name ‘Taiari’ refers to the way that the tidal changes in the ocean at the river mouth influence the flow of the river as far as the upper reaches.

³⁶ TRONT, 2024, Kā Huru Manu.



Whakaahua 19: Upper Taiari Scroll Plain

Ōtākou and Puketeraki hapū made seasonal visits along the Taiari to gather resources and strengthen the kūpeka (net) of whakapapa on which their resource rights were based. Whānau groups from Ōtākou commonly migrated through the whole of late spring and summer into the interior. They gathered eels at the lakes on the Taiari Plain, took kanakana (lamprey) in the Whakaehu (Silverstream), and followed the Taiari into the Mānīatoto, enjoying eeling and bird-trapping mahika kai activities as they went. Other resources were harvested along the way, including tī kouka, tikumu and taramea. The Taiari is now unique amongst rivers in Otago, in that it is the only one that remains open from the headwaters to the sea, providing unfettered access for native fish migration.

The Coronation and Coronation North Pits are located on the Taiari Ridge in the headwaters of the Taiari catchment.

Waikouaiti and Waihemo Catchments

Both the Waihemo and Waikouaiti catchments have been sites of settlement for ancestors of Kāi Tahu whānui for many hundreds of years. These associations date back to the arrivals of three waka, Uruao, Takitimu, and Araiteuru. It is through these histories that mana taunaha and the rights of tūturu te noho were first established, rights which have never been conceded. The significance of the Waikouaiti and Waihemo Rivers for mana whenua is recognised in the statutory acknowledgement for Te Tai-o-Araiteuru³⁷

Historical, archaeological, and wāhi tīpuna mapping identifies significant evidence of settlement in this area, including more than 50 known wāhi tīpuna along both awa and across the wider landscape (see Appendix 2).³⁸

The Macraes Gold Project is located in the headwaters of the Waikouaiti and Waihemo catchments.

Waihemo River

The Waihemo reaches the ocean just south of Matakāea, an extensive occupation site with hundreds of years of history. Matakāea is recognised as a statutory acknowledgement area and as a tōpuni

³⁷ Schedule 103, Statutory acknowledgement for Te Tai o Arai Te Uru (Otago Coastal Marine Area), NTCSA 1998.

³⁸ Schedule 103, NTCSA 1998.

area, due to this long and significant history of association and occupation, and as the site of many urupā, the resting place of tīpuna.



Whakaahua 20: The mouth of the Waihemo at Matakāea

Due to the area's significance, several archaeological investigations have been undertaken at the site, which have found evidence of occupation from at least the fourteenth century. Middens dated to 800 years old yield evidence of kai from both coastal and inland habitats, including moa and fish bone,³⁹ indicating lifeways that reflect the tenets of 'ki uta ki tai.'

Given its obvious connections to Matakāea and to the people that lived there, the Waihemo itself holds many of the same associations.⁴⁰

Waikouaiti River

*"Ko Waikouaiti te awa waiora o ō tātou tini tīpuna, rere tonu, rere tonu."*⁴¹

The Waikouaiti River is a wellspring for the wellbeing and identity of Puketeraki whānau, as referenced in this whakataukī. The whakataukī refers to the intergenerational nature of the relationship between the people and the river. The word 'waiora' links 'wai' or water with the word 'ora' meaning alive, well, or healthy.⁴² The Waikouaiti is held in high esteem by Puketeraki due to its significance in relation to mahika kai and as a focus for the hapū in expressing kaitiakitaka. The awa flows through the centre of the cultural landscape of their takiwā, a landscape that carries a rich history to which mana whenua have an unbroken connection.

³⁹ NZAA, 2024.

⁴⁰ NTCSA 1998, Schedule 41; Schedule 83.

⁴¹ The Waikouaiti is a wellspring of health passed down through generations, may it continue to flow.

⁴² Moorfield, 2003-2024.

6.3 Māori archaeology

Archaeological evidence in East Otago provides further information about the activities being undertaken by whānau in the area in the past (see Appendix 5 for a full list of known Māori archaeological sites in the area), from which several themes emerge, conveying a long, complex history of occupation and settlement over centuries that facilitated kaitiakitaka and mahika kai practices.

The presence of many coastal birds, fish, and shellfish in middens along the coast and riverbanks speaks to the importance of the coastal and estuarine environment to tīpuna.

The presence of moa both at the coast and inland, demonstrates the significant length of occupation in the area. The co-location of moa remnants with quarrying and flaking sites could indicate significant food-gathering activities taking place, in which quarrying and toolmaking was undertaken on-site in order to process a ready food source available locally. For example, there is a cluster of known sites with these characteristics to the south of the MGP site.⁴³ To the east, a further two sites share similarities.⁴⁴ These sites link back to over 500 years ago, when tīpuna were still seeking moa as a primary food source.⁴⁵

Another theme that emerges from the archaeological record is the widespread harvesting and processing of kāuru, the inner core of the tī kōuka, which was cooked in umu tī. These large ovens feature strongly in the area to the south of Macraes, including a large group of ten umu tī located on the southeast of Whati Nunui.⁴⁶ While umu have been a common cooking method for centuries, this cluster of sites tends to indicate seasonal activity that including harvesting, processing, and cooking on-site, which is more consistent with the period 300 to 400 years ago.⁴⁷

Leading inland from these quarrying and umu tī sites, a further set of three sites classified as caches hint at a trackway leading inland, with provisions stored at these cache-sites. However, the sites were fossicked, and their contents have not been recorded, so it is difficult to discern their true meaning. Nevertheless, the presence of numerous taoka finds in the wider area to the south and southwest of the Project site indicates the importance with which this landscape was regarded.⁴⁸

In terms of the lithic materials identified in these records, the presence of silcrete flakes is noteworthy, as a possible record of stone being worked for technological applications or trade.⁴⁹ Silcrete is a variety of duricrust; a hard, flaking sedimentary rock formed from an amalgam of quartz sand and freshwater gravels.⁵⁰ Silcrete is commonly found in areas of Central Otago like the Ida Valley.

⁴³ This cluster of sites includes (1) an umu (I43/49), (2) an artefact scatter (I43/155), (3) a silcrete quarry (I43/23) and (4) a silcrete working floor (I43/156). NZAA, 2024.

⁴⁴ These sites are an orthoquartzite quarry (I43/68) and a small settlement dating to the moa hunter period (I43/96); NZAA, 2024.

⁴⁵ Fleury, Burns, Richards, Norton, Read, Wesley, Fordyce, & Wilcken, 2023.

⁴⁶ There are ten umu tī in this area (I43/39, I43/48, I43/47, I43/45, I43/44, I43/43, I43/41, I43/42, I43/40, and I43/33).

⁴⁷ Holdaway & Jacomb, 2000.

⁴⁸ Anderson, 1991; Hogg, 2009.

⁴⁹ MfE & Statistics NZ, 2021; Russell, 2000.

⁵⁰ Trewin & Fayers, 2005.



Whakaahua 21: Silcrete blades found at Matakaea

During the early settlement period, tīpuna developed a technique to craft silcrete blades, ideal for carving and slicing.⁵¹ These blades are often found near moa butchery sites, with some sites, like that at Matakaea, yielding thousands of flakes in one site. Flakes were so plentiful that one author has suggested that,

*the chipped shards of silcrete found in bulk at butchery sites were works of haste, not of art. They would have meant little more... than plastic forks or knives do today, like disposable cutlery left at the scene of feasting.*⁵²

The archaeological record reinforces mātauraka that records considerable numbers of wāhi tīpuna located across East Otago. These sites were strongly linked to mahika kai activities including the gathering of food, fibre, and stone. The fact that a large number of sites of occupation date back to the Waitaha people of at least 500 years ago, and that this association and connection has continued since that time without ceasing, demonstrates that the landscape was well traversed and valued as a wāhi mahika kai.

These activities truly express living ki uta ki tai, with the wealth of food and resources acquired from both the coast and the inland areas featuring strongly across the archaeological record. This core theme identifies East Otago and the Strath Taiari Plateau, encompassing Macraes Flat and the MGP site, as a food basket, but also and a source of wellbeing, pride, and identity, for the people of that place.

7. He Mahi Kai Hōaka: The Kāi Tahu history of loss

7.1 Introduction

The colonisation of Te Waipounamu had severe impacts on Kāi Tahu, incurring a history of loss primarily due to the profound impacts of land alienation and environmental disruption. The Kāi Tahu Deeds saw vast tracts of land transferred under unjust conditions, undermining tribal authority and access to resources. European farming practices and historic gold-mining operations further degraded ecosystems and disrupted traditional land-use. These forces, combined with ongoing land-

⁵¹ McKinnon, 2015.

⁵² Barker, 2017.

use change, have had lasting consequences on Kāi Tahu wellbeing, identity, and connection to whenua.

7.2 The Kāi Tahu Deeds

The history of East Otago's settlement spans from the arrival of colonists at Waikouaiti in 1837, and the establishment of the whaling station there, which was acquired by Sydney businessman Johnny Jones in 1838. From 1838 through to 1840, Jones entered into several land agreements with rakatira of Kāi Tahu, including the purchase of a block that stretched from Waikouaiti to Wānaka in 1839.⁵³



Whakaahua 22: The mouth of Te Hikapupu

In 1840, Te Tiriti o Waitangi was signed by representatives of Kā Rūnaka when Crown representatives arrived in Te Waipounamu in late May and early June. Subsequently, in 1844 and 1864, Kāi Tahu agreed a series of land sales with the Crown and their representatives. Rather than acting in good faith, the Crown reneged on key elements of the agreements, resulting in widespread land alienation and economic deprivation for mana whenua.

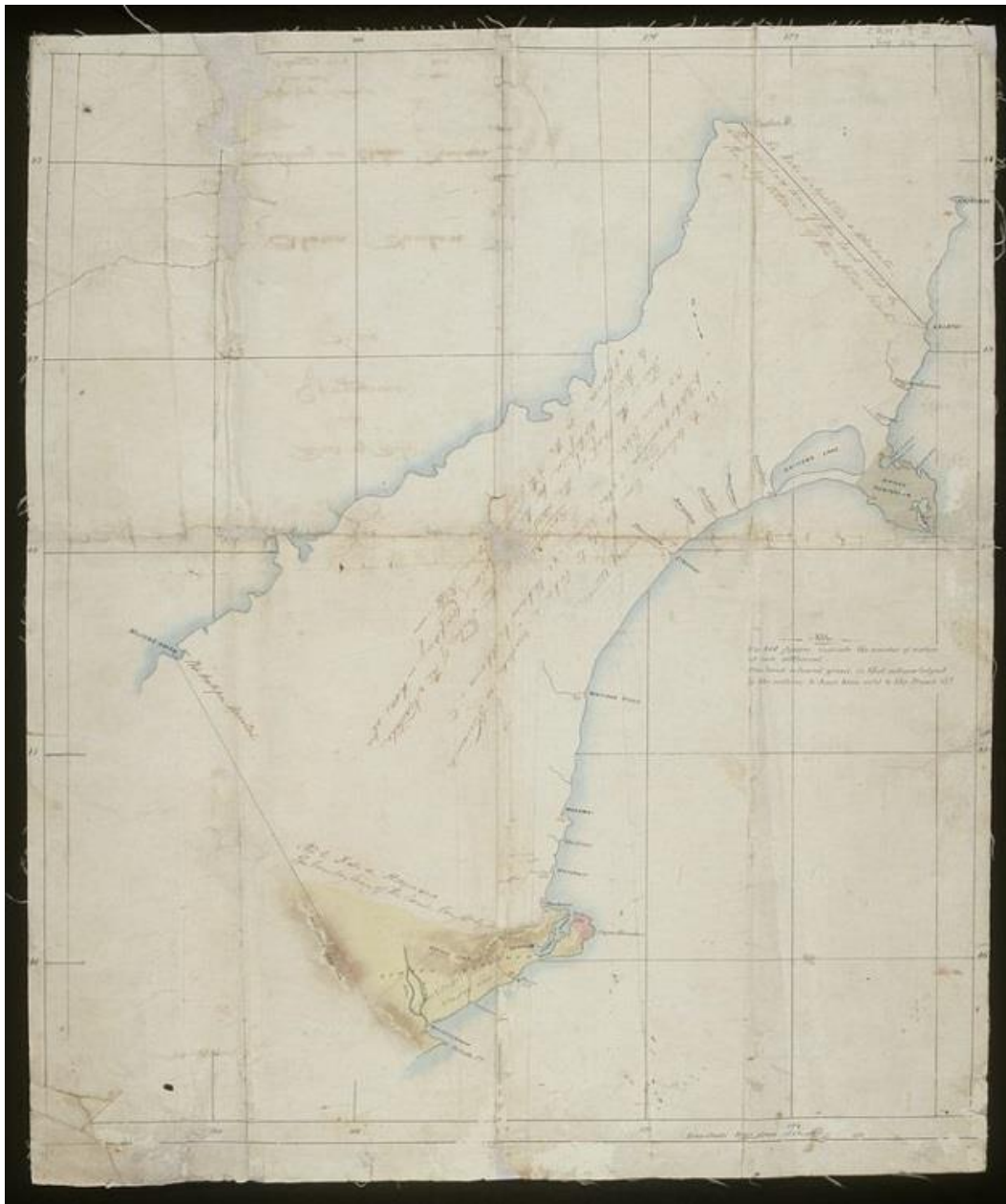
The 1848 Kemp's Deed was the largest of these Crown land purchases, comprising 13,551,400 acres for which £2,000 was paid. Although the deeds promised a tenth of the land would be retained as reserves for Kāi Tahu, less than 6,500 acres were allocated within the footprint of the deed, equating to less than 1%.⁵⁴

Over the ensuing period, settlers began to arrive and to establish themselves, initially on the coast, but later inland, and sometimes building on existing whaling and trading settlements like Waikouaiti.

⁵³ Waikouaiti Coast Heritage Centre, 2024.

⁵⁴ TRONT, 2017.

With their arrival came a slew of new practices, technologies, and ideas, many of which have affected and degraded mana whenua associations and connections to te taiao.



Whakaahua 23: The original Kemp's Deed map, 1848

Ancestral lands were surveyed, sold, and settled and it was increasingly difficult to follow *kā ara tawhito* and to access *wāhi tūpuna* and *wāhi mahika kai*. Changes in the ancestral landscape and the loss of *mahika kai* resources impacted on Kāi Tahu communities, contributing to the displacement of *whānau*, loss of knowledge and identity, and economic hardship.

The loss of connection to the *whenua* that followed the signing of the Deeds, coupled with the visible deterioration, degradation, and modification of *whenua*, *wai* and *mahika kai* since that time, is a source of great *mamae* for *mana whenua*. This is particularly true given the obligations of *mana whenua* as *kaitiaki whenua* in their *takiwā*.

7.3 Farming and growing

In the same year as the Te Tiriti o Waitangi was signed, Johnny Jones and his family immigrated from New South Wales to Waikouaiti, having previously had an estate established on land he had purchased at Matakana. He brought with him around a dozen families from Sydney, along with crops, sheep, cattle, and horses that they would farm. Thus, Jones established the first farm in Otago and became “the first to bring organised [Pākehā] settlement to the east coast of the South Island.”⁵⁵

The operation of Matakana Station had a profound effect on the environment, which effectively undermined mana whenua values and associations with the area. Large areas of wetland were drained around Waikouaiti, and there was extensive clearance of native forest, both of which were catastrophic for mahika kai practices and resources. This led to tensions with local Māori leadership, during which time, from 1848 to 1852, rakatira from Waikouaiti attempted to repossess land from squatters at Johnny Jones’ whaling station.⁵⁶



Whakaahua 24: Orbell's Crossing, Waikouaiti River, 1907⁵⁷

Jones’ farming enterprises in the area continued to have an impact. When the Dunedin City settlement was established in 1848, Jones increased food production and established a small trading store at Waikouaiti, aiming to become the chief supplier of food to the new settlement. He later built a flour mill near Cherry Farm and maintained a monopoly in flour production until the early 1950s.⁵⁸

⁵⁵ Tapp, 1990.

⁵⁶ HNZPT, 2023.

⁵⁷ Hocken Library, 2024.

⁵⁸ Tapp, 1990.

7.4 Historic gold-mining activities

When gold was discovered in Central and North Otago in the 1860s, the population of Otago rose steeply, leading to significant growth in housing and infrastructure in places like Waikouaiti township.⁵⁹ Initial finds further inland were quickly followed by discoveries in North and East Otago from 1863.⁶⁰

As miners flooded the Central Otago goldfields, other prospectors sought their fortune elsewhere in the district. One historic account describes the activities of a party prospecting in the Waikouaiti area in 1886, including sinking shafts, digging test-pits, and modifying waterways in attempts to find profitable gold sources. Water modification included dam and race construction, and waterway diversions in streams like Three O’Clock Creek.⁶¹

Initial impacts of the gold rush for East Otago were due to the huge boom in people arriving in the district, which typically involved travelling down Te Tai-o-Araiteuru in some fashion, arriving at ports like Ōamaru. This influx of people had significant economic benefits for these communities, which led to increased development, including the expansion of towns and settlements, and establishment of transportation networks.⁶² However, as mining became established closer to the coasts, the environmental impacts included significant modification to waterways and the landscape to support mining activities.

Tunaheketaka, a lake near modern-day Waipiata, was massively impacted by sedimentation from sluicing, and gravel and tailings deposits from the Hamilton and Naseby gold diggings.⁶³ The lake had provided a significant eel fishery for whānau who lived in the area, and who were forced to leave when their food basket disappeared.

Closer to the Project, gold was discovered near Macraes in 1862, leading to a series of rushes in tributaries of the Waihemo, such as Deepdell Creek. Initially, miners worked the creek’s gravels for mine, resulting in alluvial tailings along the waterway.⁶⁴

The first major vein mined at Macraes was probably the Duke of Edinburgh in 1875, followed by the Golden Point/Round Hill lode system discovered in 1889.⁶⁵ Originally named ‘Poverty Point,’ the site went through a series of hands through to the mid-1900s, before closing in about 1930. After 1900, mining continued in the area via the Maritana Company operating initially on the west side of Deepdell until 1906 before recommencing work on the east side from 1912 through to 1939. At this time, smaller operations focused on tungsten sprang up due to the drop in the gold price during WWII.⁶⁶

Environmental standards were low amongst these early pioneers, as evidenced by unconstrained mining activity, the scars of which are still visible. Revegetation is slow in many of the areas affected by gold mining, due to the lack of soil depth as a result of widespread sluicing. Historic alluvial goldmining has wrought the most obvious landscape changes, due to the disruption of sands and

⁵⁹ MCH, 2024.

⁶⁰ Otago Goldfields Heritage Trust, 2017; Pyke, 1887.

⁶¹ ‘Prospecting in the Waikouaiti District,’ 1886, p. 11.

⁶² ‘Ōamaru Harbour,’ 2012.

⁶³ Otago Central Rail Trail Trust, 2019.

⁶⁴ HNZPT, 2024, Golden Point Historic Area.

⁶⁵ HNZPT, 2024, Golden Point; OGL, 2020.

⁶⁶ OGL, 2020.

gravels in riverbeds often using dredges. In contrast, historic hard-rock mining has left little visual impact as remnant scattered piles of waste have largely been overgrown.⁶⁷



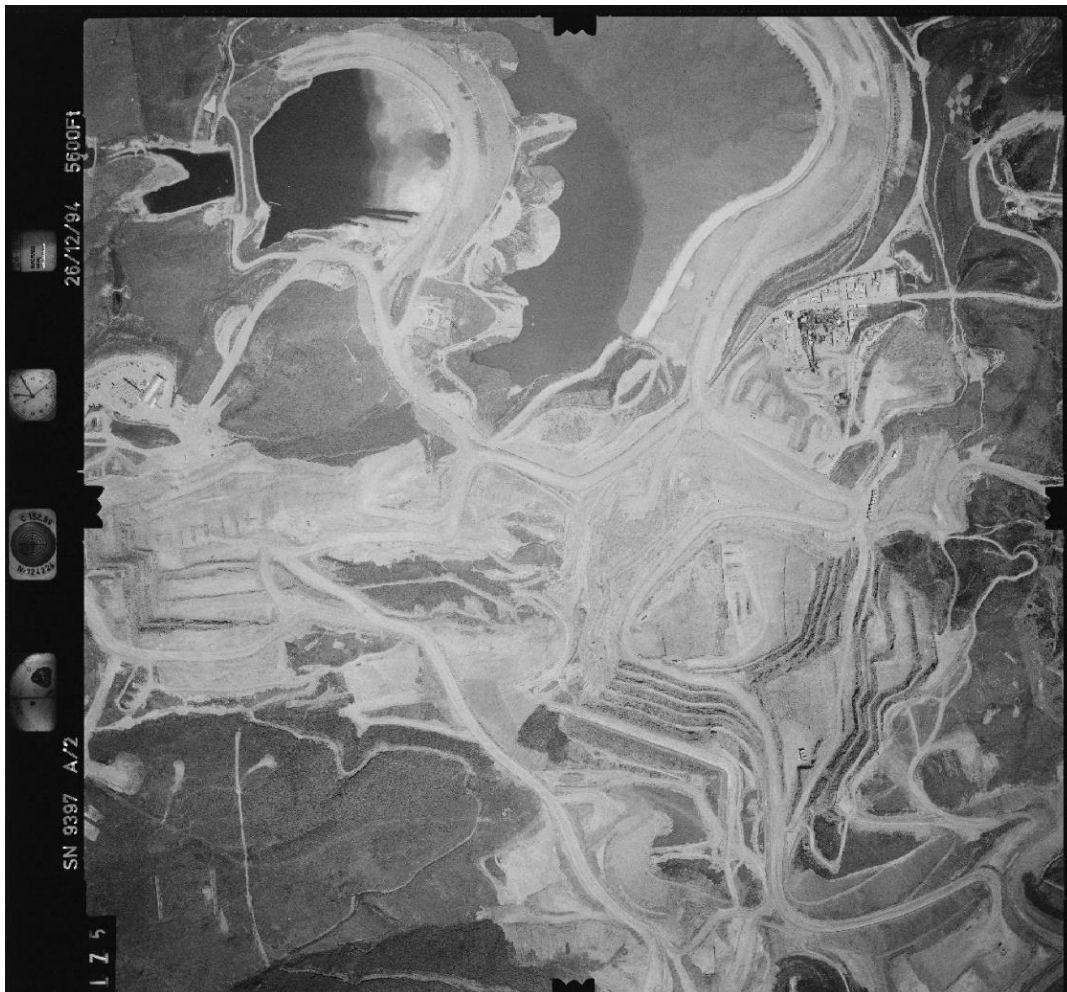
Whakaahua 25: Sluicing at Naseby, c. 1900

The development of the Macraes Gold Project continues this history of extractive land use within East Otago. This builds on a long history of land-use change (see Appendix 6) and that can be clearly seen in the following series of images.

⁶⁷ University of Otago, 2024. Environmental aspects of mining gold in Otago.



Whakaahua 26: Aerial photo of the site before the mine, 1947



Whakaahua 27: Aerial picture of the Project site, 1998



Whakaahua 28: Aerial picture of the Project site, 2004

7.5 Impacts on Mahika Kai and Ahikāroa

The significance of mahika kai as a cornerstone of Kāi Tahu kawa and tikaka cannot be overstated. It was through mahika kai practices that knowledge and skills were handed down, and through the seasonal practice of heke that the relationship with whenua and wai māori was sustained. This continued reaffirmation of ahikāroa across the seasons was a significant means of actioning rakatirataka and mana, but also provided opportunities for reconnection with the actions, stories, and knowledge of atua and tūpuna.

Thus, the deprivation suffered by Kāi Tahu since 1840 has encompassed not only the material loss of land as an asset base and the loss of seasonal hunting grounds, but the loss of a spiritual connection to te taiao and the ability to exercise rakatirataka, a fundamental building block of Kāi Tahu life and identity, and the means of passing on of mātauraka.⁶⁸

The modification of the land and environment and the impacts on mahika kai continues through practices that include mining in the headwaters of the Taiari, Waikouaiti and Waihemo. For mana whenua, this is a history that replays over and over, with echoes of the losses of the past reverberating through to the future. The resulting legacy issues and cumulative effects have contributed to significant inequities in environmental outcomes, with Kāi Tahu ultimately bearing the ongoing cost of extractive industries. This includes the continued degradation of awa tūpuna and the whenua and the associated impact on the indigenous species and mahika kai practices that they support.

⁶⁸ Waitangi Tribunal, 1991.

8. Statutory Framework

8.1. Resource Management Act 1991

The Resource Management Act 1991 recognises and provides for the Kāi Tahu values and interests in the Taiari, Waikouaiti and Waihemo catchments.

The relationship of Kā Rūnaka with the Taiari, Waikouaiti and the Waihemo is a matter of national importance that must be recognised and provided for in managing natural and physical resources.⁶⁹ The depth and breadth of the relationship of mana whenua with wai māori and whenua in these catchments is discussed in Section 6.

In achieving the purpose of the Act particular regard is required to kaitiakitaka.⁷⁰ Kāi Tahu whānau exercise kaitiakitaka in these catchments. Maintaining a balance between the right to access and use natural resources, and the responsibility to care for te taiao, with a focus on providing a sustainable base for future generations is implicit in kaitiakitanga.

8.2 National Policy Statement for Freshwater Management 2020 (NPSFM)

The concept of Te Mana o te Wai has been part of the NPSFM since 2014. However, Te Mana o te Wai was brought to the forefront of freshwater management in Aotearoa through the NPSFM 2020 (updated 2024).

Te Mana o te Wai recognises that protecting the health of freshwater (te hauora o te wai) protects the health and wellbeing of the wider environment (te hauora o te taiao). The NPSFM recognises the relationship of mana whenua with freshwater, requires that Māori freshwater values are provided for, and requires that mana whenua are actively involved in freshwater management processes.⁷¹

The concept of Te Mana o te Wai represents a significant paradigm shift in freshwater management. The previous focus on the scale and significance of the effects of resource use is now redirected onto the mauri or life-force of water and the enquiry becomes how do users of resources protect the water's health and well-being?⁷²

Policy 6 of the NPSFM requires that there is no further loss of extent of natural inland wetlands, their values are protected, and their restoration is promoted. The NPSFM and the related National Environmental Standards for Freshwater 2020 (NESF) provide for vegetation clearance and earthworks in and near wetlands in some circumstances, but require that, if adverse effects on the wetland cannot be avoided, they are managed in accordance with an effects management hierarchy.⁷³

8.3 Ngāi Tahu Claims Settlement Act 1998 (NTCSA)

The NTCSA was enacted to settle the historical Ngāi Tahu claims against the Crown and provides redress under Te Tiriti o Waitangi. The Crown apology in section 4 explicitly recognises the rakatirataka of Kāi Tahu within its takiwā.

⁶⁹ Resource Management Act 1991, section 6(e)

⁷⁰ Resource Management Act 1991, section 7(a)

⁷¹ NPSFM 2020 Clause 1.3(4)(a)-(c), Policy 2, Clause 3.4.

⁷² Aratiatia Livestock Limited and Ors v Southland Regional Council [2019] NZEnvC 191

⁷³ NPSFM 2020 Clause 3.22(1)(f); NESF Clause 45D.

The Act provides specific provisions that provide for the exercise of rakatirataka and kaitiakitaka by mana whenua in relation to mahika kai, taoka species, and other resource management matters. These include rights in relation to the management of specified significant areas including statutory acknowledgement areas.

The Statutory Acknowledgements for Taonga Species and Customary Fisheries, and for Te Tauraka Poti (Merton Tidal Arm) and the Otago Coastal Marine Area / Te Tai o Arai Te Uru, are set out in the Appendices of this assessment.

8.4 Proposed Otago Regional Policy Statement (PORPS)⁷⁴

The PORPS recognises and provides for the relationship of Kai Tahu with whenua, wai māori and coastal waters, including through the following policy:

MW-P3 – Supporting Kāi Tahu hauora

The natural environment is managed to support Kāi Tahu hauora by:

- (1) recognising that Kāi Tahu hold an ancestral and enduring relationship with all whenua, wai māori and coastal waters within their takiwā,*
- (2) protecting customary uses, Kāi Tahu values and relationships as identified by Kāi Tahu to resources and areas of significance, and restoring these uses and values where they have been degraded by human activities,*
- (3) safeguarding the mauri and life-supporting capacity of natural resources, recognising the whakapapa connections of Kāi Tahu with these resources as taoka, and the connections to practices such as mahika kai, and*
- (4) working with Kāi Tahu to incorporate mātauraka into resource management processes and decision-making.*

The objective and policies relating to Te Mana o te Wai in the PORPS were developed in consultation with mana whenua, as required by the NPSFM, and reflect the Kāi Tahu perspective on wai māori as follows:

LF-WAI-O1 Te Mana o te Wai

Otago's water bodies and their health and well-being are protected, and restored where they are degraded, so that the mauri of those water bodies is protected, and the management of land and water recognises and reflects that:

- (1) water is the foundation and source of all life - nā te wai ko te hauora o kā mea katoa*
- (2) there is an integral kinship relationship between water and Kāi Tahu whānui, and this relationship endures through time, connecting past, present and future,*
- (3) each water body has a unique whakapapa and characteristics,*
- (4) fresh water, land and coastal water have a connectedness that supports and perpetuates life,*
- (4A) protecting the health and well-being of water protects the wider environment, and*

⁷⁴ The discussion in this section refers to the PORPS as amended by decisions on submissions (30 March 2024).

(5) Kāi Tahu exercise rakatirataka, manaakitaka and their kaitiakitaka duty of care and attention over wai and all the life it supports.

Te Mana o te Wai policies require that:

- The environmental, social, cultural, and economic relationships of Kāi Tahu with water bodies are sustained and mātauraka is incorporated into freshwater decision-making, management and monitoring processes.⁷⁵
- The habitats of mahika kai and taoka species associated with water bodies are sustained and restored.⁷⁶

This policy direction is also reflected in the long-term freshwater vision for the Taiari, Dunedin & Coast, and North Otago Freshwater Management Units (FMU),⁷⁷ and in the objective for wetlands.⁷⁸

The PORPS objectives for wāhi tūpuna are also relevant, requiring protection of the values of wāhi tūpuna and recognition and provision for rakatirataka and kaitiakitaka over these areas.⁷⁹

8.5. Kāi Tahu ki Otago Natural Resource Management Plan 2005 (NRMP)

The Kāi Tahu ki Otago Natural Resource Management Plan 2005 is the principal resource management planning document for Kāi Tahu in the Otago region. The kaupapa of the plan is 'Ki Uta ki Tai' (Mountains to the Sea), which reflects the holistic Kāi Tahu philosophy underpinning resource management in Otago.

The plan is an expression of rakatirataka and kaitiakitaka, and expresses local Kāi Tahu values, knowledge, and perspectives on natural resource and environmental management issues. While the plan is first and foremost a planning document to assist Kāi Tahu in Otago in carrying out their kaitiaki roles and responsibilities, the plan is also intended to assist others in understanding Kāi Tahu values and policy.

The 2005 plan (**NRMP**) is divided into catchments, with specific provisions for the whole Otago area and for each catchment. The MGP is located within the East Otago Catchment.

Relevant provisions of the NRMP require:

- Recognition of the spiritual and cultural significance of wai māori to Kāi Tahu.
- Reduction in contaminants being discharged directly or indirectly to water.
- Restoration of the mauri of wai māori and coastal waters.
- Rehabilitation of contaminated environments.
- Protection of wetlands.
- Protection of the habitats and wider needs of mahika kai and taoka species, and restoration and enhancement of indigenous biodiversity.
- Recognition and support for the rakatirataka and kaitiakitaka of Kāi Tahu in resource management, including through:

⁷⁵ LF-WAI-P2(2) and (4)

⁷⁶ LF-WAI-P3(1)(c)

⁷⁷ LF-FW-O1A, LF-VM-03, LF-VM-04, LF-VM-05

⁷⁸ LF-FW-O9

⁷⁹ HCV-WT-O1 and HCV-WT-O2

- involvement in the development of monitoring programmes, and
- recognition of rakatirataka by empowering mana whenua interpretation of their histories and associations with wāhi tūpuna.

9. Cultural Impacts of the Macraes Phase IV Project

He manawa tahi, he manawa ora, he manawa toa, he manawa Kāi Tahu

A united heart, a vibrant heart, a determined heart, this is the heart of Kāi Tahu.

9.1 Introduction

This assessment leads to a final statement of position which outlines the position of Te Rūnanga o Moeraki, Kāti Huirapa Rūnaka ki Puketeraki and Te Rūnanga o Ōtākou on the expansion of the Macraes Gold Project.

Māori concepts of justice are governed under tikaka, encompassing the law and lore of the Māori world. The term ‘tikaka’ refers to the customs, ethics, and cultural practices of Kāi Tahu, based on the two underpinning principles of tika, that which is correct, and pono, that which is authentically based on mātauranga. The practice of tikanga emphasises the protection and enhancement of wellbeing and is an expression of Kāi Tahu cultural identity.

Whanaukataka is a central component of tikaka Māori, which places obligations on individuals to uphold the collective wellbeing of the community. Kia aroha tētahi ki tētahi is an expression of this ethos, in that it refers to the goodwill that we show to others in our community by showing respect and generosity. Māori culture is strongly premised on interconnections between people and collective rights were considered paramount to the rights of individuals.⁸⁰ This is expressed in the whakataukī above, which references the strength and wellbeing that can be derived from a collective and unified identity.

However, these principles extend beyond Kāi Tahu as mana whenua. All New Zealanders are required to comply with environmental and resource management legislation, standards, and policies that place obligations on us as citizens to adhere to certain standards in our interactions with te taiao, for the benefit of everyone in our community. This is expressed through the guiding whakataukī of Kāi Tahu whānui, *Mō tātou, ā, mō kā uri a muri ake nei*.⁸¹

The use of the word ‘tātou’ meaning ‘we’ in this whakataukī is key to the way these obligations are seen by mana whenua.⁸² This wording emphasises that Kāi Tahu recognise the obligation, and the power that they hold as an entity with significant mana, to pursue environmental aspirations and intentions that benefit all of us. This is a standard that mana whenua hold for themselves, and for everyone in our community. The breaking of this pact that we share with others is a significant affront against that community, which under tikaka Kāi Tahu, would require action to resolve, a process that is governed under the principle of utu.

The term utu is often wrongly interpreted as ‘revenge.’ However, utu is more accurately described as “a means of seeking, maintaining, and restoring harmony and balance,”⁸³ and so encompasses

⁸⁰ MOJ, 2001.

⁸¹ For us and for our children after us.

⁸² The word ‘tātou’ means ‘all of us’ including the person being addressed, as opposed to the word ‘mātou’ meaning ‘us but not you,’ which excludes the person being addressed. In this context, the term tātou reflects our obligations as members of the community to look after each other and our environment.

⁸³ MOJ, p. 3.

meanings such as reciprocity, reparation, or restitution. Moreover, utu is closely linked to mana, in that utu could be required in order to uphold and express mana.⁸⁴

Kā Rūnaka make the following statements of their position on the proposed expansion of the Macraes Gold Project, based on the four core values of mana, tapu, whakapapa, and mauri captured during the various wānaka with whānau.

9.2 Mana

Under the Ngāi Tahu Claims Settlement Act 1998, the rakatirataka and mana whenua status and interests of Kāi Tahu are recognised within their takiwā, which encompasses the Project site and the wider area affected by the project activities. The mana and rakatirataka of Kāi Tahu affords them the responsibility to assess the impact of the mining on cultural beliefs, values, practices, and the associated mana whenua access and connection to land and waters in their takiwā.⁸⁵

Mātauraka and maumaharataka handed down confirms that there were strong connections to whenua, wai māori and te takutai moana centred on settlement, travel, and mahika kai activities within the Taiari, Waikouaiti and Waihemo catchments.

The inability to experience the environment as it was experienced by tīpuna in the past is a source of significant mamae for mana whenua today. The cumulative effects of land use and development have significantly degraded habitats and ecosystems with a resulting loss of cultural values and loss of connection, particularly through the practice of mahika kai. Kāi Tahu continue to seek opportunities to restore these practices and associations, and to return the habitats and ecosystems of the whenua and wai in their takiwā to their original form.

The effects of activities in previous stages of the Macraes Gold Project on the mana and mauri of the Waikouaiti River are a significant concern to Kāti Huirapa Rūnaka ki Puketeraki. Kāti Huirapa ki Puketeraki have a deep and enduring spiritual connection to the Waikouaiti River. This paramount awa has provided nourishment for our people for generations.

Due to the excavation of mine pits, construction of waste rock stacks and tailings storage, and stream diversions, the awa is now piped around the Frasers Pit, rather than flowing from its natural headwaters. The combined mine operations in the headwaters of the Waikouaiti River also means that water that would naturally flow down the awa is diverted into mine pits and silt ponds and so is not available to feed the awa. Reclamation of stream reaches will further impact on the natural behaviour of the awa.

The impacts on mauri, diminution of mahika kai and loss of connection with the whenua and wai have had impacts on the economic, social, and cultural wellbeing of Kāi Tahu. Kā Rūnaka have a strong focus on increasing opportunities for reconnection for whānau.

Kāi Tahu continue to collect kai from our waterways and estuaries, despite the history of loss. We have seen a resurgence in our people re-establishing their connections to our whenua and waterways, and breathing life into long held cultural practices. It is our aspiration to re-establish habitat for taoka species and to improve water quality to support mahika kai practices. For

⁸⁴ Ibid.

⁸⁵ Tipa, 2013.

reconnection to be successful, social and economic sustainability for whānau is also necessary as well as a healthy environment.

The cumulative effects of the Macraes Gold Project and the proposed expansion undermine the aspirations of Kāi Tahu for the restoration and regeneration of habitats and ecosystems and the connections that the tīpuna had with the whenua, wai and te takutai moana in the past. Due to the potentially significant effects of the proposal for Kāi Tahu, including the location of the Project in the headwaters of the Taiari, Waikouaiti, and Waihemo, the scale of the mining activity, and the potential long-term environmental risks, the expectation is that OceanaGold will work with Kāi Tahu in good faith and in a mana-enhancing way to manage the impacts of the Project.

The impacts of the expansion of the Macraes Gold Project on mana are identified in Tūtohi 3.

9.3 Mauri

The word mauri refers to the life essence found in all things, relating to its nature, appearance, and vitality. Mauri can be seen and felt, as can the loss of mauri. An assessment of mauri is key component of mahinga kai practices for whānau and is used as a means of assessing the health of the environment prior to taking resources. In places where mauri is considered to be degraded, food is not taken, or the take is restricted. In some instances, a rāhui or prohibition is placed over an area to allow the mauri to replenish.

For mana whenua, the mauri of the environment is a direct reflection of the health and wellbeing of whānau and communities. Before the people can be well, the land, air, and water must also be healthy.

Protection of the mauri of wai māori is a significant priority for Kā Rūnaka, due to its life-giving properties and as a vital component of the living world of te taiao. Activities that degrade the natural flow and of a waterway and water quality are not appropriate as they damage and degrade the mauri of the environment. The Project from its inception has modified surface water and groundwater flows in the Taiari, Waikouaiti and Waihemo catchments. The restoration of mauri requires OceanaGold to go beyond managing adverse effects on water quality to actively uplifting the mauri of these Awa Tīpuna. In particular, the development of the Frasers Pit and associated waste rock stacks and tailings storage has disrupted flows into the headwaters of the North Branch of the Waikouaiti River and there is currently no mitigation proposed to address and uplift the mauri of this awa post closure.

The presence and health of indigenous flora and fauna is an expression of the mauri of the natural environment in an area. The removal of indigenous vegetation degrades the mauri by removing the natural cover from the land that provides important and unique habitats for indigenous species. In 2023, research identified that over 75% of indigenous reptile, bird, bat, and freshwater fish species are threatened with extinction, or are at risk of becoming threatened, including 94% of reptile species, 82% of bird species, and 76% of freshwater fish species.⁸⁶

OceanaGold currently manages 6 ecological covenants, with two further covenants in development, and seven protected wetlands near the Macraes site, covering a total of 655 ha. OGL now proposes to develop the Murphys Ecological Area and reinstate wetlands on the Taiari Ridge. Kāi Tahu notes

⁸⁶ Statistics New Zealand, 2023.

that there is no cohesive ecological management plan for the Macraes Project. The purpose of developing covenanted ecological areas without strategic guiding objectives is not evident nor is it evident whether the Project has successfully addressed the impact of the Project on the indigenous flora and fauna of the Macraes Ecological District. Further, as noted, the mitigation proposed for awa within the Taiari, Waikouaiti and Waihemo catchments is solely focused on managing adverse effects on water quality and does not actively provide for the health and wellbeing of aquatic ecology.

Mana whenua apply the principle of utu, giving back more than is taken, as a means of protecting mauri. The right to take kai and extract resources from te taiao is balanced with the kaitiaki duty to care for, and nurture, the environment in return. Kāi Tahu are of the opinion that the proposed ecological off-set mitigation, which includes the development of the Murphys Ecological Area, does not achieve utu or balance for the expansion of the Macraes Gold Project.

The impacts of the expansion of the Macraes Gold Project on mauri are identified in Tūtohi 3.

9.4 Tapu

The principle of tapu provides a guide for Kā Rūnaka to gauge the appropriateness of actions and behaviours in the context of the existing environment. In some cases, activities are deemed to be unsuitable to the point that they are prohibited. Activities that are inconsistent with life, including those that have the potential to significantly impact, damage or degrade te taiao, and/or the health of people, plants and animals, are considered tapu.

The description of the Project indicates that the construction of pit lakes, waste rock stacks and tailings storage will generate contaminants that pose significant risks to the environment, and to the health of aquatic life, and will require significant effort and care to manage and contain potential adverse effects. This risk increases post closure as water management on the site transitions from active management to passive management.

It is the position of Kāi Tahu that the Project is significantly tapu in this location, due to the location of the proposed pits lakes, waste rock storage and tailings storage in the headwaters of the Taiari, Waikouaiti and Waihemo, and the potential risks to Māori reserves, customary fisheries areas, estuaries, and the coastal environment.

The impacts of the expansion of the Macraes Gold Project on tapu are identified in Tūtohi 3.

9.5 Whakapapa

Kāi Tahu tribal whakapapa links the cosmological world of the atua to present and future generations, giving rise to a spiritual relationship with te taiao and a respect for the mauri of that environment.

Kāi Tahu whānui are connected through whakapapa to the landscapes, wai (waters), coasts and indigenous species of Te Waipounamu. Whakapapa thus links mana whenua to the tīpuna and atua and the natural world. Their mokopuna to come will carry that whakapapa into the future. Wai, which appeared early in the whakapapa of the world, is of heightened mana and tapu status and is a highly prized taoka due to its life-giving properties. Kāi Tahu view the protection and enhancement of wai māori as part of their role as kaitiaki, a role that is inherited through whakapapa.

In Māori concepts of time, past, present, and future are present in real time, with none taking precedence over the other. The mātauraka and tikaka passed down from tīpuna is carried forward

with honour and respect by the kaitiaki of today, for the benefit of those in the future; mō tātou, ā, mō kā uri e muri atu nei. Decision-making about the environment and environmental management is undertaken by mana whenua with a fundamental awareness of the past and the future, as is expressed in the whakataukī, 'Ka mua, ka muri.'

After generations of loss and disconnection from the whenua, creating opportunities to reconnect with the whenua is now more important than ever. The potential long-term risks associated with the Project to the tīpuna awa, estuaries and coastal environment risks undermining the efforts of whānau to restore the whenua and rekindle connections and mahika kai practices.

It is the position of Kāi Tahu that expansion of the Project should not progress until mitigation measures are implemented to manage the discharge of contaminants from pits lakes, waste rock stacks, and tailings storage, including construction of freshwater dams in Coal Creek and Camp Creek, and the consenting of mitigation measures to manage the discharge of contaminants in the Waikouaiti Catchment.

The impacts of the expansion of the Macraes Gold Project on whakapapa are identified in Tūtohi 3.

9.6 Cultural Impacts of Macraes Phase 4

The values framework set out in Section 5 was used to assess the cultural impacts of the proposed expansion of the Macraes Gold Project and to recommended mitigation to achieve utu.

Tūtohi 3: Cultural impacts of the Project and recommended mitigation measures

Project Component	Cultural Impact	Recommendations
To disturb, deposit and reclaim unnamed tributaries of the North Branch of the Waikouaiti River and Murphys Creek for the purpose of extending the Frasers WRS	Impacts on mana, mauri, whakapapa Disturbing and reclaiming sections of waterways are all actions inconsistent with Kāi Tahu environmental management practices. Waterways have their own mana, mauri, and identity, and by altering their natural form and behaviour, these cultural values are adversely impacted. Kāi Tahu strongly oppose any discharges to waterways due to the potential impacts on both the mauri of the wai, and on mahika kai. This is especially concerning within the Waikouaiti waterway system due to the deep connection of Kāti Huirapa ki Puketeraki to this awa. Its network of streams, rivers, and wetlands are a major mahika kai gathering area, and the awa is	MP4 should be rescoped to adopt methods that no-longer necessitate the disturbance or reclamation of natural waterways. The focus of mitigation for MP4 should move beyond management of adverse effects to active management of the impacts of the Project on the mauri of the Waikouaiti catchment. To address the impact of past disturbance and reclamation, OGL should work with mana whenua to identify and implement measures to uplift the mauri of the awa post-closure. MP4 must not engage in any activities that result in depositing contaminants into natural waterways.

	the particular focus of ecological restoration projects and customary fisheries areas Kāti Huirapa Rūnaka ki Puketeraki are invested in.	
Frasers Backfill Embankment and Tailings Storage Facility	Impacts on mana, mauri, tapu, whakapapa The Frasers-Innes Mills Pit Lakes will merge over the long term (>200 years). There will be no direct discharge from the lake to the Waikouaiti River. However, seepage from waste rock stored in Frasers Pit will discharge to the Murphys Silt Pond and the North Branch of the Waikouaiti River.	The cultural impacts of a discharge of contaminants to the Waikouaiti River from Murphys Silt Pond would be significant. Further information is required on the passive management of discharges from the Murphys Silt Pond over the long term.
To discharge water from pit lakes, waste rock stacks, tailings storage and silt ponds to unnamed tributaries of the Taiari, Waikouaiti and Waihemo catchments	Impacts on mana, mauri, tapu, whakapapa Kāi Tahu strongly oppose direct and indirect discharges to waterways due to the potential impacts on both the mauri of the wai, and on mahika kai. This is especially concerning within the Waikouaiti waterway system, as this network of streams, rivers, and wetlands are a major mahika kai gathering area for Kāi Tahu.	Active management of discharges from silt ponds within the Macraes Mine Water Management System (MWMS) is only proposed during operation of the Project. Further information is required on the management of discharges post closure to protect the mauri of the Taiari, Waikouaiti and Waihemo catchments.
Extension of the Coronation, Innes Mills and Golden Bar Pits	Impacts on mana, mauri, whakapapa The proposed pit extensions further encroach on the natural habitats of mahika kai and taoka species, including kōrero geckos, southern grass skinks, McCann's skinks, and the Orocrampus sophistes moth – most of which are listed as Nationally Vulnerable or Declining by Department of Conservation Te Papa Atawhai. Additionally, sixteen rare and/or taoka plant species,	Kāi Tahu opposes activities that irreversibly degrade or destroy taoka species habitat. This position is held even more firmly in this context due to the vulnerability of the species on-site, and the adverse impacts on naturally occurring wetlands. Kāi Tahu acknowledges the proactive methods the applicant has proposed to mitigate their impacts on mahika kai and taoka species. However, Kāi Tahu consider these methods to be insufficient in mitigating the significant adverse effects of these activities. We note that minimal attempts have been

	~37 ha of tussock grasslands, and seven wetland areas will also be negatively impacted by these extensions. Kāi Tahu have an intergenerational responsibility to protect the native species and habitats within their takiwā. The cumulative impacts of the Project and the impact of the pit extensions on vulnerable and culturally significant native species is a major concern for Kāi Tahu.	made to avoid damaging taoka species and their habitats, with methods mostly focusing on mitigation and offsetting. At all times, avoidance should be prioritised. Where remediation or mitigation are appropriate, however, Kāi Tahu expect to be involved in at all levels. This is especially relevant in this context where several mana whenua-led organisations have relevant, practical ecological restoration expertise. Kāi Tahu are also concerned that the habitat the applicant proposes constructing for taoka species relocation is of a poorer quality than the habitat that is being damaged or destroyed. If this type of mitigation is being proposed, the replacement habitat must be of the same or higher quality, with regular ecological monitoring and adaptive management in place to ensure translocated species thrive.
Impacts on terrestrial ecology	Potential adverse effects of the Project on herpetofauna extend to two 'At Risk' (korero gecko and tussock skink) and one 'Not threatened' (McCann's skink) taxon confirmed to be present in the Zone of Influence. The impacts may extend to additional threatened or 'At Risk' species if they are later found to be present.⁸⁷	The assessment of effects is limited to the lizard taxa that are currently present or have the potential to be later found. Historically, endangered species such as Otago skinks and grand skinks would have been present (they currently occupy only 8% of their former habitat), so any damage or removal of their former habitat will impact on the future recovery of those species.
	The number of lizards proposed to be salvaged is capped at approximately 2100, which is approximately 2 – 10% of the lizard population estimated to occur in the MP4 and Coronation 5 impact areas.⁸⁸	The significant mokomoko mortality is not supported by Kāi Tahu. The salvage of 80% of the impacted population is sought.

⁸⁷ Herpetofauna Survey and Assessment Macraes Phase 4 Project, Section 4.3, p.39

⁸⁸ Lizard Management Plan Macraes Phase 4 Project, p.39, Section 4.3

Impacts on wai māori	Impacts on mana, mauri, tapu and whakapapa The application notes that significant investment has been made on the basis that the consented water quality compliance limits will endure until at least 2046.⁸⁹ The technical review concludes that the current compliance criteria are inappropriate as they allow for significant adverse effects.⁹⁰	Kāi Tahu do not support the use of Awa Tīpuna for the disposal and dilution of contaminants from the Project. The consents for Macraes Phase 4 should require more conservative management of water quality during operation of the mine and post-closure. The water quality criteria for Arsenic, Cyanide, Copper and Zinc should be compliant with the ANZG 90% protection limits.
	The current compliance limit of 1,000 mg/L for sulphate is considered sufficient by OGL, and predicted concentrations are below this. Ryder (2019) concludes that: <i>"Recent toxicity testing conducted using Taieri flathead galaxias (eggs and larvae), seepage water from local waste rock stacks and Mare Burn water, showed no effects at a sulphate concentration greater than 1,000 g/m³."</i>⁹¹	Kāi Tahu do not support the use of Awa Tīpuna for the disposal and dilution of contaminants from the Project. The consents for Macraes Phase 4 should require more conservative management of water quality during operation of the mine and post-closure. Although there are no current national guidelines for sulphate, the 309 mg/L compliance threshold recommended by the Ministry of Environment, British Columbia (2013) is supported by Kāi Tahu.
Impacts on wāhi tīpuna values and associations	Impacts on mana, mauri, and whakapapa The landscape and visual assessment states that <i>"any potential adverse landscape effects arising from the Proposal at the four Project Sites will be at worst 'Moderate' given the areas already highly modified character."</i> The assessment does not speak to the impacts of open cut mining on the associative and perceptual values of this wāhi tīpuna landscape.	The landscape and visual assessment has omitted consideration of Tangata Whenua interests and is therefore inconsistent with the expectations of Te Tiriti o Waitangi and Te Tangi a te Manu. The assessment excludes manawhenua as a receptor and omits fundamental underpinning aspects of the Te Tangi a te Manu methodology that require an assessment of the impacts of mining on associative and perceptual values for Tangata Whenua.

⁸⁹ OceanaGold, Macraes Phase 4, Assessment of Environmental Effects, Section 2.6, p.39

⁹⁰ Torlesse Environmental Limited (2025) Surface water review, p.2

⁹¹ Appendix 21: Ryder (2024b) MP4 – Golden Bar Mine Proposed Expansion – Effects on Surface Water Ecology, p.31

Overall Cultural Impacts of the Project	Impacts on mana, whakapapa The ability to exercise rakatirataka and carry out kaitiakitaka obligations in respect to te taiao is an important contributor to upholding the mana of mana whenua. Kāi Tahu have significant concerns about the limited extent to which this has been recognised in the Macraes Gold Project to date. The ongoing modifications to the whenua and the wai increase the difficulty of maintaining and restoring connections with these places.	The ability to maintain ahikāroa and connection with the whenua and wai requires both a healthy environment and social and economic sustainability. OGL should work with Kāi Tahu to identify ways in which they can support the efforts of Kāi Tahu to reconnect whānau with the places affected by the Project.
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10. Conclusion

According to Kāi Tahu cultural values for te taiao, the health of our environment reflects the health of the wider community. For Kāi Tahu this means that the people will not be healed until the land and water are healed. Consequently, Kāi Tahu recognises the significant role that human activity plays in the outcomes we see in our environment,⁹² as well as the significant role that we all can play in environmental protection. Through our actions, we can restore the balance between what is taken from our environment, and what is given back.

OceanaGold has concluded that to the extent that cultural values may align with water quality and ecological values, the adverse effects of the Project on cultural values are likely to be no more than minor.⁹³ This conclusion is not borne out by this assessment. The cumulative effects of the Macraes Gold Project on mana, mauri, tapu and whakapapa, is significant. The proposed expansion of the Macraes Gold Project will have further impacts on these values. These impacts include:

Mana	Changes to the natural form and function of the headwaters of the Taiari, Waikouaiti, and Waihemo due to the taking and discharging of water and the mixing of waters between catchments.
	The cumulative impacts of the Macraes Gold project on the North Branch of the Waikouaiti River.
Tapu	The current compliance standards allow for significant adverse effects on water quality and exceed the thresholds required to protect aquatic life.
	Ki uta ki tai impacts over the long-term from the discharge of contaminants, including sulphates, copper and arsenic, from pit lakes, waste rock stacks and tailings storage.

⁹² Shearer, 1986.

⁹³ OceanaGold, Macraes Phase 4, Assessment of Environmental Effects, p.162.

Whakapapa	Mitigation measures to manage the long-term discharge of contaminants from pits lakes, waste rock stacks, and tailings storage, including construction of freshwater dams in Coal Creek and Camp Creek are yet to be implemented.
	The mitigation measures proposed to manage the discharge of contaminants in the Waikouaiti Catchment lack detail and are not consented.
Mauri	Permanent removal of indigenous vegetation and wetlands, including narrow-leaved tussock grassland, shrubland, riparian / wetland vegetation, which also provide habitat for taoka species.
	Direct impacts on mokomoko (McCann's skink, tussock skink, and kōrero gecko) and mokomoko habitat, manu (New Zealand falcon, pipit, harrier hawk, spur-winged plover) and manu habitat, and invertebrate species including a threatened 'Nationally Vulnerable' moth species, Crambidae: Orocrampus sophistes.
	Permanent modification of the landscape and the proposed creation of new pit lakes, waste rock stacks and tailings storage in the headwaters of the Taiari, Waikouaiti, and Waihemo Catchments.
	The mitigation measures proposed to address impacts on the headwaters of the Taiari, Waikouaiti and Waihemo are focused on managing adverse effects on water quality and do not uplift the mauri of these Awa Tīpuna.
	Given the central location of this mined landscape between two significant ancestral awa, and near ancestral mauka Hikaroroa, the whenua holds significant mauri and whakapapa. The impacts of mining on the associative and perceptual values of this wāhi tūpuna landscape are not addressed in the application.

The expectation is that OceanaGold will compensate Kāi Tahu where these impacts on cultural values cannot be avoided, remedied or mitigated.

Kāi Tahu note that the development of this cultural impact assessment has been undertaken in parallel with the consenting of Stages 1 and 2 of the Macraes Phase 4 project, including the consenting of the expansion to the Golden Point Underground Mine. Further, the technical reports submitted with the application have been progressively updated in response to further information requests from the Consent Authorities. This has significantly hindered the ability of Kāi Tahu to holistically assess the cumulative impacts of this complex project, and the ability of Kāi Tahu to meaningfully engage with OceanaGold on the development of a mitigation package that addresses the impacts of the Project.

The proposed consenting of Macraes Phase 4 Stage 3 of the Macraes Gold Project provides an opportunity for engagement between Kāi Tahu and OceanaGold on the management of these cultural impacts and the development of a substantive and meaningful mitigation package that achieves utu or balance.

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Appendix 1: Glossary of Māori words and phrases

āhua	Nature, appearance
āruhe	edible rhizome of bracken fern, fern root
ahikāroa	title to land through longstanding occupation; literally ‘the long-burning fires’
ara tawhito	ancestral trails
atua	deity, early ancestor
awa	river
hāpua	lagoon, swamp, wetland
hāpuka	groper
heke	migration, movement
inaka	whitebait
kāeo	freshwater mussel
kāika	settlement(s)
kāika mahika kai	food gathering settlement(s)
kāika nohoaka	settlement(s)
kākihi	limpet
kāuru	edible parts of the cabbage tree
kai	food
kaimahi	colleague
kaimoana	seafood
kaitiaki	trustees, minders, custodians, guardians, stewards
kaitiakitaka	the exercise of guardianship by the mana whenua of an area in accordance with tikaka Māori in relation to natural and physical resources, and including the ethic of stewardship
kanakana	lamprey
kaupapa	principles, values, purpose
ki uta ki tai	from the mountains to the sea; references mana whenua perspectives of the environment as an integrated whole
kōareare	edible rhizome of raupō
kōkopu	cockabully
kōramu	cats’ eye
kōrero	conversation
koukoupapa	upland bully
kuku	green-lipped mussel
mātauraka	knowledge, wisdom, understanding
mahi	work, activities
mahi taunaha	the process of discovering and naming land and resources
mahika kai	practices, knowledge, and activities related to food gathering
mamae	pain, distress
mana	status, prestige, honour
mana whenua	customary authority exercised by an iwi or hapū in an identified area, and the people mandated to exercise it on their behalf
mauri	life force, life essence
nohoaka	temporary campsites
onewa	basalt
pakohe	argillite
papāi	speargrass
papatipu rūnaka	entities mandated to uphold mana in their takiwā
patete	seven finger plant
pātiki	flounder

pawhaitiri	a small fish
pora	wild turnip
poutama	step, phase
rāhui	temporary ritual/ban
raupō	bulrush
rai	scorpion fish
rakahau	research
rakatirataka	chiefly authority
rūnaka	council, board
takiwā	territory
taoka/taoka tuku iho	treasure
tapu	spiritual restrictions
tauraka waka	mooring site
te taiao	the natural environment
tī kōuka	cabbage tree
tikaka	correct procedure, correct method
tiotio	barnacle
tīpuna/tūpuna	ancestors
tītiko	mudsnail
toheroa	bivalve mollusc
toki	adze
tōpuni	a dog-skin cloak, to lay a cloak over (lit.) prominent landscapes managed under statute that were identified under the NTCSA 1997 as a symbol of the mana and rakatirataka of Kāi Tahu ⁹⁴
tuaki	NZ cockle
tūpāpaku	deceased person or people
tuna	eel
tūturu te noho	maintaining rights through ongoing occupation and settlement
umu	oven
umu tī	oven used to preserve kāuru
uri	descendant(s)
wāhi mahika kai	food gathering sites
wāhi tīpuna	ancestral landscapes of significance to iwi
wai	water
waiora	health
wai māori	freshwater
wai tai	coastal waters/saltwater
waka	canoe
whānau	extended family
whakaahua	image
whakapapa	genealogy
whakataukī	proverb
whakawhanaukataka	the process of building relationships
whānui	broad, extensive
whenua	land, lands

⁹⁴ TRONT, 2024, Mana recognition; NTCSA 1997, s12.5.

Appendix 2: He Rāraki Whakaahua: List of Figures

Number	Description	Reference
1	Deepdell East remediated waste rock stack	WSP, 2023a.
2	Frasers Pit	WSP, 2023a.
3	Macraes mine and processing plant	GHDm 2024c.
4	Layout of MGP operations	OGL, 2024, p. 19.
5	Macraes Phase IV Project	OGL, 2024, p. 35.
6	Indicative location of Murphys Ecological Enhancement Area subject to lease holder feedback	GHD, 2024a.
7	Approximate location of the ephemeral wetlands (green dots) on the Taiari Spur, relative to the footprint of the Coronation Pit	Whirika, 2024.
8	Location of ecology covenants and protected wetlands	OGL, 2024.
9	The Taiari, Waikouaiti and Waihemo catchments	GHD, 2024a.
10	Schist outcrops at the banks of Māori Hen Creek	Allingham, 2016.
11	Waihemo river mouth	Bridge, 2022.
12	Huriawa Pā and Waikouaiti River Mouth, Karitāne	
13	Local rakatahi paddle on the Waikouaiti	Courtesy of Suzi Flack
14	Huriawa Peninsula, where Te Wera's pā was located	Taylor, 1950, p. 104.
15	Collecting tuaki at Karitāne	
16	Rakatahi doing restoration planting at Merton Tidal Arm on Waikouaiti Māori Trust Reserve, with Hikaroroa in the background	Courtesy of Suzi Flack
17	Waikouaiti Mātaitai Reserve	
18	Waikouaiti Taiāpure Reserve	
19	Upper Taiari Scroll Plain	
20	The mouth of the Waihemo at Matakaea	Hosking, 2013.
21	Silcrete blades found at Matakaea	Barker, 2017.
22	The mouth of Te Hakapupu	Bridge, 2017.
23	The original Kemp's Deed map, 1848	Waikouaiti Coast Heritage Centre, 2024.
24	Orbell's Crossing, Waikouaiti River, 1907	Hocken Library, 2024.
25	Sluicing at Naseby, c. 1900	National Library of New Zealand, 2024.
26	Aerial photo of the site before the mine, 1947	Retrolens, 2024.
27	Aerial picture of the project site, 1998	Retrolens, 2024.
28	Aerial picture of the project site, 2004	
29	Macraes Phase IV – Key surface features relating to Coronation Stage 6 expansion	GHD, 2024a.
30	Macraes Phase IV -Key tributaries of the Waikouaiti North Branch relating to the Golden Bar Pit	GHD, 2024b.
31	Rock shelter (I43/128), located near the head of Te Wai a te Atua (Three O'Clock Stream)	NZAA, 2024.

Appendix 3: Macraes Phase 4

Extension of the Coronation Pit

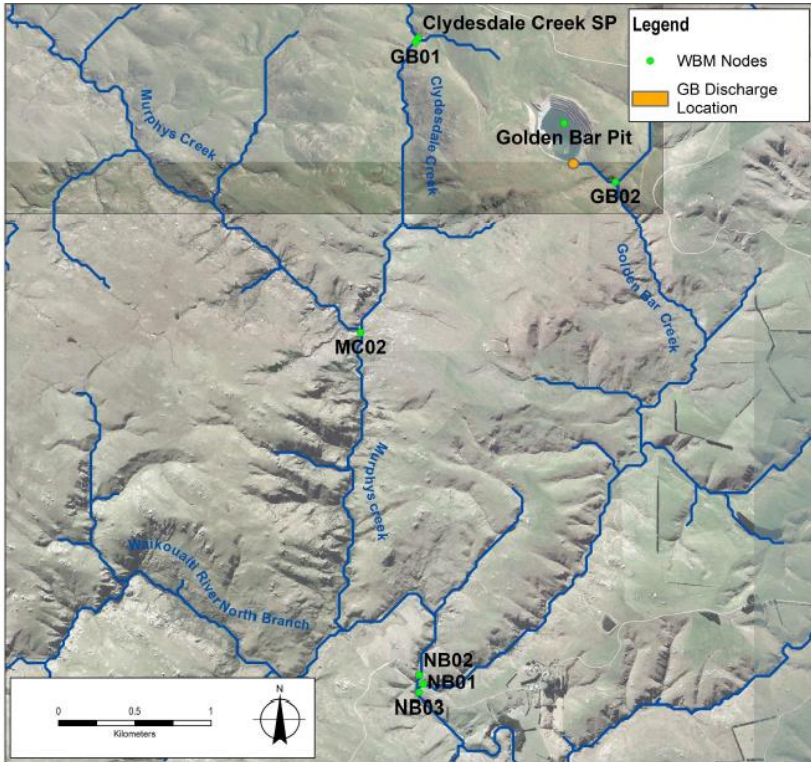
Description	The Coronation Pit was mined from 2013 – 2019 and is currently used as a temporary water storage reservoir. The currently authorised Coronation Stage 5 Pit has a footprint of 85 ha. The MP4 mine extension will involve disturbance within the existing consented pit area plus disturbance of a further 6 ha being Stage 6 (“CO6”). The waste rock from the extension of the Coronation Pit will be backfilled into the Coronation North Pit. A quantity of waste rock will be used as a buttress near the confluence of Māori Hen Creek and Trimbells Creek to manage seepage from the Trimbells waste rock stack (WRS) which is located at the northern margin of Coronation Pit. Whakaahua 29: Macraes Phase IV- Key surface water features relating to the Coronation Stage 6 expansion ⁹⁵
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⁹⁵ GHD (2024a) Coronation – Surface and Groundwater Assessment.

Extension of the Innes Mills Open Pit

Description	The Innes Mills Pit is currently being actively mined. A further extension to the east and west is proposed that will increase the Innes Mills Pit footprint by approximately 12.5 ha. The total pit footprint will increase to approximately 71 ha. Waste rock from the mining of the Innes Mills Pit extension is primarily planned to be placed within the Frasers Pit Backfill Embankment (FRBF), which is part of the Frasers Tailings Storage Facility (FTSF).
Environmental Effects	- The proposed extension footprint will encompass existing mine haul roads and access roads, mining disturbed areas, and very small remnant patches of rank pasture/tussock. - An area of natural wetland exists within 100 m of the proposed eastern extension and may be completely or partially drained.

Golden Bar Open Pit Extension

Description	The Golden Bar pit was mined from 2004 – 2006 and has been partially rehabilitated to form a pit lake that is currently spilling water to a tributary of Murphys Creek, known as Golden Bar Creek. Overall, the Golden Bar Pit extension and associated waste rock stack (WRS) covers an area of approximately 40 ha, increasing the total disturbance area of Golden Bar Pit to approximately 68 ha.  Whakaahua 30: Macraes Phase IV -Key tributaries of the Waikouaiti North Branch relating to the Golden Bar Pit⁹⁶
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⁹⁶ GHD (2024b) Golden Bar – Surface and Groundwater Assessment.

Golden Point Backfill and Northern Gully Waste Rock Stack Rehandle

Description	Waste rock from the Innes Mills Pit extension will be disposed of within and adjacent to the Golden Point Pit to provide buttressing for geotechnical instability identified with the Mixed Tailings Impoundment (MTI). Further buttressing will then be completed using waste rock that will be rehandled from the Northern Gully waste rock stack upon completion of mining in the Golden Point Underground mine.
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Golden Bar Road Realignment

Description	To facilitate the proposed extension of Innes Mills Pit, the northern section of Golden Bar Road will be realigned to the east.
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Appendix 4: Wāhi tīpuna in the East Otago area

Ikoa Māori	Ikoa Pākehā / Whakaaturaka
Waimātaitai	A kāika mahika kai on the Waihemo where āruhe, tuna, fish, koukoupapa, kōareare, and tutu were gathered.
Te Umu Kōau	A kāika nohoaka, kāika mahika kai, and pā tūturu on the Waihemo.
Te Motu Tatakaha	An island at the mouth of the Waihemo.
Puketapu	A small hill overlooking Palmerston. Puketapu was a passenger on the Arai-te-uru waka.
Te Awaure	Anderson's Lagoon A kāika nohoaka and kāika mahika kai where tūi and kererū were gathered.
Te Hakapupu	Pleasant River A river that has historically been a rich source of mahika kai such as tuna, pātiki and inaka.
Otutahanga	A kāika mahika kai at Te Hakapupu where tuna were gathered.
Te Ruatūpāpaku	Mount Royal A prominent mountain that overlooks Te Hakapupu. Te Ruatūpāpaku was a passenger on the Arai-te-uru waka.
Te awa wi	A kāika mahika kai on the Waihemo where tuna and inaka were gathered that was named for a passenger on the Arai-te-uru waka.
Te Roto a Te Uatahi	A kāika mahika kai on the Waihemo where tuna and inaka were gathered.
Oturito	A kāika mahika kai on the Waihemo where tuna, inaka, and āruhe were gathered.
Te Waiaterimurapa	A kāika mahika kai on the Waihemo where tuna and kōareare were gathered.
Te Wai o Perekuku	A kāika mahika kai on the Waihemo where tuna, inaka, and āruhe were gathered.
Matau Kareao	A kāika mahika kai on the Waihemo where tuna and raupō were gathered.
Te Iho o Putete	A kāika mahika kai and hāpua in the Waihemo where tuna and kōareare were gathered.
Te Papawai	A kāika mahika kai on the Waihemo where tuna, inaka, pawhaitiri, patete, āruhe, and pora were gathered.
Kotakaka Take	A kāika mahika kai on the Waihemo where tuna, inaka, and āruhe were gathered.
Whare Paaka	A kāika mahika kai on the Waihemo where kāuru and tuna were gathered.
Upoko Paoa	A kāika mahika kai on the Waihemo where tuna, weka, āruhe, papaī, and purau were gathered.
Whati Nunui	Nenthorn Creek
Hora Takaha	A kāika mahika kai on the Taiari.
Pātearoa-ki-raro	Hummock Range
Pātea	Mount Stoker
Pātea Whatia	A kāika mahika kai on the Taiari.

Te Wai-a-te-Atua	Three O’Clock Stream
Owhakaoho	Trotter’s Creek
Te Wai a te ao	Mount Mackenzie A tributary of Te Hikapupu that flows from Mount Mackenzie to Mount Watkins.
Ohikaroroa	Mount Watkins A mountain north-west of Waikouaiti in North Otago named for an ancestor from the Ārai-te-uru waka.
Pahatea	Mount Derdan A kāika mahika kai and also the name of the river in the area, where tuna, tūī, kererū, āruhe and tutu berries were gathered.
Kaukau-Paikea / Kao kao a Paikia	Names recorded for the ridges of the land at Pahatea.
Kaiwaka	A rock located at the south side of Te Hikapupu.
Upoko Takahia	A kāika mahika kai north of Te Hikapupu located on a lagoon where tuna, bullrush tubers, flax stems, tutu berries, and flax fibre were gathered.
Otuatahanga	A kāika mahika kai and awa located on Te Hikapupu where tuna were gathered.
Kā Tamariki-a-Heikura	Smylers Peak
Hakariki	The south branch of the Waikouaiti where it is recorded that kāuru was gathered.
Waipaku	A stream that flows into Matainaka.
Kaka hu tuna	A creek that runs from Beach Street towards the Waikouaiti.
Matainaka	Hawksbury Lagoon A lagoon that was known as a habitat for inaka and aquatic birds. The Māori Land Court established a fishing easement on the lagoon in 1868, but important cultural sites in the area such as the pā, lagoon, urupā, and kāika nohoaka were not included.
Waikouaiti	Waikouaiti River The river flows from the mountains of North Otago into a large, extended estuary on Te Tai-o-Araiteuru The estuarine environment where wai māori combines with wai tai creates an important mahika kai site as a rich habitat for fish, shellfish, and waterfowl. The area is also renowned for inaka, tuna, and pātiki, and shellfish like tuaki, and pipi.
Okauia	A kāika mahika kai on the Waikouaiti River.
Whaka patu kuku	A place on the Waikouaiti River in the approximate location of Orbells Crossing.
Pā tamariki	A backwater and creek located near the Waikouaiti River mouth.
Tauraka o Poti	The backwater of the Waikouaiti.

Tauraka o Waka	A tauraka waka locate on the Waikouaiti River near Merton including the backwater and tidal flats in front of Merton Station.
Taumata o Puaka / Taumata o Poaka	A terrace in front of Merton Station.
Te Taha a Poti	A backwater behind Merton Station.
Tapari Kōau	A mahika kai site on the Waikouaiti River where inaka and tuna were gathered.
Ohinepouwera	The sandspit and beach located at the southern end of Ohinetemoa opposite the Karitāne township.
Matariki	A kāika located at Puketeraki.
Karitāne	A small township and fishing port in East Otago, on the south bank of the Waikouaiti River estuary. Formerly known as “Old Waikouaiti”, it was once the site of the Waikouaiti Whaling Station, established in 1837.
Maramao	The channel at the mouth of the Waikouaiti.
Huriawa	Site of Te Pā a Te Wera, a pā situated on the prominent peninsula overlooking the mouth of the Waikouaiti.
Huirapa	A creek below Puketeraki marae.
Whakamaniaro	A creek drawn from Puketeraki Hill that joins with the Huirapa Creek.
Te Pou o Te Wera	A place located near the Waikouaiti River.
Owhare	A kāika located at the bend of the Waikouaiti River.
Te Pari Kōau	Cliffs located on the Waikouaiti River.
Kā Iwi a Weka	Mount Baldie
Te Kopare o Pahi	A kāika mahika kai located near Pahatea where āruhe, kōkō, tūī and tutu berries were gathered.
Te Roto-a-Hineritai	Flag Swamp A kāika mahika kai and awa where tuna and raupō were gathered.

Appendix 5: Archaeological sites in the East Otago Area

General location	NZAA number	Site type	Details
Te Tai-o-Araiteuru	J43/33	Midden Taoka	Heat shattered stones Unspecified taoka
	J43/32	Midden Taoka	Tītiko, pipi, kuku; makā and hāpuka bone Flakes of silcrete, obsidian, chalcedony, polished grey argillite, basalt
	J43/22	Umu	Pits
	J43/23	Midden	Kuku, pāua, kāeo, oven stones
	J43/10	Midden	Heat shattered stones, pāua, pipi, tītiko, and fish and bird bones
	J43/42	Terraces	Large pits located across a series of terraces on the southwest flank of Ōhineamio with views to south encompassing Huriawa, Māpoutahi, and Pukekura; possible defensive location
	I43/17	Umu/midden	Burnt stone, burnt bird and fish bone, vertebrae and spine including makā, rai, and petrel, shells including pāua, kuku, and kōramu
	I43/16	Umu	Charcoal fragments, large oven stones
	I43/50	Midden/umu	Makā, pāua, other fish and shellfish, unidentified sea mammal
	I43/13	Urupā Taoka	Burial site of at least two tūpāpaku Flake materials, taoka
	I43/12	Midden/umu	Scattering of midden containing burnt stone, charcoal, cockle, pipi and cats eye
	I43/150	Urupā	Koiwi
	I43/14	Midden/umu	Four possible ovens (with no occupational material on surface)
	I43/3	Pit	No further details
Waihemo – Shag River	J43/2	Midden/umu Taoka	Flakes of chert, orthoquartzite Broken toki onewa
	J43/17	Umu	Charcoal fragments, oven stones
	J43/18		
	J43/19	Umu	Small ovens stones, faint charcoal layer
	J43/27	Umu	Raised pits
	J43/28	Umu	Oven pit
	J43/21	Umu	Oven pits
	I43/28	Taoka	Quartzite blades, moa bone, and toki

Te Hikapupu – Pleasant River	J43/9	Midden	Heat-fractured stones, shell, and bone, including pāua, kāeo, and kākihi
	J43/4	Midden/umu Taoka	Three oven pits (remnants) with oven stone; midden containing shell, fish, and bird bone Stone flakes, silcrete toki
	J43/34	Pits	Series of pits, terracing
	J32/8	Midden	Scatters of midden material containing kāeo, pipi, and bone
	J43/7	Midden	Scatters of broken shell containing tuaki, pipi, kaeti, and tītiko
	J43/26	Midden/umu	Scattered oven stones, midden scatter containing tuaki, tītiko, toheroa, and pipi
	J43/1	Kāika	Pre-1769 settlement site – blackened soil, midden scatters of tītiko, pipi, and tuaki
	J43/64	Midden	Midden containing shell
	J43/24	Umu	Blackened soil, cracked stones
	J43/31	Midden Taoka	Oven-heated stones, shell, and bone Moa eggshell and bones
	J43/30	Taoka	Silcrete scraper, silcrete flake
	J43/6	Midden	Tītiko, charcoal, and burnt stone
	I43/19	Umu	Burnt stone fragments, blackened soil
	I43/27	Umu	Two oven pits
	I43/26	Midden/umu	Burnt stones, charcoal remnants
	I43/70	Umu	Oven put with raised rim
	I43/25	Umu	Two oven pits
	I43/69	Umu	Oven pits with raised rim
	I43/24	Umu	Several oven pits
Waikouaiti	I43/11	Midden/umu	Scatters of midden material containing tuaki, tiotio, kuku, and kāeo
	I43/10	Midden/umu	Darkened earth, possibly natural, close to other midden/umu sites
	I43/8	Midden/umu	Small deposit consisting of tītiko and tuaki
	I43/5	Midden/umu	Scatters of midden material containing tītiko, pipi, tuaki, kuku, and burnt stone Possible beaching place for canoes
	I43/9	Midden/umu	Burnt stone fragments, layer of charcoal, and some red quartz/jasper
	I43/7	Midden/umu	Layer of shell and charcoal

	I43/6	Midden/umu	Five patches of midden containing tītiko, small fish vertebra, pipi, and charcoal
Whati Nunui	I43/130	Taoka	Two silcrete blades found on a rock tor
	I43/49	Umu Taoka	Burnt stone and charcoal Toki pakohe
	I43/155	Kāika Taoka	Rock overhangs Silcrete flakes, moa bone
	I43/23	Quarry Taoka	Flaking floor Silcrete flakes
	I43/156	Quarry	Scattered fragments of worked silcrete spread across 500m ²
	I43/51	Kāika Taoka	Burnt moa bone Silcrete fragments, two blades
	I43/68	Quarry	Silcrete flakes, evidence of flaking floor
	I43/96	Taoka	Silcrete flake scatters, moa gizzard stones
	I43/29	Umu	Pits, destroyed by ploughing 1963
	I43/31	Taoka	Cache – unspecified, items fossicked
	I43/30	Taoka	Cache – small wooden bowl, other items fossicked
	I43/32	Taoka	Cache – small wooden bowl with notched rim, located in schist rock cleft
	I43/39	Umu	Oven pit, burnt schist and quartz rock
	I43/41	Umu	Two oven pits with traces of surrounding stone paving, burnt schist, charcoal
	I43/42	Umu	Charcoal, burnt schist
	I43/40	Umu	Large oven pit
	I43/43	Umu	Oven pit
	I43/48	Umu tī	Oven pits, burnt volcanic stone, blackened soil Many tī kōuka had been cleared for farming
	I43/47	Umu	Two oven pits, burnt volcanic stone and schist, blackened soil
	I43/44	Umu	Three oven pits, burnt schist, charcoal
	I43/45	Umu, rock shelters	Oven pit, several rock shelters near a stream



Whakaahua 31: Rock shelter (I43/128), located near the head of Te Wai a te Atua (Three O'Clock Stream)

Appendix 6: Taoka Mahika Kai

Mammals	Kekeno
	Whakahao / Kake
	Kurī
Shellfish	Pipi
	Tuaki
	Tītiko
	Ataata
	Kāeo
	Purau
	Papaī
	Kuku
	Kākihi
	Pāua
	Tiotio
	Ngāeti
Fish	Tuna
	Pātiki
	inaka
	Kōkopu
	Kanakana
	Koukoupapa
	Pawhaitiri
	Makā
	Rai
	Hāpuka
Birds	Kererū
	Kōkō / Tūī
	Weka
	Moa
	Aquatic birds
	Petrel, unspecified
	Kea

Plants for Kai	Āruhe
	Tutu berries
	Kōareare
	Pora
	Kāuru
	Ti kōuka
	Raupō (Kōareare)
Plants – Other Uses	Putete ⁹⁷
	Totara ⁹⁸
Plants - Fibre	Raupō
	Taramea
	Tikumu
	Pīkao
	Harakeke
Geology	Silcrete
	Pakohe
	Pounamu
	Onewa
	Matā
	Porcellanite
	Quartz Quartzite Orthoquartzite
	Chalcedony
	Kurupaku
	Whaiapu

⁹⁷ Sap from the Putete (Seven-finger plant) was used to heal sores and to treat cold sores and could be mixed with the bark and water to create a lotion for skin complaints. Leaves could be boiled to make a teething tincture, and the wood was also useful as an effective fire-starter; Riley, 1994. Other medicinal plants are likely to have been collected, but Putete is the only one identified in the review of literature.

⁹⁸ There is reference to a reported waka made of totara in the archaeological record (I43/19). The properties of tōtara lend it to usefulness for building waka, for which it was commonly used. Barclay-Kerr, 2006.

Appendix 7: Timeline of Land-use Change in the catchments⁹⁹

Period	Kāi Tahu events	Catchment modification	Housing and Social Systems	Primary industries	Trade, Commerce, and Infrastructure
Pre-1860s	1848-50 Measles epidemic, significant Māori death rate noted	Wetland drainage Native deforestation	1837 Settlement at Matainaka 1838 Goodwood estate purchased from local Māori 1840 Waikouaiti Mission established	Flax milling 1839-40 Matanaka Station built 1840 Cherry Farm cultivations supply whalers 1848 Increased food production 1854-55 'Pastoral invasion'	1837 Whaling at Karitāne/Waikouaiti 1843 Land Court Commissioners award 2560 acres to Johnny Jones 1848 Waikouaiti trading store opens
1860-1900	1868 Māori Fishing reserve established at Matainaka	Native deforestation Exotic planting 1860s Extensive wetland drainage 1863ff. Water modification by mining activities 1864 Rabbits, hares, and deer released 1866 Black swan released 1869ff Trout released 1881 Extensive lagoon drainage 1881-1883 causeways built at Matainaka 1897 Mallards released	1860 Hawksbury Hundreds subdivision 1861 Mount Royal purchased 1861 Public School opens 1864 Shag River Hundreds subdivision 1866 Matainaka renamed Hawksbury; Borough Council established 1866 Waikouaiti Lodge of Oddfellows established 1870s 27,000 migrants arrive in Otago 1872 Allotments sold at Hawksbury	1863 Shag Point Coal Mine opens 1864 First Waikouaiti bridge built 1864 Macraes Flat gold strike 1866ff. Nursery and fruit farms 1870-90 Otago Huge increase in pasture conversions 1880s-90s Dredging on Three O'Clock, Deepdell, and Nenthorn Creeks 1888 Waikouaiti Cheese Factory opens 1888 Nenthorn gold strike 1889 Golden Point gold strike 1899 Dredging in the Waihemo	1860 Beach Street Store opens 1862 Thriving commercial district on Beach Street, Waikouaiti 1862 Cherry Farm flour mill established 1864 Main North Road from Dunedin opens 1864 Shag River flour mill established 1867 40-mile water race built, Shag Valley 1872 Hawksbury flour mill established 1878 Dunedin Main trunk line opens

⁹⁹ 'A new field for gold dredging,' 1899; 'Coal once a draw to Shag Point,' 2024; Christie, 1929; DOC, 2024, Golden Point; FFNZ, 2024; Fisher, 2021; Fisheries (Declaration of Waikouaiti Mātaitai Reserve) Notice 2016; Hawksbury Lagoon Incorporated, 2024; 'Help on river pollution,' 1971; HNZPT, 2024, Tumai; Jones, 2019; Leitch & Scott, 1995; McCaskill, 2009; McKewen, 2014; MCH, 2024, Waikouaiti; POWA, 2019; TCCL, 1905; Waitaki Whitestone Geopark, 2024.

Period	Kāi Tahu events	Catchment modification	Housing and Social Systems	Primary industries	Trade, Commerce, and Infrastructure
1900-1970		1901 River channelling 1901 Matainaka causeways extended 1912 Matainaka 'wildlife reserve' established 1953 Matainaka 'wildlife refuge' established	1912-14 North Otago holdings number 540, support 1,500 people 1933 Preliminary investigations, Waikouaiti source-water 1950s Waikouaiti Water Treatment Plant Scheme constructed 1952 Cherry Farm hospital opens	1900ff. Increased orcharding; mining structures used for irrigation 1900ff. Widespread pine forestry planting 1914ff. Increased sheep, dairy farming	
1970-2000	1998 Ngāi Tahu settlement signed 1999 East Otago Taiāpure established	1971 Pollution noted, Waikouaiti River/Karitāne estuary	1972 Culverts built at Matainaka 1984 Waikouaiti WWTP built	1990 Macraes Mine opens in the headwaters of the Waikouaiti River 1998 Poultry farm opens	
2000-2024	2016 Waikouaiti Mātaitai Reserve established	2020-2023 Waikouaiti lead contamination event occurs			

Appendix 8: Statutory Acknowledgements for Wāhi Tūpuna

Ngāi Tahu Claims Settlement Act 1998, Schedule 60- Te Tauraka Poti (Merton Tidal Arm)

Statutory area

The statutory area to which this statutory acknowledgement applies is the wetland known as Te Tauraka Poti (Merton Tidal Arm), the location of which is shown on Allocation Plan MD 56 (SO 24722).

Preamble

Under section 206, the Crown acknowledges Te Rūnanga o Ngāi Tahu's statement of Ngāi Tahu's cultural, spiritual, historic, and traditional association to Te Tauraka Poti, as set out below.

Ngāi Tahu association with Te Tauraka Poti

Te Tauraka Poti, fed by the streams known as Kirikiri Whakahoro and Kokonui, was a major mahinga kai for kāinga and pā located on the coast north of the Otago Peninsula. The wetlands were a rich source of kai, including tuna (eels), mōhoao (black flounder), giant kōkopu and waterfowl. The wetlands were particularly valued as a spawning ground for inaka (whitebait).

The tūpuna had considerable knowledge of whakapapa, traditional trails and tauranga waka, places for gathering kai and other taonga, ways in which to use the resources of Te Tauraka Poti, the relationship of people with the wetland and their dependence on it, and tikanga for the proper and sustainable utilisation of resources. All of these values remain important to Ngāi Tahu today.

As a result of this history of use, there are a number of wāhi taonga within the wetland area, including middens and other evidence of occupation. These are important as places holding the memories of Ngāi Tahu tūpuna.

Te Tauraka Poti formed an integral part of a network of trails which were used in order to ensure the safest journey and incorporated locations along the way that were identified for activities including camping overnight and gathering kai. Knowledge of these trails continues to be held by whānau and hapū and is regarded as a taonga. The traditional mobile lifestyle of the people led to their dependence on the resources of the wetland.

Much of Te Tauraka Poti's continuing significance to Ngāi Tahu lies in the fact that it is the only remaining wetland area of any significance in the vicinity. The mauri of Te Tauraka Poti represents the essence that binds the physical and spiritual elements of all things together, generating and upholding all life. All elements of the natural environment possess a life force, and all forms of life are related. Mauri is a critical element of the spiritual relationship of Ngāi Tahu Whānui with the wetland.

Ngāi Tahu Claims Settlement Act 1998, Schedule 103- Te Tai o Arai Te Uru (Otago Coastal Marine Area)

Statutory area

The statutory area to which this statutory acknowledgement applies is Te Tai o Arai Te Uru (the Otago Coastal Marine Area), the Coastal Marine Area of the Moeraki, Dunedin Coastal and Molyneaux constituencies of the Otago region, as shown on SO Plans 24250, 24249, and 24252, Otago Land District, and as shown on Allocation Plan NT 505 (SO 19901).

Preamble

Under section 313, the Crown acknowledges Te Rūnanga o Ngāi Tahu's statement of Ngāi Tahu's cultural, spiritual, historic, and traditional association to Te Tai o Arai Te Uru as set out below.

Ngāi Tahu association with Te Tai o Arai Te Uru

The formation of the coastline of Te Wai Pounamu relates to the tradition of Te Waka o Aoraki, which foundered on a submerged reef, leaving its occupants, Aoraki and his brothers, to turn to stone. They are manifested now in the highest peaks in the Kā Tiritiri o Te Moana (the Southern Alps). The bays, inlets, estuaries and fiords which stud the coast are all the creations of Tū Te Rakiwhānoa, who took on the job of making the island suitable for human habitation.

The naming of various features along the coastline reflects the succession of explorers and iwi (tribes) who travelled around the coastline at various times. The first of these was Māui, who fished up the North Island, and is said to have circumnavigated Te Wai Pounamu. In some accounts the island is called Te Waka a Māui in recognition of his discovery of the new lands, with Rakiura (Stewart Island) being Te Puka a Māui (Māui's anchor stone). A number of coastal place names are attributed to Māui, particularly on the southern coast.

The great explorer Rakaihautu travelled overland along the coast, identifying the key places and resources. He also left many place names on prominent coastal features. Another explorer, Tamatea, sailed along the Otago coast in the waka Takitimu. After the waka eventually broke its back off the coast of Murihiku, Tamatea and the survivors made their way overland back to the North Island, arriving at the coast by the place Tamatea named Ō-amaru (Ōamaru).

Place names along the coast record Ngāi Tahu history and point to the landscape features which were significant to people for a range of reasons. For example, some of the most significant rivers which enter the coastal waters of Otago include: Waitaki, Kakaunui, Waihemo (Shag), Waikouaiti, Kaikarae (Kaikorai), Tokomairiro, Mata-au (Clutha), and Pounawea (Catlins). Estuaries include: Waitete (Waitati), Ōtākou (Otago), Makahoe (Papanui Inlet), Murikauhaka (Mata-au and Kōau estuaries), Tāhaukupu (Tahakopa Estuary), and Waipātiki (Wapatī Estuary). Islands in the coastal area include Ōkaihe (St Michaels Island), Moturata (Taieri Island), Paparua, Matoketoke, Hakinikini, and Aonui (Cooks Head).

Particular stretches of the coastline also have their own traditions. The tradition of the waka (canoe) Arai Te Uru and its sinking at the mouth of the Waihemo (Shag River) has led to the coastal area of Otago being known as Te Tai o Araiteuru (the coast of Arai Te Uru). Accounts of the foundering, the wreckage, and the survivors of this waka are marked by numerous landmarks almost for the length of the Otago coast. The boulders on Moeraki coast (Kai Hīnaki) and the Moeraki pebbles are all associated with the cargo of gourds, kūmara and taro seed which were spilled when the Arai Te Uru foundered.

For Ngāi Tahu, traditions such as these represent the links between the cosmological world of the gods and present generations. These histories reinforce tribal identity and solidarity, and continuity between generations, and document the events which shaped the environment of Te Wai Pounamu and Ngāi Tahu as an iwi.

Because of its attractiveness as a place to establish permanent settlements, including pā (fortified settlements), the coastal area was visited and occupied by Waitaha, Ngāti Mamoe and Ngāi Tahu in succession, who, through conflict and alliance, have merged in the whakapapa (genealogy) of Ngāi Tahu Whānui. Battle sites, urupā and

landscape features bearing the names of tūpuna (ancestors) record this history. Prominent headlands, in particular, were favoured for their defensive qualities and became the headquarters for a succession of rangatira and their followers. Notable pā on the Otago coast include: Makotukutuku (Oamaru), Te Raka-a-hineatea (Moeraki), Te Pā Katata, Pā a Te Wera, (Huriawa Peninsula), Māpoutahi (Pūrākaunui), Pukekura (Taiaaroa Head), and Moturata (Taieri Island). The estuaries from the Waitaki River to the Chaslands also supported various hapū.

Tūpuna such as Waitai, Tukiauau, Whaka-taka-newha, Rakiiamaoa, Tarewai, Maru, Te Aparangi, Taoka, Moki II, Kapo, Te Wera, Tu Wiri Roa, Taikawa, and Te Hautapanuiotu are among the many illustrious ancestors of Ngāti Mamoe and Ngāi Tahu lineage whose feats and memories are enshrined in the landscape, bays, tides and whakapapa of Otago.

The results of the struggles, alliances and marriages arising out of these migrations were the eventual emergence of a stable, organised and united series of hapū located at permanent or semi-permanent settlements along the coast, with an intricate network of mahinga kai (food gathering) rights and networks that relied to a large extent on coastal resources. Chiefs such as Kōrako (several), Tahatu, Honekai, Ihutakuru, Karetai, Taiaaroa, Pōtiki, Tuhawaiki, and Pokene being some among a number who had their own villages and fishing grounds. Otago Peninsula (Muaupoko) had many kāinga nohoanga with a multitude of hapū occupying them. At one time up to 12 kāinga existed in the lower Otago harbour, some larger and more important than others.

The whole of the coastal area offered a bounty of mahinga kai, including a range of kaimoana (sea food); sea fishing; eeling and harvest of other freshwater fish in lagoons and rivers; marine mammals providing whale meat and seal pups; waterfowl, sea bird egg gathering and forest birds; and a variety of plant resources including harakeke (flax), fern and tī root. In many areas the reliance on these resources increased after the land sales of the 1840s and 1850s, and the associated loss of access to much traditional land-based mahinga kai.

Many reefs along the coast are known by name and are customary fishing grounds, many sand banks, channels, currents and depths are also known for their kaimoana. One example is Poatiri (Mt Charles - Cape Saunders) the name of which refers to a fish hook. Poatiri juts out into the Pacific, close to the continental shelf, and is a very rich fishing ground. Another example is Blueskin Bay which was once a kōhanga (breeding ground) for the right whale, although it is well over 150 years since it has seen this activity.

Other resources were also important in the coastal area. Paru (black mud used for dyeing) was obtained from some areas. Some of the permanent coastal settlements, such as those at the mouth of the Mata-au (Clutha River), and at Ōtākou and Pūrākaunui, were important pounamu manufacturing sites. Trading between these villages to the south and north via sea routes was an important part of the economy.

The Otago coast was also a major highway and trade route, particularly in areas where travel by land was difficult. Pounamu and tītī were traded north with kūmara, taro, waka, stone resources and carvings coming south. Travel by sea between settlements and hapū was common, with a variety of different forms of waka, including the southern waka hunua (double-hulled canoe) and, post-contact, whale boats plying the waters continuously. Hence tauranga waka (landing places) occur up and down the coast in their hundreds and wherever a tauranga waka is located there is also likely to be a nohoanga (settlement), fishing ground, kaimoana resource, rimurapa (bull kelp - used to make the pōhā, in which tītī were and still are preserved) with the sea trail linked to a land trail or mahinga kai resource. The tūpuna had a huge knowledge of the coastal environment and weather patterns, passed from generation to generation. This knowledge continues to be held by whānau and hapū and is regarded as a taonga. The traditional mobile lifestyle of the people led to their dependence on the resources of the coast.

Numerous urupā are being exposed or eroded at various times along much of the coast. Water burial sites on the coast, known as waiwhakaheketūpāpaku, are also spiritually important and linked with important sites on the land. Places where kaitangata (the eating of those defeated in battle) occurred are also wāhi tapu. Urupā are the resting places of Ngāi Tahu tūpuna and, as such, are the focus for whānau traditions. These are places holding the memories, traditions, victories and defeats of Ngāi Tahu tūpuna, and are frequently protected in secret locations.

The mauri of the coastal area represents the essence that binds the physical and spiritual elements of all things together, generating and upholding all life. All elements of the natural environment possess a life force, and all forms of life are related. Mauri is a critical element of the spiritual relationship of Ngāi Tahu Whānui with the coastal area.

Appendix 9: Statutory Acknowledgement for Taonga Species

Ngāi Tahu Claims Settlement Act 1998, Schedule 97 – Taonga Species

Birds¹⁰⁰

Name in Māori	Name in English	Scientific name
Kāhu	Australasian harrier	<i>Circus approximans</i>
Kārearea	New Zealand falcon	<i>Falco novaeseelandiae</i>
Karoro	Black-backed gull	<i>Larus dominicanus</i>
Pīhoihoi	New Zealand pipit	<i>Anthus novaeseelandiae</i>
Pūtakitaki	Paradise shelduck	<i>Tadorna variegata</i>
Riroriro	Grey warbler	<i>Gerygone igata</i>

Plants¹⁰¹

Name in Māori	Name in English	Scientific name
Akatorotoro	White rata	<i>Metrosideros perforata</i>
Aruhe	Fernroot (bracken)	<i>Pteridium aquilinum</i> var <i>esculentum</i>
Harakeke	Flax	<i>Phormium tenax</i>
Horoeka	Lancewood	<i>Pseudopanax crassifolius</i>
Houhi	Mountain ribbonwood	<i>Hoheria lyalli</i> and <i>H. glabata</i>
Kahikatea	Kahikatea/White pine	<i>Dacrycarpus dacrydioides</i>
Kāmahi	Kāmahi	<i>Weinmannia racemosa</i>
Kānuka	Kānuka	<i>Kunzia ericoides</i>
Kāpuka	Broadleaf	<i>Griselinia littoralis</i>
Karaeopirita	Supplejack	<i>Ripogonum scandens</i>
Karaka	New Zealand laurel/Karaka	<i>Corynocarpus laevigata</i>

¹⁰⁰ Taonga bird species recorded within the Project Area (*OceanaGold – MP4 Terrestrial Ecological Impact Assessment, Table 9, Ahika Consulting*)

¹⁰¹ Taonga plant species recorded within the Project Area are highlighted in blue ((*OceanaGold – MP4 Terrestrial Ecological Impact Assessment, Table 9, Ahika Consulting*)

Name in Māori	Name in English	Scientific name
Karamū	Coprosma	<i>Coprosma robusta</i> , <i>coprosma lucida</i> , <i>coprosma foetidissima</i>
Kātote	Tree fern	<i>Cyathea smithii</i>
Kiekie	Kiekie	<i>Freycinetia baueriana</i> subsp <i>banksii</i>
Kōhia	NZ Passionfruit	<i>Passiflora tetrandia</i>
Korokio	Korokio Wire-netting bush	<i>Corokia cotoneaster</i>
Koromiko/Kōkōmuka	Koromiko	<i>Hebe salicifolia</i>
Kōtukutuku	Tree fuchsia	<i>Fuchsia excorticata</i>
Kōwahi Kōhai	Kōwhai	<i>Sophora microphylla</i>
Mamaku	Tree fern	<i>Cyathea medullaris</i>
Mānia	Sedge	<i>Carex flagellifera</i>
Mānuka Kahikātoa	Tea-tree	<i>Leptospermum scoparium</i>
Māpou	Red matipo	<i>Myrsine australis</i>
Mataī	Mataī/Black pine	<i>Prumnopitys taxifolia</i>
Miro	Miro/Brown pine	<i>Podocarpus ferrugineus</i>
Ngaio	Ngaio	<i>Myoporum laetum</i>
Nīkau	New Zealand palm	<i>Rhopalostylis sapida</i>
Pānako	(Species of fern)	<i>Asplenium obtusatum</i>
Pānako	(Species of fern)	<i>Botrychium australe</i> and <i>B. biforme</i>
Pātōtara	Dwarf mingimingi	<i>Leucopogon fraseri</i>
Pīngao	Pīngao	<i>Desmoschoenus spiralis</i>
Pōkākā	Pōkākā	<i>Elaeocarpus hookerianus</i>
Ponga/Poka	Tree fern	<i>Cyathea dealbata</i>
Rātā	Southern rātā	<i>Metrosideros umbellata</i>
Raupō	Bulrush	<i>Typha angustifolia</i>
Rautāwhiri/Kōhūhū	Black matipo/Māpou	<i>Pittosporum tenuifolium</i>

Name in Māori	Name in English	Scientific name
Rimu	Rimu/Red pine	<i>Dacrydium cypressinum</i>
Rimurapa	Bull kelp	<i>Durvillaea antarctica</i>
Taramea	Speargrass, spaniard	<i>Aciphylla</i> spp
Tarata	Lemonwood	<i>Pittosporum eugenioides</i>
Tawai	Beech	<i>Nothofagus</i> spp
Tētēaweke	Muttonbird scrub	<i>Olearia angustifolia</i>
Tī rākau/Tī Kōuka	Cabbage tree	<i>Cordyline australis</i>
Tīkumu	Mountain daisy	<i>Celmisia spectabilis</i> and <i>C. semicordata</i>
Tītoki	New Zealand ash	<i>Alectryon excelsus</i>
Toatoa	Mountain Toatoa, Celery pine	<i>Phyllocladus alpinus</i>
Toetoe	Toetoe	<i>Cortaderia richardii</i>
Tōtara	Tōtara	<i>Podocarpus totara</i>
Tutu	Tutu	<i>Coriaria</i> spp
Wharariki	Mountain flax	<i>Phormium cookianum</i>
Whīnau	Hīnau	<i>Elaeocarpus dentatus</i>
Wī	Silver tussock	<i>Poa cita</i>
Wīwī	Rushes	<i>Juncus</i> all indigenous <i>Juncus</i> spp and <i>J. maritimus</i>