

Archaeological Survey Report 2001/01

An archaeological survey of the Langloh Colliery site, Hamilton, Tasmania

By A. E. Webster



Lithos Consultants Pty Ltd April 2001



Mineral Resources Tasmania Archaeological Survey Report 2001/01

An archaeological survey of the Langloh Colliery site, Hamilton, Tasmania

by Tony Webster Lithos Consultants Pty Ltd

CONTENTS

ACKNOWLEDGEMENTS			
1.	INTE	RODUCTION	3
	1.1	Purpose of the survey	3
	1.2	Location and access	3
	1.3	Geology of the coal deposits of the Langloh Colliery	3
	1.4	Previous work	4
2.	HIST	TORY OF THE SITE	4
3.	SUR	VEY METHODOLOGY	5
4.	SITE	E FEATURES	5
	4.1	Site Feature A: The mullock dump, gantry and associated structures	7
	4.2	The loading gantry, coal bins, sizing screens and crusher	10
		4.2.1 Timber gantry	10
		4.2.2 Wooden coal bins (hoppers), crusher and sizing screens	12
	4.3	Site Feature B: The engine house	16
		4.3.1 Engine room	16
		4.3.2 Winder room	18
		4.3.3 Overseer's office	19
		4.3.4 Boiler	20
	4.4	Site Feature C: Mine portal access ramp cutting	23
	4.5	Site Feature D: Sandstone stables & change house	24
		4.5.1 Coal truck scatter	26
	4.6	Site Feature E: Two roomed "store" building (not marked on 1944 plan)	29
	4.7	Site Feature F: Collapsed workshop building	29
	4.8	Site Feature G: Ventilation shaft and fan building	30
	4.9	Site Feature H: Brick and corrugated iron chimney and hut platform	32
	4.10	Site Feature I: Weatherboard cottage	32
	4.11	Site Feature J: Weatherboard cottage	33
	4.12	Site Feature K: Original 'Langloh' homestead (weatherboard house)	34
	4.13	Site Feature L: Barn site	34
	4.14	Site Feature M: Sandstone footings and concrete tank base	35
	4.15	Single men's 'shacks'	35
5.	Unde	erground workings	35
6.	Assessment of significance and recommendations		36
	6.1	Cultural heritage significance	36
	6.2.	Scientific significance	36
	6.3.	Recommendations	37
7.	Refe	rences	38

Acknowledgements

Greg Dickens of Mineral Resources Tasmania retrieved the mine plans from the MRT archives and took all of the photographs presented in this report. In the short time that is available for such unexpectedly complex site surveys, an offsider with photographic skills, knowledge of mining sites and an eye for key features is a most valuable companion! Kylie Lau, MRT Librarian assisted with research and by the semi-permanent loan of a clipboard.

Mr E. S. Archer of "Ellengowan" is thanked for allowing us onto the property. He is also thanked for providing information about the operating mine and of the fate of some of the infrastructure elements post-mine closure.

Siobhan Bailey of the Broken Hill GeoCentre read the first draught of this report and as a result it has been considerably improved.

1. INTRODUCTION

1.1 Purpose of the survey

Underground mining of coal at the Langloh Colliery in the period between 1938 and 1963 generated approximately 45 000 m³ of waste rock that remains at the site as a mullock dump (MRT EII form, March 2001). A brick manufacturer has applied to MRT to mine away the dump as a source of clay, over a 15-year period, and plans to extract material at an annual rate of 3000 m³. Once the planned operation is completed, the intention is to return the dump site to grazing land, corresponding to the original contours. An archaeological recording survey of the dump and immediate precinct was commissioned by MRT so that a record of the heritage features of the area, particularly the dump site, was made prior to the start of mining. This report records the findings of that survey.

1.2. Location and access

The Langloh colliery site lies between the townships of Hamilton and Ouse (fig. 1), approximately 85 km from Hobart. It is accessed by the sealed Lyell Highway and a short stretch of well-formed dirt road.

1.3. Geology of the coal deposits of the Langloh Colliery

The small Langloh (Lawrenny) Coalfield is located in the Upper Derwent Valley, on the eastern side of the river between Hamilton and Ouse (Bacon, 1985). The coalfield is of limited lateral extent (Bacon, 1985) and the Langloh Colliery was the most significant mine developed in the area. Bacon (1985) described the coalfield as follows:

"It is of limited lateral extent. The coal bearing ground is confined to a small fault block, and part of the prospective ground is overlain by Tertiary basalt. A dolerite sill forms a floor to the fault block. Three seams, each 1.0–1.5 m thick, occur in a stratigraphic interval of 4.5–6.0 metres. The top two seams were mined together in underground workings known as the Langloh Colliery from 1938 until 1963. A measured reserve of four million tonnes of in situ black coal, suitable for extraction by open cut mining, has recently been defined. The coal is similar in quality and petrographic character to other Tasmanian Triassic black coals".



Figure 1 *Location of the Langloh Colliery.*

The mine exploited three seams, each 1.0–1.5 m thick that occur in a stratigraphic interval of 4.5–6.0 metres. The top two seams were mined together in the underground workings of the Langloh Colliery (Bacon, 1985).

1.4. Previous work

No previous archaeological work on the site was located during the present study. Bacon (1985) recorded the history of the site.

2. History of the site

Coal had been known from this locality since 1849 (Bacon and Banks, 1989). The following history of the site is slightly modified from Bacon (1985).

Selwyn (1855) inspected a 0.3 m thick outcrop of coal eleven kilometres above New Norfolk (near Plenty) and commented that a seam of coal 2.5 m thick was known to crop out near Hamilton. [This might be understandable if the area was being cleared, ploughed and sown at the time, and if the surface expression of the coal seams was exposed during the process].

The coal in the area was rediscovered when a water well was sunk through sandstone near the Langloh Park homestead. Some small-scale mining activity followed. Thureau (1883) recorded that the well was sunk "years ago" and whilst no mining was in progress at the time of his visit, miners who had some years previously extracted small quantities of coal for domestic and other purposes supplied the information that the seam was 1.07 m thick and 12.2 m below the ground surface. Thureau recommended that the area be drilled to determine the quality and quantity of coal available.

In 1891 the well (or shaft) was enlarged, and a quantity of coal raised and sent for analysis and practical testing by various consumers of coal, such as the railways. The results were positive and so in 1892 four holes were drilled to further define the extent of the coalfield (Montgomery 1894).

By 1922 the prospecting activity on the coalfield consisted of two shafts. One was the old enlarged well, and the second was a shaft that had been sunk near the *Kimbolton* homestead [some distance to the southwest of the *Langloh* site — see front cover]. The Langloh Coal Mining Company commenced mining in 1938 and initially attempted to open a mine by development from the shallow shafts. They soon abandoned this approach in favour of the driving of a dip tunnel into the seam from surface. H. E. Brock originally held the leases for the Langloh Coal Mining Company until December 1942, when they were transferred to M. E. Gorringe for the Hamilton Coal Company. The latter company continued mining until 1963. Mining was by the bord and pillar method and the coal was used in local industry, by the railways, and as a domestic fuel.

The mine employed between four and twelve men and produced between 2000 and 8000 tonnes of coal per year. As the workings were fairly shallow, percolating water from the ground surface was a continual problem. The mudstone (montmorillonite-rich) roof and floor of the seam reacted with water to produce difficult mining conditions for most of the life of the mine (Bacon, 1985).

After the mine was closed, the father of Mr E. Archer, the present owner of *Ellengowan*, purchased the lease area, including the entire surface infrastructure. Apart from the salvage of some key machinery components for scrap, the demolition of the timber gantry, coal bin and crusher structure for safety reasons, and the removal of some ashlar masonry from one of the mine buildings, the site has experienced few changes (barring natural decay) since the mine closed.

The mine is the only significant coal mining operation to have yet been developed on the field.

3. Survey methodology

The survey was undertaken on Friday 6 April 2001. Approximately 4.5 hours were spent at the site. All key surface features were examined and recorded photographically. Two site plans were produced; a general site plan showing all of the main site elements, including the mine dumps (fig. 2) and a plan of the mine yard area showing significant details of the area around the dip drive portal. This part of the site is at most at risk from dump removal (fig. 3).

The site was recorded using existing mine plans (dating from 1944; MRT Plan No. 620A-74 and 620B-74) as a base. Plans were only used after it had been established that they were an accurate representation of the remaining infrastructure and site features.

The underground workings were not entered and therefore do not form a part of this survey.

Two days were spent in plan compilation, report writing and in the final compilation of this report. The research component was a brief period spent in the MRT Library.

This report is presented as a general pictorial record of the site. It is not a comprehensive survey of the archaeology of the site. Time was not available to undertake a systematic and comprehensive survey of all areas. Subtle features related to the mid or latenineteenth century phases of exploration may have been missed.











4. SITE FEATURES

The following section outlines the layout of the site and describes the main site features. Site feature are labelled from A to M in Figure 2 and are discussed in this order in the text. Individual photographs are located in Figure 4. Panoramic views of the site that encompass most of the major site elements are presented as Figures 5A and 5B.

The colliery and its associated buildings is draped down the eastern slopes of a low gently sloping hill (fig. 5). The main focus of the site is on the flat at the base of the hill and most of the infrastructure is clustered around the portal of the main underground access drive (fig. 2, 3 and 5).

4.1 Site Feature A: The mullock dump, gantry and associated structures

The dump is a broad low undulating mound that occupies the lower slopes and foot of a low sandstone-capped hill under which the coal seam dips (fig. 2). The dump dominates the site and hides most of the colliery buildings from the main road.

The dump consists of a stratified composite of light greenish-grey to dark grey, variably carbonaceous mudstone and siltstone and contains fragments and blocks of coal (fig. 5 and 6). A section has been cut through the dump by recent bulk sampling and it can be seen that the dump was built up outwards from the main timber gantry to the south. The upper surface of the dump is undulating but relatively flat (fig. 8).

Waste rock was also transported to a dump on a neighbouring property. However this second dump was taken away over ten years ago for brick (?) manufacture (E. Archer, pers. comm., April 2001).

The northernmost section of the mullock dump hosts the extensive remains of a timber coal bin loading ramp and trestle (fig. 8). This structure forms part of a wooden loading gantry, crusher and sizing mechanism that lies off the northeastern corner of the dump. Iron and timber artefacts are scattered around the surface of the mullock dump around the course of the loading ramp. Items seen include the shell of a 1930's Chevrolet car (fig. 9), wire rope, railway points and other components of rail switching gear.

A small scatter of iron and wooden refuse is piled against a mound on the top of the dump (fig. 2). While some material is obviously agricultural in origin (e.g. a wooden farm gate), some material may be of mine origin.

The Langloh Colliery was an underground mine, so apart from the mine dump, which represents waste rock removed from the underground workings and from the processing of the coal, the main site elements consist of the surface infrastructure. The most significant buildings housed the engine and power plant of the mine and provided amenities for the men and animals that worked the mine. Housing represents the most common building type.

The built infrastructure of the mine site occurs upslope (to the west) of the mine dump and consists of a series of industrial buildings, three residences, one airshaft and the dip drive portal that provided the main access to the underground workings. The relationship of the dump to the other site elements is shown in Figures 2 and 3 and photographically in Figure 5.

The individual elements of the site will be described separately, in the following sections.

4.2 The loading gantry, coal bins, sizing screens and crusher

4.2.1 Timber gantry

On the northern side of the mine dump, directly in line with, and parallel to, the mine dip drive, are the collapsed remains of a timber loading ramp and timber gantry (fig. 3). Built into the structure were coal bins (hoppers) and a crushing/screening and sizing plant (E. Archer, pers. comm., April 2001). This massive timber structure must once have dominated the northern end of the mullock dump and towered above the site (see fig. 3).

The structure lay directly in line with a cutting excavated into the base of the hill and the incline of the dip drive. The northern end of the mullock dump was sculpted into a rail formation (fig. 11) and lain over with a timber platform and sleepers (fig. 12), which

Archaeological Survey Report 2001/01

supported a system of rails. The platform rose at an angle of approximately 10° which was continuous with the angle of the dip drive (see below).

Timber trestling (fig. 13) carried the coal truck from the ramp out beyond the northeastern face of the dump and onto the timber coal bin and crusher structure.

The timber structure supported a system of rails for the manipulation of coal trucks. Components of rail points, dismantled switching mechanisms and rails occur along the course of the on-ramp and gantry (fig. 14). Most rails have been removed for use around the property.

The coal was delivered directly to the top of the gantry from the underground workings, via the dip drive portal. Motive power for winding was provided by a steam winder (see below) and bogie coal trucks travelling on iron rails conveyed the coal directly to the bins (hoppers). Wire rope was used for haulage and several long lengths remain at the site (see foreground of Figure 11). After crushing and sizing, a truck loaded the coal directly from below the bins via chutes. A red tip truck used to collect the coal (E. Archer, pers. comm., April 2001).

The timber structure was demolished so that local children, who had taken to playing on the structure, did not injure themselves. To pull down the gantry, the current owner's father lit fires at the base of each of the supporting legs and then pulled it over. It was very hard to pull over (E. Archer, pers. comm., April, 2001), attesting to the strength of the materials and robustness of its construction.

4.2.2 Wooden coal bins (hoppers), crusher and sizing screens

When the coal bin structure was pulled down, it was turned completely over and now forms a tangle of structural timbers decking and components of the crushing and sorting mechanisms. The remains of a crusher and sizing screens lie within the collapsed structural timbers of the gantry and coal bins (fig. 15). There were up to four loading hoppers built into the gantry (E. Archer, pers. comm., 2001).

A crusher remains in place. It is almost totally obscured by the timbers of the collapsed gantry and

hoppers and is difficult to see. Mr Archer states that it is a Jacques crusher (#37). The remains suggest it was a roll crusher (fig. 16).

A perforated steel washing or sizing screen also lies in the rubble of the collapsed gantry (fig. 17). Many of the pulley, belt and rope driven components of the plant that transferred motive force from the engine house also remain relatively in-place in the remains of the gantry (fig. 18).

The crusher was probably fed directly from a hopper and may have been connected to the sizing screens by a belt conveyor, remains of which lie within the ruined crusher structure (fig. 18). The crushing and sizing plant was apparently driven by the steam engine in the engine house as this engine appears to be the only power supply for the mine plant (there may be an exception, see below). Pulleys, wire cables and belt-drives transferred energy to the crusher and sizing screens. However there is a small rivetted iron tank, that is probably a vertical boiler lying to the south of the dump, adjacent to the track. This may be associated with the mine and may have driven other machinery components during its operation.

A low, aggregate concrete wall was observed at the base of the mullock dump, below the gantry structure on the northeastern corner of the dump (directly below the collapsed gantry). This feature did not seem to serve any structural purpose related to the gantry and may represent a section of a dam that is marked on the 1944 plan. It is now buried under mullock.



The approach road to the colliery. This is the view to the west after passing through the yard of the present 'Langloh' property. The excavator sits within the recent bulk sample cutting that has been made into the face of the dump. [MRT 3210]



Figure 7

Detail of the layering of the mullock dump exposed within the northern face of the excavator cutting. Note the stratification. [MRT 3211]



Figure 8

Panoramic view of the upper surface of the mine dump looking south across the ruins of the timber gantry on-ramp. The heaped timber to the left is the remains of the trestling that led to the gantry and coal bins (shown in detail in Figure 13). The sandstone stables are to the right (refer to Figure 3 and see below). The mine portal is to the right of view. [MRT 3263, 3264]



Shell of 1930's Chevrolet lying on top of the dump, to the south of the gantry ramp (see fig. 8). The car was originally owned by a station hand and was driven into this position where it broke down and was abandoned. It was in road-registered condition when originally abandoned here (E. Archer, pers. comm., April 2001). [MRT 3265]



Figure 10

Smaller subsidiary mound to the northeast of the main dump. View is to the northeast and is taken from gantry ramp (see fig. 2). [MRT 3267]



Archaeological Survey Report 2001/01

Figure 11

Structural timber scatter with some rail-related iron artefacts that formed the 'on ramp' leading from the dip drive portal to the timber gantry and crusher structure. The linear depression in the upper centre to lower right of the view was the formation for the rails that carried the coal trucks onto the timber staging. An abandoned iron framed coal truck lies in the lower right. Note wire rope at centre left. View is approximately east. Refer to Figures 2 and 3. [MRT 3242]



Archaeological Survey Report 2001/01

Detail of the timbers that formed the on-ramp staging leading to the gantry structure. View is to the east. Scale is in half metre divisions. Refer to Figure 3. [MRT 3266]

[MRT 3223]

Figure 13

Partially collapsed timber trestling, at the point where the ramp meets the gantry structure on the northeastern side of the mullock dump. Note solid timbering. Scale is in half metre intervals. Refer to Figure 3.

Figure 14

A scatter of rail-related artefacts (points and a switching system) that lie near the top of the dump adjacent to the on-ramp of the gantry structure. The iron rails from the mine portal access to the on-ramp and gantry structures were salvaged for fencing posts and other uses around the property (E. Archer, pers. comm., April 2001). Refer to Figures 2 and 3. [MRT 3261]



Site of the collapsed coal bin, crusher and loading gantry structure (in Box Thorn to right and on the slopes of the dump in the centre of the view). The crusher, screens and other components lie in the timber rubble to the right of the view. The structure was pulled over intentionally to reduce the risk to local children (refer to fig. 3). [MRT 3209]



Figure 16

The Jaques crusher lying within the tangled wreckage of the timber gantry structure. Field of view is approximately 1.5 metres. [MRT 3282]



Figure 17

Steel sizing screen in the ruins of the crusher and coal bin structure. The screens were probably part of a coal sizing and screening mechanism and were probably powered by the main steam engine. Coal was probably transported from the screens to the coal bins by conveyor. Field of view is approximately 1.5 metres. [MRT 3281]



A belt roller forming part of the drive mechanism of the sizing screens or crusher lying in the wreckage of the timber gantry. Roll is approximately 200 mm in diameter. [MRT 3284]



Figure 19

A possible vertical boiler that may have driven smaller pieces of steam machinery (e.g. the crusher). See Figure 2 for location. Scale in half metres. It may also have supplied hot water to the showers. [MRT 3277]



Figure 20

View over the site looking southeast, showing the two most significant structures that remain at the site, in relation to the mine mullock dump. The sandstone stables/changehouse is to the right and the engine house is in the centre of the view. [MRT 3231] After the coal bins and related structures, the most significant element of the Langloh site is an engine house. This building incorporates a winder, boiler, engine house, workshop and overseer's office (fig. 20, 21, 22). This engine and boiler supplied most of the motive power to the mine. It is marked on the 1944 mine plan and probably dates from the late 1930's (fig. 2, 3). The parts of the building are described in the following sections.

The building is mainly timber framed and weatherboard clad. However the core of the structure is a massive red brick boiler bed, around which the various wings of the building are 'draped'. The building was originally roofed in corrugated iron, though this is mostly missing from the central part of the structure and was probably removed some time ago. The roof support beams are very weathered and are starting to collapse. The roof of the overseer's office is still partially in place, as is that over the winder room.

4.3.1 Engine room

The main power plant for mine haulage and (probably also for) crushing and sizing was a single cylinder horizontal steam engine, as is shown by the concrete engine beds which remain in place in the engine house (fig. 23, 24). While the engine was removed for scrap many years ago (E. Archer, pers. comm., April 2001), the belt drive wheel remains (fig. 25, see also fig. 23).

4.3.2 Winder room

There is the bed of a winding engine and the drivers platform in the southern wing of the engine house (fig. 26). The steam winder was also removed for scrap, leaving only concrete engine beds and parts of the winding drum braking mechanism (fig. 27).

The steam winder drew laden coal trucks from the underground workings by way of a wire rope running from the engine house to the gantry top, where a block and tackle type arrangement allowed the cable to turn back upon itself and be directed down the incline of the dip drive. Coal was deposited from the trucks into hoppers direct from the drive in a single movement and the coal trucks only travelled one way. Mr Arthur (pers. comm., April 2001) remembers that ore carts travelling down the dip drive often had a miner or two catching a ride by clinging to the sides. Some rope guide wheels survive on bush timber poles within the ruins of the gantry structure ramp.

4.3.3 Overseer's office

There was a small overseer's office in the small addition on the northeast side of the boiler house. This part of the building was not represented on the 1944 plan and so must be an addition from a later period. There is a notice board on the wall adjacent to window and Mr Archer (pers. comm., April 2001) stated that the men received their pay through it (fig. 28). This office may have replaced the 1944 office building that was present just uphill (site feature H).

4.3.4 Boiler

The main core of the engine house is occupied by the brick bed of a boiler. This feature must have been the powerhouse of the entire mine and provided the energy to drive the adjoining steam engine. The boiler is mounted in a substantial red brick boiler bed and must have been stoked from outside, presumably with coal (fig. 29). All brickwork is in place as are the fire bricks of the firebox. A substantial part of the service pipes and valves also remain although there are no longer any steam pipes leading to the engine room (fig. 30, 31). There is also no sign of a water tank to supply the boiler. It may have been fed direct from mine water or this may have been removed. A welded steel smokestack leads directly off the boiler casing (fig. 30, see also fig. 29 and 31).

According to E. Archer (pers. comm., April 2001), the boiler was made in Hobart by Dean Kennedy's grandfather (Kennedy's foundry?). No makers plate was located but there was one reputed to be in place (E. Archer, pers. comm., April 2001).



Engine house looking northeast. Winder was housed in the south wing (right, with corrugated iron in place). A horizontal steam engine was located in the central part of the building and an overseer's office and workshop area were in the north wing. The mine dump is in the right middle distance. Scale is in half metre intervals. [MRT 3256]



Figure 22

Engine and boiler house looking to the southwest. The overseer's office is on the right (where the window and notice board are). The boiler is mounted in the red brick bed in the centre. The steel smoke stack is on the southern end of the boiler. The upper portion of the weatherboard and timber-framed face of the boiler house has become detached and slid to the ground (to left of range pole). Refer to Figure 3. Scale is in half metre intervals. [MRT 3238]



Archaeological Survey Report 2001/01

Figure 23

Horizontal steam engine beds in the engine house. The main engine cylinder was mounted on the large bed on the left and the support for the belt drive wheel is the smaller concrete base to the right. The belt drive wheel lies in the workshop area in the background. View is looking north. The red brick boiler bed wall is to the right. Refer also to Figure 3. [MRT 3248]



Horizontal steam engine beds within the engine house. The main engine cylinder was mounted on the large bed on the right. The flywheel axle is on the left. View to south. The red brick boiler foundation wall is to left of view. Scale bar is in half metre segments. [MRT 3251]



Figure 25

Belt drive wheel (and/or flywheel) of the horizontal steam engine inside the engine house. The wheel and axle assembly lies against the wall of the overseer's office. A small concrete and timber engine bed is visible at lower left. The end of the axle lying on the ground was mounted on the smaller concrete engine bed shown in Figures 23 and 24. Scale is in half metres. [MRT 3254]



Figure 26

Winder driver's platform and braking handle in the southern wing of the engine house. Scale is in 100 mm increments. [MRT 3249]



An axle from the winding engine lies adjacent to the winding engine bed of the engine house. Scale bar is divided into half metre lengths (red and white). [MRT 3250]



Figure 28

External detail of the overseer's office and notice board, eastern side of the engine house. The overseer used to sit with his back against the boiler bed wall. Apparently the men were paid through this window (E. Archer., pers. comm., April 2001). This office does not appear on the 1944 plan and so is presumed to have been added later. Scale is in half metre intervals. [MRT 3239]



Figure 29

The fire box end of the boiler which is open to the outside of the engine house building. It is uncertain whether this boiler was coal fired because there does not seem to be adequate provision for stoking. It may have been oil fired, although there are no oil tanks evident. The base of the steel smokestack joins the boiler casing at this point. [MRT 3247]



View of the weatherboard-lined inner wall facing the brick bed of the boiler and the roof structure. This view is taken from the engine room which lay beside the boiler. The horizontal engine was arranged parallel to the boiler. The boiler is completely enclosed in brickwork, apart from its upper surface and firebox ends. [MRT 3252]





Figure 31

The upper surface of the boiler showing some of the details of the valve and service pipework. The smokestack base is visible through the timber. Scale is in half metre intervals. [MRT 3246]

Figure 32

Detail of the welded steel smoke stack protruding though the roof of the engine house. View is to the south. [MRT 3243]

Bacon (1985) reported that the 1930's shaft-based attempts to exploit the Langloh coal seams were abandoned in favour of the development of a dip drive. It is presumed that the feature of the Langloh site discussed here is that drive.

The portal consists of a broad opening to a linear excavation that dips back (west) into the hill at approximately 10 degrees. The dip of the drive corresponds to the known dip of the coal seams and it was mined to follow the coal down. Rock surrounding the portal has been cut away to form an access ramp (fig. 33). Mine service pipes (compressed air and water mains), coal cars and fragmentary remains of mine equipment litter this ramp cutting (fig. 2, 3 and 28). There is no other known access to the workings, apart from the small openings further south (that have already been mentioned), so this was the main access to the mine for the majority of its working life.

Rails extended from the underground workings, through the portal, up onto the ramp and trestle structures built into the northern face of the mullock dump (see fig. 3).

The present owner pumps water from the river into the mine workings, using them as a water storage cistern (E. Archer, pers. comm. 2001) and there was water right up to the portal at the time of the survey.

About 100 m away to the north, in an adjacent paddock, there was an 'ammunition shed', since demolished or fallen down (E. Archer, pers. comm. 2001). This was probably the magazine.



Figure 33

Entrance portal and ramp cutting to dip drive. Engine house in centre middle ground (to west). Winder house is the small wing to the south (left) of the smokestack and coal haulage was achieved by way of a wire rope from the winder in this small building passing up to the gantry structure and returning back down the drive. [MRT 3219]

4.5 Site Feature D: Sandstone stables and change house

The earliest building at the site is a sandstone stable built of fine ashlar blocks (probably local). The building is long, low and rectangular in form (fig. 34, 35) and has a false floor that forms an upper loft. This building is of a style that suggests it is much older than the mine and adjacent *Langloh* homestead building. It may relate to an earlier farm property.

The building is relatively sound but has suffered due to the removal of the outer facing of good quality ashlar masonry on the eastern facade (see Figure 40 below). Lintel beams over a former doorway on the eastern facade are deeply pitted with borer. The eastern wall will eventually collapse. The corrugated iron roof is in very good condition.

The building has three horse stalls in the southern end. Feed troughs still contain chaff and three small horse harness collars (in various states of decay) lie within the building. The animals contained there were working animals, possibly pit ponies. The owner was not consulted about the last time that the barn was used and so it is uncertain whether the evidence of horses being kept there related to the mine period or later use by the property owner. The small horse collars suggest that horses may have been employed in the mine for coal haulage, or on surface (such as to move coal trucks around). The building has a solid timber false floor at the roof base. This floor creates a roomy loft room that extends the entire length of the building. Access to the loft was via a wooden staircase on the western side of the building (fig. 34).

The northern part of the building had been lined and plumbed and utilised as a four-head shower block (fig. 36). The outer sandstone wall has been re-mortared at this end of the building, perhaps as waterproofing (fig. 37).

4.5.1 Coal truck scatter

In the flat area to the east of the sandstone stables, and between it and the toe of the mullock dump, there is a scatter of over 31 iron-framed wood-lined coal trucks. They lie in all orientations although most are on their wheels (fig. 3, 38, 39, 40). Apart from the natural decay of the wooden components, the trucks are remarkably intact (fig. 41, 42). Two further coal trucks lie in the cutting leading to the entrance portal of the dip drive. There are no rails laid to the stables from the gantry or the mine portal so it not clear how the trucks were moved there (pit ponies?). Was this area also a workshop or maintenance area?



Figure 34

Sandstone stables viewed looking southwest. Note the gabled hay loft. E. Archer (pers. comm., April 2001) mentioned that there was once a wooden staircase leading up to the upper floor in this position. He suggests that the top floor was used by the coal miners as a canteen or some similar use. The staircase has since been removed. Scale bar is in half metre intervals. [MRT 3259]



Sandstone stables looking northeast. Note the section of the wall where sandstone blocks have been removed. Scale bar is in half metre intervals. [MRT 3234]



Figure 36

Internal view of the stables building showing the northern section that has been converted into a shower and change area. Note the wooden partition. No clothing hooks were seen and it is unclear where the miners stored their clean clothes. Water drained through a hole in the base of the wall and out into a small circular stone sump on the other side. Scale bar is in half metre intervals. [MRT 3237]



Figure 37

Detail of mortar on the northern end of the stables, possibly waterproofing for the showers which were located inside this wall. The re-mortaring may also have been done to repair damage to the stonework caused by the excess moisture from the showers. Scale bar is in half metre intervals. [MRT 3260]

Archaeological Survey Report 2001/01



View showing the relationship of the coal truck scatter to the eastern side of the sandstone stables and the mullock dump. View is to the south. Refer to Figure 3. [MRT 3241]



Figure 39

Detail view showing the relationship of the coal trucks to the eastern side of the stables. Refer to Figure 3. Photo taken from the mullock dump and is looking west. Note the almost complete removal of the outer layer of ashlar masonry on the eastern wall of the stables. [MRT 3273]



Figure 40

Detail view showing the relationship of the coal trucks to the eastern side of the stables. Refer to Figure 3. Photo taken from the mullock dump and is looking southwest. [MRT 3272]



Detail view of one of the wood and iron coal trucks adjacent to the stone stables. Note the stout iron framing, and the wooden lining and chassis. These trucks are in quite good condition and their number and state of preservation make them a valuable feature of the site. Scale is in half metre increments. [MRT 3275]



Figure 42

Detail view of the wooden chassis and cast iron wheels of one of the wood and iron coal trucks adjacent to the stone stables. Scale is in 100 millimetre increments. [MRT 3274]



Figure 43 View of the 'store' building looking northeast. [MRT 3229]

Archaeological Survey Report 2001/01

Site feature E, a small square timber-framed and weatherboard-clad building that lies to the north of the engine house (fig. 43) was described as a store by E. Archer (pers. comm., April 2001). It is built on brick and concrete foundations. The building consists of two

separate rooms with their own external doors and no internal linking door.

The building does not appear on any of the 1940's mine plans and so was probably a later addition to the mine buildings.

4.7 Site Feature F: Collapsed workshop building

A small collapsed corrugated iron roofed shed is located just to the north of the mine portal (fig. 2, 3). It was a workshop shed and had workshop tools and a lathe inside it when Mr E. Archer saw it as a boy in the early 1960's (pers. comm., April 2001). There is a small engine bed in the southern end of the shed floor which may have been the lathe bed. The shed can be seen on the right in Figure 33.

4.8 Site Feature G: Ventilation shaft and fan building

This small brick and timber structure gives the first impression that it might be a magazine. It is a low square brick building with a weatherboard clad addition. It is set inside a low pasture-covered mound (fig. 44). On inspection it proved to be a fan house for a ventilation shaft and the small timber lean to was probably for housing a small motor. The feature was labelled as a temporary air shaft on the 1944 plan but it is uncertain whether the present infrastructure date from such an early time. While it is uncertain that the building dates from the 1940's, the recycled twin-bladed wooden aircraft propellor used as a fan could certainly be from that era (fig. 46).



Figure 44

Brick fan house covering the ventilation shaft. The low mound is probably the spoil dump from an early coal exploration shaft that was later utilised for mine ventilation. [MRT 3232]



Red brick and timber building covering the ventilation shaft and housing the ventilation fan of the colliery. The shaft is located in the brick building on the left (the doorway opens directly onto the open shaft collar). The fan building is out of view to the rear and the small timber lean-to may have housed the engine that drove the fan. Scale bar is in half metre increments. [MRT 3233]



Figure 46

Detail view of wooden twin-blade aircraft propellor used as a ventilation fan at the head of the ventilation shaft. Mr Archer referred to this as a 'Tiger Moth' propellor. The fan is covered by a timber-framed and weatherboard extension to the brick building that covers the shaft. The fan was belt driven, probably by a small static or electric engine housed in the timber lean-to. The corrugated iron tanks have possibly been placed there to prevent sheep from entering. [MRT 3217]



Figure 47

Collar of ventilation shaft, originally one of the earlier exploration shafts; this one was re-used in the 1940's as a ventilation shaft. The shaft is covered by the small brick shed shown in figures 45 and 46. This view is taken from the doorway of the brick building shown in Figure 45. The shaft is now used to draw the water that is stored in the underground workings for use on the 'Ellengowan' property (note galvanised pipes and electric cable). The shaft is probably one of the early coal access shafts put in in the late 1930's (or possibly earlier). [MRT 3218]

4.9 Site Feature H: Brick and corrugated iron chimney and hut platform

Site feature H consists of a narrow building platform that is cut into the face of the shallow sloping hill above the engine house. At the southern end of the cutting there is a corrugated iron-clad red brick chimney (fig. 48). A pair of galvanised iron water tanks lie to the immediate south of the chimney. An embankment marks the uphill side of the cutting. The site is marked as an 'Office' on the 1944 mine site plan, although there has been no building on this site in the living memory of Mr E. Archer (pers. comm., April 2001). It seems that the building was removed some time prior to the early 1960's and therefore prior to mine closure. Perhaps the materials from this building were used to construct the overseer's office extension to the engine house.

4.10 Site Feature I: Weatherboard cottage

Feature I consists of a timber-framed weatherboard dwelling of approximately rectangular form. It is roofed in corrugated iron and has red brick foundations and chimneys. There is a small lean-to at the rear and a wooden-framed shed and outhouse (fig. 49). The timber cladding appears to have never been painted and was probably oiled.

The cottage appears to be structurally sound and apart from the internal damage to wall linings by grazing animals (that shelter inside during cold weather), is in good order. There is a thick crust of dung and mud on the timber floors and there is also an occasional decomposed sheep carcass inside. Little furniture or fittings remain inside. Electricity was once connected to the house, as the connection point is visible on the gable (fig. 49).

The cottage is attributed to the 1930's or 1940's on stylistic grounds but does not appear on the 1944 plan of the mine area (MRT plan 621A-74). The house has not been used during the memory of the current property owner (since the early 1960's at least). It has therefore probably been abandoned since mine closure.

4.11 Site Feature J: Weatherboard cottage

Feature J consists of a timber-framed weatherboard dwelling of approximately L-shaped form. It is roofed in corrugated iron and has red brick foundations and chimneys. There are no associated outbuildings remaining (fig. 50). The timber cladding appears to have never been painted and was probably oiled.

The cottage appears to be structurally sound apart from some loss of weatherboards to animal activity. The inside was not inspected because of a European wasp nest. The timber floor was seen to be deeply encrusted with dung and mud. Electricity was once connected to the house, as the connection point is visible on the gable (fig. 50).

The cottage is attributed to the 1930's or 1940's on stylistic grounds but does not appear on the 1944 plan of the mine area (MRT plan 621A-74). The house has not been used during the memory of the current property owner (since the early 1960's at least). It has therefore probably been abandoned since mine closure.



In the foreground is the corrugated iron-covered red brick chimney, flattened cutting site and rear embankment wall of the site feature labelled as the 'Office' on the 1940's mine site plans (see fig. 2 and 3). The engine house is in the middle ground and the mullock dump is in the background. View is to the southeast. [MRT 3255]



Figure 49

Site feature I looking southwest. Note vertical weatherboard cladding and brick chimney and foundations. [MRT 3215]



Figure 50

Site feature J looking southwest. Note vertical weatherboard cladding and brick chimney and foundations. [MRT 3216] In the southeastern portion of the surveyed area there is a multi-roomed timber and weatherboard dwelling, circa 1890's in style. The residence is of timber and weatherboard construction and set on a sandstone foundation (fig. 51).

The structure has suffered from the effects of stock roaming freely within. Although apparently structurally sound, the internal linings are damaged and the timber floors are thickly encrusted with dung, mud and occasional decayed sheep carcasses. The sandstone steps leading to the verandah are fractured and partially collapsed.

The style of the house and the correspondence of its position with the location of the *Langloh* property marked on Montgomery's (1894) map of the district (see front cover) suggest that it is the original *Langloh* homestead.

The house has not been lived in since the 1960's when the last occupants were involved in the mine (E. Archer, pers. comm., April 2001).



Figure 51

Site feature K, a c1890's (?) style farm building that pre-dates the colliery infrastructure and probably represents the original 'Langloh' homestead. If so, then it was the well that was being sunk by the owner of this property (or its antecedent) that resulted in the coal discovery. View is to southwest. [MRT 3278]

4.13 Site Feature L: Barn site

This feature represents the site of a barn marked on the 1944 mine plan (fig. 2). The structure has since been removed and was not present during the present

property owner's living memory (since the early 1960's). Foundations remain.

4.14 Site Feature M: Sandstone footings and concrete tank base

These closely associated features are very subtle and only just poke above the level of the pasture grasses (fig. 2). The linear arrangement of rounded sandstone rubble footings may represent the foundations of a small cottage or barn. The rectangular concrete aggregate feature, with several bent-over iron bolt ends protruding from its upper surface, may represent an associated water tank. The feature is not recorded on any of the extant mine plans, nor is it recorded on Montgomery's (1894) plan of the area. It is of unknown age and purpose.

It is a very subtle feature and is in serious risk of damage by earth moving equipment during mining of the mullock dump.

4.15 Single men's 'shacks'

While at the mine site, Mr E. Archer pointed out a row of small collapsed timber-framed weatherboard structures and foundations that were not apparently connected with the site. He said that these small 'shacks' had originally been single men's accommodation for the colliery. They lie to the southeast of the original *Langloh* homestead and so are not shown on Figure 2. There were at least four such shacks, in a row, adjacent to the edge of a Hawthorn-rimmed paddock to the immediate southeast of the original *Langloh* (Site Feature K). Only two shacks have substantial standing remains and the remainder are represented by stone and concrete footings. From the best-preserved example (fig. 52), it would seem that the shacks consisted of single rooms with a central door and two front windows.



Figure 51

The best-preserved example of one the row of single men's shacks located to the immediate southeast of the original 'Langloh' homestead. The scale is in half metre graduations. [MRT 3225]

5. Underground workings

The workings of an historic underground mine are always its most significant feature and have the greatest archaeological potential. Sadly, the workings are usually the least accessible part of such sites. Langloh Colliery is no exception and so, as stated in the introduction, the underground workings of Langloh Colliery were not examined during this survey.

The underground workings are recorded in MRT Plans 621B-74, 621A-74, 620A-74 and 2305. All but the last listed plan date from 1943 or 1944. As the mine worked for another 20 years, these plans do not show the full extent of the underground workings. Plan 2305 was compiled in December 1962 and therefore is probably the most accurate representation of the workings as they were at mine closure.

The seam cropped out to the south of the site, near the top of a low rise. The workings actually broke through to surface here. The miners used to walk up to this place and have their morning tea outside in the sun before returning to work underground (Mr E. Archer, pers. comm., April 2001). These workings have long since been closed off and filled in.

The underground workings are currently flooded to the portal because the property owner uses them as a subterranean water storage cistern. Water is pumped from the Clyde River into the workings and drawn off from the former ventilation shaft.

6. Assessment of significance and recommendations

6.1 Cultural heritage significance

It was not a part of the project brief to assess the significance of this site, however the completeness of the Langloh mine's remaining surface infrastructure and its well preserved nature warrant a few comments.

The site represents a virtually complete example of a small steam-powered underground colliery. Although it is relatively modern, the mine was operated by steam machinery and the evidence at the site (stable, horse stalls, feeding troughs with chaff and small horse collars) suggests that ponies were at work on the mine as well. As such the mine site represents an example of a much earlier style of mining than its actual age suggests.

The Langloh Colliery is the most significant coal mine to operate in the southern part of the Tasmania. This fact gives it regional significance. It is in a remarkable state of preservation and the fact that it was steam (and possibly horse) powered suggests that it is even more unique because it may be one of the most complete examples of a steam and horse-powered underground colliery remaining in Tasmania. Therefore the mine site may also be of State significance.

6.2 Scientific significance

Examination of the microflora from mudstone associated with the coal seams of the Langloh Coalfield

Archaeological Survey Report 2001/01

suggests that the sequence belongs to the *Craterisporites rotundus* Zone, and hence is Karnian in age (Bacon, 1985). During a short discussion with Stephen Forsyth in the MRT Library (Thursday 5 April 2001) he pointed out that the mullock dumps of the Langloh Colliery were the site of a number of fossil plant discoveries. He suggested that the dump may also be the type locality of some fossil plant species. The dump has the potential to yield further important plant fossils and is therefore considered to be of some scientific significance. Any future mining operation should be periodically visited by palaeobotanists to recover any new plan remains uncovered.

6.3 Recommendations

It is recommended that extreme care be taken not to disturb any other elements of the site during the process of mining the dump. It should be possible to remove the majority of the mullock without impacting on the other site features. It should also be possible to leave the section of the dump that supports and relates to the timber gantry and coal bin remains. All aspects of the site, including the remains of the timber gantry, coal bins and crushing and sizing structures should be left intact. Only the southern part of the dump should be mined.

It is beyond the scope of this survey to assess the significance of the Langloh Colliery in the entire context of the physical remains of the Tasmanian coal mining industry. However, it can be reasonably said that further research is required into whether the machinery and structures remaining at this site occupy a significant, if not unique, place in the physical remains of coal mining in Tasmania. An assessment of the place of this mine site in the context of the whole of the physical remains of Tasmanian underground coal mining is required. It is important to know whether the completeness of the mine plant buildings, change house and stables, coal truck scatter, surface buildings and associated habitation is unique in the state. It is possible that the Langloh Colliery site is the best-preserved steam powered underground coal mine site remaining in Tasmania.

It is recommended that there is an ongoing liaison between the company and MRT about the progress of mining at the Langloh mine dump. This is necessary so that timely visits may be made by scientists to collect fossil plant material before it deteriorates through drying.

The present owner of *Ellengowan* uses the mine workings as an underground water storage cistern. The effects of the mining and mine water disposal on this important farm resource should be assessed before mining takes place.

Natural decay and the wear and tear of climate and grazing animals are the causes of much of the ongoing deterioration of the buildings and other features of the site. No recommendations are offered as to these matters.

7. References

- BACON, C. A. 1985. The Langloh (Lawrenny) Coalfield. *Unpublished Report Department of Mines Tasmania* 1985/31.
- BACON, C. A. 1991. The coal resources of Tasmania. Bulletin Geological Survey Tasmania 64.
- BACON, C. A.; BANKS, M. R. 1989. A history of discovery, study and exploitation of coal in Tasmania. *Papers and Proceedings Royal Society of Tasmania* 123:137–190.
- HILLS, C. L.; REID, A. M.; NYE, P. B.; KEID, H. G. W.; REID, W. D. 1922. The coal resources of Tasmania. *Mineral Resources Geological Survey Tasmania* 7.
- MONTGOMERY, A. 1894. Report on the Lawrenny-Langloh coalfield. *Report Secretary of Mines Tasmania* 1893–94:xli–1.

- MORRISON, K. C.; BACON, C. A. 1986. Comparison between the Fingal and Langloh coalfields, Tasmania Basin. *Australian Coal Geology* 6:41–57.
- SELWYN, A. R. C. 1855. Geological relations of some of the coal seams of Van Diemen's Land, their probable extent and relative economic value. *Papers and Proceedings Royal Society of Van Diemens Land* 3:116–141.
- THUREAU, G. 1883. Hamilton and Ouse coal deposits. *House of Assembly Paper Tasmania* 1883 (111).

[April 2001]