INTRODUCTION

Little Paddock Ltd holds Mining Permit 53214, a mining permit that covers a triangular piece of land at Little Paddock, inland from Hokitika (Figures 1 and 2). The permit is bounded by Blue Spur Road to the west and Brennans Creek is close to the eastern boundary of the permit. It is proposed to mine the permit using a digger and screen. This assessment was commissioned to record archaeological sites within the permit area and assess the values of these archaeological sites.

Figure 1. The location of MP 53214 (the boundaries of the permit are approximate).
Figure 2. Aerial photograph of the mining permit.
STATUTORY REQUIREMENTS
The Historic Places Act 1993 provides protection for archaeological sites and is administered by the New Zealand Historic Places Trust. Under section 2 of the act an archaeological site is defined as:
“...any place in New Zealand that –
(a) Either –
(i) Was associated with human activity that occurred before 1900; or
(ii) Is the site of a wreck of any vessel where that 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.”

Under the Historic Places Act, anyone who wishes to destroy, damage or modify an archaeological site requires an authority to do so under section 11 or 12 of the Act. It is illegal to destroy damage or modify an archaeological site without an authority from the Historic Places Trust. The Act allows up to 3 months for a decision to be made on the authority after the authority application has been lodged (the authority application will be lodged within 10 working days of being received, if all the required information is present). If granted, an authority has a life of up to five years. An authority may be granted with conditions, such as archaeological survey, monitoring and/or excavation. Any archaeologist carrying out work as a condition of the authority must be approved by the Trust under section 17 of the Historic Places Act. Once the authority has been granted, there is a statutory 15 working day stand-down period before earthworks can begin. This is one of the standard conditions of an archaeological authority.

Summary of the timeframes associated with applying for an archaeological authority:
• The Historic Places Trust has 10 working days to lodge an application for an archaeological authority. The application will not be lodged if insufficient information is provided. Instead, a request for information will be sent to the applicant.
• Following lodgement of the application, the Historic Places Trust has 3 months to process the application.
• After the authority has been granted, there is a 15 working day stand-down period before earthworks can begin.

It is illegal to destroy, damage or modify an archaeological site without an archaeological authority. Legal action may result if the site is destroyed, damaged or modified without an archaeological authority or if the conditions of the authority are not complied with.

METHODS
The history of the Little Spur area was researched using a number of sources, including Philip Ross May’s The West Coast Gold Rushes, the Appendix to the Journals
of the House of Representatives (AJHR), digitised newspapers on the Papers Past website (http://www.paperspast.natlib.govt.nz) and material supplied by the Department of Conservation. Landonline was also searched for any relevant plans. This work was undertaken by Rosie Geary Nichol.

I carried out an archaeological survey of the permit with Ian Boustridge on 22-24 March 2011. During this archaeological survey, the location of archaeological features was recorded using a handheld GPS (Garmin GPSmap 60Csx), sites were sketch mapped as appropriate and photographs taken.

PHYSICAL ENVIRONMENT
The mining permit area is a small plateau cut by a creek on either side, Clarke Creek to the west and Brennans Creek to the east. The true right of the gully associated with Clarke Creek is mostly covered in a pine plantation, with some regenerating bush, particularly up side streams. The true left of the gully associated with Brennans Creek is covered in regenerating bush. The plateau is grassed, with some patches of regenerating bush, most commonly around old mine shafts that have been filled in.

HISTORICAL BACKGROUND
The area surveyed is situated north of the historic Kaniere goldfield, which experienced a gold rush in the early 1860s. This area consisted of a broad tableland rising in two terraces, the inland edge adjacent to the Kaniere goldfield to the south and the Blue Spur Range to the east. The streams that drain the Blue Spur Range seawards form Houhou1 Creek and its various tributaries. Brennans Creek is tributary of the Houhou (Figure 3).

Before 1865 the area around Houhou Creek and up into the Blue Spur ranges was populated by a few prospecting parties, with a pack track providing access between Hokitika and Blue Spur. This track was described by an early prospector as “in miserable condition, with mud up to our knees and plenty of logs to scramble over as we tramped along” (Irwan c.1900). In 1865 a small rush occurred in the Houhou area (May 1967: 196). This rush consisted of small alluvial claims around the creek.

1 Also known as Three Mile Creek. In the 1860s Houhou Creek and Three Mile Creek may have been considered separate entities, and there was some confusion over which name applied to which creek. Today they are considered to apply to the same. Houhou Creek was often spelled ‘Hau Hau’ or ‘Ho Ho’ in early newspapers, and in May 1967.
Figure 3. Map of the Kaniere and Waimea goldfields, showing Houhou Creek and associated gold workings (May 1967: 194).
In February 1866 a gold lead was discovered in German Gully, a northern tributary of Houhou Creek, and an estimated 1500 men rushed to the area to dig. The Houhou lead, a cement lead, was originally considered to be an extension of the Kaniere lead. As work continued it was found to be the buried beach lead of the ancient shoreline, running north-northeast to south-southwest, parallel with the coast. Four further leads were discovered running parallel to the Houhou – Picaninny, Madman’s, New Chums (or Champagne) and Blacksmiths (May 1967: 227). At the beginning of the rush, material was extracted from the leads by tunnelling and shafting and broken down and passed through a cradle. The hopperings were burnt in kilns, then crushed by hand and recradled to obtain the gold (May 1967: 226). This was an inefficient system and much gold was lost in its use. Later, crushing machines were installed in the area.

The Houhou lead ran south-southwest through the Blue Spur Range and terminated at ‘Big Paddock’, the area of tableland north of the Kaniere goldfield (Figure 3). This area was very rich. May (1967: 196) states that the ‘Flower of Wheat’ party washed three pounds of gold in one day. Between the Blue Spur Range and Big Paddock, the lead ran through an area called ‘Little Paddock’. The location of Little Paddock is shown in Figure 3, situated between Houhou Creek to the north and Big Paddock to the south, and between Clarkes and Brennans creeks to the west and east respectively. Little Paddock, and particularly Brennans Creek, is therefore the historic mining area most relevant to the archaeology of the area surveyed.

The area through the Blue Spur ranges, along the Houhou Creek and down through Big and Little Paddocks was busy with prospectors by the end of 1866. The rush provided much needed economic stimulus to the area, the Kaniere workings having begun to slow, and the diggings kept the area as one of the main producers in 1866-67 (May 1967: 226). The main settlement for the rush was the Blue Spur township (Figure 3). A significant settlement at Big Paddock also sprang up, consisting of 24 stores, two hotels, three bakeries, three butcheries and a blacksmith (May 1967: 197). With the discovery of the leads, new ground was constantly being opened until the end of 1867 (May 1967: 227). Work then began to slow, and the tailings of older claims began to be reworked.

A description of the Houhou lead workings in early 1868 is provided in the West Coast Times (WCT). At this point, according to May (1967: 227), the initial enthusiasm of the rush was beginning to fade. Good earnings were still being made in the reworking of the false bottoms that had deterred previous prospectors and sluicing, rather than cradling, had become the most popular extraction method by this time.

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2 May (1967: 527) provides a definition of ‘paddock’ from the West Coast Times (1 July 1867): ‘The name “paddock” must not be accepted in its Australian significance, as it is unfenced by the familiar post and rails, and is merely one of those patches of country free from timber, and generally very boggy, peculiar to the West Coast. The native name is “pakihi”.’ Hence ‘Natural Paddock’ (or Bruce’s Paddock) at Lake Brunner, and Big and Little Paddocks at Ho Ho.’

3 The old Blue Spur township is recorded as an archaeological site (J32/84).
Standing on the top of the terrace, and looking northwards, a good view is obtained of the line of lead, which is distinctly marked by a line over a hundred yards wide that has been cleared through the forest in a N.N.E. direction. At about a mile from the tunnel claim this line runs across the corner of the little Paddock and there ends, as the ground dips off into the deep and wide gully that separates the little Paddock from Ballarat Hill, in which the lead is again found. Every claim contained in that mile of the lead is occupied, and closely held, but as we said before, all are working upon one of the false bottoms, at depths varying between seventy and ninety feet. Our reporter conversed with several parties, all of whom admitted to good wages, and were confident that their claims would hold out for at least twelve months. By good wages is meant from L7 to L10 per man per week. The false bottom gold weighs well but is very fine, and therefore the washing out process requires to be conducted with great care. Sluicing is the modus operandi most in vogue, very few cradles being used.

_WCT 29 February 1868_

In March 1868, a small rush occurred in the Houhou area when a new lead was discovered at the head of Little Paddock (WCT 21/3/1868). This lead was known as the ‘Prince Alfred’, and it boosted the popularity of Little Paddock once again. The population of Little Paddock was placed at 100 in April 1868 (WCT 4/4/1868). By May “every inch of the available paddock [was] taken up” (WCT 16/5/ 1868).

A description of the workings at the Fraser and party claim in the northeast of Little Paddock is provided by the _West Coast Times_. This claim was adjacent to Brennans Creek, the “deep gully that separates the Paddock from Ballarat Hill” in the excerpt below. The following therefore describes typical workings along Brennans Creek in the late 1860s.

From the Little Paddock northwards to the Three-mile Creek there are many extended claims in work in the old ground of the Hau Hau Lead. In the extreme N.E. corner of the Paddock, Fraser and party leased two and a half acres of the lead, and have already gone to a vast amount of expense and labor in getting the claim into working order. One side of the claim adjoins the deep gully that separates the Paddock from Ballarat Hill, the claim being so marked to give Fraser and Co. the side of the gully as a frontage for a tunnel, tunnelling being the modus operandi to work the ground. As the washdirt is mainly composed of cement, these enterprising men resolved to erect a good crushing plant, driven by water-power. They accordingly selected a convenient site for a dam down the above-mentioned gully, and sent to Melbourne for an iron overshot wheel and a battery of ten stampers, and then constructed a tramway from the site of the dam and machine to the mouth of the tunnel, a distance of 600 yards. We should have stated that they first proved the worth of the ground by driving a tunnel one thousand feet long, six feet high, and wide enough to allow the ingress and egress of a small pony, which is to be employed hauling the trucks in and out. They have about 18 inches of washdirt, which is expected to crush 1oz to the load.

_WCT 30 May 1868_

The Houhou field appears to have developed over the next few years. Further infrastructure, such as tramways and tracks, were established through the diggings. The report below, from the _West Coast Times_, describes a trip between Big Paddock and Blue Spur township, through Little Paddock and up Brennans Creek. By this time a tramway has been established between Hokitika and the Big Paddock settlement, and a track through Little Paddock to Blue Spur. The report provides a description of the workings on Brennans Creek, through which the track ran.

...this track runs along the ridge of the Old Hau Hau lead to Brenan’s creek, where there are two crushing machines, both worked by water-power, as, indeed, are all the machines in this locality. The one known as the “Queen of the Hau Hau” by some, and
by others as the “Ballarat”, is situated close under the hill of that name, and has four heads of stampers and is chiefly employed in crushing the cement produced from the claim owned by the proprietors of the machine. It is a compact and useful little machine in its way being quite capable of doing all the work required of it. Proceeding along the Creek same distance to the westward the Enterprise machine is reached. This is owned by McLean and party, and crushes for others as well as the proprietors. There are ten head of stampers, all iron, which are worked by a wheel twenty-five feet in diameter, and four feet six inches abreast; there is a plentiful supply of water for motive power, and a large amount of the cement in the locality is crushed here. For the purpose of facilitating the bringing of cement to the crusher a number of tramways, in all about three miles long, have been laid down. At one time this machine was kept pretty busy, but since the locality has been almost deserted it is seldom worked longer than one shift. At the time of my visit it was not in operation.

WCT 9 July 1870

Over the next two decades work in the area diminished further. Some miners remained working steadily in Little Paddock and along Brennans Creek, but there were no further rushes like those of the late 1860s. A small rush occurred in Big Paddock in 1872 but it did not stimulate any renewed interest in the area (AJHR 1872 G4: 20). In 1874, the district’s mining warden expressed a hope that interest in the “almost deserted” area would revive due to the expected completion of the Kaniere Lake Water Race, which was to terminate in the Houhou area (AJHR 1874 H9: 20-21). The race was expected to provide employment for the population, and the provision of water was to revive prospecting enthusiasm in an area where the shortage of water had previously hampered gold extraction. It appears that these hopes were not fulfilled, as the area is not mentioned again in the Warden’s reports with any optimism.

In 1874 the population of the Houhou area was placed at 150, 60 of whom were miners (AJHR 1874 H9: 21). Applications made to the Warden’s Court over the next two decades show that mining continued in the area and along Brennans Creek. These were primarily applications for races and dams along the creek. There were also several applications made to the Westland County Council for repairs to the track along Brennans Creek, indicating that it was still in use. Many applications to the Warden’s Court were made by Chinese miners.

In 1898 Somerset Henry Graves, an Ashburton merchant, applied for a special claim to dredge Brennans Creek from the point at which the Hokitika-Blue Spur Road crossed the creek down to the Houhou (WCT 29/10/1898). It is unclear whether the application was granted, but two years later another dredging claim was applied for by T. Furlong (WCT 12/10/1898). Again it is unclear whether this dredging eventuated, but the applications must have had some foundation, because in 1909 a Mr. Hessey was boring in the Brennans Creek bed. A £3000 dredge, the “most powerful yet constructed on the Coast” was to be placed on the creek (WCT 11/12/1909). The West Coast Times stated that “the dredge...is expected to be constructed in about six months’ time. It is intended to convey the machinery and other gear along a tramway, which is to be laid for the purpose. We hope the high
opinion which has been formed by Mr. Hessey will be borne out by the Syndicate winning good returns from it."  

Figure 4 shows a detail of a plan of the Blue Spur area, believed to date to the 1920s, from the West Coast Historical Museum (Watson 2004: 10). The plan shows Houhou Creek, Brennans Creek and Little Paddock with associated infrastructure. What appears to be a track is shown crossing Little Paddock and Brennans Creek. It is possible that this is the track mentioned in the West Coast Times report of 9 July 1870.

![Figure 4. Detail of c.1920s plan showing Brennans Creek and a track nearby (Watson 2004: 14). Note the comment that the terrace to the north of Houhou Creek is “riddled with shaft holes”.](image)

**PREVIOUS ARCHAEOLOGICAL WORK**

There has been no archaeological survey of the mining permit prior to this time but there are a number of recorded archaeological sites in the general area around the mining permit (Figure 5). Most of these sites are related to the gold mining history of the area and they include gold workings (J32/71), dams (J33/66 and J33/71), a mining tunnel (J33/72), a creek diversion tunnel (J32/89), the Blue Spur and Big Paddock settlements (J32/84 and J33/6), a pack track (J32/72) and two brick kilns (J33/20 and J33/27).

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4 The *West Coast Times* has only been digitised to 1909, so it is not clear what became of this project.
Figure 5. The Brennans Creek area, showing nearby recorded archaeological sites.

RESEARCH RESULTS

Figure 6 shows the location of the archaeological sites recorded during the survey. No specific information about the history of any of these sites was located and they are not shown on any plans held by Land Information New Zealand. The sites are all believed to date to the 1860s or 1870s.
Figure 6. Archaeological sites recorded during the survey.

Creek diversion tunnel (J32/266)
This creek diversion tunnel is located on Brennans Creek and water still flows through it (Figure 7). The original creek bed would have been to the east (and outside the mining permit boundaries) and the creek would have been diverted to enable the creek bed to be worked.
Figure 7. Looking down the creek diversion tunnel.

Sluice claim (J32/267)
This large sluice claim, on the true left of Brennans Creek, is clearly visible on aerial photographs (Figure 2). The remains of the claim comprise the sluice face itself, which forms a semi-circular sluice basin, the flat base of the claim and a very few small piles of tailings. The bulk of the tailings would have been washed down Brennans Creek. Vegetation cover meant that it was not possible to estimate the height of the faces.

A dam was found to the east of this point and may have provided water for working this claim – a water race carried water away from the dam but the destination of the water was not relocated as the race was lost in dense vegetation (Figure 8). The water race that fed the dam was located and crossed a bridge built with hand-stacked tailings immediately before reaching the dam (Figure 9). The dam had two tunnels dug into the uphill side and was also associated with the tail race from a small sluice claim. It is likely that these works predated the construction of the dam, as the dam wall would have hindered the disposal of the tailings.
Figure 8. Sketch plan of the dam likely to be associated with the sluice claim. Not to scale.

Figure 9. The stone revetted bridge for a water race for the dam in Figure 8.
Camp site (J33/179)
The remains of scattered rubbish from a camp site were found on the plateau. This material had been exposed and dispersed when a road was put in a number of years ago. The scattered artefacts comprised broken ceramics and glass, including the remains of black beer bottles (Figure 10). No Chinese ceramics were seen and the exact site of the camp was not relocated.

![Figure 10. Scattered artefacts associated with the camp site.](image)

Prospect area (J33/180)
Four prospecting channels had been worked up here in the search for payable ground (Figure 11). These channels were approximately 2 m wide and 2 m depth and varied in length. Material from the channels had been piled up on the unworked ground between the channels. This area was worked with the assistance of a small water race (waypoint 77). There was also a prospect pit in this area (waypoint 79).

The fact this area of prospecting survives and that there are no workings in the area indicates that payable gold was not found here.
Figure 11. Sketch map showing the prospecting area. Not to scale.

Shafts and tunnels (J33/181)

Forty-four shafts and 23 tunnels were recorded within MP 53214 (Figure 12). Most of the shafts are on the plateau, while the tunnels have been dug into the terrace face above Brennans Creek. Although these features have been recorded as one archaeological site, a subsequent discussion with Les Wright indicates that the tunnels and shafts were not necessarily related. While it is possible that the shafts provided air for the tunnels below or were used as a means of extracting material from the tunnels, Wright indicated that it was common at Blue Spur for the claims at the front of the terrace to be tunnelled and the claims at the back shafted. Further, while the features have been lumped together, they are likely to represent the work of a number of different mining parties.

In a number of instances, a small pile of spoil remained next to the shaft, most of which were filled in some time ago for safety reasons (Figures 13 and 14). In some instances, no surface evidence of the shafts remains but the location was pointed out by the digger operator who filled the shafts in.

Only one tunnel (waypoint 11) was recorded on the terrace face above Clarkes Creek.

Three tunnels were associated with sluiced areas. The largest sluice area had faces approximately 3 m high and was associated with the dam described above (waypoint 87). Another sluiced area was a small sluice basin (waypoint 26), complete with a tail race that was partly lined with hand-stacked tailings.

There was one instance of two tunnels separated by less than 500 mm (Figures 15 and 16; waypoint 99). It is likely that the one of these tunnels was abandoned part way through excavation when it was found to be in an unsuitable location.
Figure 12. The shafts (red) and tunnels (blue) recorded within the mining permit.

Figure 13. Regenerating native bush on a filled in shaft.
Figure 14. A shaft.

Figure 15. The arrangement of the two tunnels. Not to scale.
Figure 16. The smaller of the two tunnels shown in Figure 15.

Water races (J33/183, 184 and 185)
Five water races were recorded during the archaeological survey (excluding those water races already discussed above). No workings were found in association with any of these races.

Three of the races were in the same general area as the prospect area (waypoints 78, 80 and 83; J33/183). The remaining races were recorded on the terrace above Brennans Creek. One was at the northern end of the permit area (waypoint 18; J33/184) and the other was above and parallel to the water race that carried water away from the dam (waypoint 91; J33/185).

Pack track (J33/182)
There is a pack track on the true left of Brennans Creek (Figure 17). This was not followed in its entirety but runs south from the creek to the top of terrace, where it has been destroyed by later earthworks. The lower end of the track has been widened by bulldozing and may have been used during forestry operations. The upper half retains its original pack track formation and may be the track shown on SO 491 (Figure 18) and Figure 4. A number of tunnels had been dug into the face above the road.
Figure 17. The black dots are the waypoints recorded along the pack track.

Figure 18. The track over Brennans Creek (LINZ: SO 491).
Prospect pits

Eight prospect pits were recorded within the mining permit boundaries (excluding the prospect pit already mentioned above; Figure 19). These were generally rectangular in form and less than 2 m deep, although two reached depths of over 5 m (waypoints 95 and 101).

![Figure 19. The black dots show the location of prospect pits recorded during the archaeological survey.](image)

ARCHAEOLOGICAL AND OTHER VALUES

The New Zealand Historic Places Trust recommends using the following criteria to assess the value of an archaeological site:

- The **condition** of the site.
- Does the site possess **contextual value**?
- Is the site **unusual, rare or unique**, or notable in any other way in comparison to other sites of its kind?
- **Information potential**.
• Does the site have any special **cultural associations** for any particular communities or groups, e.g. Maori, European, Chinese.

• **Amenity value** (e.g. educational, visual, landscape). Does the site have potential for public interpretation and education?

Other values can also be considered when relevant to the archaeological site. These include architectural, cultural, historical and technological value. Historical values are particularly important when assessing archaeological sites associated with New Zealand’s history after European contact. Investigating the history of a site and establishing an association with an important person or event in New Zealand’s history increases both our understanding of the site and its archaeological value.

The values for each sites are listed in Table 1. The sites have been ascribed a value of low, medium or high. Some of the values were difficult to assess, notably rarity in the instance of the shafts and tunnels and the contextual values. While the use of tunnels and shafts to work ground at Blue Spur was not unusual, it was less common on other West Coast gold fields. It is not known how many sites of a similar type remain in the Blue Spur area. One other similar site (J32/71) was recorded in conjunction with gold mining in the 1980s and it is not known whether or not the site has survived. Other areas of Blue Spur known to have been worked using similar technology are the equivalent terrace north of Blue Spur Road (where there are extensive old workings), at Big Paddock and the Arch Creek area at Kaniere. There are also a number of shafts near the Hokitika airport (L. Wright, pers. comm.; J. Wood, pers. comm.).
<table>
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<th>site</th>
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<th>contextual values</th>
<th>rarity</th>
<th>historical values</th>
<th>information potential</th>
<th>cultural associations</th>
<th>amenity value</th>
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<td>High</td>
<td>Medium</td>
<td>Low-medium. Other examples known in the area &amp; at Waimea.</td>
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<tr>
<td>J33/179 (camp site)</td>
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<td>Low</td>
<td>Low</td>
<td>Medium</td>
<td>None known</td>
<td>Low</td>
<td>Low</td>
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<tr>
<td>J33/180 (prospect area)</td>
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<td>Medium</td>
<td>Similar prospecting areas seen at Mont d'Or.</td>
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<td>Low</td>
<td>None known</td>
<td>Low</td>
</tr>
<tr>
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<td>Medium?</td>
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<td>Low</td>
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<td>Low-medium</td>
<td>Medium?</td>
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<tr>
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<td>Low-medium</td>
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<td>Low-medium</td>
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<tr>
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<tr>
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<td>Low-medium</td>
<td>None known</td>
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*Table 1.* The archaeological values of the sites recorded within MP 53214.
ASSESSMENT OF EFFECTS
The New Zealand Historic Places Trust recommends using the following criteria to assess the effects of development on a site:

- What are the physical effects of the proposal? How much of the site will be affected and to what degree? What are the effects on the values of the archaeological sites?
- Will the proposal increase the risk of future damage to the site?
- Would a redesign of the proposal avoid the effects?
- What are the possible methods to avoid, minimise and/or mitigate the adverse effects of the proposal?

Physical effects
The following sites will not be affected by the proposed mining:
- the creek diversion tunnel (J32/266);
- the sluice claim (J32/267);
- the prospect area (J33/180); and
- the water races (J33/183, 184 and 185).

The following sites will be damaged by the proposed mining:
- the shafts and tunnels (J33/181); and
- the pack track (J33/182).

The following site will be destroyed by the proposed mining:
- the camp site (J33/179).

The pack track and tunnels will be affected by a haul road that will be cut up from the southeast corner of the permit, while the camp site and shafts will be affected by mining.

Given that the camp site is not an in situ feature per se, the loss of this site is not regarded as significant, although the opportunity to recover and analyse the artefacts is an important one. No gold rush area habitation sites from this part of the West Coast have been excavated and thus the possibility of recovering these artefacts is an important opportunity.

Future damage
The proposed work would not increase the risk of future damage to the remaining sites.

Redesign
The mining plan has, in part, been designed to minimise the impact of the mining operation on the archaeological sites in the area.
Avoid, minimise and/or mitigate

The effects of the proposed mining will be minimised by:

- establishing a buffer zone around the shafts at the southern end of the permit to ensure that they are not damaged by mining (Figure 20). This buffer will include at least one open shaft, which will be permanently fenced off.
- establishing a buffer zone around the northern tunnels to ensure that they are not damaged by mining (Figure 20).
- restricting the extent to which the pack track is impacted by the access road. This will be achieved by aligning the road so that it only crosses the pack track once, at either the very bottom of the track or the very top. This will mean that, while the surviving length of the pack track is shortened, the contiguity of the site will not be affected.

Figure 20. The tunnels (blue) and shafts (red), showing where the buffer zones will be established.

The following mitigation is proposed:
• The surface artefacts at the camp site (J33/179) will be collected by a suitably qualified archaeologist. The artefacts will subsequently be analysed and a report written outlining the results of this analysis. Should the source of the artefacts be located, this should be excavated by a suitably qualified archaeologist.
• The full length of the pack track (J33/182) will be recorded by an archaeologist prior to any earthworks being undertaken on the site.
• Where possible, information about the shafts and tunnels will be recorded during the mining work. Such work would include taking photographs and, where safe to do so, recovering any artefacts from within the shafts.

RECOMMENDATIONS
It is recommended that:
• Little Paddock Ltd apply for an authority to destroy, damage or modify an archaeological site under section 12 of the Historic Places Act.
• Buffer zones are established to protect some of the shafts and tunnels.
• Only one end of the pack track is destroyed by the mining activity. The full length of the track (within the mining permit boundaries) should be recorded by an archaeologist prior to this.
• Prior to mining commencing all loose surface artefacts associated with the camp site (J33/179) are recovered. These should then be analysed in accordance with archaeological best practice.
• During the mining operation, photographs should be taken of all shafts encountered and, where safe to do so, any artefacts in the shafts should be recovered.
• A report on all the archaeological work undertaken shall be completed at the end of mining.
REFERENCES

Appendices to the Journals of the House of Representatives.

Irwan, R., c.1900. Experiences of an old identity (Blue Spur 1865). Department of Conservation Archive, West Coast Conservancy, Hokitika.

