

Archaeological Survey – Macraes Phase III



Prepared for Oceana Gold (NZ) Ltd

Archaeological Survey - Macraes Phase III

Prepared By

.....
Cathryn Barr
Senior Archaeologist

Wendy Turvey
Principal Environmental Advisor

Opus International Consultants Limited

Environmental
Opus House, 6 Ossian Street
Private Bag 6019, HB Mail Centre,
Napier 4142, New Zealand

Telephone: +64 6 833 5100
Facsimile: +64 6 835 0881

Date: 4 April 2011
Reference: 380554.00 103HR
Status: Final

Contents

1	Introduction.....	1
1.1	Purpose	1
1.2	Project Outline	1
1.3	Limitations	2
2	Background.....	4
2.1	Historic Background.....	4
2.2	Previous Archaeological Work	5
2.3	Summary of Archaeological Landscape.....	8
3	Historic Heritage Protection Mechanisms.....	9
3.1	Statutory Obligations	9
3.1.1	The Historic Places Act 1993.....	9
3.1.2	The Resource Management Act 1991	9
3.2	Non-Statutory Obligations.....	10
3.2.1	OceanaGold – Heritage Management Plan 2005	10
4	Field Survey	12
4.1	Methodology	12
4.2	Results	12
4.2.1	Camp Creek:.....	13
4.2.2	Macraes – Dunback Back Road	22
4.2.3	Top Tipperary Tailings Storage Facility	25
4.2.4	Frasers Waste Rock Stack Extensions.....	31
4.2.5	Back Road Waste Rock Stack.....	34
4.2.6	Extension of Frasers Pit	39
5	Discussion	47
5.1	Sites Impacted.....	47
5.2	Past HPT Authorities	51
5.3	Proposed Mitigation	52

1 Introduction

1.1 Purpose

Opus International Consultants (Opus) were contracted by Oceana Gold (NZ) Ltd (OceanaGold) to carry out an archaeological survey of areas to be affected by works associated with the proposed Macraes Phase III (MP III) expansion of Macraes mine. This assessment was to include an inspection of areas to be affected by the proposed works, a review of past archaeological assessments and work carried out in the area and NZ Historic Places Trust (HPT) authorities issued associated with the mining operation.

This report outlines the results of the above work and provides an assessment of the archaeological and heritage values of the Macraes area. The report is written to provide input into resource consent processes as well as provide sufficient detail to be used to support applications to modify archaeological sites under the Historic Places Act 1993.

A separate report has been completed as part of this project that discusses a proposed realignment of a section of the Macraes – Dunback Road from near Hocking Road following the legal (but unformed) Macraes Back Road alignment north before turning west to run along the divide between the Deepdell and Tipperary catchments and rejoining the current alignment adjacent to the Innes Mills Pit. While the assessment for this work is covered in a separate report it is discussed below as part of discussion on the impacts of the overall project.

1.2 Project Outline

It is proposed by OceanaGold to extend the consented life of the Macraes Gold Project by expanding operating areas at the mine. The proposed works will take the consented mine life through to approximately 2020.

The main features of the project are:

- A new tailings storage facility (to be called the Top Tipperary Tailings Storage Facility - TTTSF), to be constructed in the upper Tipperary catchment basin. It will result in an increase of 51Mt of total consented tailings storage capacity (from 81Mt currently to 132Mt);
- Reclamation of tailings from within the current SP11 tailings storage facility. The tailings will be relocated to a stack within the footprint of the existing Mixed Tailings Impoundment with any residual tails being stored within the new Top Tipperary Tailings Storage Facility;
- New rock stacks and extensions to existing rock stacks will be constructed, increasing the total consented tonnage from 850Mt to 1,180Mt. The existing Back Road Waste Rock Stack will be substantially expanded to the east of the Round Hill / Southern Pit locations. Frasers East and Frasers West Rock Stack will be linked by a new rock stack called Frasers South Rock Stack and an extension added to the north of Frasers East Rock Stack, to be called Frasers North Rock Stack;

- Macraes – Dunback Road will be realigned from near Hocking Road following the legal (but unformed) road alignment north before turning west to run along the divide between the Deepdell and Tipperary catchments and rejoining the current alignment adjacent to the Innes Mills Pit (near the old Golden Bar haul road traffic lights);
- Golden Bar Road will be realigned for the last 2.5km before rejoining Macraes – Dunback Road;
- Expansion of the existing pits to include the following – Frasers Stage VI, Round Hill – Southern Pit Extension and Innes Mills Stage V;
- Continued dip (North Easterly) development of Frasers Underground mine;
- A new freshwater storage dam in Camp Creek (a tributary of Deepdell Creek) that will be filled from flood flows. The dam will result in a permanent residual flow in Camp Creek;
- Surface water on the expanded mining infrastructure will be managed with diversions and new silt control dams;
- The processing rate will be similar to current operations and the intensity of operations on site will be similar to that currently; and
- A revised closure plan which will comprise: 3 lakes formed from the pit excavations; maintenance of the current artworks and infrastructure; a renovated Stanley's Hotel; and a bicycle trail connecting artworks with the hotel, and a fund to support local community initiatives and encourage business development.

1.3 Limitations

As part of this assessment limited details of the engineering details associated with the proposals were available. Information on the location of proposed works was indicated on an aerial photograph along with a general description of works. Statements on the likely impact of proposed work is based only on this information. Should more detailed information become available, particularly where this involves any changes to the footprints of new mine elements, the results and recommendations of this report should be reviewed by a suitably qualified archaeologist in light of this information and amended as required.

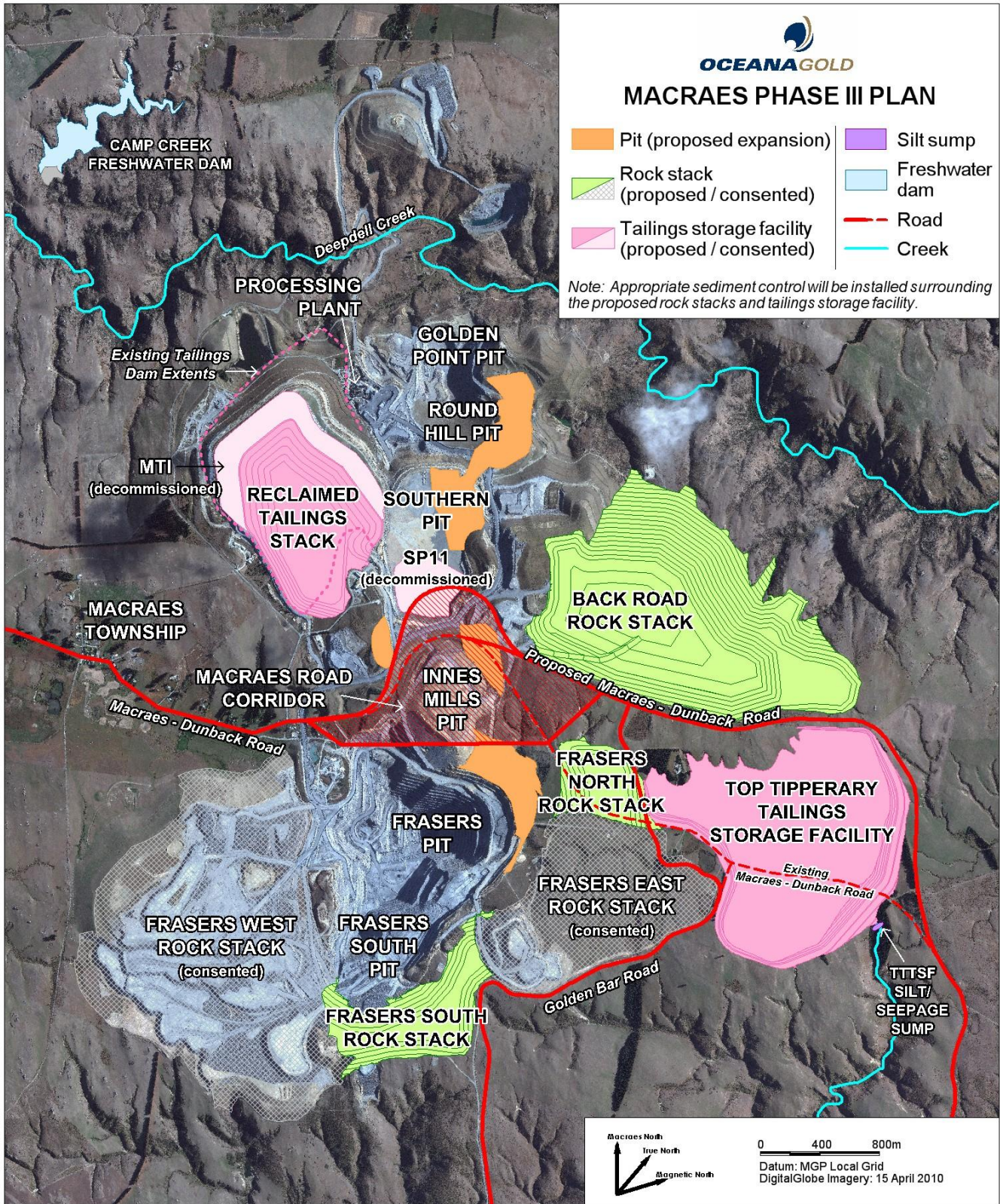


Figure One Plan of proposed works associated with MP III Project - Macraes Mine

2 Background

All relevant reports and an examination of NZAA database indicate limited knowledge or understanding of pre-European land use within the Macraes Flat area. The nearest recorded Maori site is approximately 20 km to the south in Nenthorn. This is not to say Maori did not use the area, however extensive modification of the area by large scale mining in the 19th century has probably resulted in the disturbance or removal of any evidence of such sites. It is possible that evidence of such sites may be found in remote areas. There is also potential for occupation or rock art sites to be present in some of the outcrops. It is of note that no sites of significance to Maori have been identified during operations by OceanaGold to date, and no sites have been identified as a result of on-going consultation with the runanga.

2.1 Historic Background

Since the early 1990s considerable research has been carried out on the historic gold mining operations in the vicinity of Macraes, with the majority of this work linked with the current mining operations (see Hamel 1991; and various reports by Petchey 1995 – 2004; Cable 2004; Wright 2008; Nichol and Wright 2009). It is not the purpose or intention of the current report to repeat here the history of the district. A summary of this historic information is provided here however in order to provide context for statements and discussion on sites located in the course of work.

Alluvial Mining

The earliest mining in this area appears to have been alluvial working at Murphy's Flat in 1862, with Macraes Flat, Deepdell and some parts of Horse Flat being worked soon after.¹ Much of this early working would have involved exploration of the many small creeks and gullies in the district, and would have been carried out by individuals or small groups of men who established small temporary camps or huts, worked out an area then moved on. By 1865 the population of Macraes was reported to be around 380, however by the 1870s this had dropped to around 200, with 90 of these Chinese miners. Hamel suggests that alluvial mining in the district stagnated around Macraes in the 1870s and 1880s² however numbers again increased in the 1890s with a new rush to Horse Flat in 1892 "above old workings close to Deepdell Station." From this period until the 1930s and 1940s alluvial mining, using various techniques continued in the district, with some of the earlier areas being reworked as new technologies became available.

Quartz Mining

The Duke of Edinburgh (Eclipse) Mine has long been considered as the first quartz lode worked in the Macraes field. Originally named as the Eclipse, by 1868 the reef was beginning to be identified as the Duke of Edinburgh.³ Operations at the Duke of Edinburgh included a small battery for crushing stone, a dam, shafts and an extensive area of prospecting pits and trenching. It appears that by 1872 operations at the Duke of Edinburgh

¹ Hamel J 1991

² *ibid*

³ Petchey, P 1996

had ceased, and during a visit in 1875 a visitor to the gold field noted the workings had fallen in to disrepair.⁴

In the late 1800s and early 1900s a number of quartz mines were established in the area – the Golden Bell, Maritana, Deepdell, Golden Point and Round Hill mines. These mines are generally located within areas identified on early plans as auriferous reserves. Quartz mining operations were generally on a larger scale, requiring more machinery, and generally greater man-power. Quartz mines were often operated by companies, with varying numbers of shareholders.

Farming

In addition to evidence of historic gold mining, this area was also opened to farming in the 1860s and 1870s, with many miners likely to have also run small farm. Many land blocks were taken up in the early 1870s as part of the Macraes 100, with grants identified on an 1874 plan (SO 625). This plan not only shows blocks, but the names of some of those to whom the land was granted, as well as the auriferous reserves. Evidence of historic agricultural activities within the area are generally the remains of structures – small cottages, houses, sheds and enclosures.

2.2 Previous Archaeological Work

A considerable amount of archaeological survey and investigation work has been carried out in the Macraes district, the majority of which has been linked with impact assessments for modern mining operations. It is not intended in this report to provide a complete list of all work and reports completed in the district. A summary of key work, particularly those reports of relevance to the current proposal is provided here however. This is of relevance in that it assists in outlining the current understanding of the archaeological resource within the area, as well as providing an understanding of the extent to which this resource has been impacted upon by modern farming and mining operations. This summary of work is presented below in relation to the author of relevant reports reviewed as part of this project.

Hamel – Completed in 1991, the Hamel report provides a synthesis of gold mining in the Macraes district from the mid 19th to early 20th centuries. As part of the work Hamel identified and recorded a number of key sites in the district, and provides sketch plans of many of the features. The report also provides a succinct summary of operations and changes in mining technology over this period. It is noted however that the work was defined by a specific area and it is stated through the report that there are significant sites that were known to exist but which sat outside the study boundary. The boundary of the Hamel study was linked to the area covered by an application for new licence areas that stretch in a broad band south east from Horse Flat Road, across Deepdell Creek, east of the Round Hill Mine and Macraes township and down Golden Bar Road (defined on Macraes Development map July 1991 – Hamel Fig 3). Part of this area is included within the current study area.

The area of Horse Flat examined by Hamel was primarily the area around Golden Point Road. Her report does however identify that a creek running to the south west of the study

⁴ Ulrich 1875:232

area contained the remains of old sluicing, and it is suggested that this pattern would be common in many of the creeks within the Deepdell / Horse Flat area.

Hamel also notes that the Horse Flat workings can easily be divided into alluvial workings (generally larger areas of workings, characterised by irregular open pits or faces in the floors of gullies, usually with one low side or a tail race leading out of them); or quartz mining (generally larger operations, but with relatively small pits, much tidier in shape, limited drainage though may occasionally have a narrow channel cut to drain water from adits. These sites are generally located on ridge tops or higher slopes, along definable reefs).

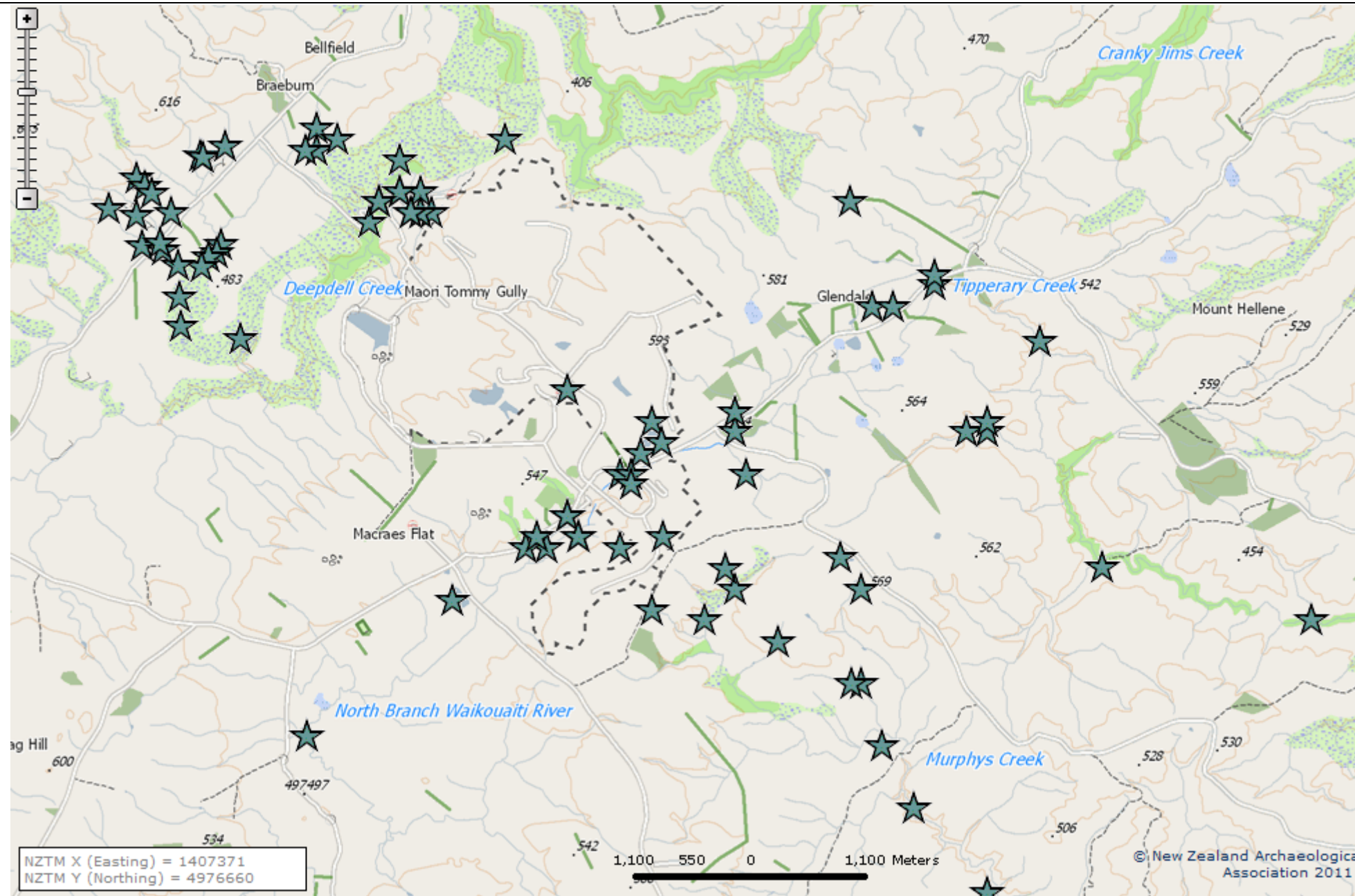


Figure Two General Macraes Flat showing the location of recorded archaeological sites prior to assessment survey. Each star represents a recorded feature or site. Detailed maps including information on site record numbers of each survey area discussed in this report are provided in the relevant section of the report. Source NZAA Archsite database January 2011

Petchey Since the early 1990s Petchey has carried out a significant amount of work on gold mining in the Otago region, and specifically Macraes Flat. Not all work completed by Petchey was referenced for this assessment, however all work carried out within the general area of the Macraes Mine and adjacent to areas to be physically impacted by proposal was reviewed. Key to the current work are reports on Duke of Edinburgh and Tates (Galli) Mines, the Tipperary Gully area, and the area around the Macraes Back Road.

In terms of gaining an understanding of the extent and nature of the heritage landscape in the Macraes district the Petchey work provides the most comprehensive detail. Work covered includes not only survey and impact assessments, but a number of archaeological investigations that were carried out as part of the requirements of authorities that were obtained from the Historic Places Trust. The significance of this is that as a result of the work a more detailed understanding of the nature of sites is possible.

Cable & Habberfield-Short – This report was commissioned to provide an assessment of proposed plans to extend the Fraser West Rock Stack. As a result of the work a number of features associated with early mining operations were identified.

Wright / Nichol & Wright Two pieces of work completed by Nichol and Wright were consulted as part of this review – an assessment of a proposed prospecting area adjacent to Horse Flat Road (2008), and an assessment for a proposed tailings impoundment area in the Macraes Back Road area (2009). The Horse Flat Road assessment covers land located on flats on western side of Horse Flat Road, and is outside the area identified as part of the current assessment. The report was however reviewed in order to obtain a general background of mining in the area.

The latter report, covering the area to the immediate north-west of the Macraes – Dunback Road overlaps with some of Petchey work, and identifies features associated with the sites recorded in the area by Petchey. This assessment is significant to the present study as it covers part of the area of the proposed Top Tipperary Tailings Storage Facility as well as the general location of the proposed Macraes-Dunback realignment, and the Back Road Waste Rock Stack.

One of the difficulties with the Nichol and Wright report is that none of the features identified were formally recorded in the NZ Archaeological Association database and the maps provided in the report do not provide a clear indication as to the location of features on the ground. Following submission of the report however the Historic Places Trust granted an authority for the construction of the tailings impoundment as identified in the report (HPT authority 2010/223). This is discussed further in Section 5 of this report.

2.3 Summary of Archaeological Landscape

The Macraes district can be considered as a complex and extensive heritage landscape. There are a variety of historic site types, representing farming, alluvial and quartz mining operations. A considerable amount of archaeological and heritage assessment and inventory work has been carried out in the district since the early 1990s, and this has

identified that while the area has been extensively impacted by modern farming and modern mining operations, evidence of earlier activities does remain.

3 Historic Heritage Protection Mechanisms

3.1 Statutory Obligations

In conjunction with district and regional plans there are several pieces of national legislation that assist with the protection and management of heritage sites. These must be considered with regard to any development or land use proposal that may affect archaeological sites and landscapes within an area. Legislation that will guide this proposal from an archaeological perspective includes, amongst others, The Historic Places Act 1993 and the Resource Management Act 1991. The requirements of this legislation must also be considered with regard to the impacts of any development or proposal that may physically impact on the archaeological resource.

3.1.1 The Historic Places Act 1993

Under the Historic Places Act 1993 (HPA), all archaeological sites, whether recorded or not, are protected and it is illegal to destroy, damage or modify an archaeological site without an Authority to do so from the Historic Places Trust (HPT).

An archaeological site is defined in the HPA 1993 as any place in New Zealand that:

Either

- (a) *i) was associated with human activity before 1900; or*
ii) is the site of the wreck of any vessel where the wreck occurred before 1900; and
- (b) *is or may be able through investigation by archaeological methods to provide evidence relating to the history of New Zealand.*

In considering any application for an Authority, the Trust may grant fully, or in part, or decline any application. The Act allows for up to 3 months for the Trust to process an Authority after the application has been formally lodged.

3.1.2 The Resource Management Act 1991

Part II of the Resource Management Act 1991 (RMA) outlines the Purposes and Principles of the Act. In outlining the purpose of the Act, Section 5 states:

1. *The purpose of this Act is to promote the sustainable management of natural and physical resources.*
2. *In this Act, "sustainable management" means managing the use, development and protection of natural and physical resources in a way, or at a rate, which enables people and communities to provide for their social, economic, and cultural wellbeing and for their health and safety while –*

- (a) Sustaining the potential of natural and physical resources (excluding minerals) to meet the reasonably foreseeable needs of future generations; and*
- (b) Safeguarding the life supporting capacity of air, water, soil, and ecosystems; and*
- (c) Avoiding, remedying, or mitigating any adverse effects of activities on the environment.*

In 2003 amendments to the RMA elevated historic heritage to a Matter of National Importance under Section 6 (f), which identifies the need to recognise and provide for “the protection of historic heritage from inappropriate subdivision, use, and development.”

A definition of Historic Heritage has also been added with the amendments to the RMA. This defines Historic Heritage as:

a) Those natural and physical resources that contribute to an understanding and appreciation of New Zealand’s history and cultures deriving from any of the following qualities:

- (i) Archaeological*
- (ii) Architectural*
- (iii) Cultural*
- (iv) Historic*
- (v) Scientific*
- (vi) Technological; and*

b) Includes –

- (i) Historic sites, structures, places, and areas; and*
- (ii) Archaeological sites; and*
- (iii) Sites of significance to Maori, including waahi tapu; and*
- (iv) Surroundings associated with the natural and physical resources.*

3.2 Non-Statutory Obligations

3.2.1 OceanaGold – Heritage Management Plan 2005

Originally completed in 1998 and updated in 2005, the OceanaGold Heritage Management Plan was developed as a condition of resource consents with the objective of ensuring that “*identified heritage sites (including archaeological sites both pre- and post-1900 in origin) would only be modified or destroyed where no other reasonable option exists.*”⁵

⁵ OGL Heritage Management Plan Update 2005 pg 1

Within the Management Plan criteria for the assessment of archaeological and heritage sites is outlined (Chapter 4) based on those recommended by the Historic Places Trust. A system of site ranking, based on these criteria, is then proposed. The proposed ranking is as follows:

Grade I Sites of national importance. Must be amongst the best or rarest examples of their type nationwide. Outstanding archaeological landscapes. Very high archaeological potential.

Grade II Sites of regional importance. Must be amongst best or rarest examples of their type in the Otago region. Very good archaeological landscapes. Very high archaeological potential (not necessarily expressed by surface remains).

Grade III Well preserved common sites or damaged rare sites, with considerable potential for archaeological information. Good archaeological landscapes. Includes sites with little surface evidence but with high archaeological potential.

Grade IV Very common or badly damaged sites, with little surface interpretative value. May still have archaeological value.

Grade V Very badly damaged sites. Areas where sites are known to have existed, but have been almost completely destroyed.

Using this system, the Heritage Management Plan proposed that sites considered to be ranked as Grade I or Grade II “*are worthy of serious consideration for permanent preservation, and any modification should be subject to serious consideration and all alternatives considered.*” It is suggested that the remaining grades of sites are considered for differing levels of recording and investigation, depending on proposed levels of impact.

It is noted in the document that the ranking system is proposed only as a management tool to assist in guiding decision making, to allow basic understanding of site significance, and that all sites that are likely to be affected by proposals should be the subject of a descriptive assessment.⁶

In relation to the development of the mine at Macraes, defined as the creation of large open-cast pits, and associated waste rock stacks, infrastructure, haul roads, drainage works, silt dams, sumps etc., it is stated that archaeological authorities will be sought from the NZ Historic Places Trust for all pre-1900 sites that are to be destroyed within the footprint of works. The management plan notes that “*while the location of the pit is defined by the ore body, it may be possible to vary the location of waste rock stacks and other infrastructure to avoid important heritage sites, provided that they are identified as such early enough.*” The plan continues, to note that “*financial implications will play a part of (sic) this decision making.*”⁷

Section 8 of the Management Plan outlines proposals for the management of sites adjacent to mining and modification zones. It is important to consider the proposals contained within

⁶ Ibid. pg 19

⁷ Ibid. pg 24

this section as part of this report for two key reasons. The first is that in proposing mitigation for sites to be avoided as part of works and managed long term there is a need for an understanding of the principles that will guide the management of the sites. Secondly, in the past, as modern mining at Macraes has expanded, sites that had been identified for long term protection and management have had to be reconsidered in relation to amended mine development plans. It is important that when considering or assessing the long term management options of historic heritage sites, that possible threats to this from changes in mining operations are considered so that a site identified as significant and worthy of high level protection is not later included within operation areas.

4 Field Survey

4.1 Methodology

A survey was carried out on foot of all areas to be impacted by proposed works associated with the Macraes Phase III extension. Prior to going into the field archaeological reports for both the general area and specific locations within the project area were reviewed. Copies of site record forms for any previously identified and recorded sites were taken into the field and these, in conjunction with recent aerial photographs were used to relocate sites on the ground.

Historic aerial photographs, flown in 1947 and 1999⁸ were also examined. These were useful in identifying historic and more modern mining features. The 1947 aerial photographs were particularly useful in not only identifying areas of historic working, but where land forms have changed or been significantly modified over the last sixty years, resulting in the loss of visible historic features. In addition to this, historic survey plans of the area were examined in order to identify areas of historic working and habitation.

When sites were identified in the field the location was recorded with a hand held Garmin eTrex GPS unit, a description of features was made and where possible features were photographed. Due to time constraints during the field survey detailed plans of features at sites were not compiled. All measurements are paced, unless otherwise stated, and plans of sites are sketches only. Detailed measurements of any built structures (huts, house remains) were made, however these should not be considered as forming complete and accurate building records.

The field survey was carried out by two archaeologists, enabling good coverage of areas. In areas such as Camp Creek this allowed both sides of the creek to be surveyed for archaeological sites.

4.2 Results

The results of the field survey are provided below, and have for ease of discussion been separated into geographic locations, linked with proposed activities associated with the proposed MP III project. These are as follows:-

⁸ http://ortho.linz.govt.nz/high_res_jpg/1999_00_jpg_high_res/i42d_fy_99_00.jpg
http://ortho.linz.govt.nz/high_res_jpg/1999_00_jpg_high_res/i42c_fy_99_00.jpg

- Camp Creek (proposed dam and associated reservoir);
- Macraes Back Road (proposed realignment of Macraes – Dunback Road – covered in a separate report⁹ but discussed in summary here);
- Tipperary Creek (Top Tipperary Tailings Storage Facility),
- Back Road Waste Rock Stack,
- Frasers Rock Stack (extension areas).

As a result of this survey a number of previously recorded archaeological sites were revisited and information on them updated. A total of twelve new sites were recorded. Copies of site record forms for all sites are appended with this report as Appendix One. Included in Appendix One is a summary table of information on the twelve newly recorded archaeological sites.

4.2.1 Camp Creek:

At the time of the field survey the precise location of the proposed dam was unknown, however plans were provided that indicated the likely area where the dam would be constructed and the likely maximum extent of the reservoir when full. The area of Camp Creek surveyed was effectively that area in the creek bed immediately to the east of the existing farm shed near the Camp Creek bridge on Horse Flat Road, downstream to the junction of Camp Creek with Deepdell Creek (Figure Seven).

A total of ten previously unrecorded archaeological sites were identified in the Camp Creek survey area. All of these features, with the exception of the remains of a stone hut, are located on flat areas or natural terraces within the base of the creek gully. All features are associated with gold mining, and include the remains of water races, hut sites, prospecting pits and evidence of sluicing. One of the sites recorded (I42/154) represents the remains of a dry stone culvert under Horse Flat Road, an historic feature that has been built over in the construction of the current road. All of the sites identified as a result of this survey are considered to have archaeological values and have been formally recorded as archaeological sites in the New Zealand Archaeological Association national database.

The Camp Creek gully is in many places very narrow, with steep rocky sides. Along the length of the Creek there are however several small natural terraces. Towards the eastern end of the Creek, upstream of the junction with Deepdell, there is one large flat area, and this contains extensive evidence of both mining activities and occupation.

I42/148: Water Race and workings – features located on the true left side of the creek on a small, narrow area of flat land. The water race runs approximately 30m in length, parallel with the creek. The water race is narrow, on average less than half a metre wide, and has a bank along its length on the creek side of the cut.

⁹ Barr, C 2010 Archaeological Assessment – Proposed Macraes- Dunback Road Realignment Earthworks

There are three square shaped features along the length of the water race, - two possible prospecting pits and one small sluicing trench. The flat land between the creek and the hill slopes is small – only 6m wide at the central point.

I42/149: Water race – this feature is very overgrown with thick bush, matagouri and gorse, however the cut of the water race could be identified, running 54m alongside the creek. The race takes advantage of a small bend in the creek, cutting across a low flat in a straight line. At the northern end of the race the cut is 1m wide, however it is 3m wide at the southern end. There is evidence of pig rooting and stock damage to the feature.

I42/150: Prospecting pit -The pit is roughly circular pit measuring 50cm x 55 cm and 50cm deep. The pit appears to have been partially in-filled as a result of farming activities.

I42/151: Water race - located within bend of the creek. The area is covered in dense bush and the full extent of the race could not be inspected, however it does appear that a large part of the race has been destroyed as a result of stock trampling.

I42/152: Prospecting pit – located up a side gully heading towards Horse Flat Road (west). Shallow pit measures 1.80m x 2.2m. There is evidence of other possible workings in this area. These are not very clear however, with obvious evidence of stock trampling which has impacted on the definition of features. The area has also been used in part as a rubbish tip for farm debris, with evidence of a variety of appliances having been tipped into the gully.

I42/153: Remains of stone hut – identified by landowner as “Harry’s Hut” this is reported to have been lived in by a hermit known as Harry during the 1930s and early 1940s. The hut is located adjacent to a natural rock outcrop near the western end of a gully running down (east) towards the main Camp Creek gully. The hut consists of two walls made of schist and mud, using natural rock formation as the remaining walls. The entry doorway is located in the eastern wall, next to a small fireplace with well built chimney. The liveable area of the hut is small (4.60m sq), and it has a dirt floor. It is possible however that beneath this there is a schist floor. Along the western interior wall of the hut (rock face) some holes have been drilled. These possibly supported a small camp stretcher.



Figure Three View of the remains of “Harry’s Hut” nestled in rock outcrop (I42/153)

Small steps have been cut into the rock at the southern end of the hut, leading up onto the rock outcrop above the hut and providing a view down the gully towards Camp Creek.

While the hut is reported to have been lived in during the early 1900s, there is no clear indication that this is when the structure was first constructed. It is possible that it was built during the early period of mining in the Horse Flat area, and was reused at a later date. Until such time as a date for construction can be confirmed the hut should be considered to meet the definition of an archaeological site under the provisions of the Historic Places Act 1993. The remains of the hut are also one of the few visible examples of a small stone hut that remain in the district.

In addition to the standing structure, there is also potential for sub-surface archaeological evidence in the immediate area, associated with the occupation of the hut. This would include evidence of external structures as well as rubbish pits and refuse areas.

I42/154: Stone culvert – located where a small creek passes under Horse Flat Road. Approximately 1m under the modern road formation there is a small, stone culvert. This is likely to be associated with the earliest alignment of the road along Horse Flat, dating from the 1870s.

I42/155: Water Race and workings – located on a flat area at the junction of Camp Creek gully and a gully leading to the west and Horse Flat Road. There is evidence of stock trampling and vegetation damage to some of the features, however there are a number of well defined features on both sides of Camp Creek at this location. The main race runs parallel to the creek, on the true left bank. Where Camp Creek turns toward the east the race follows, then drops into a rectangular cut measuring 6m x 12m. At this point the ground is higher than the creek and it appears that the rectangular cut provided a spillway for water back into the main creek.

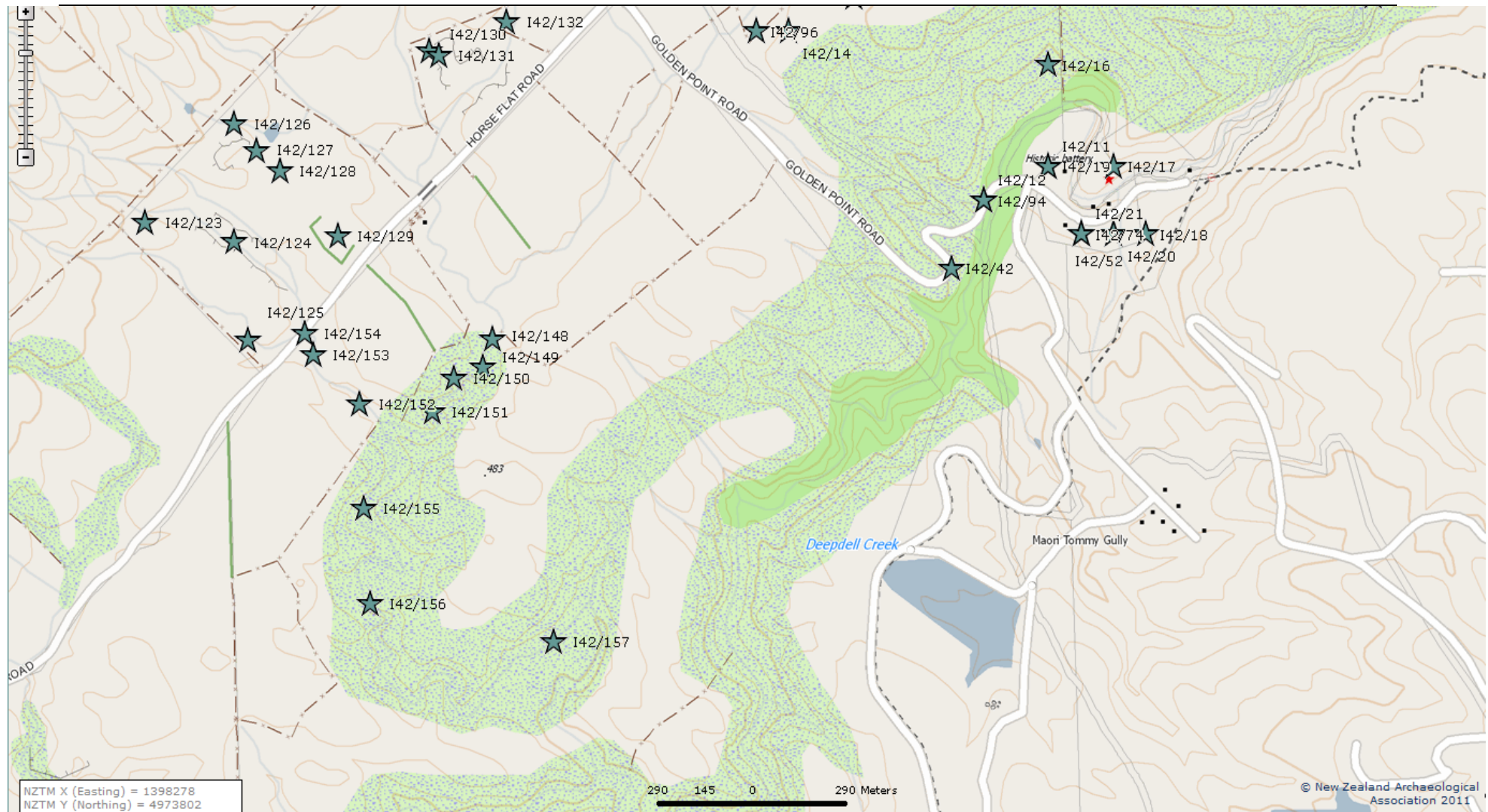


Figure Four Map showing the location of recorded archaeological sites in Horse Flat / Deepdell Creek area. Camp Creek runs from Horse Flat Road to Deepdell Creek in the centre of the photo. Source NZAA Archsite Nov 2010

I42/156: Workings and Hut sites – features associated with this site are located on both sides of Camp Creek. The site consists of a number of water races, prospecting and sluicing pits / depressions and hut sites. There is one clearly defined hut that has several standing stones outlining the extent of the feature. It is likely that this hut had a stone base, with canvas walls (as opposed to a stone walled hut). This type of hut was more common in temporary mining sites. There were areas within the flat where the grass was quite long, and it is possible that there are more hut sites in the clearing.



Figure Five General view to north west of Site I42/156. Camp Creek on extreme right of photo

I42/157: Hut site and workings – this is the most extensive area of workings recorded as part of the survey. There is evidence of occupation and working along the entire length of this flat, on the true right bank of the creek. At the southern end of the clearing there are steps cut into the rocks providing access down a steep face to the workings. There was probably a clear track associated with these at some point, however this is no longer visible.

There appears to be one main water race that runs the entire length of the clearing. Below this (to the west) and between the main water race and Camp Creek there are the remains of sluicing workings and smaller water races. Again, these features run the entire length of the clearing (approximately 430m).

Toward the northern end of the clearing there are the remains of a hut. This is considerably larger than that at site I42/156, and appears to have consisted of two rooms. The outline of

the hut is clearly defined, by both the remains of upright stones and a low earth bank. As with the hut at I42/156, it is possible that this hut had upright stones as a base, with canvas walls and roof. While it is possible, given the size of the hut, that it had more durable walls, there was no evidence of either timber or corrugated iron remnants that may suggest this. Excavation of the feature may also indicate whether it originally had a stone or dirt floor. There are the remains of a fireplace at the southern end of the hut.



Figure Six (a) view of cut track leading down to Site I42/157, and (b) view of remains of fireplace at hut site, Site I42/157

Given the extent of workings at this location it is likely that there are further hut sites along the creek terrace however time constraints at the time of the assessment did not allow for a detailed survey of the entire area.

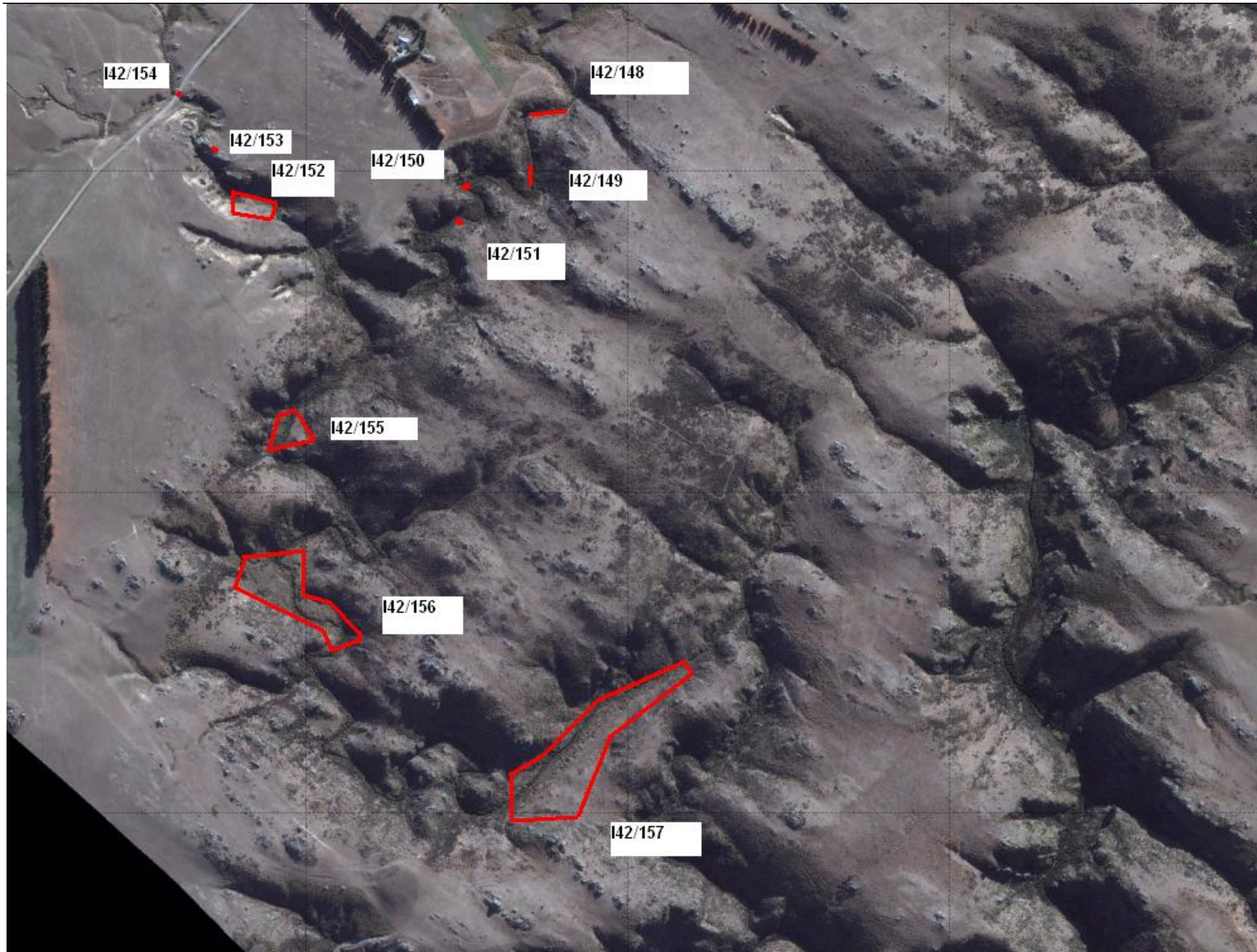


Figure Seven Aerial view of Camp Creek area showing the location of archaeological sites discussed in text (base aerial image taken April 2010)

Summary Camp Creek – Potential Impacts

As a result of the archaeological survey along a section of Camp Creek to the east of Horse Flat Road, a total of ten previously unrecorded archaeological sites were identified. These sites are generally located on natural terrace areas immediately adjacent to the Creek bed and contain evidence of alluvial mining (water races, sluicing) as well as occupation sites (huts).

Each of the identified archaeological sites are considered to have significant archaeological values. Alluvial mining in the Horse Flat area has been identified as some of the earliest gold mining activities in the Macraes District (Hamel 1991). It is noted however that until investigations of the sites is carried out it is not possible to assign a specific date to the occupations.

As a group, the workings on the low terraces adjacent to Camp Creek present an example of a significant historic landscape. Sites of this nature and type are common on small creeks and streams in the Macraes area. It is possible that a similar distribution of alluvial mining sites such as these will remain alongside creeks such as the upper Deepdell Creek, where no archaeological surveys have been carried out, however the location and condition of other sites cannot be considered as a measure until archaeological surveys of these areas are carried out. Despite this, it is considered that site I42/157 represents a good example, in good condition, of an extensive area of alluvial workings and habitation.

Preliminary results of this archaeological survey were provided to OceanaGold in November 2010. At this time the exact location of the dam and reservoir footprints had not been finalised. The preliminary results were included as part of OceanaGold's selection criteria for the dam site, and a preference for a dam site upstream of the location of site I42/157 was identified.

Based on the dam and reservoir footprint provided by OceanaGold in January 2011 (Figure Eight), a number of the sites identified will be negatively impacted upon by the creation of a dam and reservoir in Camp Creek. These sites are sites I42/149 – 152, and I42/155 – 156. As these sites are all located on the flats immediately adjacent to the stream bed, they will be inundated as a result of the construction of the dam and the resulting reservoir. Depending on the reservoir level site 5 may be partially impacted, however sites I42/148, I42/153, I42/154 and I42/157 are likely to be outside the impact area.

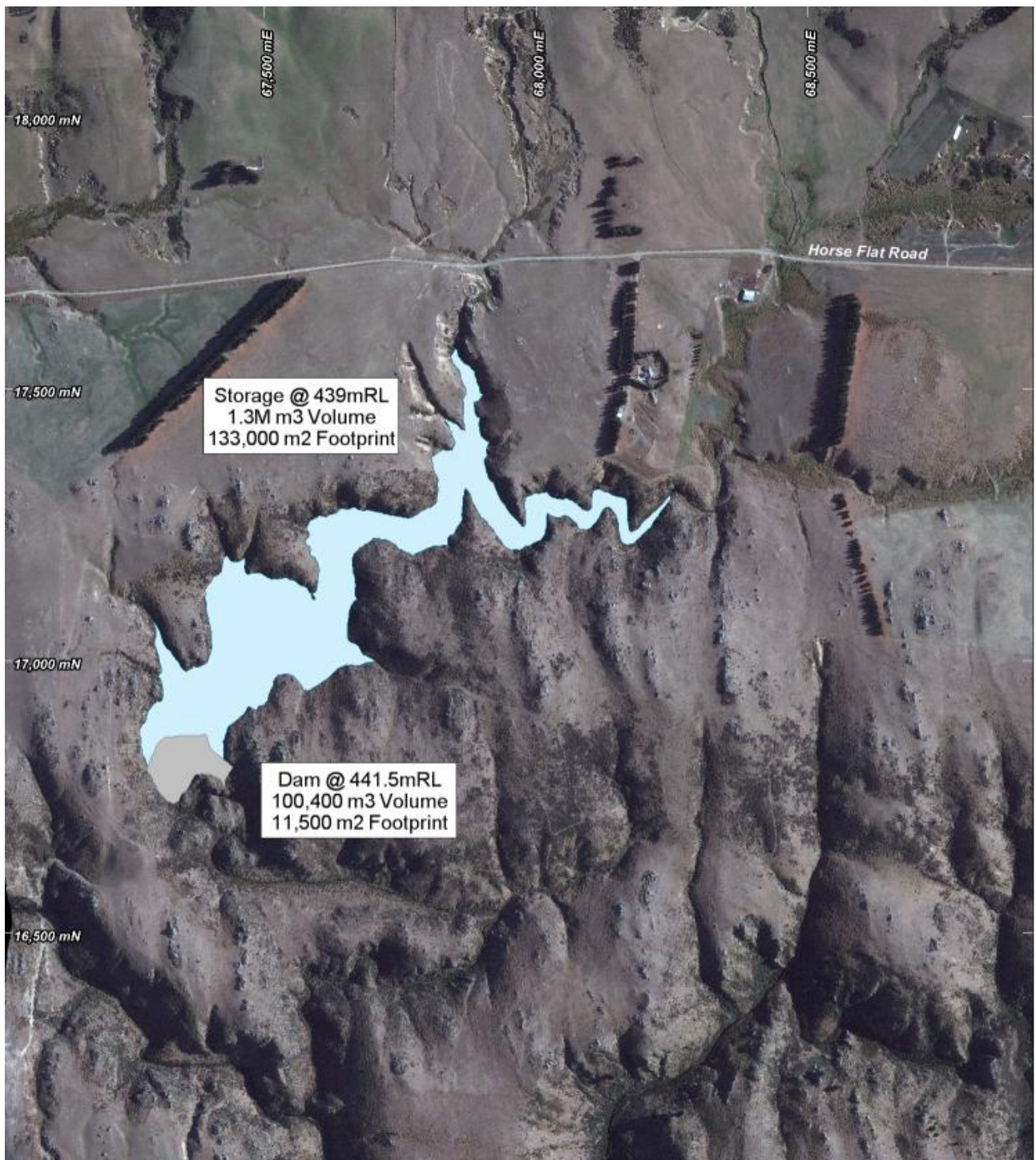


Figure Eight Macraes Phase III Plan Camp Creek Freshwater Dam (base aerial image taken April 2010)

4.2.2 Macraes – Dunback Back Road

The proposal to realign the Macraes – Dunback Road will result in placing the road close to the original historic track (known as Macraes Back Road, a legal but unformed road) as shown on historic survey plans and visible in historic aerial photographs of the area. Petchey¹⁰ notes that the road was used for a short time as a main thoroughfare running along the ridge top that separated the catchments of the Waikouaiti and Shag Rivers. This route was replaced in the 1860s, however continued to be used as a farm access track. This general area was the location of what is reported to have been the earliest quartz mining at Macraes (The Duke of Edinburgh (Eclipse) Mine) as well as later historic mining in the 1940s (Tate's (Galli's) Mine and associated battery).

The route of the proposed realignment was walked by two archaeologists, who covered an area slightly wider than the proposed road footprint.

Applications for Resource Consent and HPT authority have been submitted for the preparatory earthworks associated with the proposed road realignments (HPT lodgement reference 2011/318). The MPIII project covers the formation of a road surface and the realignment of the Macraes-Dunback Road. The majority of the route of the proposed works associated with the road is open farmland, which has been ploughed over many years. As a result there is limited visible evidence of historic or archaeological sites within the flat paddocks. Despite this several archaeological sites or features were identified, one of which had previously been recorded by Peter Petchey, associated with the Tate's (Galli's) mining operation (NZAA site I42/91). There are also a number of features within this general area that were identified as part of the Nichol and Wright survey in 2008, however these have not been formally recorded.

Tate's Mine (I42/91) – there are limited physical features remaining of the mining operations indicated on the 1939 plan compiled by Williamson¹¹. In 1996 Petchey noted that there was no evidence of the hut identified on the Williamson plan, however a shaft and associated mullock heap were identified. These features remain in a field, surrounded by cultivated ground. The shaft and mullock heap associated with the Tate's mining operation does not appear to be affected by the proposed earthworks as the route appears to pass over 50m to the south of the mullock heap and shaft.

Associated with Tate's (Galli) mining operation a number of other features were identified during the site walkover, some of which, based on descriptions provided, are features identified by Nichol and Wright. These are discussed below in the section related to the proposed Top Tipperary Tailings Storage Facility. It is of note however that some of the features may be associated with operations earlier than those of the Tate mine, however there is no way to clearly distinguish or identify this based on physical descriptions of the features alone.

¹⁰ Petchey 1996b *Macraes Back Road Waste Rock Stack Site: Archaeological Survey* page 5

¹¹ Williamson, J H 1939 *The Geology of the Naseby Subdivision, Central Otago* Geological Bulletin No 39 Map 7

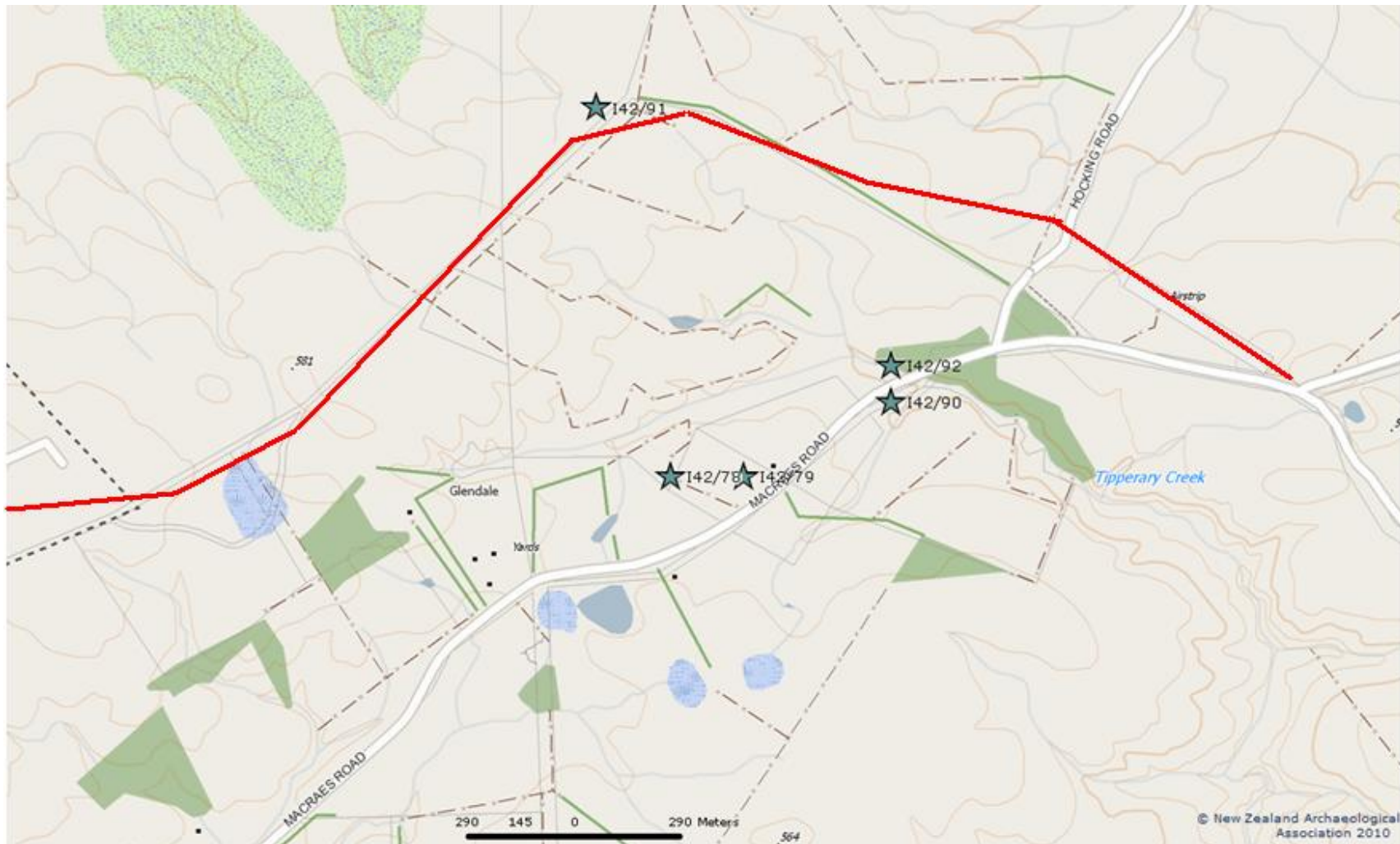


Figure Nine Map showing location of proposed Macraes – Dunback Road realignment (red line) and recorded archaeological sites discussed in text. Source NZAA Archsite database November 2010

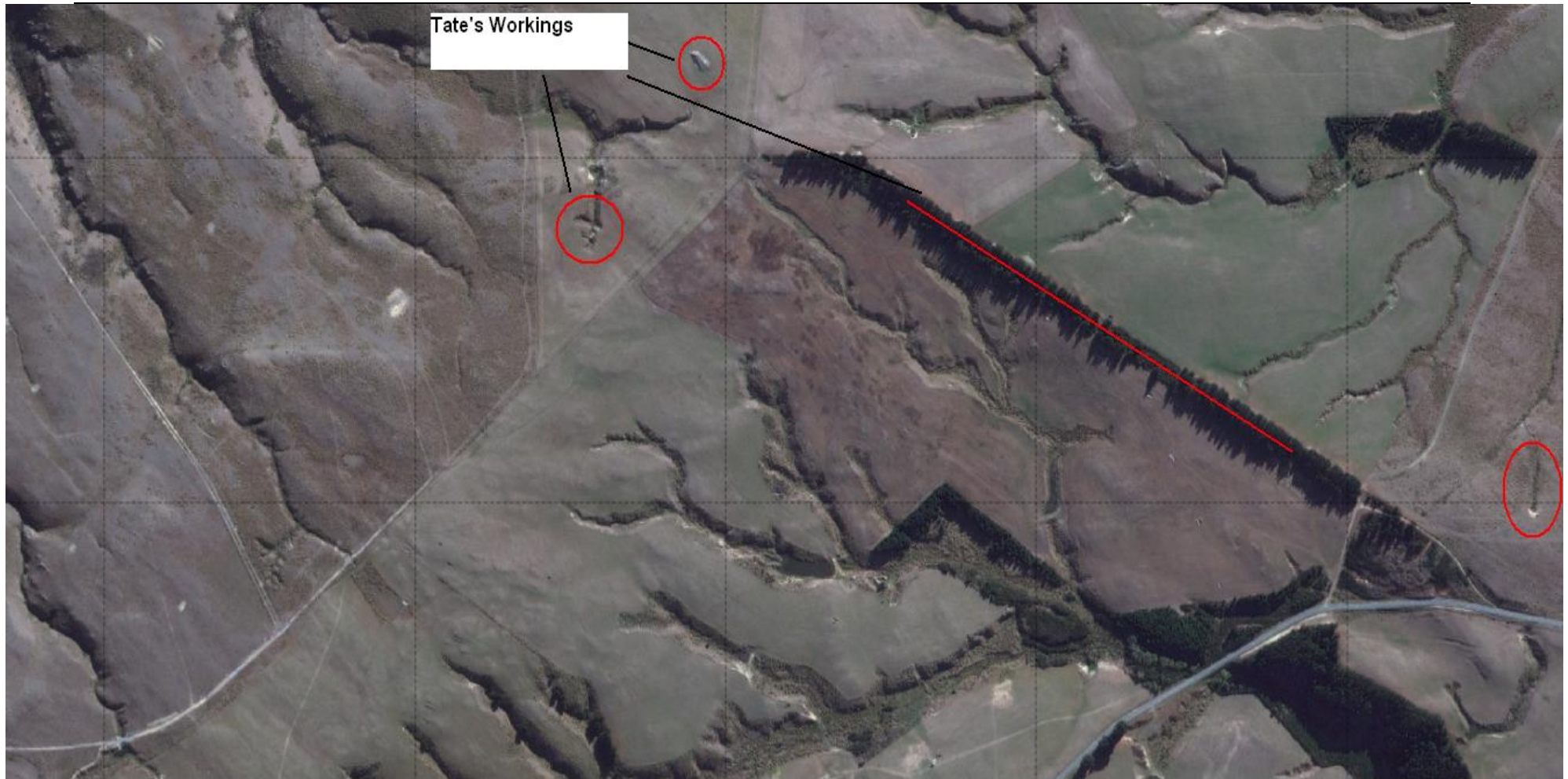


Figure Ten Aerial Photograph showing the location of workings associated with the Tate Mine as discussed in text (base aerial image taken April 2010)

Summary proposed earthworks for Macraes – Dunback Road

The landscape through which it is proposed to realign a section of the Macraes – Dunback Road includes a number of historic features associated with early gold mining. Within the route of proposed earthworks the main area of historic features that will be impacted by the construction of the new road and associated preparatory earthworks are at the eastern end. At this point the road will cut over the heads of several gullies with evidence of workings. Full details on the impact assessment of this proposal are provided in the report commissioned for this work (Barr 2010).

4.2.3 Top Tipperary Tailings Storage Facility

A new tailings storage facility (to be called the Top Tipperary Tailings Storage Facility), is proposed for construction in the upper Tipperary Creek catchment basin. The resulting impoundment lake area associated with the storage facility will cover a total area of 184ha, including the dam footprint. This covers a large area of what is currently open pasture on either side of the existing Macraes – Dunback Road. The northern and eastern boundaries of the storage facility will be defined by the proposed new section of Macraes – Dunback Road (discussed above) and to the west will be the Frasers East Waste Rock Stack.

Within the area of the proposed storage facility there are a number of recorded archaeological sites, and several archaeological features identified by Nichol and Wright but not formally recorded in the NZAA database. Although the location of sites is indicated on maps as single data points, some of these features are quite extensive, specifically the trenches and working associated with the Duke of Edinburgh Mine (I42/78), and the alluvial workings recorded in Upper Tipperary Creek (I42/90). Each of the recorded archaeological sites were relocated and re-inspected as part of this assessment. Current information on the condition of the features and the likely impact of work was noted. Detailed plans of features were not compiled as those that already existed were considered sufficient for this assessment, and due to time constraints as part of this work. Where possible GPS readings of features were noted, and photographs of features were taken.

Within the area of the Top Tipperary Tailings Storage Facility recorded sites to be affected are:–¹²

I42/78 – Duke of Edinburgh Mine – includes dam and workings over a large area. Features associated with the mine that are within the footprint of the tailings storage facility include the main area of the mine and battery (the visible remnant of the shaft now filled with farm debris), the dam and associated adit and shaft in the Upper Tipperary Creek, prospecting pits, adits and trenches associated with the Duke of Edinburgh reef that can be assumed to be associated with the operation of the Duke of Edinburgh mine between 1866 and 1874.

Many features, particularly trenches visible in the 1947 aerial photograph of work along the Duke of Edinburgh reef, have been affected by farming activities since that time. As a result, the visible evidence of this mine, the earliest quartz operation in this district, is not as

¹² Information on formally recorded archaeological sites consulted as part of this assessment was as at November 2010. Information on identified sites that have not been recorded is based on the Nichol and Wright assessment report dated July 2009

obvious as it was sixty years ago. The loss of a large percentage of the features associated with this mining operation only adds value to those examples that do remain.

Features attributed to the working of the Duke of Edinburgh reef extend considerable distance from the battery and dam site. One major area of trenching and prospecting is located over 2.1km to the north west of the shaft (305 degrees) but along the line of the reef as indicated by the central red line on Figure Eleven.¹³ This feature is discussed further below, in relation to the proposed Back Road Waste Rock Stack.

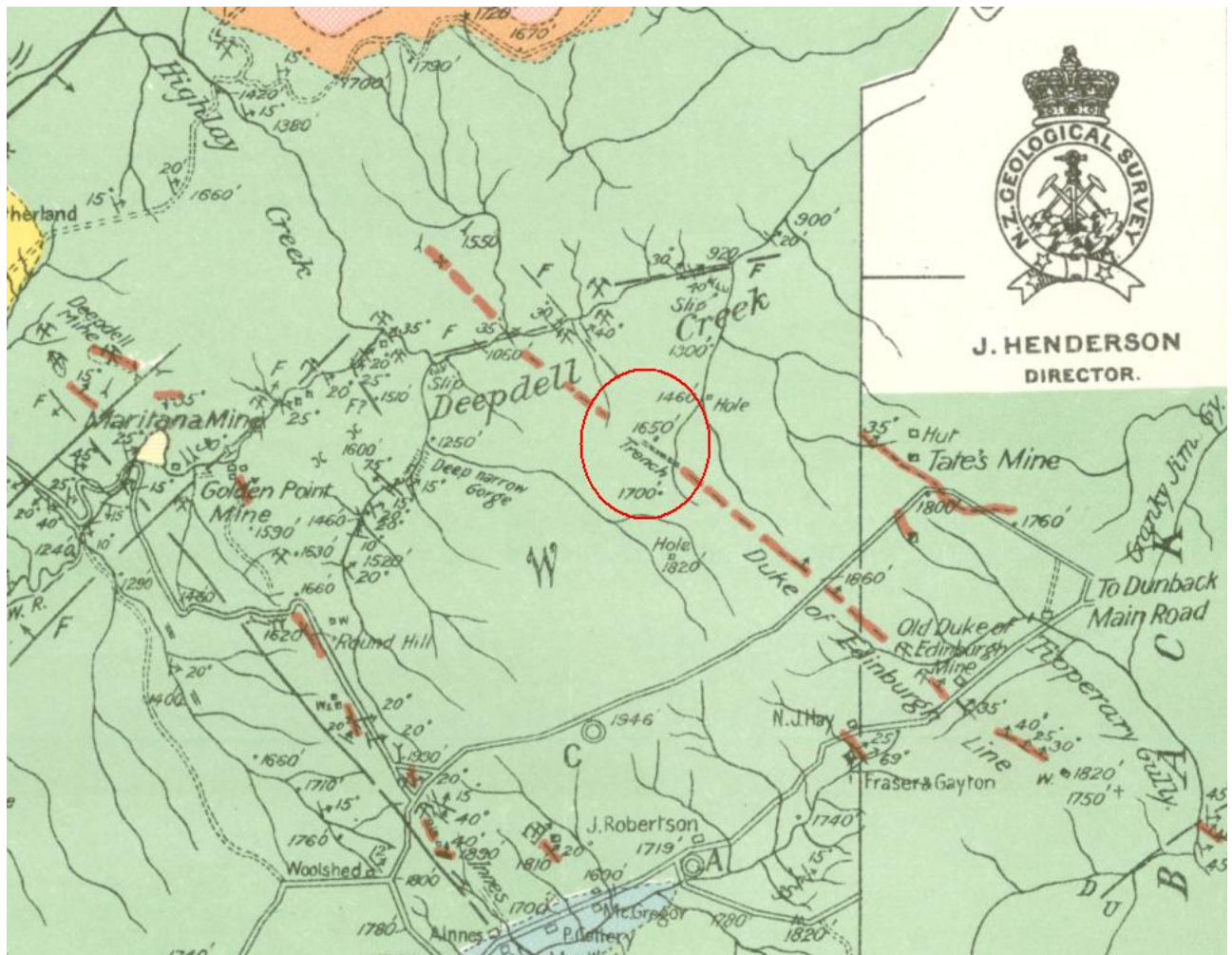


Figure Eleven Part of Geological Survey Map of Rock and Pillar and Highlay Survey District from Williamson 1939 – showing the location of reefs and associated works of Duke of Edinburgh and Tate's Mines. Note also the identification of the Macraes Back Road route passing through both workings. Marked with red circle is area of trenching associated with the Duke of Edinburgh reef and corresponding with the location of trenching discussed above.

¹³ This feature is discussed further below in relation to the Back Road Waste Rock Stack

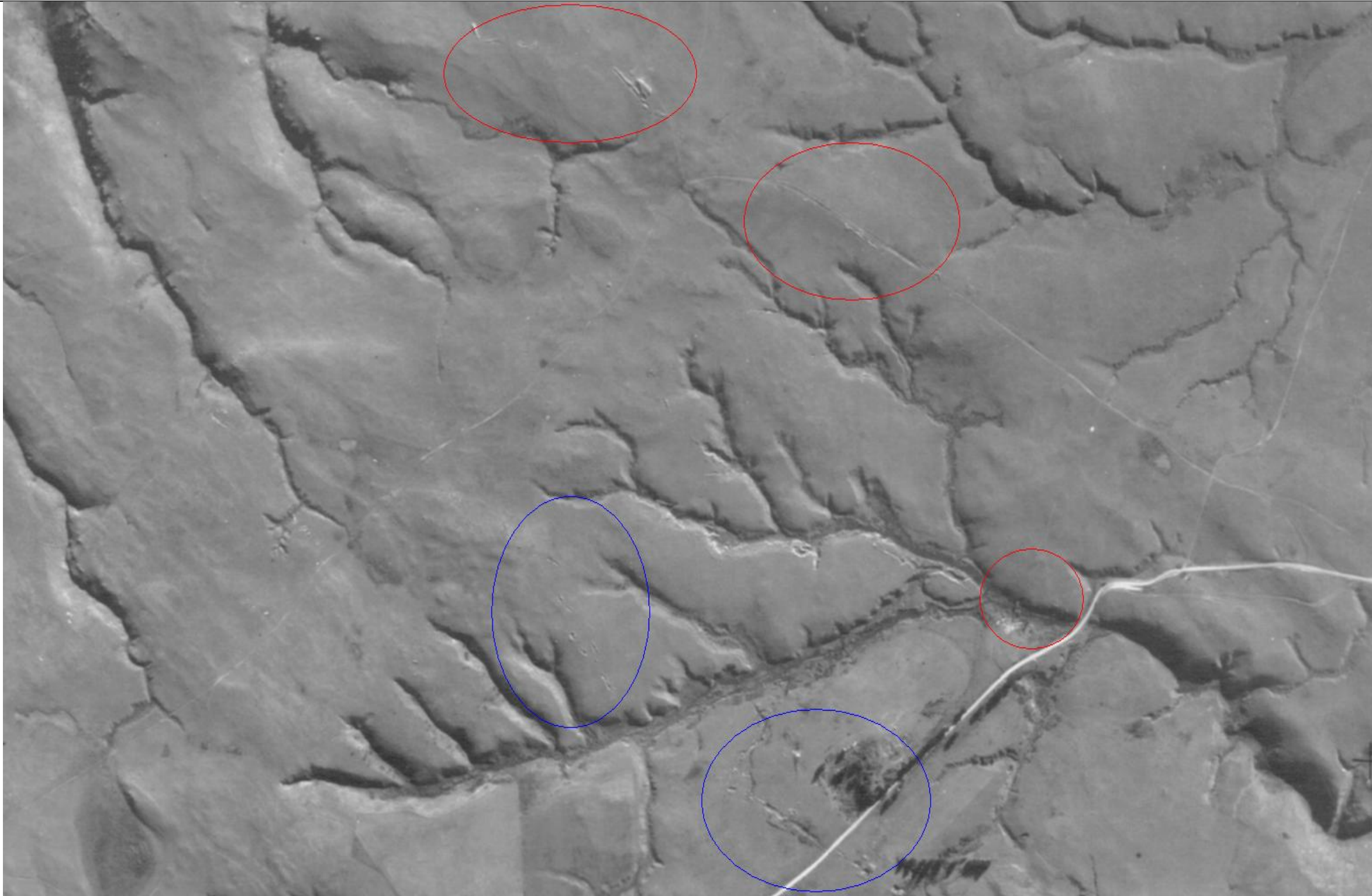


Figure Twelve 1947 Aerial Photo SN 501 1355 / 3 visible is the route of Macraes – Dunback Road, the historic route (visible as a track through the centre of the photo), Tate workings above the right angle of the track and parallel with the track (red circles). The Duke of Edinburgh workings are visible in the centre bottom of the photo (blue circles). The results of trenching and the result of sluicing operations can also be seen in creek gullies

I42/79 – remains of house with schist walls, with mud mortar on the outside. Petchey suggests that the building dates from the 1870s, and given its proximity to the workings, may be associated with the Duke of Edinburgh mine, however this cannot be confirmed. In addition to the stone walls of the house there is evidence of earth mound enclosures to the SW of the house.

The house and surrounding area has the potential to contain significant archaeological information and evidence, associated possibly with the early quartz mining company but also late 19th century farming activities on Macraes Flat. The house walls and immediate area have been adversely affected by the growth of several large macrocarpa trees, some through the walls of the house, resulting in the collapsing of the walls. The area of the house and associated features (sod / earth mound enclosure) are located directly under the proposed tailings storage facility.

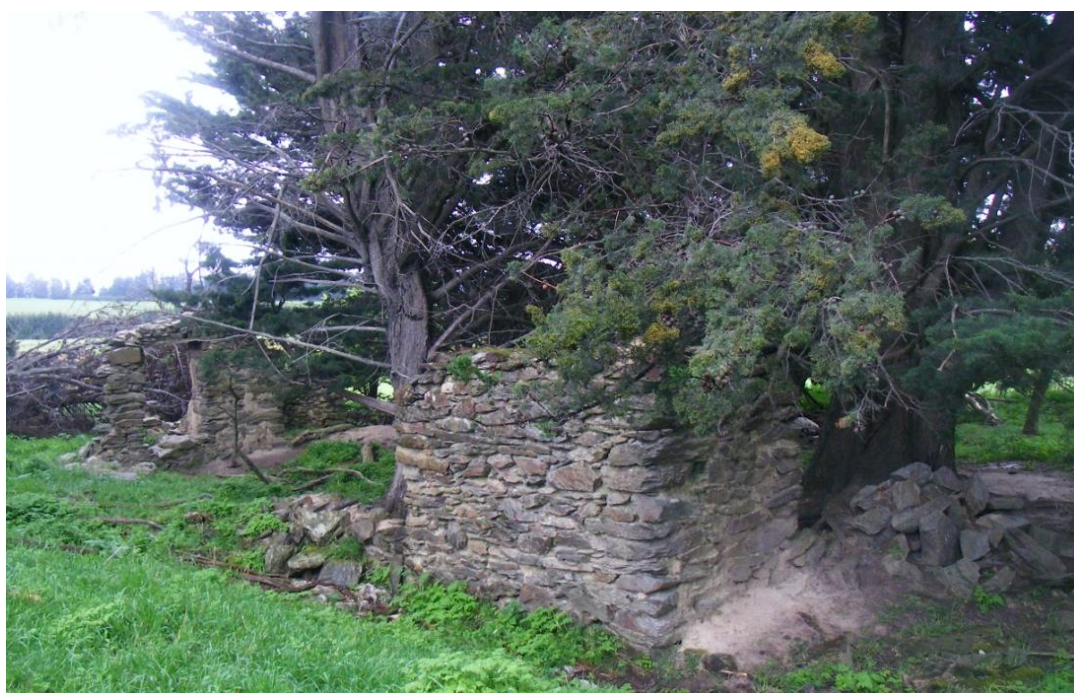


Figure Thirteen Remains of stone house recorded as archaeological site I42/79

I42/90 – alluvial workings located within the Upper Tipperary catchment on both sides of the existing Macraes – Dunback Road. Evidence of working includes remains of sluicing, water races, the remains of a benched track above the gully and remnant small ponds that are associated with historic dams. Some of these areas have been modified by farming operations, for example a more modern farm dam and pond on the south side the Macraes – Dunback Road. On the slopes of the gully and on the flats at the base of the gully, however, considerable evidence of gold mining activities remains. Included within this group of features are several of those identified by Nichol and Wright in 2009. Based on the descriptions provided in their report, it is considered that features identified by them overlap with the area of working recorded by Petchey as the Tipperary Creek alluvial workings.

On the southern side of the Macraes – Dunback Road the main Tipperary Creek gully widens. Approximately 800m down the gully, south of the road there is a flat area adjacent

to the creek. There is evidence here of working, prospecting pits and a possible hut site. Above the working, on the true left of the gully there is a small cave and rock shelter. This was first reported by Petchey in 1996¹⁴ but was not been formally recorded as an archaeological site. The cave has evidence that it was used as a shelter, with nails in the rock above the entrance suggesting a canvas door. A small pale green glass bottle (pickle jar) was found near the entrance to the cave. The cave will not be affected by the construction of the proposed tailing storage facility, however the area of workings on the flat below the cave, which are probably linked with the use of the cave as accommodation, were originally considered as the location of a silt pond. Plans for this feature have now been amended, and a silt / seepage sump located near the tailings storage facility will eliminate the need for a silt pond at this location. Based on this information there should be no physical impact on the cave or workings. The cave and associated mining workings have now been recorded as archaeological site I42/158.



Figure Fourteen View to east showing cave. Visible in foreground are depressions representing gold workings, likely to be associated with the occupation of the cave, recorded as archaeological site I42/158.

¹⁴ Petchey August 1996 pg 16



Figure Fifteen Close view of nails above entrance to cave

I42/91 – Tate Mine – the main shaft and mullock heap identified by Petchey will not be affected by either the proposed tailings storage facility or the realignment of the Macraes – Dunback Road. Proposals will however impact on trenching outside the main shaft area, particularly in the tree line and in the immediately surrounding area.

Located within a line of pine trees at the eastern end of the proposed tailings facility are the remains of workings that appear to correspond with the line of Tate’s working identified by Williamson in 1939. The main feature is a trench, over 100m long which winds much of the length of the tree line on a NW – SE alignment. At several places there are smaller trenches running off the main trench. There are two places along the trench where there are the remains of shafts. One of these has been filled in with debris (wire rope, fencing debris). The other shaft is partially filled in, but remains 2.5m deep. Examination of a 1947 aerial photograph shows a long trench at this location, parallel to the farm track¹⁵ however this does not extend the length of the area, suggesting that part of these workings may post date the late 1940s. Several of the small stream gullies around the main Tate workings on either side of the tree line also show evidence of modification. Given the clear proximity and link of these features to the Tate Mine (I42/91) as recorded by Petchey, information on them has been added to the record for that site.

The trench within the tree line will be affected by the creation of the Top Tipperary Tailings Storage Facility.

Features associated with Nichol and Wright’s field site number 1 was identified as probably associated with the Tate (Galli) mining operation and were linked to the already recorded archaeological site I42/91. This feature appears to be avoided by proposed works.

I42/92 – Tate Dam and Battery – located alongside existing route of Macraes Dunback Road. There were two batteries associated with the Tate mining operation, however only the location of one of these has been firmly identified and is formally recorded as archaeological site I42/92. This is located in a rock cutting on the true left of the Tipperary Creek, approximately 50m upstream of the existing road crossing. The main feature of the battery today is the concrete foundation for the diesel engine. Upstream of the battery site are the remains of a large earthen dam, with a concrete abutment at the western end. Both

¹⁵ SN 501 1335/3 17/04/1947

these features were re-inspected during the 2010 survey, and although more overgrown than noted by Petchey, remain much as described in August 1996. All features associated with the Tate battery and dam will be located within the footprint of the proposed tailings storage facility.

Nichol and Wright identified additional features that are thought to be associated with Tate and Duke of Edinburgh mining operations. They also note however that while some features are clearly associated with each operation, some cannot be clearly linked. Features discussed by Nichol and Wright are discussed below in relation to the Back Road Waste Rock Stack.

Summary Top Tipperary Tailings Storage Facility

Given the nature of many of the features within the area of the proposed tailings storage facility it is difficult to assign a definite company or identity to the creation of many of the workings. This cannot be done for all features unless there is clear documentary or artefactual evidence that can indicate the period of construction. Documentary evidence does however assist with the identification of several key features within the area, particularly the main quartz workings of the Duke of Edinburgh and Tate mines. Alluvial working in the Tipperary Gully, and isolated prospecting pits are harder to clearly identify.

What is significant within this area is the time period and nature of heritage sites identified. The area contains examples of both alluvial and quartz mining operations, dating between the early 1860s through until the Second World War (1940s). There is also evidence of an early stone house, possibly associated with the Duke of Edinburgh mine. The area surrounding the house will contain subsurface archaeological evidence, while the standing remains are considered to have built archaeological and heritage values.

All sites located within the footprint of the proposed Tailings Storage Facility will be negatively impacted by the proposal. It is noted that in 2009 OceanaGold received an authority to modify some sites within the area for the construction of a tailings impoundment. Included within the authority are parts of site I42/91, part I42/78 trench and sites A to H as identified by Nichols and Wright.

4.2.4 Frasers Waste Rock Stack Extensions

It is proposed that as part of the MP III project the Frasers East and Frasers West Waste Rock Stacks will be expanded and a new linking rock stack between these two called Frasers South Waste Rock Stack will be constructed. A second area will be developed to the north of the already consented Frasers East Waste Rock Stack, to be called Frasers North Waste Rock Stack. The location and extent of these is indicated on Figure One. Within this general area there are five recorded archaeological sites identified on the New Zealand Archaeological Association site database, none of these are however within the footprint of either of the proposed Waste Rock Stack extensions (Figure Sixteen).

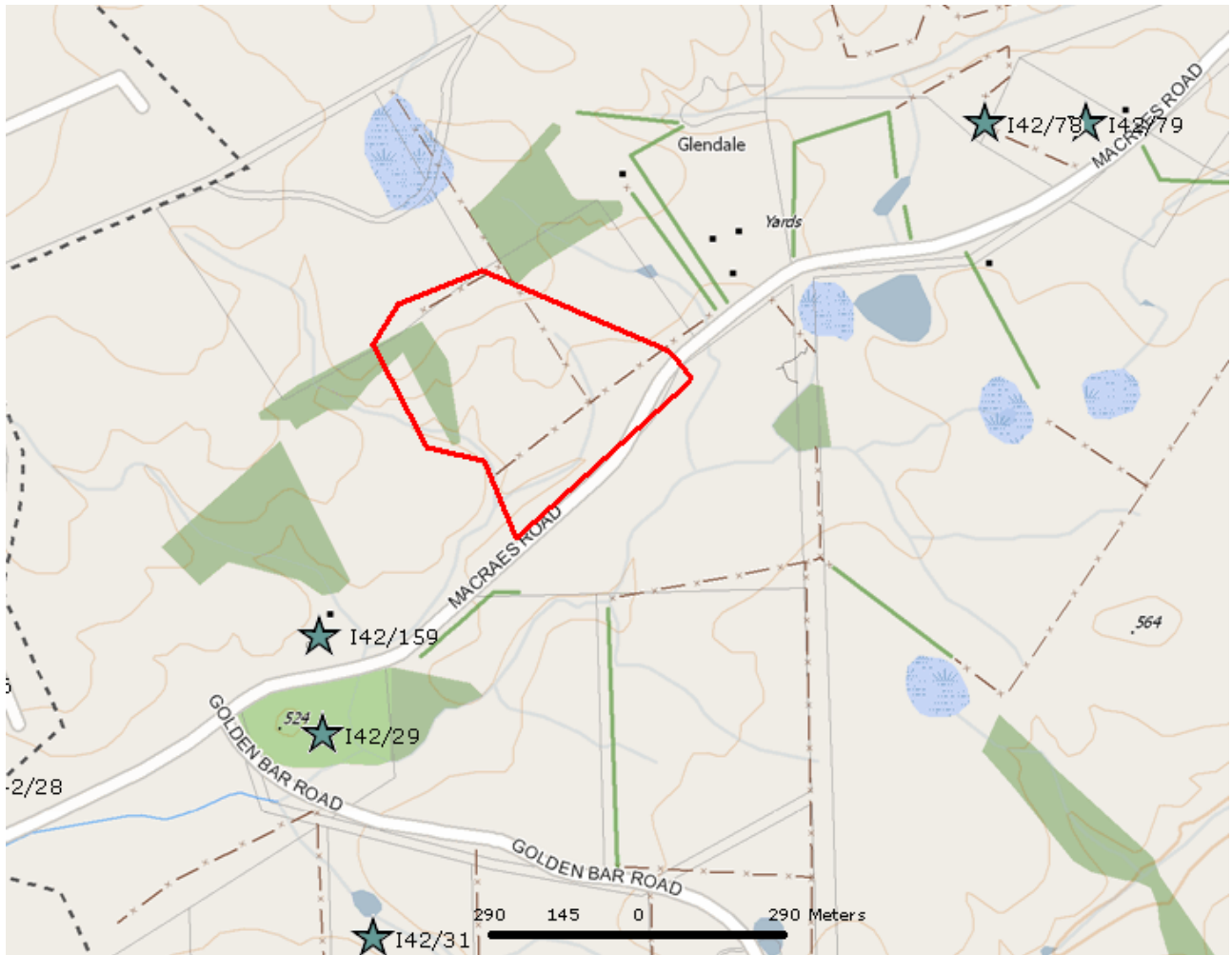


Figure Sixteen NZAA Archsite map (November 2010) showing location of recorded archaeological sites in relation to proposed Frasers North Rock Stack Extension (approximate location shown as red area – for detail see Figure One).

The remaining area of the proposed Frasers East Waste Rock Stack is characterised by hilly open grass areas, cut by narrow, steep sided gullies. There was no evidence of historic or archaeological sites in the grassed areas. Within several of the small gullies in the extension areas (north and to the south west linking Fraser's East and Fraser's West Rock Stacks), possible workings were identified, however these were not clearly defined and could not be confirmed as resulting from mining activities.

Adjacent to the area identified as the proposed Frasers South Rock Stack there are two recorded archaeological sites, I42/33 and I42/41. I42/33 is recorded as a prospecting pit located alongside the Golden Bar Road. It is noted that at the time of recording (1991) that the pit had been partially dug out to form a farm dam and that it was likely to be affected by future mining associated with Macraes. No evidence of this feature was seen in 2010.

The second site recorded in this general area is site I42/41, an historic trig site, identified on an 1874 map. The trig was noted as being a schist slab plinth, surrounding a wrought iron bar. The top of the bar is stamped with a 'D'.

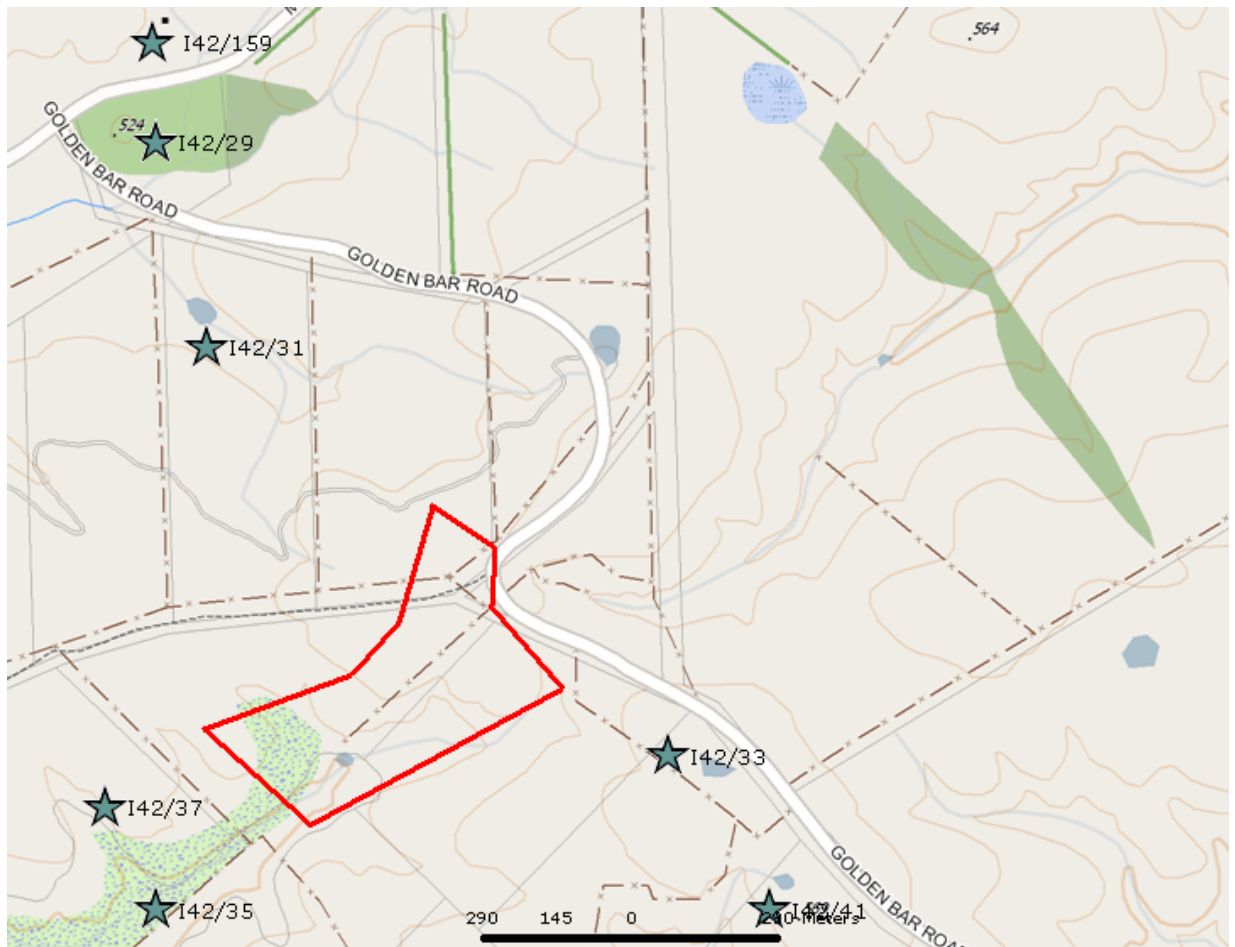


Figure Seventeen Map showing the location of recorded archaeological sites within the area of the proposed Frasers South Waste Rock Stack (approximate boundary marked with red line).

Based on information and the plan provided for this assessment, the trig point identified should not be affected by the physical works associated with the creation of the Frasers South Rock Stack.

Summary Frasers Waste Rock Stack Extension

While there are a number of recorded archaeological sites in the vicinity of the proposed Waste Rock Stack extension areas, there are no recorded archaeological sites within the footprint of the proposed waste rock stack extensions. Two of the recorded sites, I42/33 and I42/41 are located immediately adjacent to Golden Bar Road. Site I42/33 could not be relocated, and information indicates that site I42/41 will not be affected by proposed works.

4.2.5 Back Road Waste Rock Stack

Within the area of the proposed Back Road Waste Rock Stack there are no formally recorded archaeological sites. There are however a number of features identified by Nichol and Wright within the area that are likely to be associated with the working of both the Duke of Edinburgh Mine and the Tate (Galli) Mine. There are two recorded archaeological sites immediately adjacent to the proposed edge of the Back Road Waste Rock Stack - a large area of trenching identified as the north western extent of workings associated with the Duke of Edinburgh reef (I42/78), and the Tate mine shaft and mullock heap (I42/91).

The area of the proposed Waste Rock Stack includes the area assessed by Nichol and Wright as the footprint of the proposed tailings storage facility in 2009 (see Nichol and Wright 2009 Figure 5). A plan completed as part of the Historic Places Trust Authority application associated with the Nichol and Wright assessment is provided with this report as Figure Eighteen. It is noted however that the plan identifies the sites with their numerical field number. To assist in interpreting this information the sites are listed below alphabetically (as they are referenced in the Historic Places Trust authority and in the latter part of the Nichol and Wright report) and the numerical numbers are provided in brackets below and on Figure Eighteen.

With the exception of features recorded as site H, all features identified by Nichol and Wright were revisited as part of the 2010 site assessment. The area around Site H was examined, however the features could not be relocated using the information provided in the report.

Site A (Number 2) – possible earth dam – site is reported as being located on the western side of a creek, close to the mullock heap recorded as part of the Tate Mining operation (I42/91). It is noted that the material making up the dam appears to be mullock and that approximately one third of the dam is missing. There is also a note on record that there is no evidence of any other features, such as water control, associated with the feature. The dam was relocated, and is as described on the site record.

This feature is located outside the footprint of the proposed tailings storage facility but on the edge of the Back Road Waste Rock Stack.

Site B (Number Six) – Trenching. The GPS reading for this site places it within the footprint of the proposed Back Road Waste Rock Stack. The longest of the two trenches is described as being over 13m long and approximately 800mm wide.

Site C (Number 7) – This site is reported as consisting of a row of at least eight trenches extending across an area immediately above a shallow, steep sided gully. There is mention of a small pond located close to the eastern end of the trenches, and it is commented that this appeared to connect to the head of the small gully.

These features are located within the footprint of the proposed Back Road Waste Rock Stack.

Site D (Number 8) – This site is reported as consisting of two shallow, irregularly shaped holes, 2m across.

These features are located within the footprint of the proposed Back Road Waste Rock Stack.

Site E (Number 9) – Trenching. Nichol and Wright note that this site is a scatter of at least 27 generally small trenches over an area of approximately 90 x 50m. It is stated that the features appear to be in good condition, however there is some indication of “modern” testing and / or prospecting work in the north eastern portion of the site.

These features are located within the footprint of the proposed Back Road Waste Rock Stack.

Site F (Number 10) - This site is described as an intermittent row of holes of varying sizes running down a fairly steep hillside. The holes are typical of collapsed workings and small prospecting pits.

These features are located within the footprint of the proposed Back Road Waste Rock Stack.

Site G (Number 11) – This site is reported as consisting of a series of 10 depressions of various sizes and depths. The largest depression is recorded as measuring 9m x 4m x 1m.

These features are located within the footprint of the proposed Back Road Waste Rock Stack.

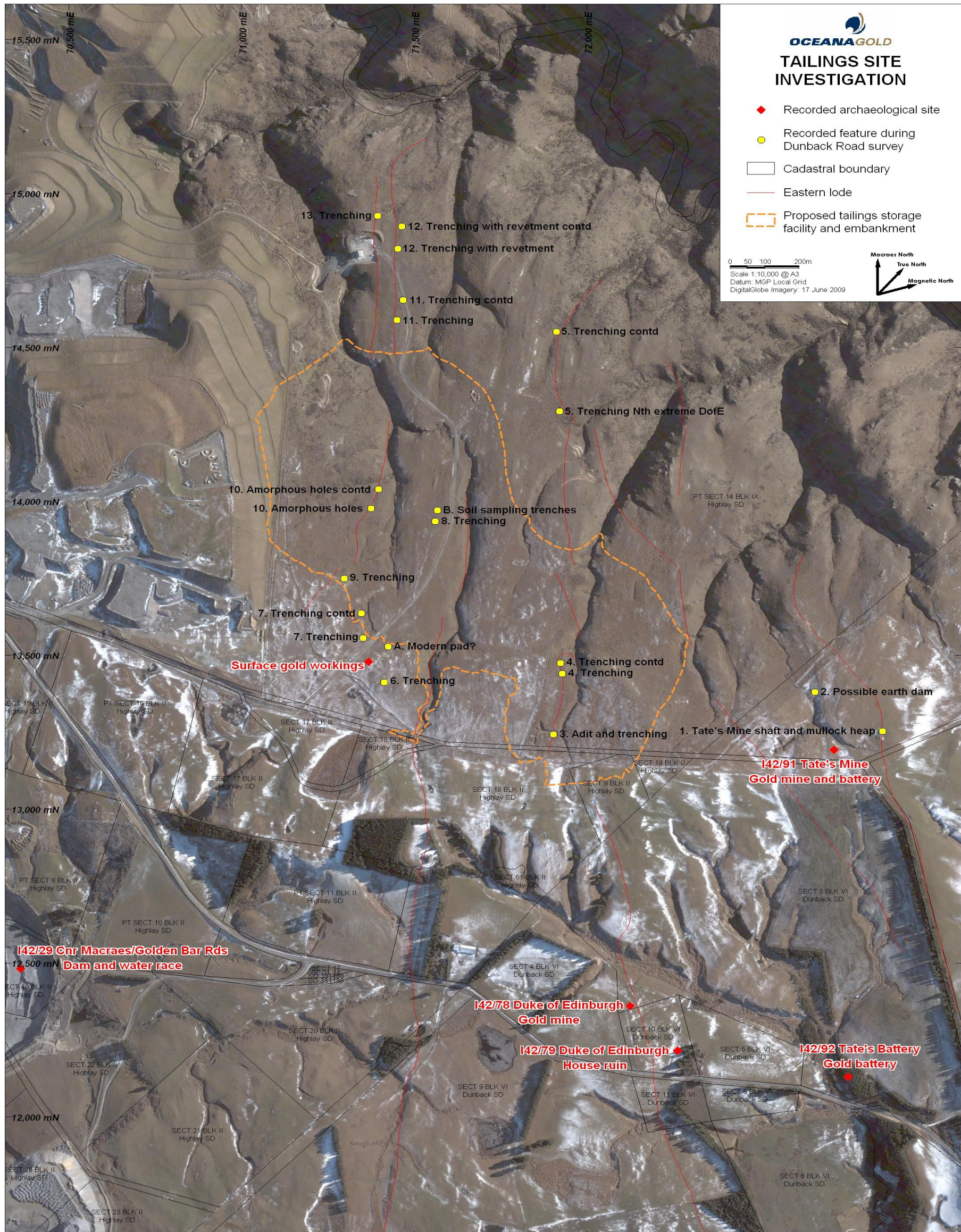


Figure Eighteen Map from OceanaGold Historic Places Trust authority application for impoundment (2009) indicating location of features identified by Nichol and Wright. Note in reference to feature 5 DofE refers to Duke of Edinburgh

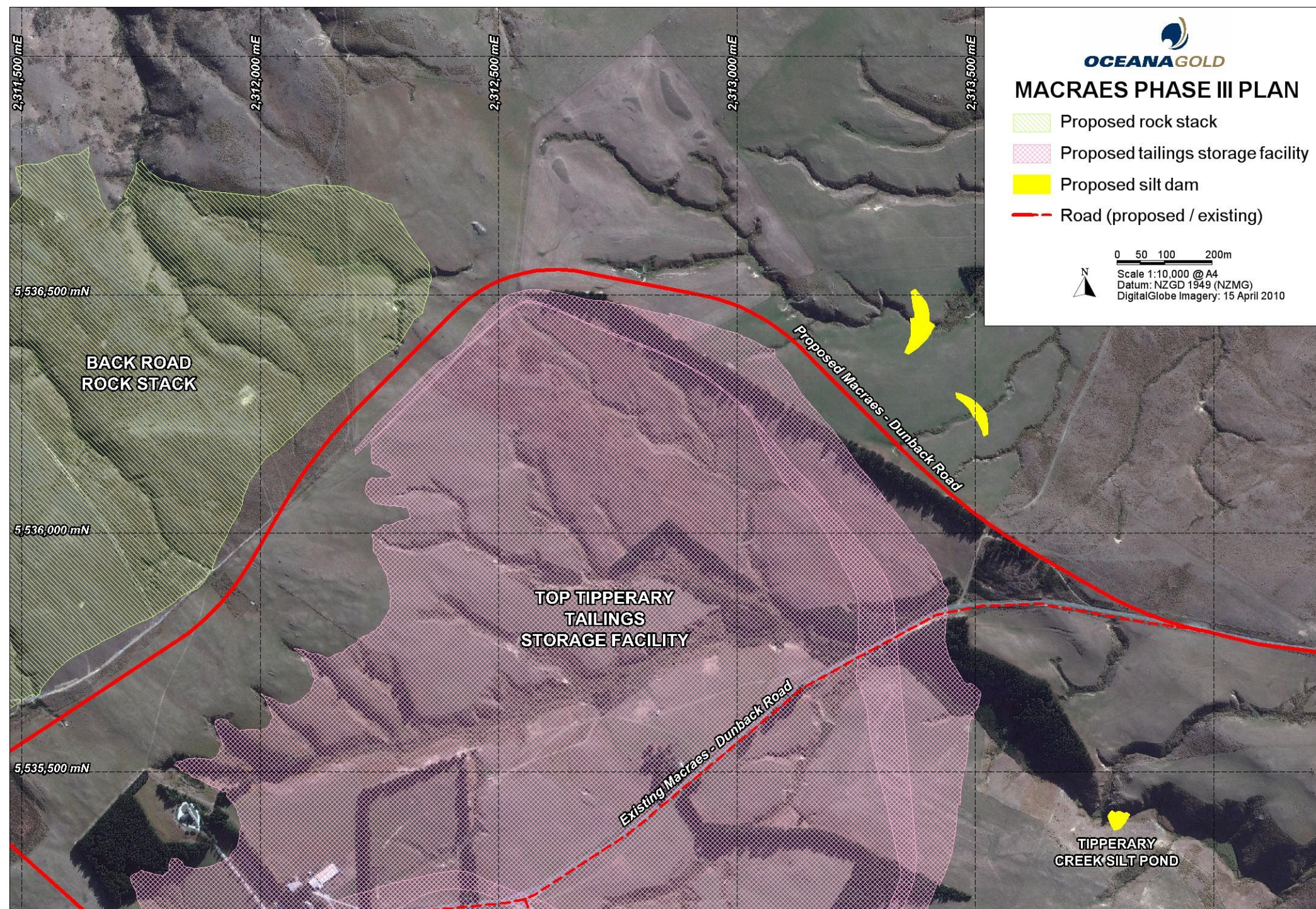


Figure Nineteen Proposed works associated with MPIII Project within the area of the Duke of Edinburgh and Tate's Mines

Site H (Numbers 12 and 13) – This site is reported as a line of trenching approximately 70m long and a small rock revetment. Along the length of the trench on alternating sides mullock has been placed, “producing a slight zigzag effect.” The stone revetment is located approximately 14m from the top (southern end) of the trenching.

A second line of trenching (feature 13 on Figure Eighteen) is located approximately 30m to the west of the first trench. This trench is approximately 12m long and up to 2m wide. An additional feature – a hole measuring 4 x 4m, is located further to the west. This is likely to be an isolated prospecting pit.

These features are located just outside the footprint of the proposed Back Road Waste Rock Stack.

Nichol and Wright features 3, 4 and 5 as indicated in Figure Thirteen, were identified by the authors as being associated with the Duke of Edinburgh Mine, and information was to be added to the records for that recorded site (I42/78). Features 4 and 5 are located within the area of the proposed Back Road Waste Rock Stack. Feature 3 is located close to the edge of the realignment route of the Macraes – Dunback Road, and the Back Road Waste Rock Stack and it is possible that this feature may be affected by either of these activities. All three of these features were revisited in the course of the 2010 assessment.

Nichol and Wright note that as part of their assessment the large trench associated with the Duke of Edinburgh reef (their Feature 5) would not be affected by the proposed tailings impoundment, and it is noted clearly on the Historic Places Trust Authority granted for the impoundment (HPT Authority 2010/37) that the feature was considered to have high significance, and was intended for long term protection. While the site was outside the proposed impoundment area assessed by Nichol and Wright, the feature is located immediately adjacent to the area of the Back Road Waste Rock Stack proposed as part of the MP III project. The main zig-zag trench of this feature is over 200m long, and is on average 2m wide and 2m deep. Associated with the trench are a number of prospecting pits, located on the north eastern side of the trench. Following the site assessment and discussions with OceanaGold the boundary of the proposed Waste Rock Stack at this location has been amended to avoid any physical impact on the Duke of Edinburgh trench at this point.



Figure Twenty View to NW of major trenching associated with the Duke of Edinburgh Reef (Nichol and Wright Feature 5)

Summary Back Road Waste Rock Stack

A number of features associated with both alluvial and quartz mining operations are located within or immediately adjacent to the proposed footprint of the Back Road Waste Rock Stack. According to information provided in their report, sites B – H identified by Nichol and Wright will be impacted by the proposed Back Road Waste Rock Stack. Features associated with two significant heritage sites, the Duke of Edinburgh Mine (I42/78) and the Tate Mine (I42/91) are adjacent to the Rock Stack. These features will not physically be impacted by the creation of the rock stack, however the imposing change to the landscape will impact on these features visually.

4.2.6 Extension of Frasers Pit

As part of the expansion of the mine it has been identified that the existing workings associated with Frasers Pit are to be extended to the north, in the direction of the Macraes

– Dunback Road. This will see the mine incorporating the area of an old farming homestead, known as the Robinson Homestead.

The historic values of the largely intact Robinson farmstead were first formally identified by Peter Petchey in 1996¹⁶. Petchey notes the collection of buildings consisted of the farmhouse, woolshed and several implement sheds, and suggests that there is likely to be a great deal of subsurface archaeological evidence associated with the buildings. Based on a review of historic plans and titles Petchey suggests that the land was initially taken up by Peter Gifford in the late 1870s or early 1880s, and that the earliest buildings in the group possibly date from this period. Ownership of the farm later passed to Gifford's daughter, Jane Robinson, who appears to have retained the property until 1943.¹⁷¹⁸

The first building to be constructed appears to have been a small stone cottage that hearsay suggests was lived in while the main house (timber) was built nearby¹⁹. The cottage remains, at one end of a long shed or stable building. The schist walls of the buildings remain in fair condition, however the corrugated iron roof of the stables has partially collapsed and large sections of the roof are missing (mainly over the cottage). Vegetation is growing up through both buildings. The remaining buildings that make up the farmstead remain much as described by Petchey in 1996, however in slightly poorer condition as there appears to have been little or no maintenance of the historic structures over the years.

The Robinson Homestead was not formally recorded as an archaeological site by Petchey, despite its archaeological potential being identified. As part of the current assessment the site has been formally recorded and entered into the New Zealand Archaeological Association site record database and is identified as archaeological site I42/159.

¹⁶ Petchey, P Sections 8, 16 & part 10 Block II Highlay SD. Archaeological Survey for Macraes Mining Company 1996 page 2

¹⁷ *ibid*

¹⁸ Petchey notes that on his 1939 plan Williamson labels this land as owned by Robertson, however Petchey suggests this is simply a mis-spelling of the family name as a title search indicates no change of ownership during this period.

¹⁹ *ibid*



Figure Twenty One Google Earth Image showing complex of buildings that make up the Robinson Homestead (I42/159). Red line indicates approximate current location of Fraser's Pit edge



Figure Twenty Two Photo taken from a mine road adjacent to historic cottage and shed structure. Note proximity of earthworks and route to the historic structure.



Figure Twenty Three View of shed (left) with cottage at far end



Figure Twenty Four View of front (north) face of cottage – reported to have been built in the late 1870s



Figure Twenty Five Merged photo showing a general view of central yard of woolshed complex. Shed on left, shearing shed in centre, shed on right



Figure Twenty Six Upper shed – part of wool shed complex



Figure Twenty Seven Garage / blacksmith shed

Petchey suggests that the homestead as a whole should be considered as being of heritage significance however neither the buildings or surrounding area have been formally

recorded as an archaeological site or area. The general area of the buildings has been marked off, and a sign erected identifying it as an historic area, and noting that activities and access within the area was restricted. Despite this, operations associated with the Frasers Pit have expanded so that the northern edge of pit at this location is within metres (20m) of the edge of the timber house and the southern most of the stone sheds.

As part of the MPIII project it is proposed that the pit is further extended in this area, and this will result in the loss of all buildings associated with the farmstead as well as any archaeological deposits that may be associated with this occupation. In the area to the immediate north of the shearing shed there is also evidence of small scale mining operations. This is possibly linked with the owners of the farm, and is characterised by depressions and “humps” within the paddock. These features would also disappear with the expansion of the pit in to this area.

The collection of associated farm buildings is considered to be of high heritage and archaeological significance in the Macraes District. A focus of many archaeological surveys and assessments has been on the use of the area for mining, and there are very few agricultural complexes such as this recorded or remaining in the district. The exception to this would be investigations carried out on Lawrence Flynn’s homestead in 1997²⁰. The buildings have significant heritage values in terms of the evidence of change over time. There is a mix of simple stone cottage, later expanded to include a stable / implement shed, a timber house, with lean-to additions, a woolshed complex (a mix of timber batten buildings and stone), and a small blacksmith’s workshop.

The subsurface archaeological resources of this area will be internal to some of the structures as well as in the immediately surrounding area, where domestic and farm debris will have been buried.

Examination of NZAA data indicates two recorded archaeological sites identified on maps within close proximity of the Frasers Pit: - site I42/29 is recorded as a race and small dam and site I42/31, an area of prospecting holes. A sketch plan of the sites indicates that they were located within an area close to the junction of the Golden Bar Road and Macraes Road and adjacent to a small farm dam, although Hamel suggests the pits and the farm dam are not associated.

Since the time that Hamel carried out her survey and recorded the archaeological site, the route of Golden Bar Road and the junction with Macraes Road has been changed four times, and the location of the pit edge has extended further to the north and east. Comparison of a 1975 aerial photo with a 2010 photo identifies that site I42/29 and site I42/31 have been destroyed by the expansion of Frasers Pit (Figures Twenty Eight and Twenty Nine).

²⁰ Petchey, P Macraes Mining Company, Expansion Project, Archaeological Report, unpublished report for Macraes mining Company Ltd. 1997

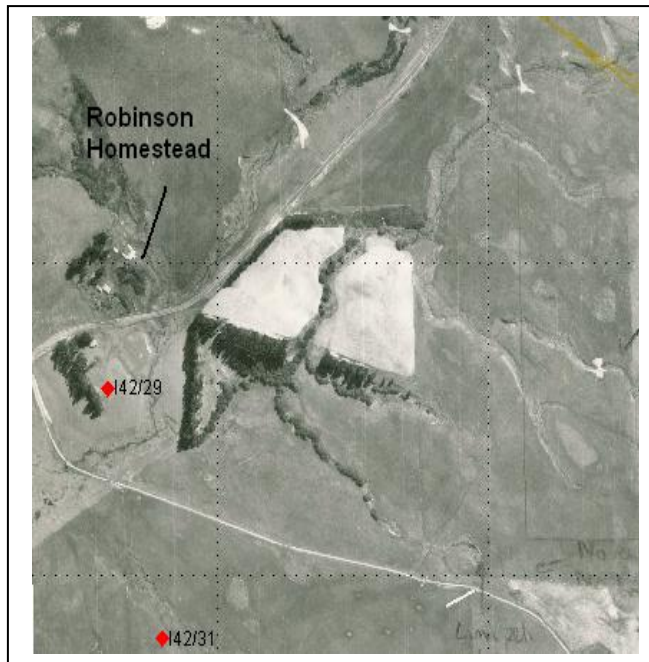


Figure Twenty Eight 1975 aerial photo showing location of Robinson Homestead as reference point, and recorded archaeological sites I42/29 and I42/31 (red dots)



Figure Twenty Nine 2010 aerial image of same area as Figure Nineteen showing location of Robinson Homestead and recorded archaeological sites I42/29 and I42/31

Summary Fraser's Pit Extension

The extension of the Frasers Pit will result in the complete loss of one of the few remaining examples of a later 19th century / early 20th century farm homesteads, recorded archaeological site I42/159. This complex contains both built heritage and archaeological values and was identified in 1996 as being of historic significance.

NZAA data indicates two recorded sites in the vicinity of Frasers Pit, I42/29 and I42/31. These sites no longer exist as a result of the expansion of the main pit over recent years.

5 Discussion

5.1 Sites Impacted

Evidence of archaeological and heritage resources have been identified within all of the areas examined as part of this project. Several of these features had been identified as a result of earlier archaeological survey work, such as the working associated with the Duke of Edinburgh and Tate mines, and others, such as the alluvial working on the terrace flats adjacent to Camp Creek, were previously unknown. Historic research in this area carried out by Hamel, including the wider Deepdell Creek had however indicated that the potential for sites to be located within this area was high.

A summary of sites and the potential impacts of proposed activities associated with the MPIII project is provided below by area, as discussed above.

Camp Creek Between the junction of Camp Creek and Deepdell Creek up to the gully immediately below the Howard property sheds a total of 10 archaeological sites were recorded as a result of this assessment. Of these sites six have the potential to be impacted as a result of the construction of a dam, and the associated reservoir (Sites I42/149, I42/150, I42/151, I42/152 (partially impacted), I42/155 and I42/156). The majority of these sites will be covered by water as a result of the creation of the reservoir.

Individually the potentially affected sites are considered to have variable archaeological values. Several of the sites are single prospecting pits or isolated workings, and have limited archaeological values. Two of the sites (Site I42/155, and Site I42/156) are considered on their own to be of high archaeological value. These sites are a mix of workings and either clearly defined hut sites, or are likely to contain hut sites. Although no clear date can be assigned at this stage to any of the sites, the alluvial workings in the creeks and gullies of the Horse Flat area, which includes Camp Creek and the Deepdell catchment, are thought to be some of the earlier workings in the Macraes District, dating to the early 1860s²¹. Based on this information camp sites and associated workings have the potential to contain significant archaeological information on some of the earliest exploration and alluvial gold mining in the district. Each of these sites are therefore considered to be of high historic and archaeological significance and an authority to modify the sites will be required from the Historic Places Trust for any activity that will impact on the sites.

²¹ Hamel 1991

As a group the sites within the Camp Creek gully are considered to represent a significant remnant historic landscape and it is important that the connection and link between sites within this landscape is recorded and interpreted in detail. If it is not possible to avoid these sites as a result of the proposed MPIII project, it is recommended that a representative example of the complexes is preserved.

As a result of early discussions following the archaeological survey the location of the proposed dam has been amended so that it is upstream of the terrace area containing archaeological site I42/157, excluding this site from any impact as a result of the dam and reservoir.

Macraes – Dunback Road Realignment of the Macraes - Dunback Road will result in placing the alignment close to that of the 1860s. The landscape through which earthworks are proposed includes a number of historic features associated with early gold mining. Key features associated with both the Tate and the Duke of Edinburgh Mines will however be avoided by earthworks.

Within the route of proposed earthworks the main area of historic features that will be impacted by the construction of the new road and associated preparatory earthworks are at the eastern end, close to Hocking Road. At this point the route of the proposed road will cut over the heads of several small shallow gullies that contain evidence of gold workings. Full details on the impact assessment of this proposal and proposed mitigation methods are provided in the report commissioned for this work.²²

Top Tipperary Tailings Storage Facility The proposal to create a tailings storage facility within the Tipperary Creek catchment potentially has the greatest impact on heritage features within the MPIII project area. The creation of an impoundment area at this location will result in the loss of heritage features associated with the earliest quartz mining operation in the Macraes district (the Duke of Edinburgh), early to mid-20th century quartz mining (Tate / Galli operation), the remains of an historic stone house and associated features, and evidence of alluvial mining in the Tipperary Gully. As well as recorded archaeological sites in the area, there are several features that have been identified, but which are likely to link with known operations (Nichol and Wright site A).

Back Road Waste Rock Stack Along with the Top Tipperary Tailings Storage Facility, the proposed work associated with the Back Road Waste Rock Stack will impact on a number of identified heritage features, primarily associated with early quartz mining in the district. Within the footprint of the Waste Rock Stack are sites identified as B to H in the Nichol and Wright report. These features are a mix of alluvial and quartz workings, and features are in a variety of conditions. Many of the features relate to exploration and mining operations that can provide little additional information, other than identifying techniques and the location of work. When examined individually have limited archaeological or historic values, however the sites are significant as a group in that they provide information on the extent and nature of mining activities in the area and they reflect as a group the historic landscape values of this area.

²² Barr, C 2010 Archaeological Assessment Proposed Macraes – Dunback Road Realignment Earthworks

Adjacent to the northern edge of the proposed waste rock stack boundary is a 200m long, well preserved section of trenching associated with the exploration of the Duke of Edinburgh reef. It is of note that the authority granted by the Historic Places Trust for a proposed impoundment in this area in 2010 made specific reference to this feature, stating that it was considered to be of higher significance and intended for long term protection.²³ As a result of discussions following this assessment, a set-back boundary has been proposed along the southern side of the trench, identifying the recommended extent of the toe of the rock stack. This is indicated in Figure Thirty. The proposed boundary makes use of a natural gully and existing track and fence line to separate the rock stack and the heritage feature. It is noted that while the trench will not physically be impacted by the Back Road Waste Rock Stack, the creation of an imposing landscape feature in close proximity will have a negative visual impact.

Given the concern for the protection of this site raised by the Historic Places Trust in authority 2010/73, it is recommended that the proposed set back is discussed with representatives of the Trust. It is further recommended that discussions are also held to determine long term protection mechanisms for this feature so that it is not threatened any further by modern mining facilities or operations.

²³ HPT Authority 2010/73 assessment and advice



Figure Thirty Aerial photograph showing Duke of Edinburgh trench and proposed toe of rock stack.

Fraser's Waste Rock Stacks – Extensions

Examination of the NZAA database Archsite indicates several recorded archaeological sites within the area of the Frasers Waste Rock Stack extension²⁴, however no recorded sites are located within the actual footprint of the Waste Rock Stack. Two sites, I42/33 and I42/41 are located immediately adjacent to Golden Bar Road. Site I42/33 could not be relocated, and information indicates that site I42/41 will not be affected by proposed works.

Fraser's Pit Extension

The key site that will be affected by the proposed extension of Frasers Pit is the Robinson Homestead (I42/159). This site was identified in 1996 as having significant heritage values. Since that time work on the consented area of the pit has advanced to the point that it is less than 20m from the remains of the main house. Expansion of the pit in this area will result in the complete loss of this complex of buildings.

²⁴ This refers to the extension of the existing consented rock stack area to both the north, and to the south west where it will link to Frasers West

It is acknowledged that none of the buildings are in good condition, with no maintenance having been carried out for many years. There remains however significant heritage information that can be obtained from these structures, in terms of recording of building techniques and changes over time; economic changes reflected in the buildings, and archaeological deposits associated with the complex – agricultural and domestic.

It is also of note that this site differs from many of the others recorded within the Macraes district in that it reflects a different economic activity – a focus of many of the surveys and assessments that have been carried out is gold mining activities, however this complex of structures reflects the development of early farming in the area.

5.2 Past HPT Authorities

Macraes Flat has been a focus of gold mining since the 1860s. Since the development of modern mining in the district however there has been considerable impact on the visible evidence of earlier operations. In the 20 years since archaeological and heritage work has been carried out in the district a total of 51 authorities to modify archaeological sites have been applied for and granted to OceanaGold. A list of authorities held by OceanaGold and dating between 1993 and 2010 is provided in Appendix Two of this report.²⁵ While this covers a total of 34 individually recorded archaeological sites, it also includes a number of general authorities relating to specific areas, which may contain a number of individual sites or features, and eight identified but unrecorded features.

It is also noted that several of the authorities listed in Appendix Two cover the same site. This is sometimes as a result of changes in proposed activity, may be as a result of part of a site being affected at different times, but may also reflect the expiry and renewal of an authority during the long life of mining activities. A total of 26 sites have been the subject for two or sometimes three authority applications.

In reviewing the extensive record of authorities what can be seen is that since the early 1990s considerable modification of the historic landscape in the Macraes district has taken place. Having stated this however, it is important to note that as a result of mitigation work carried out as a part of the HPT requirements, considerably more is known and understood of the extent and nature of these sites. There is a need however to consider the overall result or cumulative effect of this activity. While individual sites have generally been well recorded and understood, the management of site complexes or landscapes does require some consideration in terms of ensuring an appropriate example and range of heritage site types is preserved long term as well as providing an understanding of the relationship of site types with each other and the overall landscape.

It is acknowledged that the mining industry, and therefore developments at operations such as OceanaGold's Macraes facility is very much influenced by the changing demand and market for the resource and relies on accessing minerals and developing associated infrastructure in areas where historical mining has occurred. In relation to the non-renewable heritage resource however it is felt that stronger consideration needs to be given to the implications of this approach for the survival and management of the resource. These considerations are reflected in statements made in the Heritage Management Plan

²⁵ Information provided to author by OceanaGold October 2010

developed by OceanaGold. In Section 9.3.2 of the Plan it is stated that provided that significant or important heritage sites are identified early enough, it may be possible to vary the location of waste rock stacks and other infrastructure to avoid such sites. It is recommended that the approach for managing the heritage resource is reviewed in relation to the Management Plan document, and features identified as significant are taken into account and where possible avoided during the development and design of new work programs.

5.3 Proposed Mitigation

Historic heritage sites represent a non-renewable resource, and once modified the values of that site are either diminished or destroyed, even if this as a result of archaeological investigation to recover information. Within a landscape such as that in the Macraes district there is considerable information on past land use – predominantly related to different gold mining operations, however there are several sites that represent early farming in the district.

Any activities proposed as part of MPIII that will impact on the archaeological resource will require an authority to modify archaeological sites from the Historic Places Trust. This is a legal requirement.

As a result of this assessment it has been identified that within all areas of proposed work there is evidence of archaeological and heritage sites. These sites hold a range of historic and archaeological values, and there are several areas that are identified as being highly significant and worthy of long term protection. Key recommendations are detailed below, with a summary including identified in Table One.

Camp Creek: The sites within the Camp Creek complex are considered as an overall heritage landscape to be of high archaeological value. While located on private land, the sites are in an open environment, meaning that many of the features are easily visible. Although some of the features show evidence of damage as a result of stock trampling, many of the visible features remain in fair to good condition, and there is potential at all sites for sub surface archaeological material to remain intact. It is recommended that consideration is given to avoiding any impact on this landscape. If this is not possible, preference is that a representative example of the landscape is protected from any works.

Of the sites identified, key to this landscape is site I42/157. As a result of this assessment the original plan for the proposed dam site has been amended so that it avoids site I42/157. If the site is to be protected long term, it is recommended that the location of the site is identified on OceanaGold management documents and it is recognised as a Grade I site in relation to the OceanaGold Heritage Management Plan, this is based on the range of features present, the good condition of the site, and the extensive size of the site along a single creek terrace.

If the remaining sites within this catchment cannot be avoided as a result of the proposal recommended mitigation includes the detailed recording of all features, both through plans and photographic records. Some of the sites, particularly sites I42/155 and I42/156, should be the subject of detailed archaeological investigations prior to any modifications, in

accordance with any conditions that may be imposed by the Historic Places Trust as part of authorities to modify the sites or any conditions that may be imposed in any land use consents issued by the Waitaki District Council.

Macraes – Dunback Road Earthworks: It is recommended that prior to undertaking any earthworks detailed mapping of the historic features in gullies, and trenches associated with the Tate / Galli mine is compiled. This plan should be developed in conjunction with an archaeologist in order to ensure all features are clearly identified. In association with the plan, a detailed photographic record of features should also be compiled. Application has been made (January 2011) to Historic Places Trust for an authority to modify archaeological features in this area.

It is further recommended that in all areas, all earthworks should be carried out under an Accidental Discovery Protocol. It is anticipated that the likelihood of identifying archaeological deposits within much of the area of work is low, given that the majority of the area has been regularly ploughed for many years. The use of an Accidental Discovery Protocol will outline steps to be followed should suspected historic or archaeological material be identified.

Top Tipperary Tailings Storage Facility: The proposed work associated with this aspect of the project will result in impacts on the remains of the Duke of Edinburgh Mine (shaft, battery site, workings, dam), the Tate (Galli) Mine (workings, dam and battery) and alluvial workings in the Tipperary Gully. Silt dams associated with the impoundment that were originally planned to be located in the lower Tipperary Gully, adjacent to a cave site and associated workings are no longer proposed and there will be no physical impact on these features.

Included within the area of the Top Tipperary Tailings Storage Facility are the remains of a stone house and associated features. It is unclear whether this house was associated with the Duke of Edinburgh Mine, or is a farm building, but it appears to have been constructed sometime in the 1870s or 1880s. An authority to modify these sites will be required from the Historic Places Trust.

It is noted that the Duke of Edinburgh is the earliest quartz mining operation in the Macraes district, and limited evidence of this operation remains. The main shaft of the mine has been used as a place for dumping refuse for many years, and much of the surrounding land has been ploughed as part of farming activities for many years, modifying or destroying any features not located in the creek gullies. A significant number of visual features associated with the operation do however remain in or on the edge of the Tipperary Creek gully. These are generally earth features, with limited associated archaeological deposits. If these features cannot be avoided it is recommended that detailed recording of all features, particularly in the gully adjacent to the battery site and shaft is carried out. Although the adjacent fields have been regularly ploughed, and there is no visible evidence of features, it is recommended that test excavations in the vicinity of the Duke of Edinburgh battery are carried out in order to determine whether any sub surface evidence of this feature survives.

In relation to the stone house, it is highly likely a significant amount of archaeological material survives in association with this feature. There is evidence of a raised earth enclosure adjacent to the house, suggesting that unlike much of the surrounding area, this

area may not have been the subject of extensive ploughing. The standing structure also contains significant information on building techniques and the original layout of the structure. It is recommended that if this site is to be impacted by the proposed works it is subject to a detailed archaeological investigation, including recording, sampling and analysis in accordance with accepted archaeological best practice. Recording of this site should include detailed building archaeology recording.

It is important to recognise that the landscape including the Duke of Edinburgh Mine, Tate's (Galli) Mine and the Tipperary gully includes evidence of both quartz and alluvial mining operations. It is recommended that further research is carried out on these sites in order to identify and record details of the operations and if possible identify these in relation to evidence on the ground.

As the operations associated with the Tate mine post date 1900, they are not covered by the provisions of the Historic Places Act 1993. These features are considered however to represent a significant aspect of this overall historic landscape. It is therefore recommended that features associated with this operation that are to be impacted by proposed works are recorded in accordance with accepted best archaeological practice.

Back Road Waste Rock Stack There are a number of archaeological features located within the area of the proposed Back Road Waste Rock Stack that will be affected by proposed works. Key among these sites is the trench associated with the Duke of Edinburgh reef. This trench is over 200m long and is considered to be in good condition. The feature is a good example of the remnants of mining associated with the Duke of Edinburgh Mine, and if the approval is granted to construct the Top Tipperary Tailings Storage Facility as planned, this trench will be the only visible evidence of this mining operation remaining. As part of the planning and design process for this project the footprint of the proposed Waste Rock Stack has been redesigned to avoid any physical impact on this feature. This includes an appropriate set back from the feature, so that it can be viewed in at least one direction, in an appropriate setting. It is recommended that this set back is discussed with the Historic Places Trust. In addition, it is recommended that mechanisms to ensure the long term protection are reviewed in line with the policies of the OceanaGold Heritage Management Plan. Options for the protection of this feature may include identifying it as Grade I site on OceanaGold documentation and maps, or formal covenanting or gazetting of the site under the Historic Places Act 1993.

Many of the remaining features in this area (primarily Nichol and Wright sites E to H) are considered to have limited archaeological values on their own. The sites represent isolated prospecting pits or small areas of working. Any work that will impact on these features will require an authority to modify archaeological sites under the provisions of the Historic Places Act 1993. It is recommended that prior to any work that may impact on these features that they are accurately mapped and photographed in order to compile a record of the extent of working in this area.

Frasers Waste Rock Stack Extensions Several areas of possible gold mining workings were identified in small gullies in the area, however these were indistinct and unclear. Examination of the NZAA database Archsite indicates several recorded archaeological sites within the area of the Frasers Waste Rock Stack extension but none within the actual

footprint²⁶. Two sites, I42/33 and I42/41 are located immediately adjacent to Golden Bar Road. Site I42/33 could not be relocated, and information indicates that site I42/41 will not be affected by proposed works.

Frasers Pit Extension The key site that will be affected by the proposal to extend Frasers Pit is the Robinson Homestead. This site was identified in 1996 as containing significant heritage values. The site is one of the few within the district that is not directly associated with gold mining operations. Since 1996 the edge of the pit has advanced so that it is now within 20 metres of the site, and the long term survival of the features has been effectively compromised.

Evidence indicates that the oldest part of this complex dates from the 1870s, with the remaining buildings appearing to be constructed between 1880 and 1930. As the site cannot be avoided as part of the Frasers Pit extension it will be necessary to apply to the Historic Places Trust for an authority to modify the site. It is recommended that prior to any work that may impact further on the site (including clearing of any material from the site), a detailed photographic record and record of all structures is compiled by a suitably qualified buildings archaeologist. There is also potential for subsurface deposits associated with the use of the buildings to exist in the area. It is recommended that in association with the development of mining operations in this area, discussions are held with an appropriately qualified archaeologist and representatives of the Historic Places Trust in order to determine an appropriate manner of identifying, investigating and recording any such deposits.

General Mitigation Recommendations

As is outlined in this report, OceanaGold has developed a Heritage Management Plan to guide the appropriate management of historic resources on land they manage. It is recommended that this plan is updated so that it includes policies identifying the need for appropriate long term management for sites identified for long term protection. These need to ensure that sites of high priority or heritage values are excluded from any areas of proposed mine development. Failure to do this will result in the progressive loss of historic sites in the Macraes area over time.

One option to assist with the long term protection and preservation of a representative example of significant historic mining features and landscapes would be to identify an area within the wider Macraes district with a similar range of mining features (quartz and alluvial operations, a range of early European and Chinese operations; mining and farming habitation etc), from a similar time period range (1860s – 1940s). Any such area should be located away from OceanaGold's area of mining operations to reduce or eliminate any future threat.

In order to ensure that any such proposal is effective, the identification and establishment of any such area must include an outline for active long term management of features, funding outline and identification of formal protection mechanisms such as legal covenants or gazettal. The establishment of legal recognition and protection will assist in eliminating or

²⁶ This refers to the extension of the existing consented rock stack area to both the north, and to the south west where it will link to Frasers West

reducing the potential for historic sites and features being protected in the short term, and then subsequently destroyed as mining activities move into new areas. If it is decided that the identification and protection of an area of historic mining features and sites will form some type of mitigation package, it is recommended that any discussion and decisions to identify an appropriate area include representatives of OceanaGold, an appropriate archaeologist and representatives of the New Zealand Historic Places Trust. This will ensure that the interests and concerns of all interested parties are considered.

Table One Summary of impacted sites, and proposed mitigation

AREA	SITES AFFECTED	PROPOSED MITIGATION
Camp Creek	Six of the ten identified archaeological sites in the catchment will be affected by the construction of dam and associated reservoir	<ul style="list-style-type: none"> • Apply for authority from Historic Places Trust for all sites located within dam and reservoir area • For those sites that are directly impacted carry out detailed mapping and recording of all features; • Archaeological investigation and excavation of features at sites I42/155 and I42/156 – specifically hut or suspected hut features • Identification on the ground of the area of site I42/157. While the site is excluded from impacts of the dam, identifying the area will ensure it is clearly visible to contractors as an excluded zone during formation of the dam; • While site I42/157 will not be physically impacted by the dam and reservoir, it is recommended that a detailed survey of the site (by archaeologist and surveyor) is carried out.
Macraes – Dunback Road	Working in heads of gullies immediately west of Hocking Road	<ul style="list-style-type: none"> • Application has been made for an authority to modify sites within the area of proposed earthworks for the road
Top Tipperary Tailings	Duke of Edinburgh Mine,	<ul style="list-style-type: none"> • Apply for authority from Historic Places Trust for all

Storage Facility	<p>dam and workings</p> <p>House site and associated features</p> <p>Tate (Galli) workings, dam and battery</p> <p>Top Tipperary Workings</p> <p>Nichol and Wright features A and B</p>	<p>sites located within area;</p> <ul style="list-style-type: none"> • Detailed recording and mapping (archaeologist and surveyor) of all visible features within area; • Archaeological investigation of area within the vicinity of the Duke of Edinburgh battery and mine • Detailed recording of house and archaeological investigation of surrounding features and area
Back Road Waste Rock Stack	<p>Features identified by Nichol and Wright C – H</p> <p>Potential impact Duke of Edinburgh trench I42/78</p>	<ul style="list-style-type: none"> • Apply for authority from Historic Places Trust for all sites located within area • Identify set back in vicinity of Duke of Edinburgh Trench for toe of Waste Rock Stack. • Fence or mark off area of Duke of Edinburgh trench to ensure that it is clearly visible and avoided • Detailed mapping and recording of the extent and nature of all historic mining features in area • Provision for archaeological investigation of any features within area as considered appropriate
Frasers Waste Rock Stack Extension		<ul style="list-style-type: none"> • Identify location of sites I42/33 and I42/41 and ensure these are not impacted by works
Frasers Pit Extension	Robinson Homestead	<ul style="list-style-type: none"> • Apply for authority from Historic Places Trust for all sites located within area

		<ul style="list-style-type: none">• Detailed buildings archaeology recording of all structures;• Discussion with Historic Places Trust as to appropriateness of reconstructing complex within district;• Archaeological excavation and investigation of buildings and surrounding areas
--	--	---

REFERENCES

- Barr, C 2010 Archaeological assessment – Proposed Macraes – Dunback Road Realignment Earthworks unpublished report for Oceana Gold (NZ) Ltd
- Cable, N 2004 OceanaGold NZ Ltd: Macraes Gold Operation: Fraser's West Rock Stacks: Archaeological Input unpublished report for Oceana Gold (NZ) Ltd
- Hamel, J 1991 Changes in gold mining at Macraes unpublished report to Macraes Mining Company
- Petchey, P 1995 Home Reef Resource Consent Area Macraes Gold Project Archaeological Survey unpublished report to Macraes Mining Company
- 1996a Sections 8, 16 & part 10 Block II Highlay S.D. Archaeological Survey unpublished report to Macraes Mining Company
- 1996b Macraes Back Road Waste Rock Stack Site Archaeological Survey unpublished report for Macraes Mining Company
- 1996c Duke of Edinburgh Mine & Tipperary Gully Macraes Flat Archaeological Survey unpublished report to Macraes Mining Company
- 1997 Macraes Mining Company, Expansion Project, Archaeological Report, unpublished report for Macraes mining Company Ltd.
- 2004 OceanaGold Fraser's West Waste Rock Stack Proposed Enlargement unpublished report for Oceana Gold (NZ) Ltd
- Nichol, R & L Wright 2009 An Archaeological Assessment of the Impact of the Construction of a Tailings Storage Facility at Macraes Gold Project unpublished report for Oceana Gold (NZ) Ltd
- Wright, L 2008 Archaeological Sites in area of proposed drilling programme by OceanaGold Ltd at Horse Flat Road unpublished report for Oceana Gold (NZ) Ltd
- Williamson, J H 1939 *The Geology of the Naseby Subdivision, Central Otago* Geological Bulletin No. 39 (New Series) Govt. Printer, Wellington
- Historic Aerial Photographs – SN 501 1332/100; 1355/2; 1355/3 flown 17/04/1947

APPENDIX ONE


NZAA Site Record Forms and list of 12 new recorded archaeological sites

New archaeological sites recorded November 2010

All sites located on I42 - location recorded with handheld GPS by Cathryn Barr / Ben Shaw

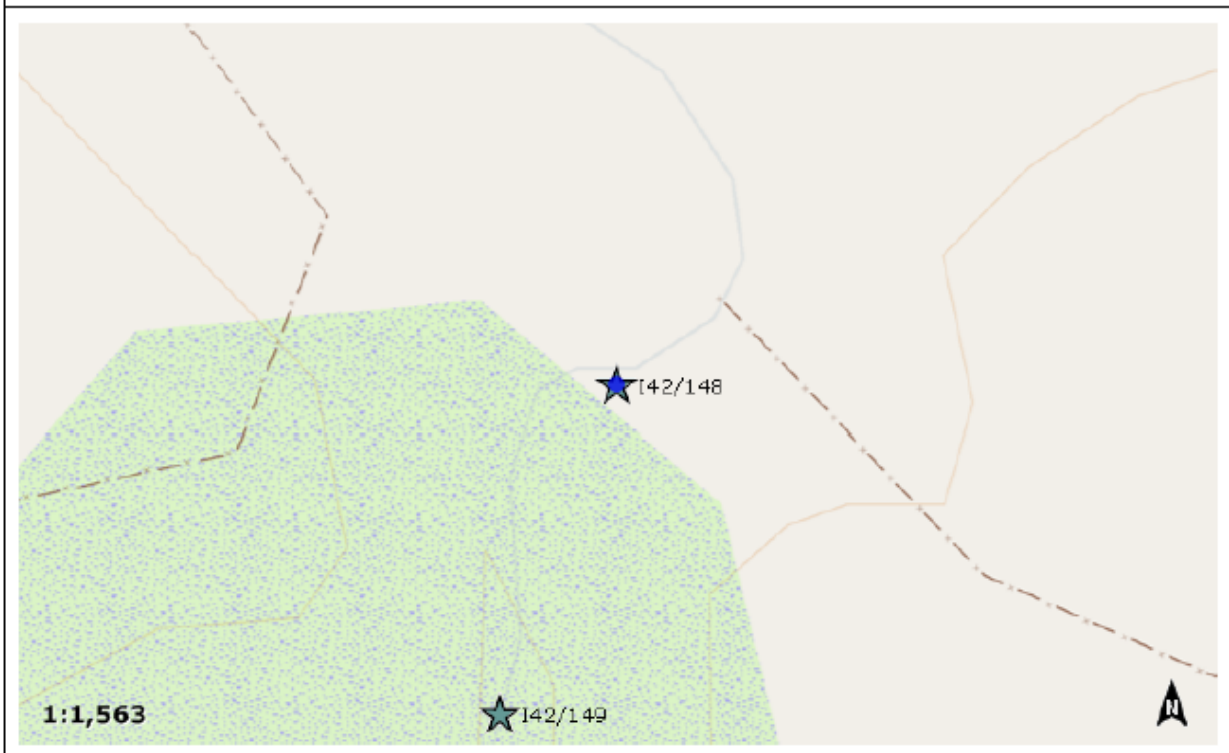
NZAA Site Number	Site Type	NZTM Grid Reference (easting / northing)
I42/148	Water race / workings	1396518 / 4974436
I42/149	Water race	1396488 / 4974353
I42/150	Prospecting pit	1396399 / 4974320
I42/151	Water race	1396333 / 4974221
I42/152	Prospecting pit	1396108 / 4974244
I42/153	Stone hut (Harry's Hut)	1395966 / 4974389
I42/154	Stone culvert	1395939 / 4974452
I42/155	Workings / water race	1396121 / 4973936
I42/156	Workings / hut / water race	1396141 / 4973655
I42/157	Workings / hut / water race	1396707 / 4973543
I42/158	Workings / cave occupation	1404342 / 4973511
I42/159	Farm homestead	1401429 / 4972842

NEW ZEALAND ARCHAEOLOGICAL ASSOCIATION

	Site Record Form	NZAA SITE NUMBER: I42/148
		SITE TYPE: Mining - gold SITE NAME(s): DATE RECORDED: 24/02/2011

SITE COORDINATES (NZTM) Easting: 1396518 Northing: 4974436 Source: Handheld GPS

IMPERIAL SITE NUMBER: **METRIC SITE NUMBER:**



Finding aids to the location of the site
 Access from Howard property farm vehicle sheds. Head northerly direction into Camp Creek gully. Site located on small flat terrace adjacent to stream.

Brief description
 Water race and prospecting pits.


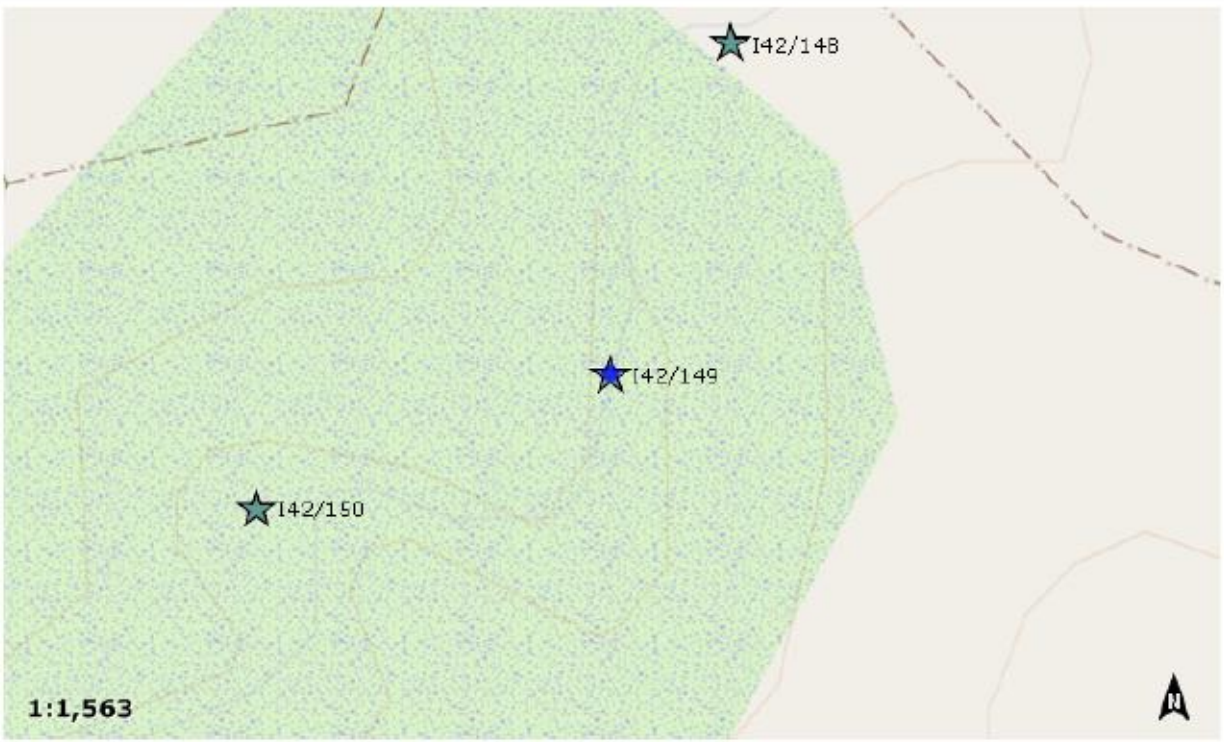
Recorded features
 Prospecting pit/ trench, Water race

Other sites associated with this site

NEW ZEALAND ARCHAEOLOGICAL ASSOCIATION

SITE RECORD HISTORY	NZAA SITE NUMBER: I42/148
<p>Site description Updated: 24/02/2011, Visited: 02/11/2010 - NZTM E1396518 / N4974436 (Handheld GPS).</p> <p>Water race and prospecting pits.</p> <p>Features located on the true left side of the creek on a small, narrow area of flat land. The water race runs approximately 30m in length, parallel with the creek. The water race is narrow, on average less than half a metre wide, and has a bank along its length on the creek side of the cut.</p> <p>There are three square shaped features along the length of the water race, - two possible prospecting pits and one small sluicing trench. The flat land between the creek and the hill slopes is small - only 6m wide at the central point.</p> <p>Inspected by: Barr, Cathryn; Shaw, Ben.</p> <p>Condition of the site Updated: 24/02/2011, Visited: 02/11/2010 - Fair condition; grazing, stock trampling. Threats: possible impact proposed freshwater dam.</p> <p>Statement of condition Updated: 24/02/2011, Visited: 02/11/2010 - Fair - Some intact features, but others may be unclear or damaged</p> <p>Current land use: Updated: 24/02/2011, Visited: 02/11/2010 - Grazing</p> <p>Threats: Updated: 24/02/2011, Visited: 02/11/2010 - Stock trampling</p>	
Empty section for additional notes or images	

NEW ZEALAND ARCHAEOLOGICAL ASSOCIATION

 <p>Site Record Form</p>	<p>NZAA SITE NUMBER: I42/149</p> <p>SITE TYPE: Mining - gold</p> <p>SITE NAME(s):</p> <p>DATE RECORDED: 24/02/2011</p>
<p>SITE COORDINATES (NZTM) Easting: 1396488 Northing: 4974353 Source: Handheld GPS</p>	
<p>IMPERIAL SITE NUMBER: METRIC SITE NUMBER:</p>	
 <p>1:1,563</p>	
<p>Finding aids to the location of the site Located upstream of I42/148. In stream gully.</p>	
<p>Brief description Water race.</p>	
<p>Recorded features Water race</p>	
<p>Other sites associated with this site</p>	

NEW ZEALAND ARCHAEOLOGICAL ASSOCIATION

SITE RECORD HISTORY	NZAA SITE NUMBER: I42/149
<p>Site description Updated: 24/02/2011, Visited: 02/11/2010 - NZTM E1396488 / N4974353 (Handheld GPS).</p> <p>Water race.</p> <p>This feature is very overgrown with thick bush, matagouri and gorse, however the cut of the water race could be identified, running 54m alongside the creek. The race takes advantage of a small bend in the creek, cutting across a low flat in a straight line. At the northern end of the race the cut is 1m wide, however it is 3m wide at the southern end. There is evidence of pig rooting and stock damage to the feature.</p> <p>Inspected by: Barr, Cathryn; Shaw, Ben.</p> <p>Condition of the site Updated: 24/02/2011, Visited: 02/11/2010 - Fair condition; vegetation, stock trampling. Threats: possible impact proposed freshwater dam.</p> <p>Statement of condition Updated: 24/02/2011, Visited: 02/11/2010 - Fair - Some intact features, but others may be unclear or damaged</p> <p>Current land use:</p> <p>Threats: Updated: 24/02/2011, Visited: 02/11/2010 - Stock trampling</p>	
Empty space for additional notes or images	

NEW ZEALAND ARCHAEOLOGICAL ASSOCIATION



Site Record Form

NZAA SITE NUMBER: I42/150

SITE TYPE: Mining - gold

SITE NAME(s):

DATE RECORDED: 24/02/2011

SITE COORDINATES (NZTM) Easting: 1396399 Northing: 4974320 Source: Handheld GPS

IMPERIAL SITE NUMBER: METRIC SITE NUMBER:



Finding aids to the location of the site
Upstream of I42/149. In Camp Creek stream gully.

Brief description
Prospecting pit.

Recorded features
Prospecting pit/ trench

Other sites associated with this site

NEW ZEALAND ARCHAEOLOGICAL ASSOCIATION

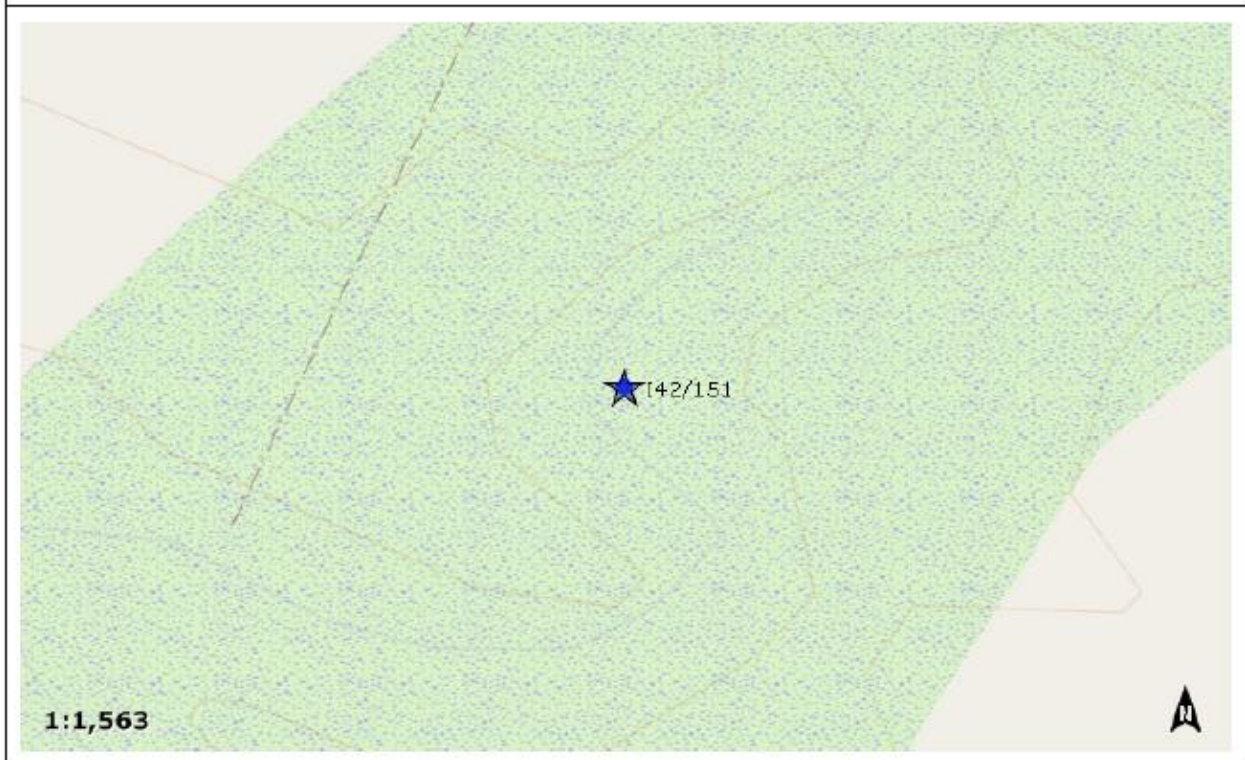
SITE RECORD HISTORY	NZAA SITE NUMBER: I42/150
<p>Site description Updated: 24/02/2011, Visited: 02/11/2010 - NZTM E1396399 / N4974320 (Handheld GPS). Prospecting pit. The pit is roughly circular pit measuring 50cm x 55 cm and 50cm deep. The pit appears to have been partially in-filled as a result of farming activities. Inspected by: Barr, Cathryn; Shaw, Ben.</p> <p>Condition of the site Updated: 24/02/2011, Visited: 02/11/2010 - Moderate condition; vegetation, stock trampling. Threats: possible impact proposed freshwater dam.</p> <p>Statement of condition Updated: 24/02/2011, Visited: 02/11/2010 - Fair - Some intact features, but others may be unclear or damaged</p> <p>Current land use:</p> <p>Threats: Updated: 24/02/2011, Visited: 02/11/2010 - Stock trampling</p>	
Empty space for additional notes or images	

NEW ZEALAND ARCHAEOLOGICAL ASSOCIATION

 <p>Site Record Form</p>	<p>NZAA SITE NUMBER: I42/151</p>
	<p>SITE TYPE: Mining - gold</p> <p>SITE NAME(s):</p> <p>DATE RECORDED: 24/02/2011</p>

SITE COORDINATES (NZTM) Easting: 1396333 **Northing:** 4974221 **Source:** Handheld GPS

IMPERIAL SITE NUMBER: **METRIC SITE NUMBER:**



Finding aids to the location of the site
 Located within bend in bed of creek.

Brief description
 Water race.



Recorded features
 Water race

Other sites associated with this site

NEW ZEALAND ARCHAEOLOGICAL ASSOCIATION

SITE RECORD HISTORY	NZAA SITE NUMBER: I42/151
<p>Site description Updated: 24/02/2011, Visited: 02/11/2010 - NZTM E1396333 / N4974221 (Handheld GPS). Water race. The area is covered in dense bush and the full extent of the race could not be inspected, however it does appear that a large part of the race has been destroyed as a result of stock trampling. Inspected by: Barr, Cathryn; Shaw, Ben.</p> <p>Condition of the site Updated: 24/02/2011, Visited: 02/11/2010 - Poor condition – stock trampling, vegetation. Threats: possible impact from proposed freshwater dam.</p> <p>Statement of condition Updated: 24/02/2011, Visited: 02/11/2010 - Poor - Visible features are incomplete, unclear and/or the majority have been damaged in some way</p> <p>Current land use:</p> <p>Threats: Updated: 24/02/2011, Visited: 02/11/2010 - Stock trampling</p>	

NEW ZEALAND ARCHAEOLOGICAL ASSOCIATION

 <p>Site Record Form</p>	<p>NZAA SITE NUMBER: I42/152</p> <p>SITE TYPE: Mining - gold</p> <p>SITE NAME(s):</p> <p>DATE RECORDED: 24/02/2011</p>
<p>SITE COORDINATES (NZTM) Easting: 1396108 Northing: 4974244 Source: Handheld GPS</p>	
<p>IMPERIAL SITE NUMBER: METRIC SITE NUMBER:</p>	
	
<p>Finding aids to the location of the site Located in side gully of Camp Creek. Access from Horse Flat Road (Camp Creek culvert); follow gully NE direction.</p>	
<p>Brief description Pit. Other possible gold workings also in area.</p>	
<p>Recorded features Pit</p>	
<p>Other sites associated with this site</p>	

NEW ZEALAND ARCHAEOLOGICAL ASSOCIATION

SITE RECORD HISTORY	NZAA SITE NUMBER: I42/152
<p>Site description Updated: 24/02/2011, Visited: 02/11/2010 - NZTM E1396108 / N4974244 (Handheld GPS). Located up a side gully heading towards Horse Flat Road (west). Shallow pit measures 1.80m x 2.2m. There is evidence of other possible workings in this area. These are not very clear however, with obvious evidence of stock trampling which has impacted on the definition of features. The area has also been used in part as a rubbish tip for farm debris, with evidence of a variety of appliances having been tipped into the gully. Inspected by: Barr, Cathryn; Shaw, Ben.</p> <p>Condition of the site Updated: 24/02/2011, Visited: 02/11/2010 - Poor/fair condition – stock; farm activities.</p> <p>Statement of condition Updated: 24/02/2011, Visited: 02/11/2010 - Poor - Visible features are incomplete, unclear and/or the majority have been damaged in some way</p> <p>Current land use:</p> <p>Threats: Updated: 24/02/2011, Visited: 02/11/2010 - Stock trampling, Farming practices</p>	
Empty space for additional notes or images	

NEW ZEALAND ARCHAEOLOGICAL ASSOCIATION



Site Record Form

NZAA SITE NUMBER: I42/153

SITE TYPE: Historic - domestic

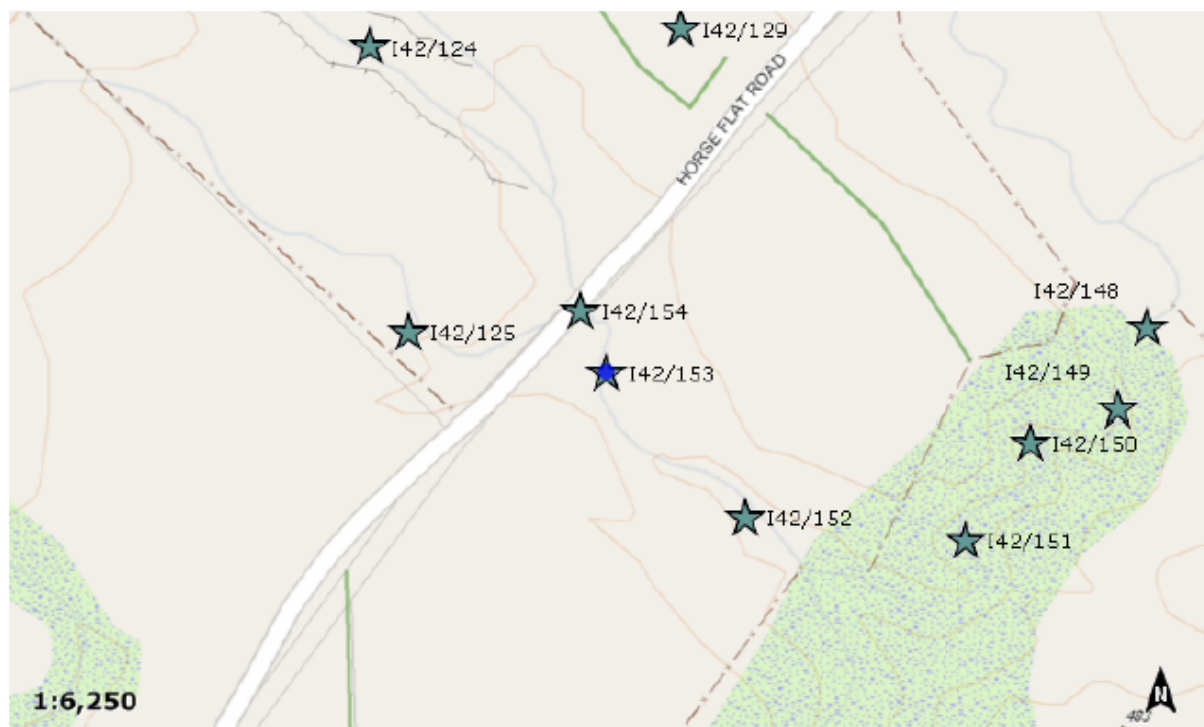
SITE NAME(s): Harry's Hut

DATE RECORDED: 24/02/2011

SITE COORDINATES (NZTM) Easting: 1395966 Northing: 4974389 Source: Handheld GPS

IMPERIAL SITE NUMBER:

METRIC SITE NUMBER:



Finding aids to the location of the site

Located adjacent to natural rock outcrop near western end of gully before it meets Horse Flat Road.

Brief description

Stone hut.

Recorded features


Building - hut

Other sites associated with this site

NEW ZEALAND ARCHAEOLOGICAL ASSOCIATION

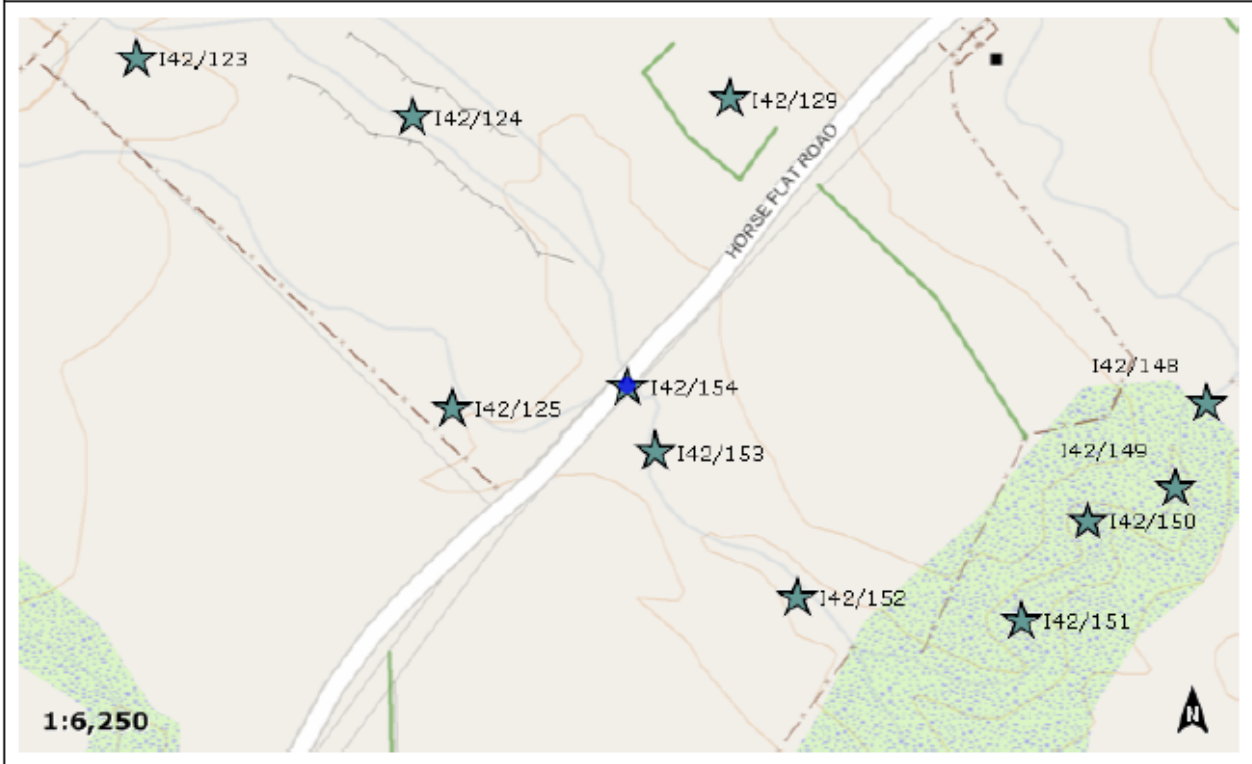
SITE RECORD HISTORY	NZAA SITE NUMBER: I42/153
<p>Site description Updated: 24/02/2011, Visited: 02/11/2010 - NZTM E1395966 / N4974389 (Handheld GPS).</p> <p>Stone hut.</p> <p>Identified by landowner as "Harry's Hut", this is reported to have been lived in by a hermit known as Harry during the 1930s and early 1940s. The hut consists of two walls made of schist and mud, using natural rock formation as the remaining walls. The entry doorway is located in the eastern wall, next to a small fireplace with well built chimney. The liveable area of the hut is small (4.60m sq), and it has a dirt floor. It is possible however that beneath this there is a schist floor. Along the western interior wall of the hut (rock face) some holes have been drilled. These possibly supported a small camp stretcher. Small steps have been cut into the rock at the southern end of the hut, leading up onto the rock outcrop above the hut and providing a view down the gully towards Camp Creek. While the hut is reported to have been lived in during the early 1900s, there is no clear indication that this is when the structure was first constructed. It is possible that it was built during the early period of mining in the Horse Flat area, and was reused at a later date. The remains of the hut are also one of the few visible examples of a small stone hut that remain in the district. In addition to the standing structure, there is also potential for sub-surface archaeological evidence in the immediate area, associated with the occupation of the hut. This would include evidence of external structures as well as rubbish pits and refuse areas.</p> <p>Inspected by: Barr, Cathryn; Shaw, Ben.</p> <p>Condition of the site Updated: 24/02/2011, Visited: 02/11/2010 - Fair condition; threats – farming / stock.</p> <p>Statement of condition Updated: 24/02/2011, Visited: 02/11/2010 - Fair - Some intact features, but others may be unclear or damaged</p> <p>Current land use:</p> <p>Threats: Updated: 24/02/2011, Visited: 02/11/2010 - Stock trampling, Farming practices</p>	
Empty space for additional notes or photos	

NEW ZEALAND ARCHAEOLOGICAL ASSOCIATION

 <p>Site Record Form</p>	<p>NZAA SITE NUMBER: I42/154</p> <p>SITE TYPE: Transport/ communication</p> <p>SITE NAME(s):</p>
	<p>DATE RECORDED: 24/02/2011</p>

SITE COORDINATES (NZTM) Easting: 1395939	Northing: 4974452	Source: Handheld GPS
---	--------------------------	-----------------------------

IMPERIAL SITE NUMBER:	METRIC SITE NUMBER:
------------------------------	----------------------------



Finding aids to the location of the site
 Located under Horse Flat Road.

Brief description
 Stone culvert.



Recorded features
 Culvert

Other sites associated with this site

NEW ZEALAND ARCHAEOLOGICAL ASSOCIATION

SITE RECORD HISTORY	NZAA SITE NUMBER: I42/154
<p>Site description Updated: 24/02/2011, Visited: 02/11/2010 - NZTM E1395939 / N4974452 (Handheld GPS). Stone culvert – located where small creek passes under Horse Flat Road. Approximately 1m under the modern road formation there is a small, stone culvert. This is likely to be associated with the earliest alignment of the road along Horse Flat, dating from the 1870s. Inspected by: Barr, Cathryn; Shaw, Ben.</p> <p>Condition of the site Updated: 24/02/2011, Visited: 02/11/2010 - Fair condition. Threats: road upgrades / new culvert.</p> <p>Statement of condition Updated: 24/02/2011, Visited: 02/11/2010 - Fair - Some intact features, but others may be unclear or damaged</p> <p>Current land use:</p> <p>Threats: Updated: 24/02/2011, Visited: 02/11/2010 - Road/ track formation or maintenance</p>	

NEW ZEALAND ARCHAEOLOGICAL ASSOCIATION

 <p>Site Record Form</p>	<p>NZAA SITE NUMBER: I42/155</p> <p>SITE TYPE: Mining - gold</p> <p>SITE NAME(s):</p> <p>DATE RECORDED: 24/02/2011</p>
<p>SITE COORDINATES (NZTM) Easting: 1396121 Northing: 4973936 Source: Handheld GPS</p>	
<p>IMPERIAL SITE NUMBER: METRIC SITE NUMBER:</p>	
	
<p>Finding aids to the location of the site Located on flat area at junction of Camp Creek gully and a gully leading to the west and Horse Flat Road.</p>	
<p>Brief description Water race and workings.</p>	
<p>Recorded features Mining workings, Water race</p>	
<p>Other sites associated with this site</p>	

NEW ZEALAND ARCHAEOLOGICAL ASSOCIATION

SITE RECORD HISTORY	NZAA SITE NUMBER: I42/155
<p>Site description Updated: 24/02/2011, Visited: 02/11/2010 - NZTM E1396121 / N4973936 (Handheld GPS).</p> <p>Water race and workings.</p> <p>There is evidence of stock trampling and vegetation damage to some of the features, however there are a number of well defined features on both sides of Camp Creek at this location. The main race runs parallel to the creek, on the true left bank. Where Camp Creek turns toward the east the race follows, then drops into a rectangular cut measuring 6m x 12m. At this point the ground is higher than the creek and it appears that the rectangular cut provided a spillway for water back into the main creek.</p> <p>Inspected by: Barr, Cathryn; Shaw, Ben.</p> <p>Condition of the site Updated: 24/02/2011, Visited: 02/11/2010 - Site in poor to fair condition. Threats: stock / farming; proposed construction of freshwater dam by Macraes Mining.</p> <p>Statement of condition Updated: 24/02/2011, Visited: 02/11/2010 - Poor - Visible features are incomplete, unclear and/or the majority have been damaged in some way</p> <p>Current land use:</p> <p>Threats: Updated: 24/02/2011, Visited: 02/11/2010 - Stock trampling, Farming practices</p>	
Empty space for notes or images	

NEW ZEALAND ARCHAEOLOGICAL ASSOCIATION



Site Record Form

NZAA SITE NUMBER: I42/156

SITE TYPE: Mining - gold

SITE NAME(s):

DATE RECORDED: 24/02/2011

SITE COORDINATES (NZTM) Easting: 1396141

Northing: 4973655

Source: Handheld GPS

IMPERIAL SITE NUMBER:

METRIC SITE NUMBER:



Finding aids to the location of the site

Located on large flat area in Camp Creek gully. Features located on both sides of the creek.

Brief description

Water race, workings and hut sites.

Recorded features

Depression, Hut floor/ site, Prospecting pit/ trench, Sluicings/ sluicing face, Water race

Other sites associated with this site

NEW ZEALAND ARCHAEOLOGICAL ASSOCIATION

SITE RECORD HISTORY	NZAA SITE NUMBER: I42/156
<p>Site description Updated: 24/02/2011, Visited: 02/11/2010 - NZTM E1396141 / N4973655 (Handheld GPS).</p> <p>The site consists of a number of water races, prospecting and sluicing pits / depressions and hut sites. There is one clearly defined hut that has several standing stones outlining the extent of the feature. It is likely that this hut had a stone base, with canvas walls (as opposed to a stone walled hut). This type of hut was more common in temporary mining sites. There were areas within the flat where the grass was quite long, and it is possible that there are more hut sites in the clearing.</p> <p>Inspected by: Barr, Cathryn; Shaw, Ben.</p> <p>Condition of the site Updated: 24/02/2011, Visited: 02/11/2010 - Site in fair condition. Grazed. Threats: stock trampling. Will be under water if proposed freshwater dam goes ahead.</p> <p>Statement of condition Updated: 24/02/2011, Visited: 02/11/2010 - Fair - Some intact features, but others may be unclear or damaged</p> <p>Current land use: Updated: 24/02/2011, Visited: 02/11/2010 - Grazing</p> <p>Threats: Updated: 24/02/2011, Visited: 02/11/2010 - Stock trampling</p>	
Empty content area	

NEW ZEALAND ARCHAEOLOGICAL ASSOCIATION

 <p>Site Record Form</p>	<p>NZAA SITE NUMBER: I42/157</p>
	<p>SITE TYPE: Mining - gold</p> <p>SITE NAME(s):</p>
<p>DATE RECORDED: 24/02/2011</p>	

SITE COORDINATES (NZTM) Easting: 1396707 **Northing:** 4973543 **Source:** Handheld GPS

IMPERIAL SITE NUMBER:

METRIC SITE NUMBER:



Finding aids to the location of the site

Located on long flat area upstream of junction of Camp Creek with Deepdell Creek. Features all on flat terrace above creek.

Brief description

Mining workings.

Recorded features


Building - hut, Sluicings/ sluicing face, Water race

Other sites associated with this site

NEW ZEALAND ARCHAEOLOGICAL ASSOCIATION

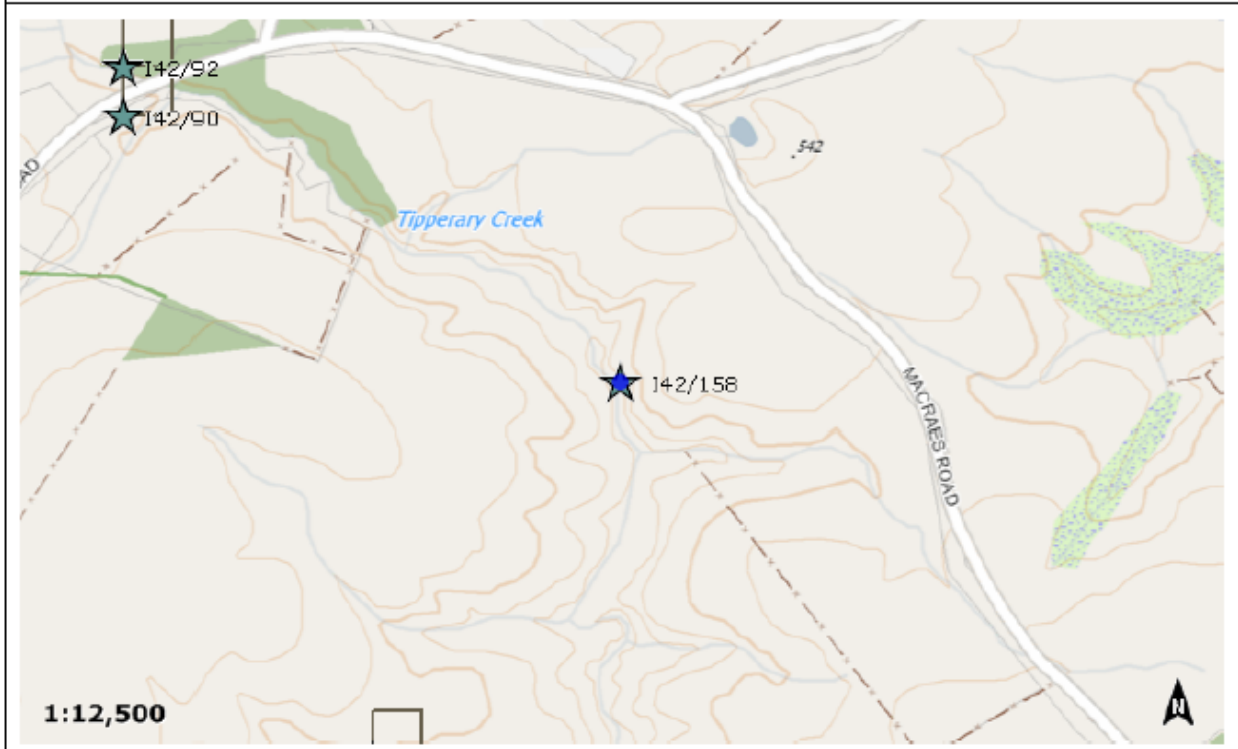
SITE RECORD HISTORY	NZAA SITE NUMBER: 142/157
<p>Site description Updated: 24/02/2011, Visited: 02/11/2010 - NZTM E1396707 / N4973543 (Handheld GPS).</p> <p>This is the most extensive area of workings recorded as part of the survey. There is evidence of occupation and working along the entire length of this flat, on the true right bank of the creek. At the southern end of the clearing there are steps cut into the rocks providing access down a steep face to the workings. There was probably a clear track associated with these at some point, however this is no longer visible.</p> <p>There appears to be one main water race that runs the entire length of the clearing. Below this (to the west) and between the main water race and Camp Creek there are the remains of sluicing workings and smaller water races. Again, these features run the entire length of the clearing (approximately 430m).</p> <p>Toward the northern end of the clearing there are the remains of a hut. This is considerably larger than that at site 142/156, and appears to have consisted of two rooms. The outline of the hut is clearly defined, by both the remains of upright stones and a low earth bank. As with the hut at site 142/156, it is possible that this hut had upright stones as a base, with canvas walls and roof. While it is possible, given the size of the hut, that it had more durable walls, there was no evidence of either timber or corrugated iron remnants that may suggest this. Excavation of the feature may also indicate whether it originally had a stone or dirt floor. There are the remains of a fireplace at the southern end of the hut.</p> <p>Given the extent of workings at this location it is likely that there are further hut sites along the creek terrace however time constraints at the time of the assessment did not allow for a detailed survey of the entire area.</p> <p>Inspected by: Barr, Cathryn; Shaw, Ben.</p> <p>Condition of the site Updated: 24/02/2011, Visited: 02/11/2010 - Site in good condition though some evidence stock trampling. Site was originally proposed to be within area freshwater dam but has been excluded.</p> <p>Statement of condition Updated: 24/02/2011, Visited: 02/11/2010 - Good – Majority of visible features are intact, but some minor loss of definition and/or damage</p> <p>Current land use:</p> <p>Threats: Updated: 24/02/2011, Visited: 02/11/2010 - Stock trampling</p>	

NEW ZEALAND ARCHAEOLOGICAL ASSOCIATION

	<p>Site Record Form</p>
	<p>NZAA SITE NUMBER: 142/158</p> <p>SITE TYPE: Cave/ rock shelter</p> <p>SITE NAME(s):</p> <p>DATE RECORDED: 24/02/2011</p>

SITE COORDINATES (NZTM) Easting: 1404342	Northing: 4973511	Source: Handheld GPS
---	--------------------------	-----------------------------

IMPERIAL SITE NUMBER:	METRIC SITE NUMBER:
------------------------------	----------------------------



Finding aids to the location of the site
 Site located in Tipperary Stream Gully, downstream from area of alluvial workings recorded as 142/90.

Brief description
 Small cave and rock shelter.


Recorded features
 Artefact - bottle, Cave, Rock shelter

Other sites associated with this site

NEW ZEALAND ARCHAEOLOGICAL ASSOCIATION

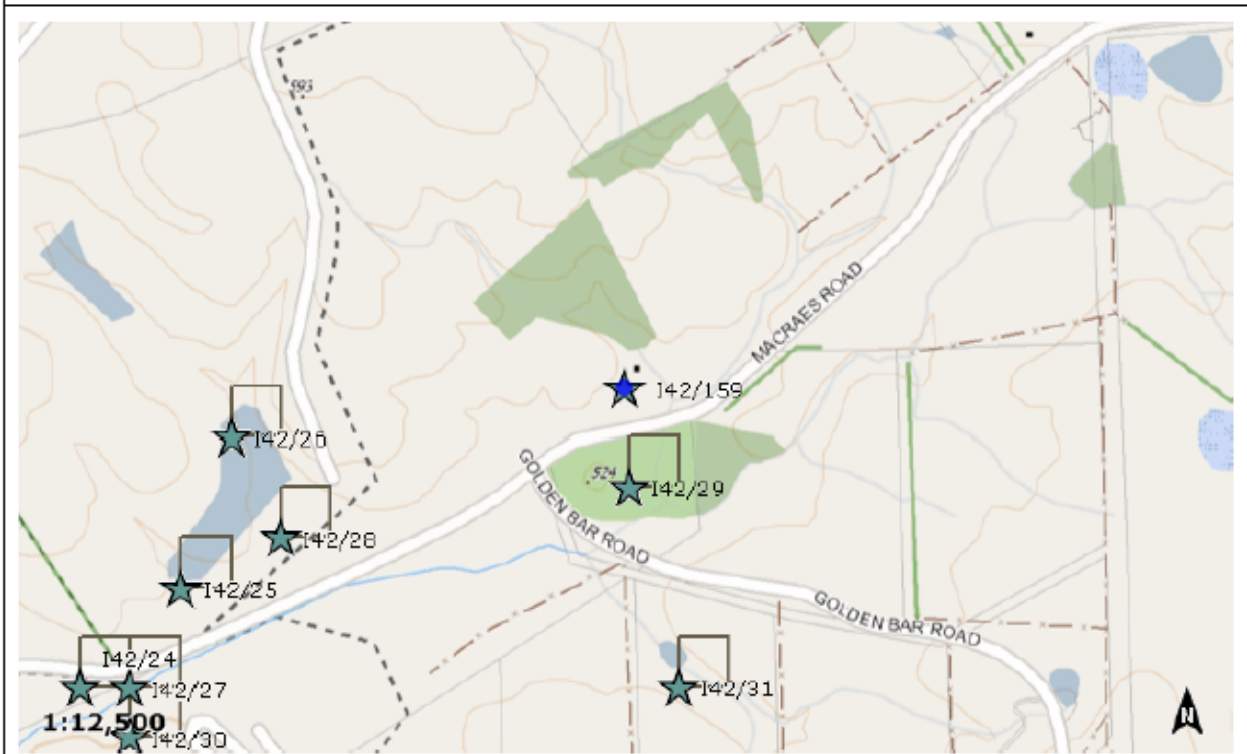
SITE RECORD HISTORY	NZAA SITE NUMBER: 142/158
<p>Site description</p> <p>Updated: 24/02/2011, Visited: 04/11/2010 - NZTM E1404342 / N4973511 (Handheld GPS).</p> <p>Small cave and rock shelter.</p> <p>On the southern side of the Macraes – Dunback Road the main Tipperary Creek gully widens. Approximately 800m down the gully, south of the road there is a flat area adjacent to the creek. There is evidence here of working, prospecting pits and a possible hut site. Above the workings, on the true left of the gully there is a small cave and rock shelter. This was first reported by Petchey in 1996 but was not been formally recorded as an archaeological site. Based on distance and the different nature of features associated with this site, it is considered to represent a different site and is therefore recorded as such. The cave has evidence that it was used as a shelter, with nails in the rock above the entrance suggesting a canvas door. A small pale green glass bottle (pickle jar) was found near the entrance to the cave.</p> <p>Inspected by: Barr, Cathryn; Shaw, Ben.</p> <p>Condition of the site</p> <p>Statement of condition</p> <p>Updated: 24/02/2011, Visited: 04/11/2010 - Good – Majority of visible features are intact, but some minor loss of definition and/or damage</p> <p>Current land use:</p> <p>Threats:</p>	
Empty space for additional information	

NEW ZEALAND ARCHAEOLOGICAL ASSOCIATION

	<p>Site Record Form</p>
	<p>NZAA SITE NUMBER: 142/159</p> <p>SITE TYPE: Agricultural/ pastoral</p> <p>SITE NAME(s): Robinson Farmstead</p> <p>DATE RECORDED: 24/02/2011</p>

SITE COORDINATES (NZTM) Easting: 1401429 Northing: 4972842 Source: Handheld GPS

IMPERIAL SITE NUMBER: **METRIC SITE NUMBER:**



Finding aids to the location of the site
 Site is located to the south west of Macraes – Dunback Road (2011 alignment) on the edge of the Frasers Pit.

Brief description
 Historic farmstead.

Recorded features
 Building - cottage, Building - farm, Building - homestead, Building - stable, Building - wool shed

Other sites associated with this site

NEW ZEALAND ARCHAEOLOGICAL ASSOCIATION

SITE RECORD HISTORY	NZAA SITE NUMBER: 142/159
<p>Site description</p> <p>Updated: 24/02/2011, Visited: 04/11/2010 - NZTM E1401429 / N4972842 (Handheld GPS).</p> <p>The historic values of the largely intact Robinson farmstead were first formally identified by Peter Petchey in 1996. Petchey notes the collection of buildings consisted of the farmhouse, woolshed and several implement sheds, and suggests that there is likely to be a great deal of subsurface archaeological evidence associated with the buildings. Based on a review of historic plans and titles Petchey suggests that the land was initially taken up by Peter Gifford in the late 1870s or early 1880s, and that the earliest buildings in the group possibly date from this period. Ownership of the farm later passed to Gifford's daughter, Jane Robinson, who appears to have retained the property until 1943.</p> <p>The first building to be constructed appears to have been a small stone cottage that hearsay suggests was lived in while the main house (timber) was built nearby. The cottage remains, at one end of a long shed or stable building. The schist walls of the buildings remain in fair condition, however the corrugated iron roof of the stables has partially collapsed and large sections of the roof are missing (mainly over the cottage). Vegetation is growing up through both buildings. The remaining buildings that make up the farmstead remain much as described by Petchey in 1996, however in slightly poorer condition as there appears to have been little or no maintenance of the historic structures over the years.</p> <p>The Robinson Homestead was not formally recorded as an archaeological site by Petchey, despite its archaeological potential being identified. As part of the current assessment the site has been formally recorded and entered into the New Zealand Archaeological Association site record database.</p> <p>Inspected by: Barr, Cathryn; Shaw, Ben.</p> <p>Condition of the site</p> <p>Updated: 24/02/2011, Visited: 04/11/2010 - Fair condition. Threats: mining – is now within 20m of edge of Frasers Pit.</p> <p>Statement of condition</p> <p>Updated: 24/02/2011, Visited: 04/11/2010 - Fair - Some intact features, but others may be unclear or damaged</p> <p>Current land use:</p> <p>Threats:</p>	
Empty space for additional details	

APPENDIX TWO

List of Historic Places Trust Authorities Granted 1993 - 2010

Authority Number	Date Issued	Section of Act	Location	Site Number	Activity
1992/93	11 January 1993	...	Macraes, Waitaki	I42/12	Modify/destroy
1993/15	15 June 1993	...	Macraes, Waitaki	I42/24	Forming a haul road for mining
1993/12	16 June 1993	...	Macraes, Waitaki	I42/13	Open cast mining
1993/13	16 June 1993	...	Macraes, Waitaki	I42/35	Forming a silt pond
1993/14	16 June 1993	...	Macraes, Waitaki	I42/27	Open cast mine pit
1994/11	18 March 1994	11	Battery Creek mining Site	I42/20	Access road to a new silt pond and the extension of the Battery Creek (east branch) waste rock stack
1994/32	15 June 1994	11	Murphy's Creek Gold Mining Site, Macraes, Otago	I42/35	Drilling programme
1994/55	5 September 1994	11	Battery Creek Mining Site	I42/20	Access road to a new silt pond and the extension of Battery Creek (east branch) waste rock stack
1994/95	4 January 1995	11	Sligo House Ruins, Macraes	-	Open cast gold mining
1995/50	1 August 1995	11	Golden Point Mine	-	Open cast gold mine
1995/51	9 October 1995	11	Golden Bar Mine	I43/86, 87, 88	Geological prospecting
1995/52	8 November 1995	11	Stoneburn, Macraes	I42/71 to 84	Geological prospecting
1995/65	8 November 1995	11	Innes Freehold Mine, Macraes	I42/24	Forming the waste rock stack for the Innes Mills Mine
1996/11	11 June 1996	11	Macraes Flat	I42/25	Open cast mining
1996/83	8 November 1996	12	Tipperary Creek	-	Silt dam construction
1997/3	20 March 1997	11	Macraes Road	-	Alignment work
1997/9	20 March 1997	11	Upper Murphy's Creek	-	Construction of an earth dam
1996/125	20 March 1997	12	Tipperary Gully	-	Construction of a fresh water reservoir
1996/126	20 March 1997	12	Gifford Road/Murphy's Creek	-	Construction of processing plant
1996/127	20 March 1997	12	Gifford Road	-	Construction of a waste rock stack
1997/31	23 May 1997	11	McCormick Creek	I42/59	Gold Mining
1997/52	12 December 1997	11	Macraes Flat	I42/28	Open cast mining
1997/108	24 February 1998	12	Golden Point	-	Open cast mining
1998/76	19 September 1998	11	Golden Bar Mine, Macraes Flat	I43/86, 87, 88	Modify or damage – geological exploration
1998/77	19 September 1998	11	Stoneburn, Macraes Flat	I43/71 to 84	Geological exploration
1998/78	19 September 1998	11	Gold Workings, Macraes Flat	I42/25	Geological exploration
1998/75	6 November 1998	12	Upper Dam Tributary, Tipperary Creek	-	Gold Mining
1998/124	3 February 1999	11	Coronation Mine	I42/93	Modify, damage or destroy – gold mining

1999/06	4 June 1999	12	Gifford Road, Murphy's Creek	-	Processing plant
1999/07	4 June 1999	12	Gifford Road	-	Constructing the Frasers West Waste Road Stack
1999/08	4 June 1999	11	Upper Murphy's Creek	-	Constructing an earth dam
9900/18	15 December 1999	12	Horse Flat, Golden Bell and Deepdell, Macraes	142/12	Gold mining
9900/47	11 July 2000	12	Macraes Flat	142/28	Open cast mining
2004/130	20 April 2001	12	Frasers East, Macraes Flat	-	Construction of waste rock stack
2001-111	31 August 2001	12	Coronation Mine, Macraes Flat	142/93	Modify or damage – gold mining
2001-117	10 September 2001	12	Gifford Road/Murphy's Creek	-	Modify, damage or destroy
2002/162	14 November 2002	11	Macraes Flat	142/28	Geological exploration
2002/162	11 March 2003	11	Macraes Flat	143/86, 87, 88	Open cast mining
2003/211	14 July 2003	12	Gifford Road/Murphy's Creek	-	Modify or damage – gold mining
2003/210	14 July 2003	12	Coronation Mine, Macraes Flat	142/93	Gold mining
2003/222	11 August 2003	12	Upper Murphy's Creek, Macraes	-	Modify or damage – gold mining
2004/58	1 December 2003	12	Maraeburn, Hyde	142/101	Modify or damage – exploration by drilling
2004/124	9 February 2004	12	Upper Murphy's Creek, Macraes Flat	-	Silt dam construction
2005/106	19 January 2005	12	Stoneburn Gold Mines, Stoneburn	143/71-143/84	Gold exploration
2004/131	14 February 2005	12	Macraes Flat, Otago	142/64	Waste rock dumping
2005/277	25 July 2005	12	Gay Tan's Cottage, Macraes Flat	142/49	Storm water drainage
2006/01	22 August 2005	12	Coronation Mine, Macraes Flat	142/93	Gold mining
2006/05	22 August 2005	12	Lawrence Flynn's Farmstead, Macraes Flat	142/75	Gold mining
2006/96	25 October 2005	12	13 Hyde Street, Macraes Flat	-	Toilet block construction
2009/219	20 April 2009	12	Fraser's East Waste Rock Stack, Macraes Flat, Dunback	-	Construction of a waste rock stack
2010/73	19 November 2009	12	Macraes Back Road tailings impoundment, Macraes Mining zone, Waitaki	142/91	Construction of tailings impoundment