A Brief Archaeological Inspection of the Site of Proposed Exploration Drilling at the Magnet Ag-Pb Mine, Tasmania.

DRAFT

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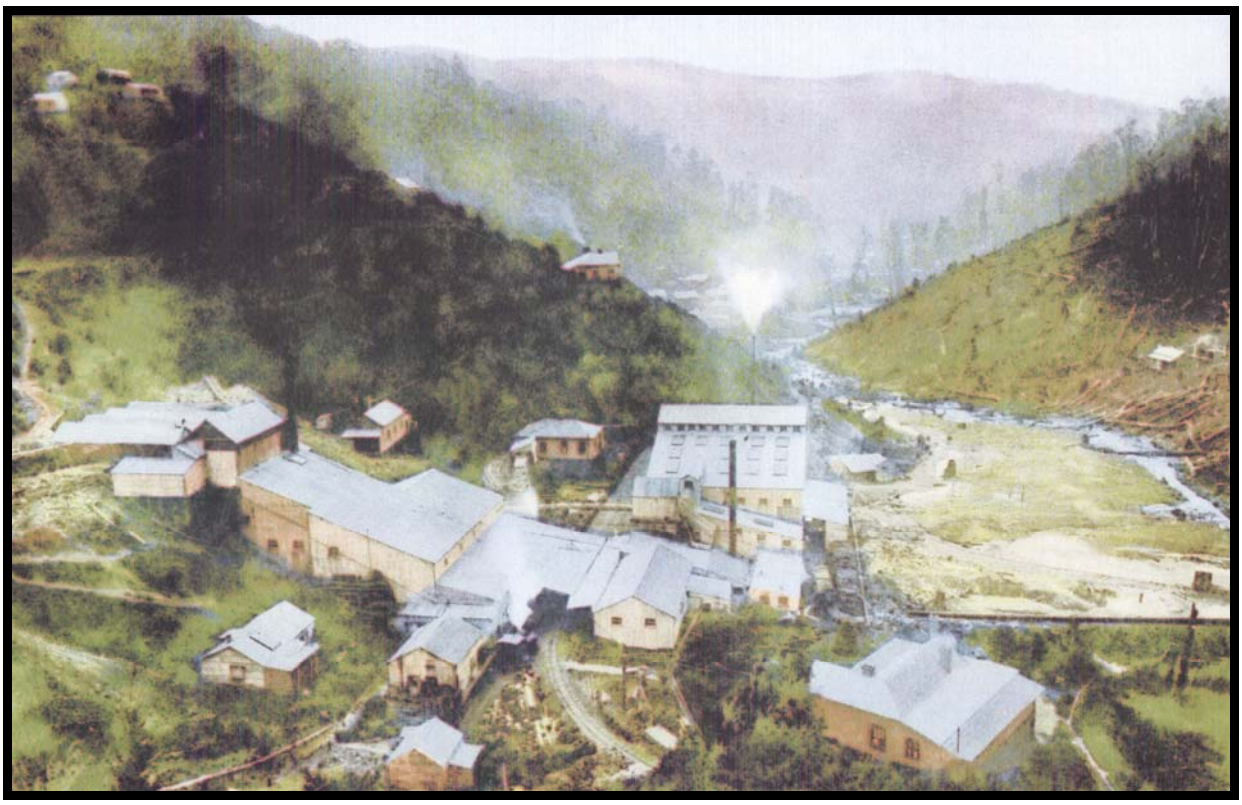
November 2007



INTRODUCTION

Location & Access

The Magnet Mine workings and town site lie 7km due west of Waratah (as the crow flies). The easiest road access to the site is by travelling 12km to the southwest of Waratah via the sealed Corinna Rd and then turning off to the north and driving a further 4.5km along a gravel road that follows the alignment of the original wooden horse-drawn tramway (Figure 1).

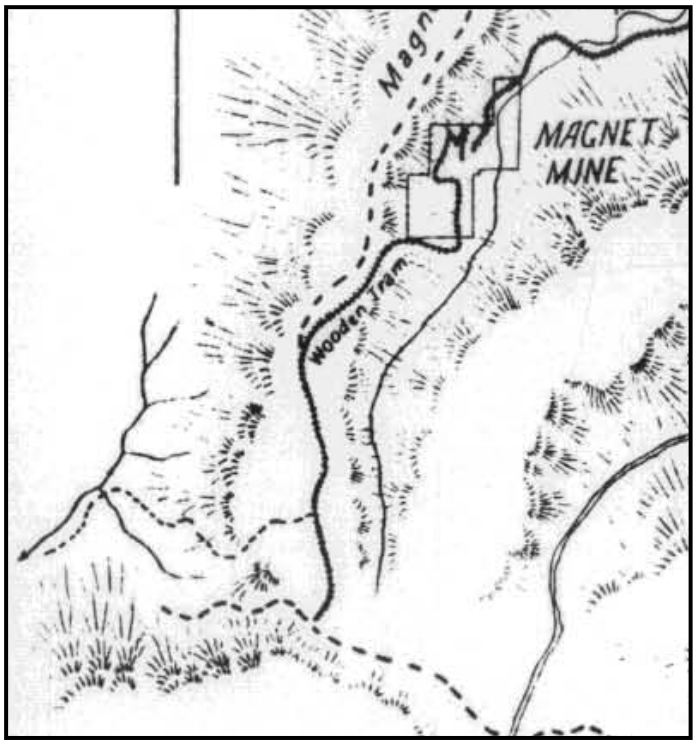


Figure 1. *Plan showing the original wooden tramway that first linked the Magnet Mine with the outside world (Waller 1902). This tramway was superseded by a modern 2 foot gauge railway in 1902. It seems to have fallen into disuse until renovated as a haulage road by EZ Ltd in the early 1970's.*

The modern Corinna Rd still follows the undulose dotted line at the southern end of the tramway formation

The tramway alignment was re-developed as the main access to the site in the 1970's when the EZ Company extracted zinc-rich tailings from the mill dam. The modern track is navigable by 2WD vehicles (with care) to the newer open cut workings developed on the surface expression of the orebody, which lie within the gazetted fossicking area.

General Description of the Magnet Mine Site

The Magnet Mine site is located in the steep walled, southwest-northeast trending valley of Magnet Creek, on the southern margin of the Magnet Range. The mine surface workings are draped along the northern wall of the valley and are focussed around the surface expression of the steeply plunging, pipe-like shoot that comprises the orebody. The associated mill ruins and the remains of the transport infrastructure are located immediately below the mine workings, on the floor and lower slope of the north side of the valley (Figures 2, 3A - 3D. See also Appendix 1).

The steep southwesterly plunge and westerly dip of the orebody, and the rugged topography of the valley, mean that most of the ore was extracted using underground mining methods. The result is a series of adits and their associated ore transport infrastructure being excavated into the hillside above the mill (see Figures 3A-3D). Extensive surface workings are also present on the surface outcrop of the orebody, which occurs about midway up the hillside above the mill site (see Figure 2 and Appendix 2).

In November 2007, the most visible historic features of the Magnet Mine were the ruins of the mill complex, particularly the timber framing of the drying house (?).

Figure 2. *View of the Magnet Mine and mill taken from the southern slope of magnet Valley. Taken after the construction of the hydroelectric power station (twin-roofed building in foreground), which was built in 1918.*

Note the two houses, excavated terraces and the historic open cut (right centre of view).

Photo from Godfrey (1984)

The house sites were located during this survey but lie below the alignment of the proposed exploration track.

Rehabilitated remnants of the original tailings heaps remain in the base of the valley and have survived the rehabilitation work undertaken by MRT in late 1990's. This material is having little effect on the fauna of Magnet Creek (Mike Blake, pers. Comm., 2007)

Purpose of the Survey

Bass Metals Ltd proposes to undertake exploration drilling in and around the outcrop area of the Magnet Lode. This area was the focus of the original discovery of the orebody and it was the focus of the earliest mining and exploration activity. Mineral Resources Tasmania (MRT) recognised that historically significant sites may remain in the vicinity of the proposed exploration and requested that Bass Metals undertake an archaeological survey to identify any sites prior to developing access to the area.

The focus of this report is the hillside immediately above the present access track, and extending to the ridgeline. Photographic evidence such as that presented as Figure 2, and in Appendix 2, suggests that this area contained a high density of mine workings, related ore transport infrastructure (tramways, inclined tramways and tracks), and houses and huts.

Brief visits were made to other key features of the site that lay outside the survey area, mainly to collect GPS co-ordinates of known features for georeferencing purposes.

The proposed drilling programme requires that a new track be constructed (Figure 3D; Figure 4) to allow rig access to drill sites on the ridge above the mill and the historic workings. The proposed track may impact of remaining elements of the surface infrastructure and surroundings of the historic mine and so this survey was undertaken to identify any such elements and to make recommendations about their preservations.

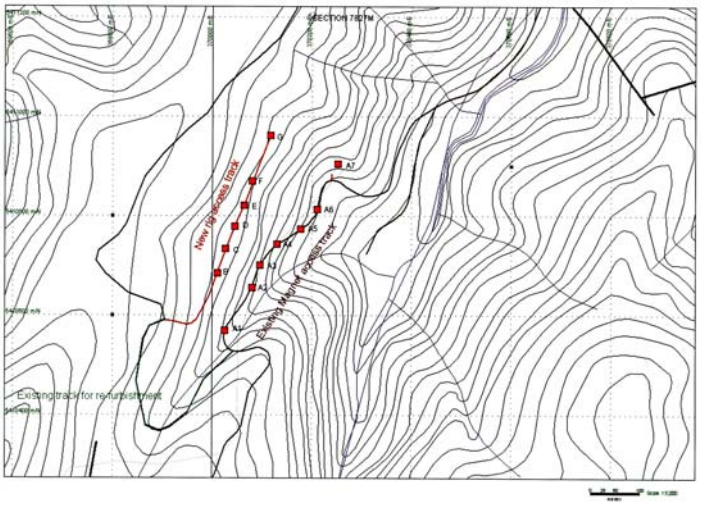


Figure 4. *Bass Metals topographic plan of the proposed drilling access track (red line) and planned drill hole locations (red squares).*

This plan formed the basis of the guide plan compilation (e.g. Appendix 2). See also Figure 3D.

Supplied by Mike Blake of Bass Metals, October 2007.

Brief History of the Magnet Silver Mine

The following section is a brief summary of the history of the Magnet Mine site. It only draws on readily available published resources and is not a comprehensive review. Wherever an historical element of the site is mentioned in the published sources and for which evidence was located during the site survey, it is highlighted in text boxes with a blue shading (e.g. Blue background.).

Nye (1923) reported the 'hearsay' that the Magnet Lode gossan had originally been discovered by W. R. Bell in dense horizontal scrub while track cutting around 1877. Given the position of early pack tracks marked on the lease plan in Nye's (1923) report (Figure 1), this seems plausible. Bell went on track cutting and did not follow up the discovery. Only some 12-13 years later (1890) he relocated the gossan and pegged lease No 3705-87M on 16th February 1891 (as a Reward claim; Glasson & Cox, 1968). Two 40 acre sections, 2074-91M and 2075-91M were also taken up to the north and the south by W. F. Petterd in December 1893 (Nye, 1923). The Magnet Silver Mining Company NL was formed in 1895, with a capital of £1024 in 4096 shares of 5s each.

Prospecting work found lumps of galena and carbonates on the surface and this material was traced uphill to the gossan outcrop, which was then opened up by trenches (Nye, 1923). The workings were originally commenced on the northern end of mining lease 5637M (165 acres) but at depth, they progressed to the south and onto the adjoining 5636M (Nye, 1923).

The trenches, pits and shallow costeans identified during this survey at the southwestern end of the lode may date from this early period of prospecting. The open cut at the northeastern end of the surface expression of the lode is almost definitely from this early phase of exploration and development. See Figures 3A to 3D.

The deposit was worked by open cut and adit levels down to the No. 4 Adit level. The orebody is a steeply plunging shoot and soon shaft-sinking had to be undertaken to develop the ore-bodies at depth. The internal underlay shaft was sunk from the No 4 Adit Level, on the footwall side of the lode, at an angle of 73°, to a total depth of 289.5m (950 feet). The angle of the underlay shaft was designed to correspond to the dip of the lode above the No 4 Adit Level, however, it flattened with depth and so by the time the 16 Level was reached, the distance between the shaft and the orebody was 159m (523 feet) (Glasson & Cox, 1968). The deeper mining operation required pumping and winding equipment.

The No 4 Adit Level and internal shaft were the main access to the mine for the rest of its production life, judging by the extensive mullock dumps that have been built up to the level of the portal and the arrangement of finger dumps that radiate out from it. Most mine infrastructure was also clustered at the level of the No 4 Adit (Figures 3A to 3D).

The original access to the Magnet Mine was by a three mile long pack track along the leading spur between the mine and the Corinna Road (Waller, 1902; Figure 1) and the first ore left the mine by pack horse (Godfrey, 1984). This soon proved inadequate and was replaced in 1899 by a horse drawn tramway. While the first 2' gauge, steel (described as 'wooden' on Figure 1), horse drawn tram allowed the mine to be systematically developed, and allowed the transport of about £28,000 worth of first-class argentiferous lead ore to market (standard content of approximately 90oz Ag, 26% Pb and 1 ¾ dwt Au / ton; Twelvetrees, 1902). The transport system did not have sufficient capacity to deal with all of the ore that the mine could produce and large quantities of gossan and other second-class ore were left at the mine (Twelvetrees, 1902; Nye, 1923). Cheaper transport was required to fully exploit the mine reserves and so a new tramway linking the mine to Waratah (Magnet Siding) was completed by 1902.

The original tramway formation seems to have been abandoned once the new one was completed and by 1900, Twelvetrees (1900) described it as being in a 'rough' condition. Glasson and Cox (1968) recommended that the old formation should be cleared for exploration drilling access, so it was no longer a functioning track in the 1960's. It was re-developed as a haulage road in the 1970's for the tailings extraction operation undertaken by EZ and it is now the major access track for the mine site and fossicking area. This feature of the site will not be impacted by the Bass Metals exploration activity.

A crusher and revolving drying plant were installed during 1902 and large quantities of first class ore and gossan were sold to customers such as the Smelting Company of Australia and the Tasmania Smelting Company, where its main use was as a flux (Secretery of Mines, 1902). In the same year, the company was investigating the construction of a leaching plant to treat the lower grade ores and by the end of 1904, the mill had been enlarged with the addition of a concentrating mill. It was at this point that the mine paid its first dividend. A further enlargement of the mill was soon required to treat the larger tonnages of ore being produced from the mine. The dividends did not last however, and the operation basically paid its way until 1914, requiring several calls (Nye, 1923) before returning to a brief dividend paying period in 1916-1917. However, this did not last.

A dam was constructed on the Arthur River (the Magnet Dam) and water races brought water to the mine and mill via penstocks. This additional water was required not only for milling but for later hydroelectric power generation (from 1918 onwards).

This was probably when the water race identified during this survey was built (see Figures 3A to 3D and Appendix 5).

Water shortages in the 1920's led to the construction of a second dam (the No 2 Dam) and the raising of the wall of the Magnet Dam by 21.3m. By 1931, an auxiliary steam generating plant had been installed as a standby power source. These capital works were very expensive and with the other high costs after the War, the mine became unprofitable (Acting Government Geologists, 1937). When the mine was finally closed and abandoned in 1940, the gate dam was blown up to prevent any dangerous build up and dam burst. (Godfrey, 1984).

Government assistance was provided to the company in 1931 but the mine still declined (Acting Government Geologists, 1937).

Historic photos show an inclined tramway leading from the main crusher building above the mill complex to No 2 Adit. Large wooden ore bins lay at the top of the twin-tracked incline. This adit was not located during this survey and although a systematic search was not carried out, it has probably been destroyed by road building and fossicking activities. No unequivocal evidence of the incline was found but its alignment may just be visible in the modern aerial photo (see Figure 3A). Photos taken after the hydroelectric power station was in place (i.e. after 1918) show that this line had been already been dismantled and abandoned (only timber retaining walls at the site of the ore bins are visible; see Appendix 1).

The financial history of the mine shows five increases of capital from £1,0,24 to £24,000 between 1898 and 1930 and five grants of assistance by the Tasmanian Department of Mines from 1930 to 1940. The mine had only three short dividend paying periods (November 1903 to January 1908; June 1916 to September 1917, and some after November 1922. All dividends were 1/- per share (Cottle, 1953).

About 1932-33 the mine was leased on tribute to a syndicate of employees, with R. G. Hales as Manager. This scheme failed and it was then leased to the Magnet Prospecting Syndicate NL, a co-operative that lasted, with government assistance, until 1935 (Acting Government Geologist, 1937; Godfrey, 1984). The New Magnet Prospecting Syndicate NL, operating with government assistance through the Mines Department and was supervised by the Inspector of Mines. It continued until being wound up in 1936.

Francis Snow Pty Ltd, Adelaide metal buyers then leased the mine with an interest in the mullock dumps and Magnet Silver-Lead Mines NL was formed to work them. A new shaft was also sunk (location unknown) but development work ceased without success and the mullock dump is still in place (November 2007).

At the end of the mine life, Mr E. L. Egan of Storey's Creek explored the mine through his company Spartan Silver-Lead Mines NL. It was this company that organised the final auction of the mine and town in 1940 (Godfrey, 1984).

Between November the 25 and 27th 1940 the mine plant and buildings (including 16 mine buildings and miners' cottages) (including the town) were auctioned off. The final items sold were the train and lines, which went to R. J. Howard of Zeehan. However, the train worked on for several months more, hauling out all of the moveable items from Magnet. Mr Howard did not use the rail equipment he purchased and the rails were sold for scrap. Two of the O&K Mallet engines were sold to Great Boulder Gold Mines Pty Ltd. for ore haulage at Kalgoorlie. No.3, an Orrenstein & Koppel 0-4-4-0T went into service at this great mine while No.1 was eventually cannibalised for spare parts to keep No.3 operating. No 3 was withdrawn from operation in 1962 (Bennet Brook Railway, 2007) but has entered preservation with the Bennet Brook Railway and is under restoration in Western Australia

The total production from Magnet Mine amounts to 36,803 tons of lead and 7,611,903 ozs. of silver (Acting Government Geologists, 1937) from approximately 620,000 tons of ore (Hopkins, 1991). The best available indication of the grade of the orebody comes from the production records of 15 years (not consecutive) between 1916 and 1933. In these records 251,331 tons of ore was mined for a recovery of 14,229 tons of lead and 2,826,192 oz. of silver showing a recovery grade of 5.7 percent lead and 11.25 oz. of silver per ton. Tailing losses are not known

but Cottle (1953) estimated the dump material to contain 1.3 percent lead, 7.3 percent zinc and 5.3 oz. Ag per ton (Glasson and Cox, 1968).

Recent History

EZ company removed most of the zinc-bearing tailings from the Magnet Creek tailings dam in the mid-1970's. The material was trucked to the Corinna Rd where it was stockpiled. The work done to reconstruct the formation of the original horse drawn tramway into the new haul road and probably impacting on many of the surface workings of the old mine (including the No 2 Adit portal area). The southwestern end of the old open cut was also affected, though most of the original features have probably been preserved.

Extensive surface exploration (mapping of drainage lines/road cuttings and soil sampling) and some drilling was undertaken in the 1960's to the 1980's.

The Magnet Mine was declared a fossicking area in recent years. Mineral fossicking activities have been focussed around the place where the modern access track cuts through the surface expression of the lode. Excavations in the search for minerals specimens have probably destroyed some of the surface features that were originally associated with the historic mine.

In the late 1990's MRT completed environmental remediation works on the floor of Magnet Creek, in the area of the former tailings dumps (tailings with possible metal contamination were ripped and agricultural limestone was spread to neutralise the area). While this work was taking place, some steep batters on a nearby mullock dump were graded out (MRT Annual Review 2000/01). This work has destroyed some building sites and tramway formations on the floor of Magnet Creek but has had no impact in the area surveyed,

The Magnet Mine was the only silver lead mine that was in continuous production in the Mt Bischoff area. Godfrey (1984) states that the mine was considered to be the third most important operation on the west coast, after My Lyell and Rosebery, and that it was held in very high regard by those that lived and worked there for over 40 years.

Given that the site has not experienced any significant modern exploration or mining activity, it remains a largely 'intact' example of late 19th Century to early 20th Century mining.

ARCHAEOLOGICAL SURVEY

Time taken for survey

- 1 day travel to and from site.
- 2 days site survey.
- 2 days historical research & preliminary data compilation (guide plans etc), and
- 4 days report preparation

Historical information

'Guide' Plans

Preliminary historical data compiled into a series of 'Guide Plans' (e.g. Appendix 2) to determine the approximate locations of former structures, surface workings and other features of the site and their relationship to existing features (particularly remnant historical infrastructure and tracks). Guide plans were compiled in ArcView and Corel Draw using historic mapping and other information.

'Guide Plans' are compilations of historic map information (and possibly written observational information) as a first pass assessment (pre-field survey) of the archaeological features that may be preserved in the surveyed area. They are compiled as a guide to the features that were recorded as having once been present in the area (in documentary sources) and for which there may still be evidence remaining. They are not accurate and may differ greatly from reality. They serve as a field guide to the archaeologist about what might be found in areas of the lease. They are not comprehensive and do not replace detailed field surveys.

It is important to note that features identified on 'guide plans' as having once been present may no longer be there. There may also be features present within the survey area that are not indicated by these plans.

Historic photographs of the site.

Several panoramic views of the Magnet mill and mine are preserved in museum and private photographic collections. Most are taken from the southern wall of the valley, looking north (e.g. Appendix 1) or from the western end of the valley, looking east (probably from around the No 2 South Adit area; e.g. Front cover of report).

Readily available (published) examples of such photos were used to augment the guide plans and were visually analysed to determine the nature and location of structures that had formerly existed on the area investigated (Appendix 1).

The analysis of historic photos identified regions of the surveyed area to be specifically targetted to determine if remains of structures were preserte3ved. Both Hut Groups 1 and 2 were identified as a result of this approach and it proved to be a key method for efficiently carrying out this project.

Survey Method

The complete alignment of the proposed track was walked (as shown in the map supplied by Bass Metals; Figure 3) and any features identified and flagged (orange flagging tape). The water race, which was not indicated in any historic records was located during this traverse (see below).

Structured traverses then specifically targetted zones where the 'guide plans' indicated there were likely to be historic features. Historic photographs aided this process and were particularly useful in the interpretation of several of the key features found (see Appendix 1; 4 and 5).

Finally, the line of the surface workings was walked to record the locations of any surface workings, passes and open stopes (Figure 3A-3D).

The location of all features were recorded using a Magellan Meridian Gold GPS receiver.

Survey information was compiled in ArcGIS and ArcView GIS compilations of GPS survey and other historic information. The final map compilation was completed using Corel Draw.
Identified features that were in immediate danger of impact by exploration activity were marked with orange flagging tape.

Accuracy of Survey

The accuracy of the Magellan Meridian hand held GPS is affected by satellite availability, vegetation canopy density and climatic conditions (mist and rain). On the second day of the survey, several key features were resurveyed and the results compared with earlier readings. The location of the features varied by up to 15m. So the accuracy of this survey is only +/- approximately 15m.

Key Historic Elements Identified

- **Hut / house Sites.** Two clusters of hut/house sites were identified; Hut Group 1 (Figure 3A; Figure 4 & Appendix 6) and Hut Group 2 (Figure 3A; Figure 5 & Appendix 7). Hut Group 1 lies on the alignment of the proposed exploration track and under threat.

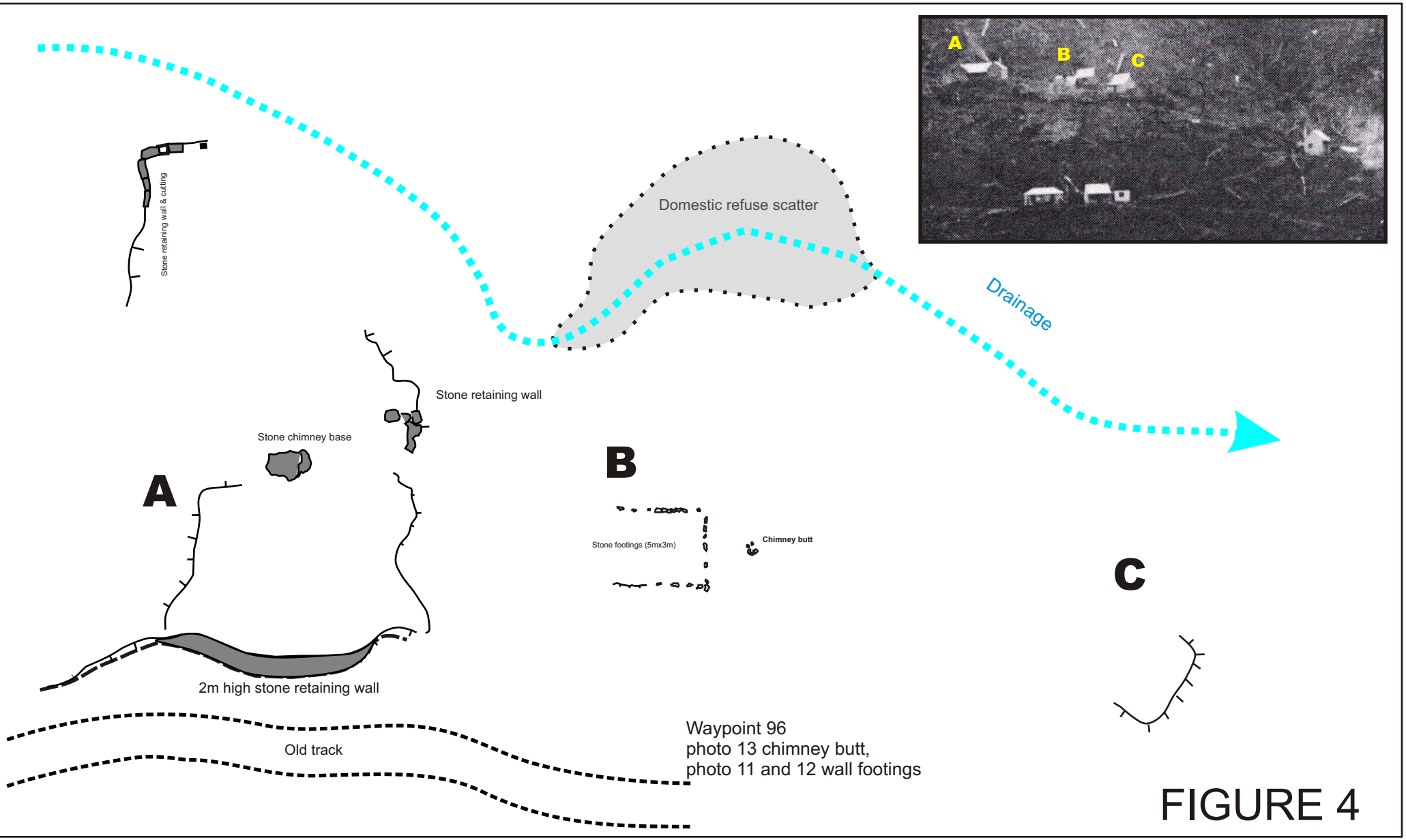
- **Surface mine workings.** A line of workings extends along the surface outcrop of the lode to the southwest of the open cut (Figures 3A-3D) and includes such features as;

    - Adit portals,
    - Mullock/ore passes,
    - Open stopes (some collapsed),
    - Costeans, trenching and test pitting,
    - Surface benching/terracing and
    - Tracks.

- **Original Open Cut.** The original open cut and remnants of the gossan is located at the northeastern end of the surveyed area and is closely associated with Hut Group 1 (Figure 3A-3D & Appendix 4). This historic section of the workings is largely unaffected by modern fossicking).

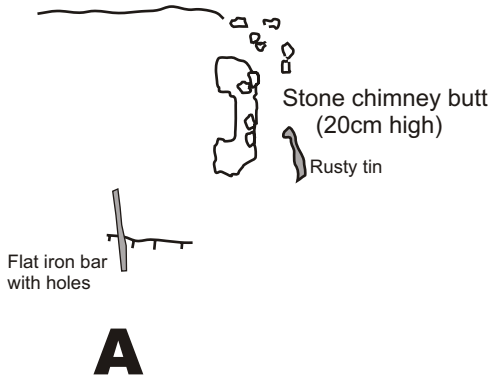
- **Water Race.** A water race and related drainage channel (Figure 3A-3D and Appendix 6).

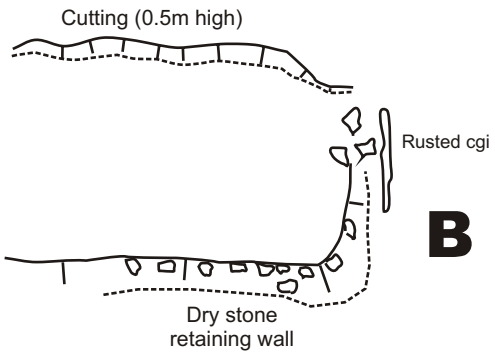
A summary of the location of the key archaeological features located during this survey is presented as Appendix 7.

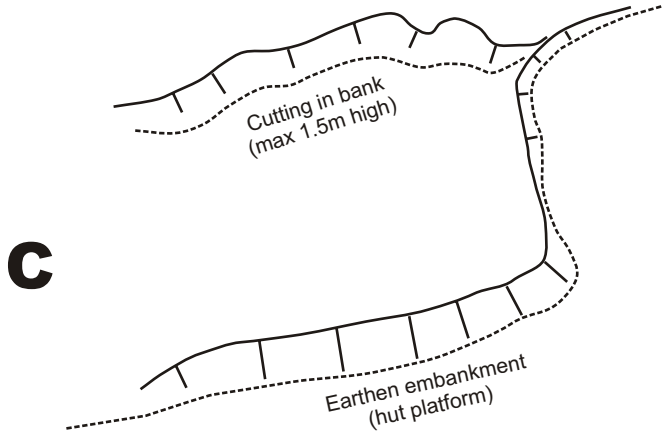


5m (approx)

Sketch Plan of House/Hut Group 1
(above old open cut)







5m (approx)

FIGURE 5

Sketch Plan of Hut (tent?) Group 2 (near ridge top)
In path of exploration track

SITE DESCRIPTIONS

The hillside above the mill site to the immediate north of the open cut is benched and terraced and it is in this region, right up to the crest of the ridge that the greatest density of hut sites occur on any flat areas. Historic photos of the mine suggested that there could be three groups of huts on the slope above the mine. Two of these were located and are described below.

A third group of structures occurred in the vicinity of the No Adit Portal, at the top of the inclined tramway to the mill. This group of buildings was probably removed prior to 1918 and the foundations may have been mined away by the old open cut.

Hut Group 1

A large house site comprising a dry stone embankment, associated cuttings and a domestic refuse scatter (bottle glass, and a wash tub) was identified immediately above the old open cut (Figure 4). Two hut sites (marked B, comprising low platforms built up from earthen embankments and cut into the hillside are closely associated with the larger house site. The group of buildings is seen in historic photographs of the mill site. This cluster of buildings is marked on Figures 3A-3D as Hut Group 1 and details of the site features are shown in Appendix 4.

Hut Group 1 is closely associated with the old open cut. A fourth house site and the northeastern end of the old open cut.

The larger house site marked 'A' in Figure 4 is probably the double-gabled house (probably of timber and iron construction) that appears in most of the historic photos of the site (e.f. Appendix 2).

Hut Group 2

A second group of three hut sites, associated glass scatters and occasional iron artefacts was identified on the track alignment to the southwest of Hut Group 1. This cluster of sites is marked as Hut Group 2 on Figures 3A-3D. A sketch plan of the three hut footings is presented as Figure 5 and details of each feature are presented in Appendix 5.

This groups of sites is interpreted to be the remains of the groups of huts or tents that is visible in one of the early photos of the mill and mine area (see Appendix 1). An extract from one of these photos is shown in Appendix 5. Photographic evidence suggests that there was a fourth hut to the southwest of the three that were found during the survey and the remains of this hut may still be there. This should be so8ight for and located before the track is constructed.

Hut Group 2 lies on the proposed track alignment and could easily be avoided if the position of the track is moved upslope (to the NW).

Surface Workings

Extensive surface workings were found during the traverse along the surface expression of the orebody. The location of the identified surface features are shown in Figures 3A-3D and their locations are listed in Appendix 7. Three main categories of surface workings were identified;

- Open stopes (some collapsed),
- Test pits/costeans,
- Mullock/ore passes and second access points,
- Open stopes (some collapsed),
- Costeans, trenching and test pitting,
- Surface benching/terracing and
- Tracks.

Historic mine plans (e.g. Nye, 1923) show that several mullock passes and second access points intersected the surface in the outcrop area of the lode. Passes tend to be open holes, with no dumps around the collars (presumably because they were mined from underground, as rises) and are dangerous.

Most of the surface workings at the southwestern end of the mined area appear to be related to early exploration activity. They consist of shallow test pits and costeans oriented normal to the strike of the lode.

There is a network of benched tracks that follows the contours and link features on the hill slope. There is a small open cut bank approximately 1 to 1.5m high at the southwestern end of the workings.

Several adit portals were located during the survey and these are shown on Figures 3A-3D. They have been named where this is possible but comparing them to the locations of features shown in Nye's (1923) plan of the workings (Figure 3B).

Open Cut

One of the most significant historic features of the Magnet Mine site was identified by Mike Blake. This is the open cut workings that are shown on Nye's (1923) plan of the mine workings

that line the modern access track are largely the result of mineral collecting activities and have little significant (in fact they have probably contributed to the destruction of earlier elements of the historic mine infrastructure).

Significant and historically / geologically significant portions of the historic open cut workings are located just to the northeast of the newer open cut workings.

Water Race

A water race was located upslope from the proposed track during the first traverse and its location was surveyed using the GPS (see Figures 3A-3D). Details of this feature are shown in Appendix 6.

The race appears to have been designed to catch runoff from the perennial gullies during peak rainfall periods and to channel it into Magnet Creek (?). An earthen embankment was constructed at the point where there is a change in slope of the race (i.e. drainage changes from north to south; see Appendix 6). From this position, the race drains to the south.

ARCHAEOLOGICAL ASSESSMENT

The planned exploration access track (Figure XX Bass metals plan) is only likely to have a significant impact on **Hut Group 2** (Figure 3A-3D and Figure 5) and it should be moved up slope to avoid this cluster of building footings and their associated artefact scatters. The huts are significant because they are recorded in early photos of the mine and they were probably abandoned prior to 1918. They therefore represent habitation sites from the earlier phase of the development of this mine. The early date and relatively temporary nature of these houses makes them of interest.

It will be necessary for the exploration track to cut the steep southwestern section of the water race. As long as the track works do not disturb an unnecessarily large part of the channel, it will have little impact on the fabric of the race.

This survey has identified many archaeological features located outside the likely impact area of the proposed track and drill sites. It is possible that future work may threaten these features and the results of this survey should be considered when planning any future work.

Bottle Collecting Activities

It was apparent while carrying out the survey that bottle collectors have already become active at the two hut groups described here. Very recent shovel test pits were apparent in at least three surface glass scatters. It is probable that the collectors have had some link to the exploration programme. Bottle collecting could have a much greater impact on these sites than the exploration activity and access to the area should be restricted by Bass Metals.

REFERENCES

Acting Government Geologist, 1937. History of Magnet Mine. Tasmanian Mines Department Unpublished Report 1891/169/101.

Bennet Brook Railway, 2007. http://www.bennettbrookrailway.org/o&k_mallet.htm, accessed 20 October, 2007.

Cottle, V. M., 1953. Magnet Silver-Lead Mine, in *Geology of Australian Ore Deposits* (Ed. A. B. Edwards) pp. 1160-1165, (5th Empire Mining Metallurgical Congress: AusIMM, Melbourne).

Glasson, K. R. and Cox, R., 1968. *Preliminary Report, Magnet Mine, Waratah District, Tasmania.* Unpublished exploration report to Tasmania Mines Department.

Godfrey, M., 1984. *Waratah – Pioneer of the West.* Municipality of Waratah.

Haupt, J., Bottrill, R.S. and Sorrell, S.P., 1995. The minerals of the Magnet Mine, Tasmania. *Australian Journal of Mineralogy*, 1(1), 3-19.

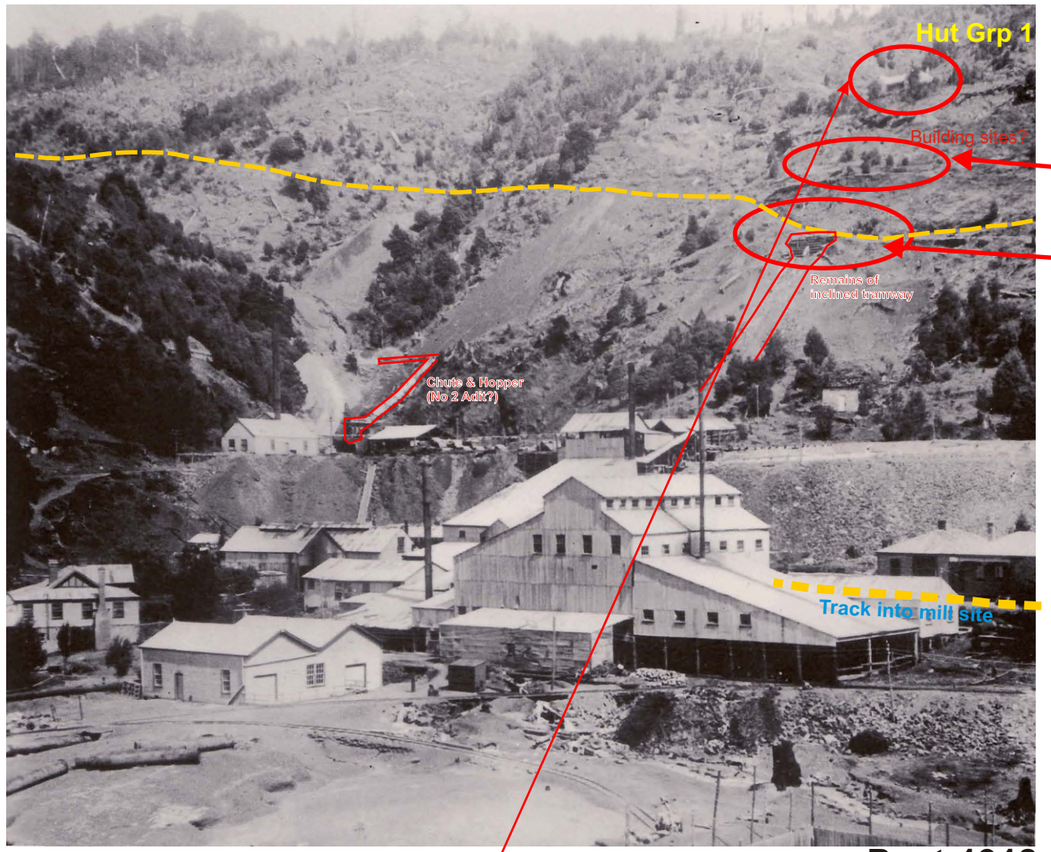
Hopkins, D., L., 1991. *The Golden Years of Tasmania.* St David's Park Publishing, Hobart.

Nye, P. B., 1923. *The Silver-Lead Deposits of the Waratah District.* Geological Survey Bulletin 33, Tasmania Department of Mines, Hobart.

Twelvetrees, W. H., 1900. *Report on the Mining Fields Between Waratah and Corinna.* Tasmanian Mines Department Report, Old Series, OS 158, Tasmanian Government Geologist's Office, Launceston.

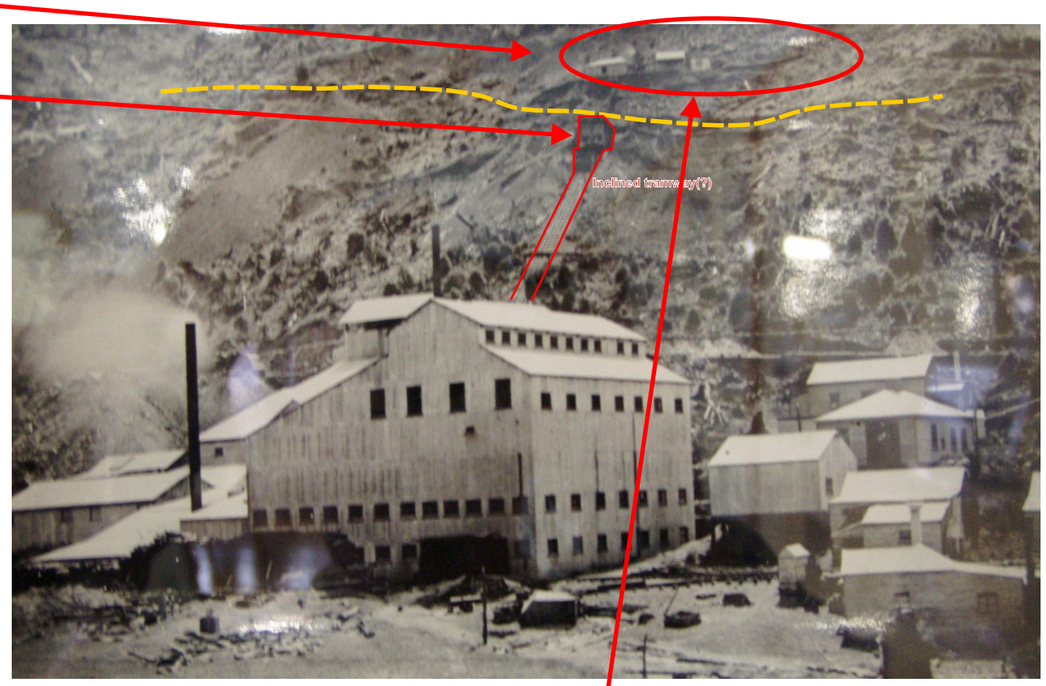
Waller, R. F., 1902. *The Magnet Tramway.* Mines Department of Tasmania report, Old Series, OS 195. Mines Department Hobart.

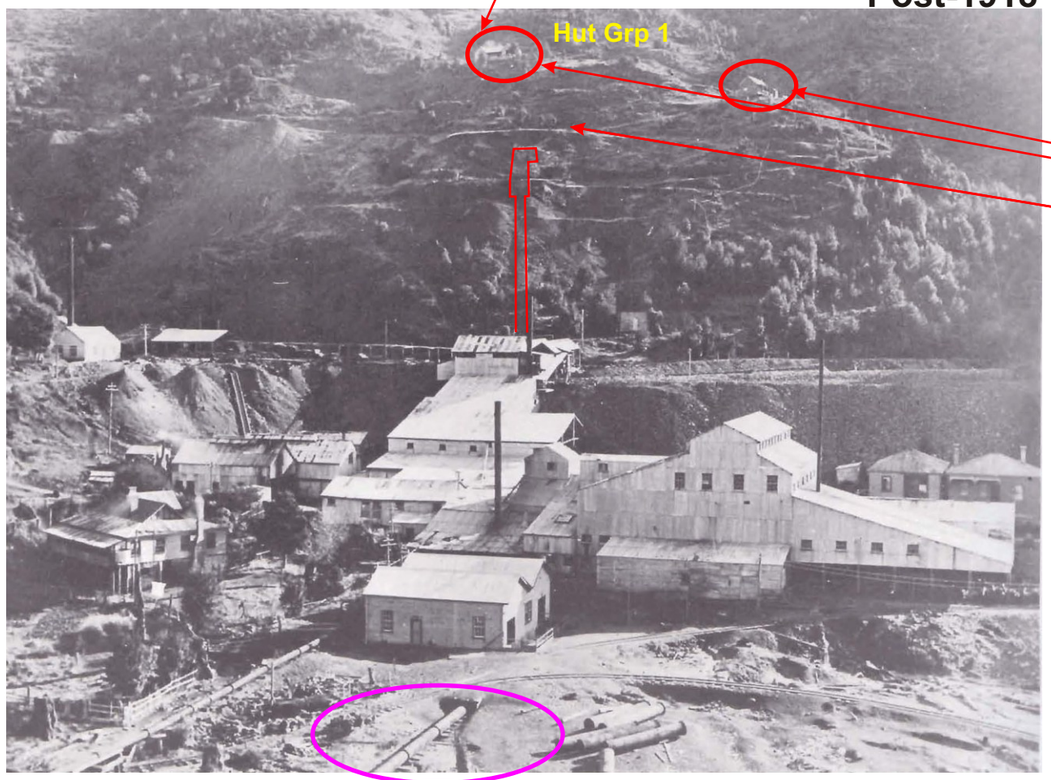
Waller, R. F., 1902. The Magnet Tramway, *Rept. Sec. Mines Tas.,* 1901-02.



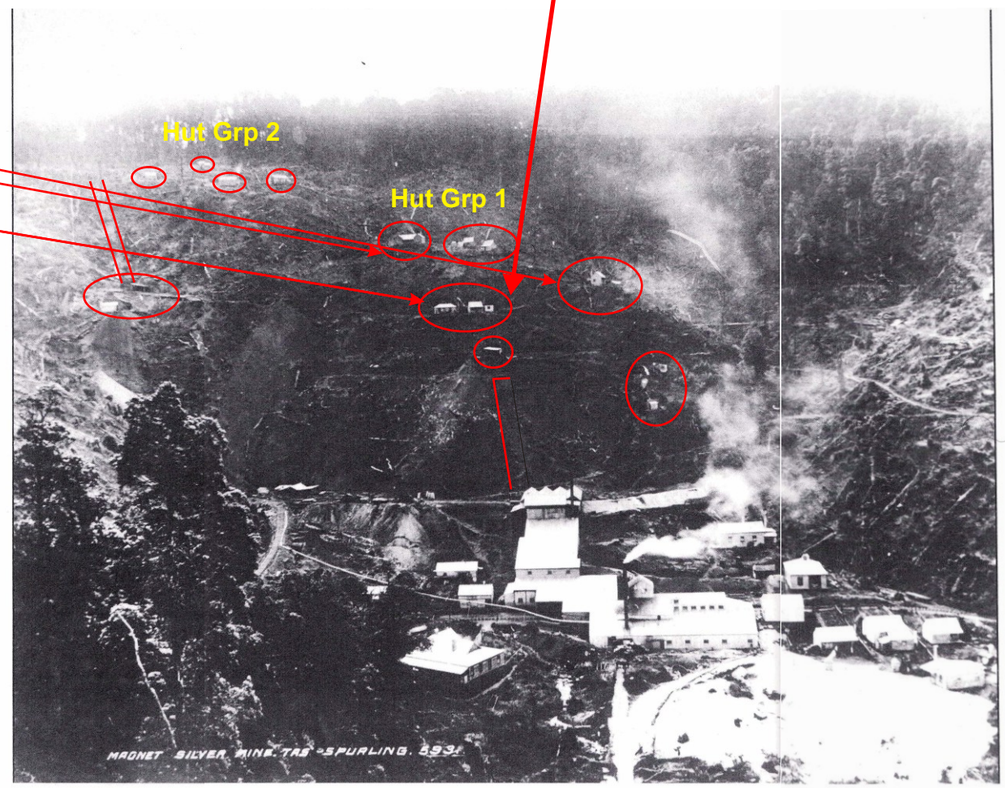
Post-1918

Below: Earlier photo than the similar view **at left** (the trees in the background are much less well developed). The buildings at the top of the inclined tramway are still present and the incline appears to still be in use. Therefore, the incline was dismantled well-before mine closure and the lean-to on the side of the main building is a later addition.

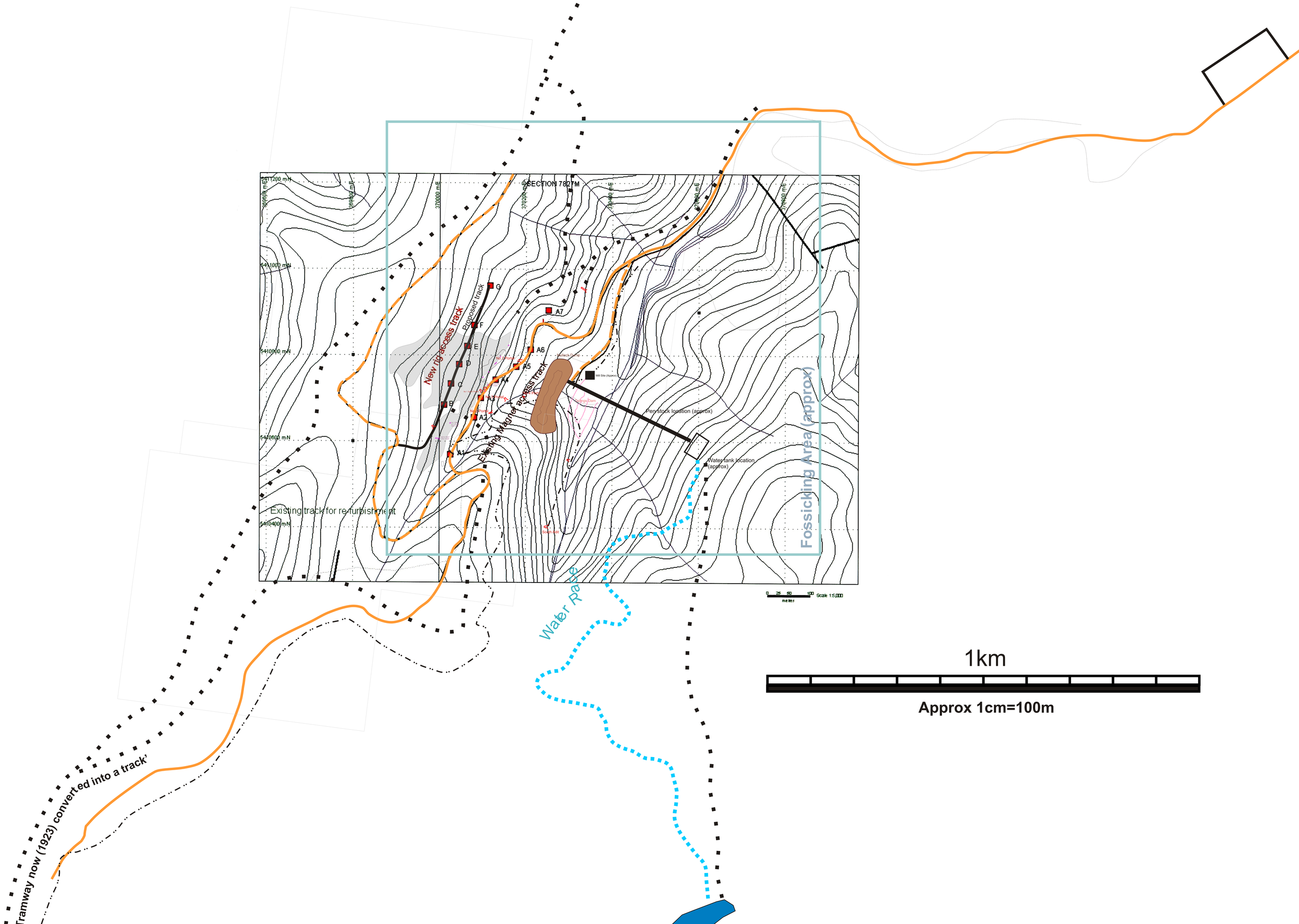


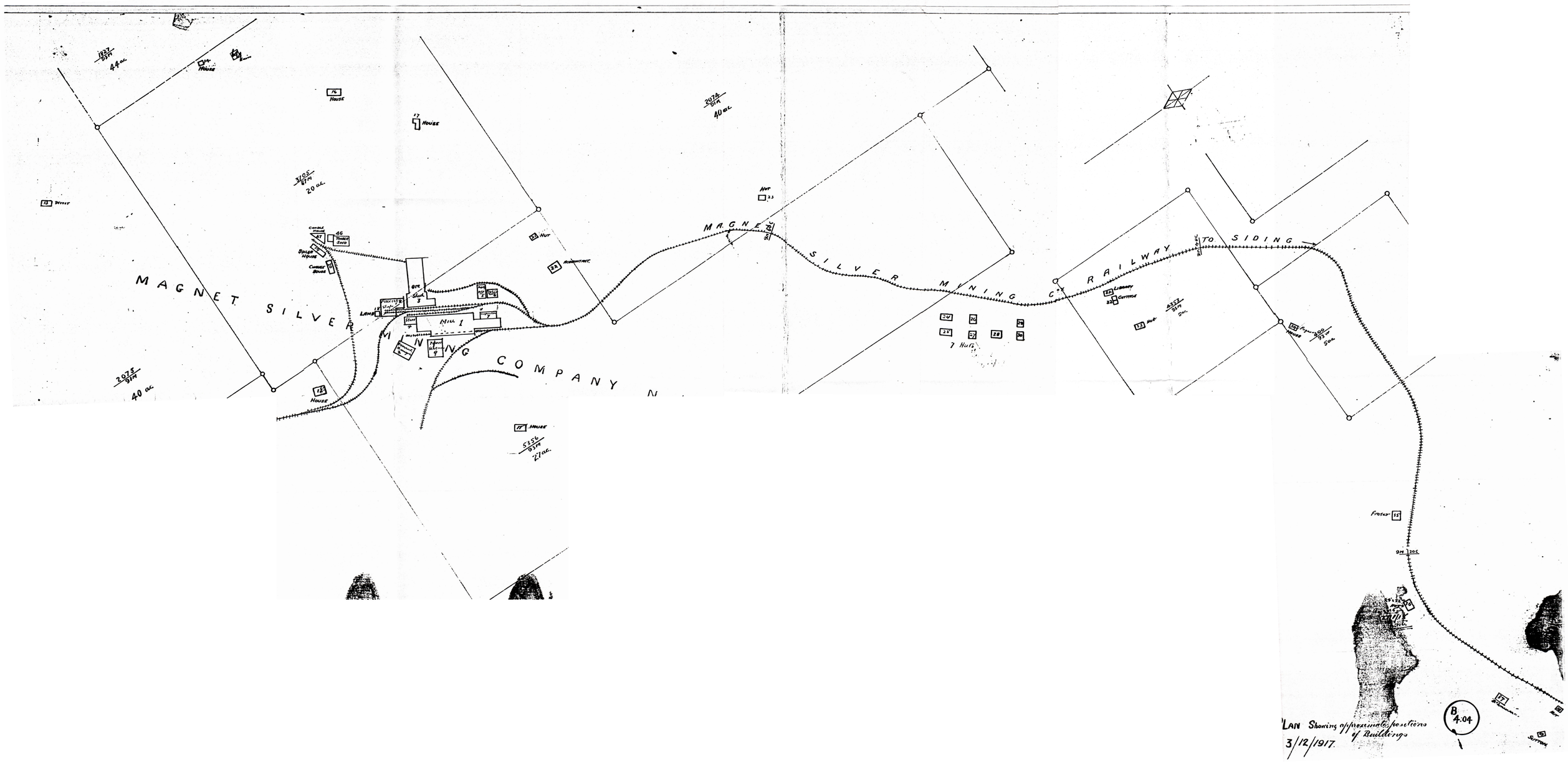


Post-1918



Pre-1918 (early)


SECTION 7827M
New rig access track
Proposed track
Existing Magner access track
Existing track for re-furbishment
Pen stock location (approx)
Water tank location (approx)
Fossicking Area (approx)
Water Race
Tramway now (1923) converted into a track'
1km
Approx 1cm=100m


MAGNET SILVER MINING COMPANY
MAGNET SILVER MINING Co. RAILWAY
TO SIDING
Mill 1
Boiler House
Chinese House
Hut
House
Cottage
Library
Water
Stable
Blacksmith
Fraser
44 ac.
20 ac.
40 ac.
27 ac.
50 ac.
PLAN Showing approximate positions of Buildings
3/12/1917.
B 4.04

APPENDIX 4

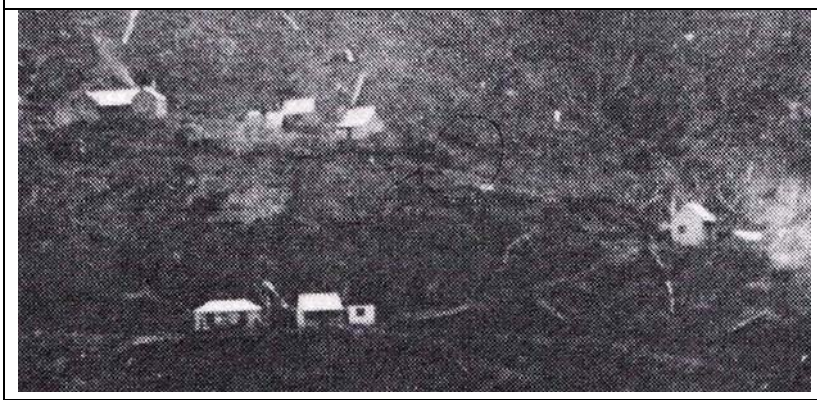
HUT GROUP 1	**REFER ALSO TO FIGURE 4.**
Historic Photo Pre-1918	
	Hut group 1 is interpreted to be the remains of the large twin gabled house on left and the two cottages (tents?) on the right in the upper left part of this view. The Square hut at centre-right is probably located at the northeastern end of the old open cut and remnants of a platform were identified in this approximate location. This hut was still standing after 1918 and is shown on the 1917 fir plan (Appendix 2).
Historic Photo Post-1918	
	The twin-gabled house still stands in this view but the small huts to the NE & those on the open cut bench are gone. The sites of the lower buildings were not located & may have been mined away by the old open cut. They may also have been associated with the operation of the inclined tramway from the mill to the No 2 Adit & been removed on its decommissioning (pre-1918).
	Photo 20. Dry stone retaining wall at front of the site interpreted to be the double-gabled house shown above and marked 'A' on Figure 4, Hut Group 1. View approximately S. The old track and some terracing are visible to the left of the view.

Photo 21. Heavily overgrown stone rubble chimney butt of the twin gabled house site. Marked 'A' on Figure 4, Hut Group 1

Photo 22. Stone retaining wall in cutting in the bank behind the site of the double-gabled house. Marked 'A' on Figure 4, Hut Group 1. This feature is the one shown in the top left of Figure 4.

Photo 9. Hut platform labelled in Figure 4 as 'C'. View looking approximately S.

Note the low stonework used as a retaining wall.

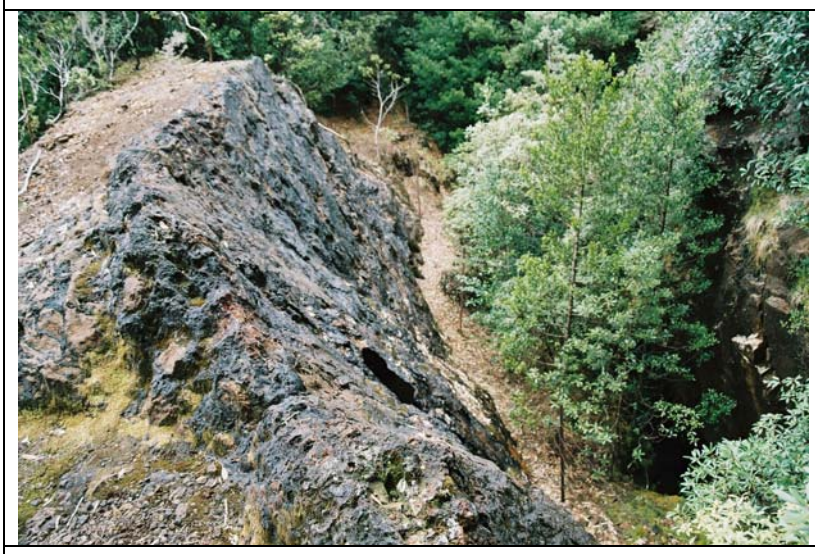
Photo 10. Detail of above. labelled in Figure 4 as 'C'. View looking approximately S.

Photo 12. Rubble stone foundations of the most substantial hut site in Hut Group 1 (labelled as 'B' in Figure4).

This view is looking approximately S. The chimney base is out of the view to the right and the wall footings lie parallel to the survey staff which lies against the far wall base.

Photo 14. Rubble stone chimney butt at the eastern end of the hut site shown in the above photo (this hut is labelled 'B' in Figure 4).

This is a very subtle feature.

	Photo 23, roll 2 by Greg Dickens. View of the eastern wall of the old open cut (looking approximately S). This excavation is much more extensive than is apparent at this location. It extends into the bush to the south and the high wall is just below Hut Group 1. The open cut workings are highly significant.
	Photo 25, roll 2 by Greg Dickens. View of the western wall (cutting bank) of the new open cut developed by mineral fossickers (looking approximately N). Historic workings in this area have been totally destroyed.

APPENDIX 5

Hut Group 2 ***(Threatened by planned track development)***	**REFER ALSO TO FIGURE 5**
Historic Photo Pre-1918	
	Extract from pre-1918 photo of the magnet mine site showing the group of huts (tents?) interpreted to be Hut Group 2. Three hut sites were identified. The site of the fouorth hut on the far left was not located and may still be present. These structures no longer visible in post-1918 photos.

	Photo 3. Rubble stone chimney butt. Hut Group 2. Marked as 'A' in Figure 5. View approximately N. Small flat area with low stone rubble chimney butt (up to 0.5 m high). Minor iron artefacts (galvanised sheet steel) and some broken bottle glass scatter to S. Site marked 'A' on Figure 5
	Photo 15. 1.5 high hut platform. Piece of cgi downhill. Cutting in bank at rear (see below). Labelled as 'B' on Figure5. The whole hillside below this hut site, to the high wall of the open cut is terraced with shallow contoured workings and tracks.

	Photo 16. Small hut platform, approximately 2m x 1.5m between waypoint 107 and the hut found earlier today. Note subtle 0.5m high cutting in bank at rear of site. Piece of cgi downhill Labelled as 'C' on Figure 5.
	Photo 17. Detail of earthen embankment of the small hut platform shown above. Labelled as 'C' in Figure 5.

APPENDIX 6

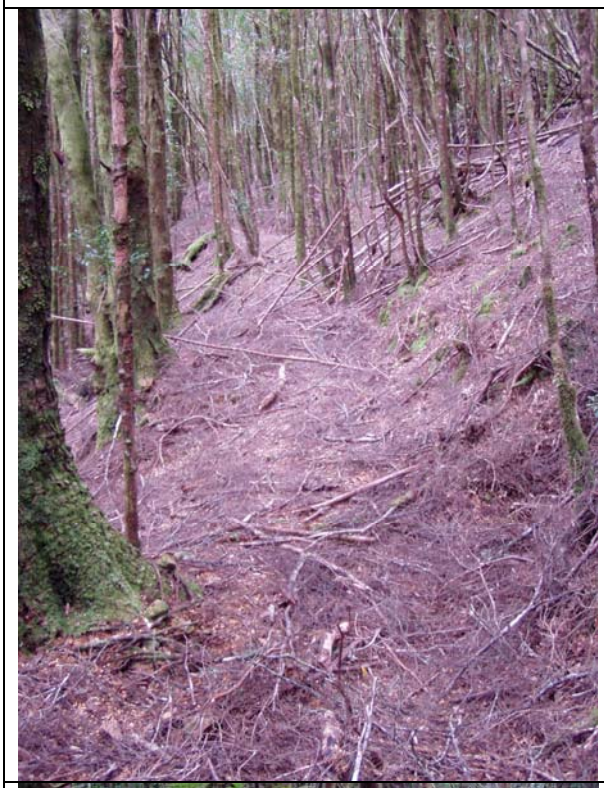
Water Race	
	Photo 5. Shallow water race draining south to north. Possibly originally flumed because it seems too shallow to have held water.
	Photo 6 (looking N). Deep earthen embankment wall on race where it crosses the line of an E flowing drainage line. Was this race designed to cut the runoff from these perennial creeks and channel it into the main Magnet Creek? This position also represents a change in slope in the race and it drains S from here.
	Steel plates embedded upright at meeting point of two drainage channels/races (one from the adit above, to N, and one from uphill - collapsed pass and main water race described above). This site is at the south end of the main race. Plates to deflect runoff from the adit portal below?

	Photo 7 by Greg Dickens Stone tructure near water race. Possible dry stone chimney base (?) or possibly associated with nearby drill rod (?). 1.5m x 1m. A tubular steel drilling rod lies near this feature (waypoint 59)
	.

APPENDIX 7 LOCATION OF MAJOR SITE FEATURES – MAGNET MINE

Name	Feature Type	Date	Zone	Northing(AUS66)	Easting(AUS66)
Wpt001	Track	28-Oct-07	55G	5411192.597	370586.008
Wpt003	Tram	28-Oct-07	55G	5410944.526	370480.418
Wpt005	Tram	28-Oct-07	55G	5410938.476	370452.671
Wpt006	Corner of mill ruins	28-Oct-07	55G	5410936.6	370451.311
Wpt007	Corner of mill ruins	28-Oct-07	55G	5410949.728	370460.826
Wpt009	Corner of mill ruins	28-Oct-07	55G	5410919.897	370448.825
Wpt010	Corner of mill ruins	28-Oct-07	55G	5410910.844	370460.13
Wpt011	Corner of mill ruins	28-Oct-07	55G	5410938.85	370473.556
Wpt012	Managers House Site	28-Oct-07	55G	5410880.989	370446.737
Wpt013	Old Mill	28-Oct-07	55G	5410902.919	370431.023
Wpt014	Wpt014	28-Oct-07	55G	5410913.747	370415.509
Wpt015	Crusher wall	28-Oct-07	55G	5410917.273	370405.696
Wpt016	Crusher wall	28-Oct-07	55G	5410929.926	370388.756
Wpt018	No4 Adit Portal	28-Oct-07	55G	5410897.496	370335.019
Wpt019	Vertical Boiler & Winch footing	28-Oct-07	55G	5410882.892	370346.423
Wpt020	Brick Chimney Base	28-Oct-07	55G	5410879.092	370340.92
Wpt021	Cutting (Building)	28-Oct-07	55G	5410875.141	370327.063
Wpt022	No2 Sth Adit	28-Oct-07	55G	5410843.911	370237.094
Wpt024	Old Track	28-Oct-07	55G	5410845.637	370230.099
Wpt025	Old Track	28-Oct-07	55G	5410833.109	370254.001
Wpt026	Mullock Dump	28-Oct-07	55G	5410838.46	370242.763
Wpt029	Mullock Dump	28-Oct-07	55G	5410840.186	370235.768
Wpt031	Pass	28-Oct-07	55G	5410957.51	370275.446
Wpt032	Wpt032	28-Oct-07	55G	5410678.752	370110.534
Wpt033	Adit Portal	28-Oct-07	55G	5410793.576	370114.042
Wpt034	Cutting Pit	28-Oct-07	55G	5410838.961	370167.544
Wpt035	3m Deep Pit	28-Oct-07	55G	5410842.786	370174.439
Wpt036	Open Stope	28-Oct-07	55G	5410839.161	370178.683
Wpt037	Shallow Pit	28-Oct-07	55G	5410848.538	370185.478
Wpt038	Open Stope Collapsed	28-Oct-07	55G	5410854.064	370183.986
Wpt039	Open Stope Collapsed	28-Oct-07	55G	5410857.815	370186.704
Wpt040	Open Stope	28-Oct-07	55G	5410841.036	370180.042
Wpt041	Open Stope	28-Oct-07	55G	5410829.809	370173.28
Wpt042	Open Stope Collapsed	28-Oct-07	55G	5410822.257	370165.059
Wpt043	Open Stope	28-Oct-07	55G	5410797.952	370151.567
Wpt044	Adit & Open Stope	28-Oct-07	55G	5410790.501	370148.916
Wpt045	Pass	28-Oct-07	55G	5410779.323	370144.938
Wpt046	Test Pit Costean	28-Oct-07	55G	5410764.345	370135.458
Wpt047	Test Pit	28-Oct-07	55G	5410756.768	370125.845
Wpt050	Pass Shaft Deep	28-Oct-07	55G	5410740.04	370121.967
Wpt051	Pit or Costean	28-Oct-07	55G	5410732.513	370115.139
Wpt052	Costean	28-Oct-07	55G	5410730.613	370112.387