HUNTER VALLEY OPERATIONS SOUTH MINE PROJECT

DOG LEG FENCE AND TIMBER BRIDGE SIGNIFICANCE ASSESSMENTS

20 NOVEMBER 2019
P0017219
PREPARED FOR HUNTER VALLEY OPERATIONS

URBIS

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Project Code	P00017219
	1 - Draft. 6.11.2019
	2 – Final Draft. 19.11.2019
Report Number	3 – Final 20.11.2019

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EXECUTIVE SUMMARY

During previous field assessments, two historic features were identified as being of potential significance and entered in Coal and Allied's Historic Heritage Inventory. These two sites were inspected by Urbis historical archaeologist Tina King in 2013 and 2015. Urbis Pty Ltd (Urbis) have now been engaged by Hunter Valley Operations (HVO) to assess the significance of these two identified non-Indigenous heritage items, a timber bridge and dog leg fence.

The two historic features are located in the southern portion of Hunter Valley Operations South Coal Project adjacent to the Golden Highway.

Located within the Parish of Lemington, County of Hunter, the first non-Indigenous occupation of land on which the dog leg fence and timber bridge are located, was by Richard Hobden in the mid nineteenth century, with successive generations taking on land adjacent to and within the areas where the two historical features are located. The land was taken over for mining purposes in the 1970s, and has remained as buffer land for HVO South.

A site inspection was undertaken on 31 October 2019 to record the historical features, assess the condition and identify any changes. Additional archival research was also undertaken to assist in undertaking the date of construction, historical associations and any additional information on the development of the features and surrounding area.

The timber bridge was assessed as being of twentieth century construction and not significant at a State or local level. No further action is required for the bridge.

The dog leg fence was found to extend into the United Wambo Open Cut Mine Project Area to the south, and was previously identified as part of a Heritage Impact Assessment for works in this area in 2016. The earliest records for the fence date to 1920, but the physical fabric and historical research indicate a nineteenth century construction date.

Over 300m of the fence was recorded during the survey, with historical records indicating that it previously extended further in both directions. While in poor condition, it is still identifiable as an early fence and is the only known site of this type.

The assessment has found that the fence has local historical significance, and is of potential State significance for its representativeness and degree of rarity. The fence should be managed in accordance with its assessed level of significance and it is recommended that the area surrounding the feature be cleared, the fence thoroughly documented, and administrative measure put in place to ensure its ongoing protection.

1. INTRODUCTION

Urbis Pty Ltd (Urbis) has been engaged by Hunter Valley Operations (HVO) to assess the significance of two identified non-Indigenous heritage items.

1.1. BACKGROUND

During previous field assessments, two historic features were identified as being of potential significance and entered in Coal and Allied's Historic Heritage Inventory:

Name	Easting	Northing	Comment	Significance Assessment	Protection Requirements
Dog leg fence	309774.0	6397268.0	Older style, early pastoral fence, off Golden Highway	Visited by ERM historic archaeologists, but no formal significance assessment provided	Obtain formal statement of significance from ERM
Bridge on Old Jerrys Plain Rd alignment	309755.0	6397333.0	No longer used, over unnamed tributary	Visited by ERM historic archaeologists, but no formal significance assessment provided	Obtain formal statement of significance from ERM

These field assessments were undertaken in 2013 and 2015, and involved recording of the locations of features, but no formal significance assessment.

The dog leg fence was also recorded as being a cockatoo fence in a number of locations, but in this report is referred to as a dog leg fence which is defined as being:

> *any form of fence with pairs of dog-legs forming crutches supporting a higher log or rail (Pickard 2015:4): Dog-leg ...fences were widespread and common in the initial stages of developing farms. They are recorded from most colonies and were used into the early years of the twentieth century...dog-legs were accepted as components of fencing improvements under NSW lands legislation... (Pickard 2013*:40).

In 2016, Umwelt prepared a heritage impact statement for the United Wambo open cut mine project. As part of the proposed works, a dog leg fence was identified as potentially being impacted on, part of which fell outside of the United Wambo coal project land. The fence had previously been inspected by United Collieries Pty Limited in 2013 and in 2015, rural fence specialist, John Pickard also investigated the fence and assessed it as being of state significance:

> *General evidence of rural fences...may provide information about how the landscape was used and changed during its use as pastoral land. However, in general as individual items they have little research potential beyond the immediate physical presence of their type (Pickard 2015).*
>
> *Although the condition of the Dog-leg fence has been assessed as being poor, it is a unique example of the former private and government Dog-leg fences once common across NSW and could be seen as an important icon in Australian history (Pickard 2007). Its physical presence within the Project Area provides an opportunity to study and better understand this form of early fence.*
>
> *As such the Dog-leg fence is considered to be of State significance as it is a unique example of a rare and endangered type of fence. Only one other example of a Dog-leg fence, at Mt Trooper south of Ingebyra NSW, is known to have been recorded (Pickard 2009:45). The Dog-leg fence at Mt Trooper does not have the unique stone supporting blocks of the fence discussed in this report.*

The HIS recommended that a full survey and archival recording of the fences be undertaken, and an interpretation strategy prepared.

These features are referenced in the Hunter Valley Operations South – Modification 5, Environmental Assessment (February 2017), Statement of Commitments, Historic Heritage.

'In addition to the mitigation measures undertaken at HVO for management of historic heritage, the following action specific to the proposal will be implemented:

- *a targeted field assessment will be undertaken by an historic heritage professional where required to supplement existing information to report on the relative significance of the additional sites identified on CNA land including a derelict bridge structure over an unnamed ephemeral creek and the cockatoo fence and recommend additional management measures.'*

1.2. METHODOLOGY

A site survey was undertaken on 31 October 2019 by Hunter Valley Operations Environment and Community Officer Peter Bowman and Urbis Historical Archaeologist, Tina King. Locations of features were recorded using handheld GPS and mapped in GIS, and features photographically recorded using an SLR camera.

Historical research has been undertaken at the local studies room at the Maitland Library and online using the following resources:

- NSW Land Registry Services to obtain Crown plans and Deposited plans;
- Historical Lands and Records Viewer to view cancelled Parish maps; and
- Government Gazettes and historical newspapers through Trove.

This significance assessment has been undertaken in accordance with NSW Heritage Division's 'Assessing Heritage Significance' guidelines.

1.3. LOCATION

The two historic features are located in the southern portion of HVO South Mine Project on a buffer property adjacent to the Golden Highway.

The timber bridge is located west of Riverview Pit, 20m north of an east-west track which runs below the powerline alignment. The dog leg fence is positioned to the north of a the boundary shared with United Collieries Pty Limited (see Figure 1).


Muswellbrook
Denman
Singleton
Dungog
Medowie
Gessnock
Newcastle
Esri, HERE, Garmin, © OpenStreetMap contributors, and the GIS user community, Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community
Chestnut Pit
Timber Bridge
Riverview Pit
Dog Leg Fence
Wambo Mine Complex
Legend
N
HVO South
United Colliery
Historic Features
Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

2. HISTORICAL OVERVIEW

Detailed histories of the Hunter Valley currently exist, and heritage studies have previously been undertaken for the HVO South Mine Project Area. Research for this assessment has focussed on the two historic features and the results outlined at Section 2.2 and 2.3.

Table 1 below provides a summary of key dates and events relevant to the region to provide context.

Table 1 – Summary of Key Events in the Development of the Region

Date	Event
1790s	First European presence in the region
1804	Penal settlement established in Newcastle
1810s	Cedar getters began to slowly occupy the region
1813	Patterson Plains area first opened to free settlers
1819	John Howe, Chief Constable of Windsor explored the region
1822	Closure of penal settlement allowing settlement of the Hunter Region
1822-1824	Henry Dangar surveyed village reserves in preparation for free settlement
1830s	Town reserve proclaimed at Jerry's Plains
1840s	Bulga township established
1863	Introduction of *Real Property Act 1863* saw larger estates progressively contracted into smaller lots.
1900s	Larger holdings further subdivided as part of the Soldier Settlement Scheme
1949	HVO commenced operations at what is now known as the West pit
1960s	Wambo coal mining operations commenced south of the study area
1971	Lemington Mine began production east of the study area
1979	The Hunter Valley No. 1 mine began production in 1979
1989	United coal mining operations commenced south of the study area
2000	In 2000 Coal & Allied merged the Howick and Hunter Valley mines to create HVO
2017	Yancoal Australia acquired HVO
2018	Hunter Valley Operations Joint Venture formed through a joint venture between Glencore and Yancoal.

2.1. HOBDEN ESTATE

The study area is located within the Parish of Lemington, County of Hunter. The first non-Indigenous occupation of land on which the dog leg fence and timber bridge are located, was by Richard Hobden in the mid nineteenth century (see Figure 2).

Figure 2 – Historic Features shown on Hobden Land Grant

Source: Bing Maps

Richard Hobden Senior arrived as a free settler in 1813, and while residing in Sydney in 1824 was initially granted 100 acres in the Hunter Valley, followed by a further grant of 500 acres near what was to become Jerry's Plains. Richard Hobden established the family estate, known as the Great Lodge on this land, and his sons and grandsons, Richard Hobden Junior, Thomas and John Ellis Hobden continued to take up land in the region, land portions that later became part of the HVO South Mine Project.

The 1892 Parish map shows a road between Jerrys Plains and Warkworth south of Richard Hobden's holding, and land south of this road taken up by his son, Thomas Hobden (Figure 3). A bend in in the road is evident south of where the timber bridge is currently located.

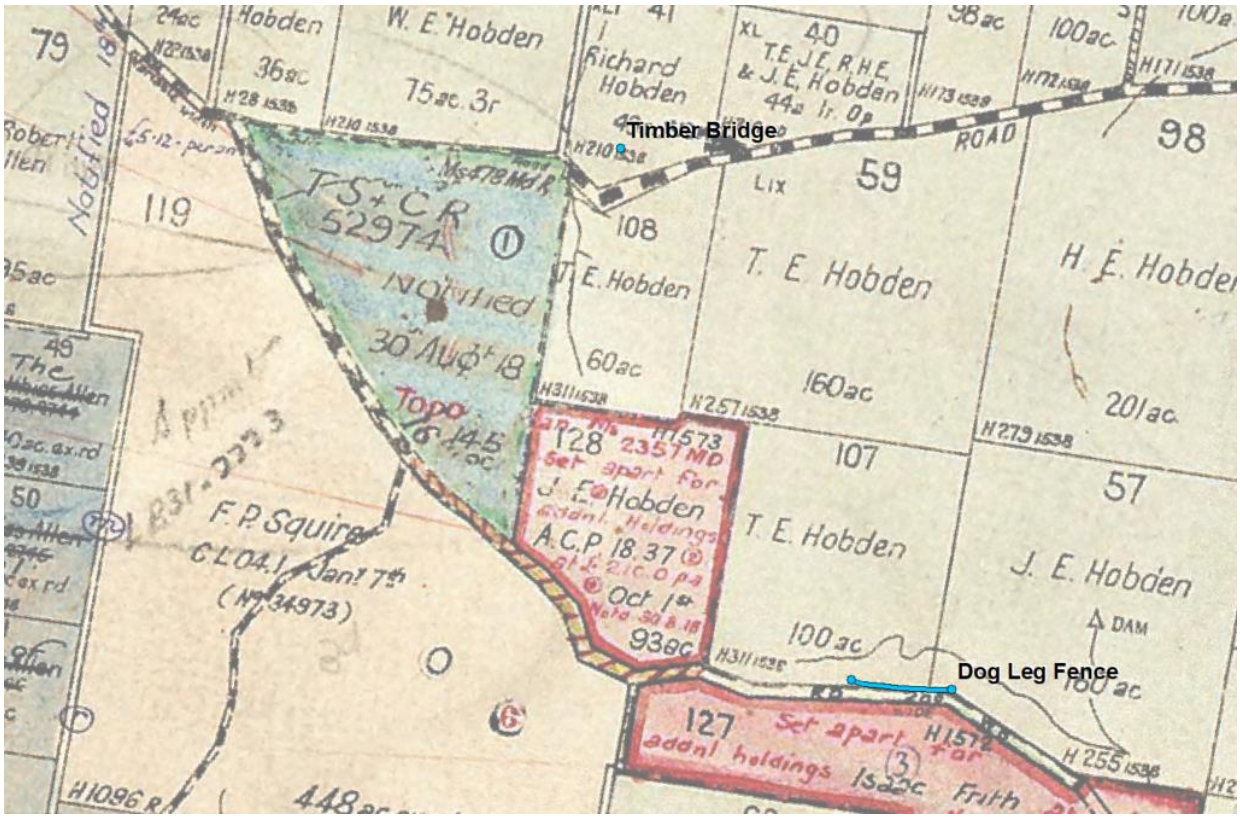
By 1917, a road had also been established immediately to the south of Thomas Hobden's land and adjacent to the dog leg fence (Figure 4).

Figure 5 shows the Hobden family still occupied land in the area in the 1960s, but by the 1970s this land was being taken up for mining purposes (Figure 6), and the road between Jerry's Plans and Warkworth in this location was eventually closed and replaced by the Golden Highway.

Figure 3 – Location of Historic Features on 1892 Parish Map

Source: Department of Lands

Figure 4 - Location of Historic Features on 1917 Parish Map

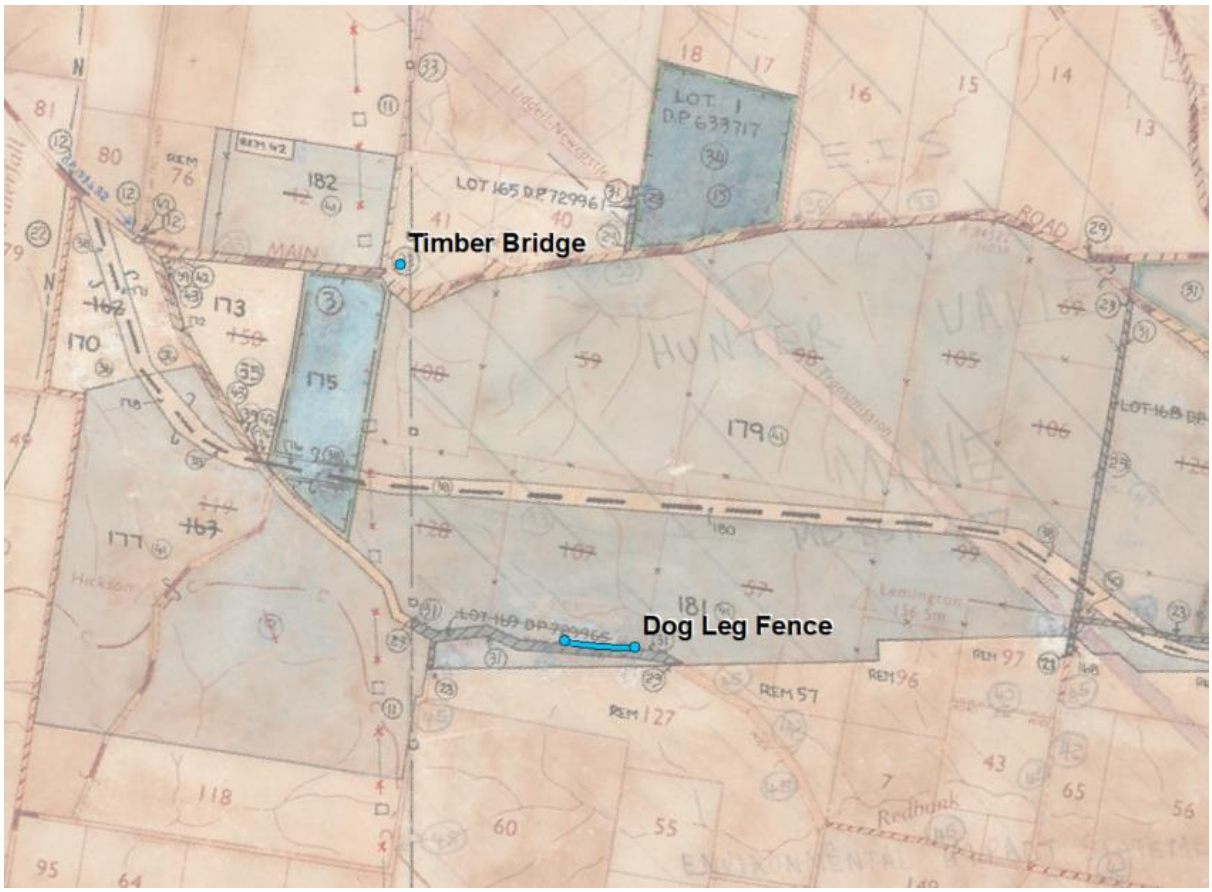


Source: Department of Lands

Figure 5 - Location of Historic Features on 1961 Parish Map

Source: Department of Lands

Figure 6 - Location of Historic Features on 1979 Parish Map

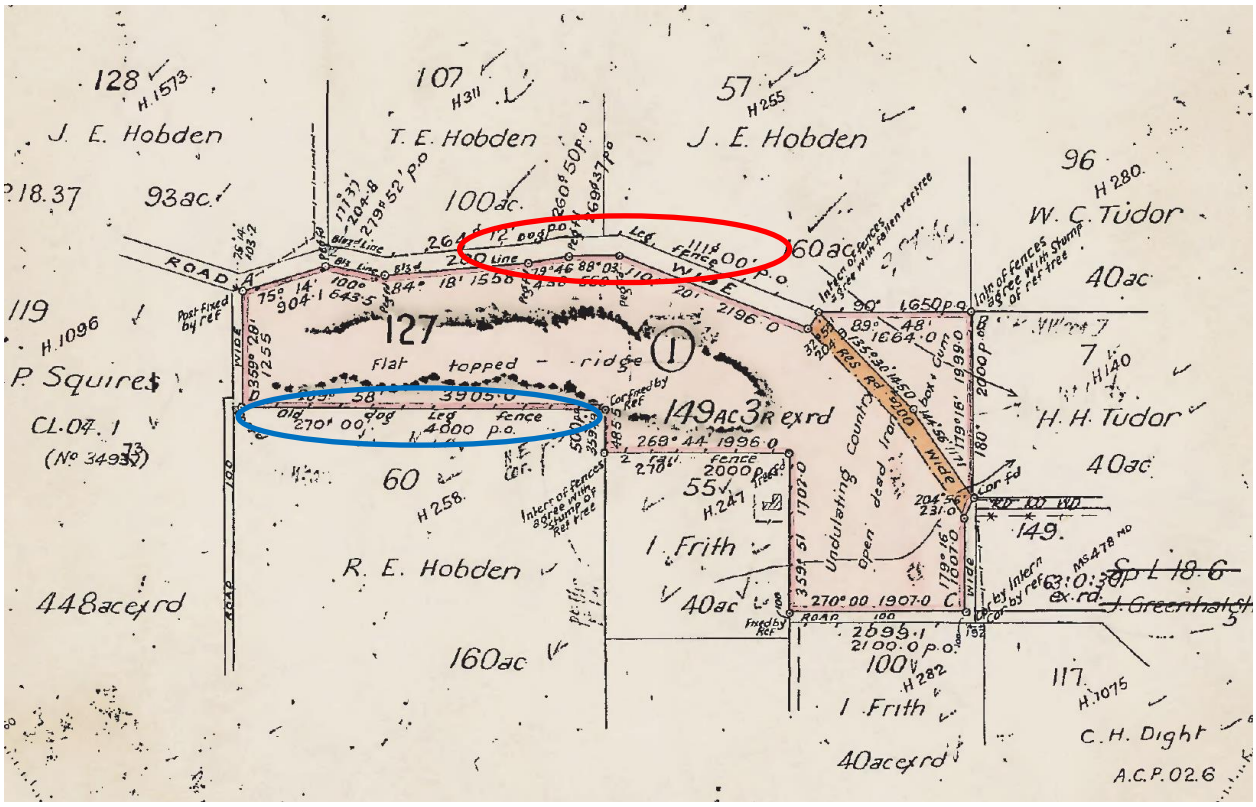


Source: Department of Lands

2.2. DOG LEG FENCE

In the late nineteenth century, Thomas Hobden held the 100 acre land portion on which the dog leg fence is located. The earliest plans showing the dog leg fence are the 1920 Crown Plans for Portion 127 (see Figure 7), showing the fence running along the southern portions of Lots 107 and 57. The plan indicates another dog leg fence south of Portion 127 that is noted as being an “old dog leg fence.” This section falls outside of HVO land to the south.

Figure 7 – Crown Plan of Portion 127, with dog leg fence in study area shown in red, and “old dog leg fence” in blue

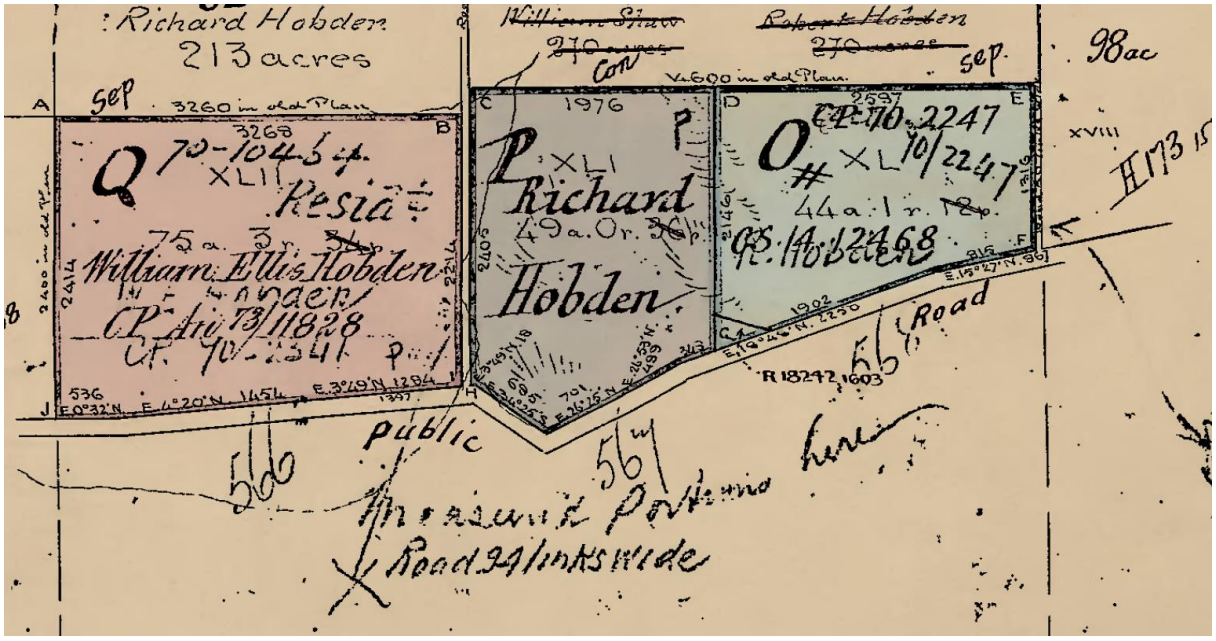


Source: NSW Lands Crown Plan #1572-1538

2.3. TIMBER BRIDGE

In 1870, the land upon where the bridge is presently located was taken up by Richard Hobden (see Figure 8).

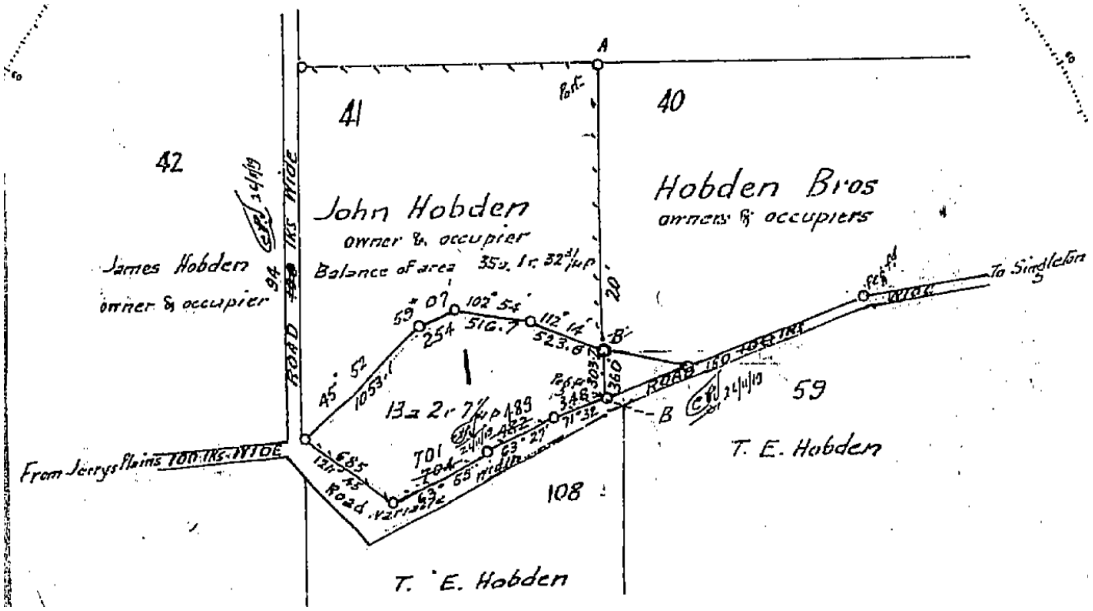
Figure 8 – Crown Plan of Portion 41



Source: NSW Lands Crown Plan #210-1538

By 1918, Portion 41 was owned and occupied by John Hobden. No features such as bridges were noted, and the bridge is located between the bend in the road and the fenceline shown in Figure 9.

Figure 9 – Deposited Plan of Portion 41, 1919



Source: NSW Lands Deposited Plan 963714

3. DESCRIPTION

This section provides a summary of the results of the site inspection undertaken on 31 October 2019. GPS points in the Coal and Allied Historic Heritage Inventory were found to be inaccurate, and updated locations are in Table 2.

Table 2 – Coordinates of Historic Features

Historic Feature	Easting	Northing
Dog Leg Fence	309742.58 (western extent) 309993.27(eastern extent)	6397338.37 (western extent) 6397326.92 (eastern extent)
Timber Bridge	309053.12	6398788.52

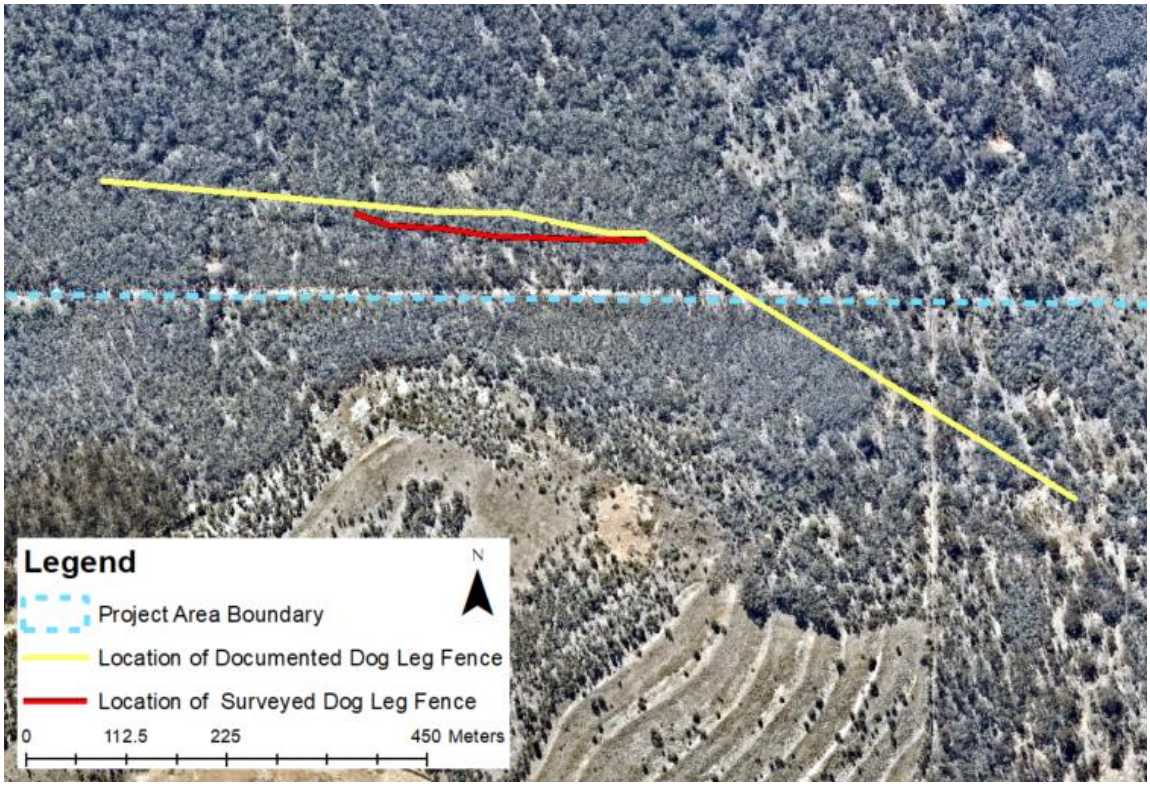
3.1. DOG LEG FENCE

A total of 330m of dog leg fence was recorded during the survey (see Figure 10). The fence runs along a roughly east-west axis north of a more modern fenceline and firebreak. The surrounding area contains a great deal of regrowth likely around 20-30 years of age, with a number of fallen trees and branches limiting the visibility of the fence.

The integrity of the fence varies along this length, with intact sections comprising horizontal upper and lower logs supported on sandstone blocks, with pairs of dog leg branches resting across the lower log and supporting the higher log in its centre.

The sandstone blocks are likely to have been locally sourced from outcrops of sandstone located adjacent to the fence, and timber members appear to be Ironbark (eucalyptus crebra), which is the dominant hardwood species in the locational area of the fence.

Figure 10 – Location of recorded fence



Source: NearMap and Urbis

Sandstone blocks were used to support the lower log and the distances between the blocks varied greatly. At the eastern end of the surveyed area the blocks were the only fabric associated with the fence remaining (Picture 1). Generally the blocks were spaced between 3-4m apart, but in some locations as little as 1.8m.

Blocks also varied in shape, but were generally 300-400mm in height and thickness (see Picture 2), and 500-800mm in length. Some blocks showed evidence of being carved (see Picture 3) to allow the lower log to be placed securely on top (Picture 4).

Picture 1 – Stone blocks indicating former fence alignment

Source: Urbis 2019

Picture 2 – General dimension of stone block

Source: Urbis 2019

Picture 3 – Chiselled block

Source: Urbis 2019

Picture 4 – Block with intact lower log

Source: Urbis 2019

The blocks were used to support the lower log/bottom rail of the fence. While there are not many areas where both the upper and lower logs remain in-situ, the lower log remains among much of the fenceline (see Picture 5. Where both upper and lower logs remained the fence was on an angle (Picture 6). In a number of locations, length of Ironbark logs sit adjacent to sandstone blocks in the alignment of the former fence.

Picture 5 – Intact lower log/bottom rail

Source: Urbis 2019

Picture 6 – Intact upper and lower logs

Source: Urbis 2019

The posts of the fence are the “dog-legs” which are formed by pieces of split Ironbark. Remaining lengths were between 1.2-1.5m in length (see Picture 7), and in a number of locations the dog leg had failed leading to the collapse of the top rail/upper log (Picture 8).

Picture 7 – Remnant dog leg post

Source: Urbis 2019

Picture 8 – Portion of fence with damaged dog-legs

Source: Urbis 2019

Condition and Integrity

The overall condition of the fence is considered to be poor, especially the eastern section where the sandstone blocks are the only remains of the former fence. Stone elements remain largely intact and in good condition throughout, but many timber elements have disappeared or deteriorated.

The integrity of the fence is considered to be moderate. While a lot of the original material is missing, impacted on by modern vegetation, or in poor condition, overall the alignment and structure is still legible.

Picture 9 shows a section of fence with sandstone blocks, upper and lower logs and both dog legs remaining, but not in-situ. Picture 10 shows a section of fence with dislodged rail and sandstone blocks remaining.

Picture 9 – Fence impacted by vegetation

Source: Urbis 2019

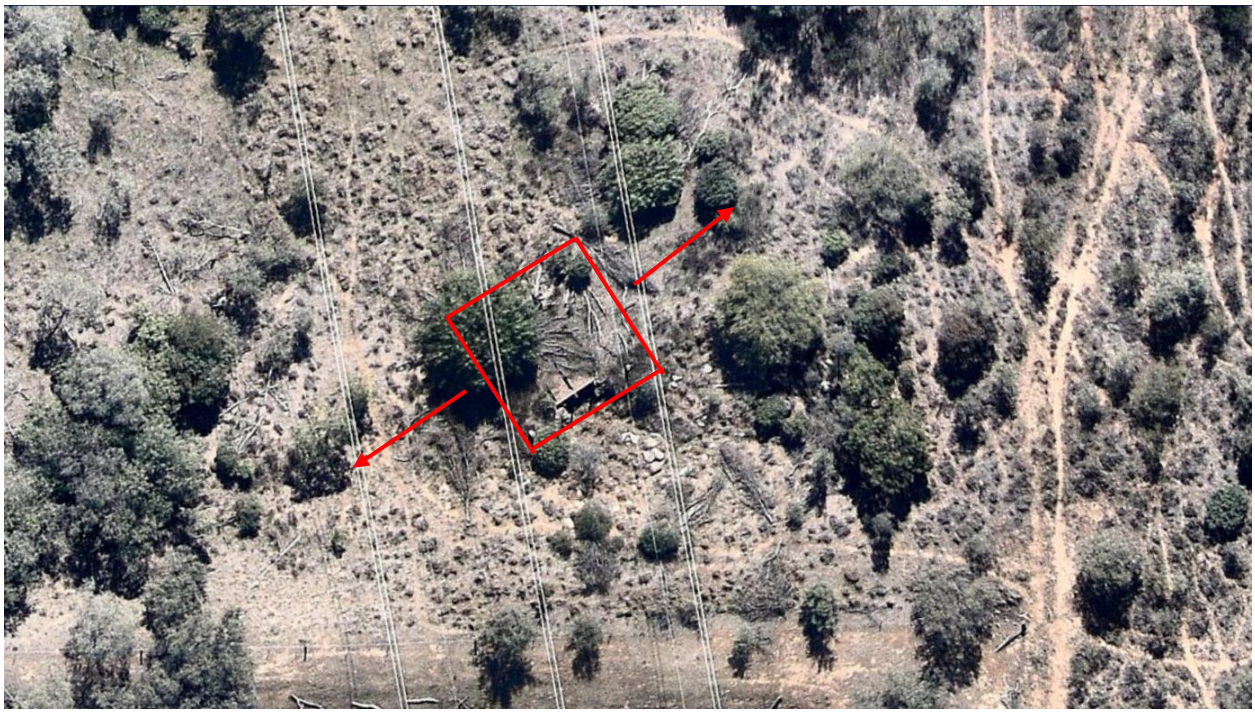
Picture 10 – Log lying adjacent to sandstone blocks

Source: Urbis 2019

3.2. TIMBER BRIDGE

The feature comprises a single span timber girder bridge which sits on a north-east to south-west axis (see Figure 11). It sits within the powerline easement, with a dam adjacent to the south, and is surrounded by regrowth. It is partially covered by vegetation, and is visible upon approach from the south (Pictures 11 and 12).

Figure 11 – Aerial photograph showing direction of the timber bridge



Source: NearMap, 10 September 2018

The superstructure of the bridge is 4.1m long and 2.4m wide. The abutments of the bridge are set 2.4m apart, with 7.2m between the wingwalls of the abutments.

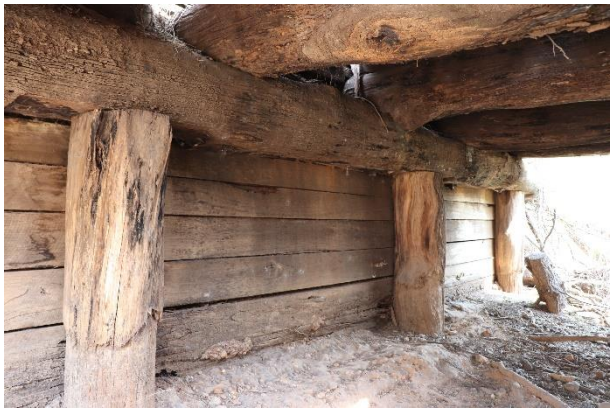
The substructure is constructed of timber pile abutments at roughly 2m centres (see Picture 13). Timber wing walls (Picture 14) are present at both ends, with rubble backfill.

Picture 11 – View to bridge from south-east

Source: Urbis 2019

Picture 12 – View to bridge on approach from the south

Source: Urbis 2019



Picture 13 – Timber piles

Source: Urbis 2019

Picture 14 – Timber wing walls of abutments

Source: Urbis 2019

The decking comprises closely spaced transverse timber planks, 125mm deep and 200mm wide (see Picture 15). The planks have the remains of a flush seal surface (see Picture 16), commonly used to slow drying of timber and resultant splitting of timber.

Picture 15 – Decking of the structure looking south-west

Source: Urbis 2019

Picture 16 – Detail of deck surface

Source: Urbis 2019

The decking is supported by log girders (sitting on log headstocks), and also comprises the remains of traffic barrier system in the form of kerbing and a post and rail system. None of the rails remain. Posts are bolted into the kerb and girders (see Picture 17), similar to standard timber bridge construction (see Picture 18).

Picture 17 – Remains of safety barrier

Source: Urbis 2019

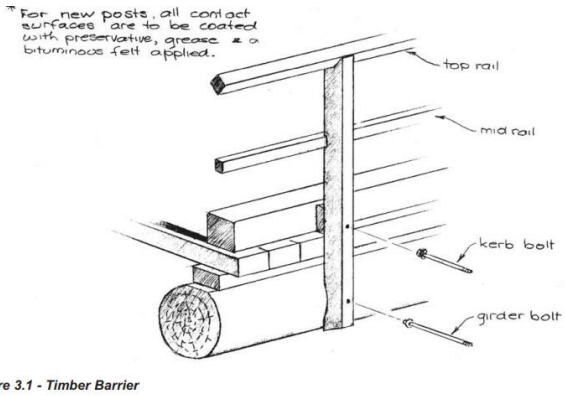


Figure 3.1 - Timber Barrier

Picture 18 – Standard timber bridge railing system

Source: Department of Transport and Main Roads 2005

Condition

Overall the bridge is in poor condition, with vegetation growing against the structure (Picture 19), timber members showing signs of deterioration (Picture 20), corroded bolts, and missing timber decking and railing.

Picture 19 – Vegetation impacting on structure

Source: Urbis 2019

Picture 20 – Condition of underside of timber decking

Source: Urbis 2019

4. SIGNIFICANCE ASSESSMENT

Before making decisions to change a heritage item, an item within a heritage conservation area, or an item located in proximity to a heritage listed item, it is important to understand its values and the values of its context. This informs decisions that will retain these values in the future (Heritage Office 2001). Statements of heritage significance summarise the heritage values of a place; why it is important, why a statutory listing was made to protect these values.

The Heritage Council of NSW has developed a set of seven (7) criteria for assessing heritage significance, which can be used to make decisions about the heritage value of a place or item. The following assessment of heritage significance has been prepared in accordance with the NSW heritage Division's 'Assessing Heritage Significance' guidelines.

4.1. ASSESSMENT AGAINST CRITERIA

Table 3 – Assessment of Heritage Significance

Criteria	Significance Assessment
A – Historical Significance *An item is important in the course or pattern of the local area's cultural or natural history.*	**Dog Leg Fence** The dog leg fence was erected before 1920, likely in the late nineteenth century along boundaries of the Conditional Purchase of Thomas Ellis Hobden. It provides a tangible link to the early non-Indigenous settlement of the area. This criterion is met at a local level. **Timber Bridge** The timber bridge is located along an unnamed tributary, likely constructed in the latter half of the twentieth century. It is not visible in the documentary record and does not provide substantial evidence of the past history of the area. This criterion is not met.
B – Associative Significance *An item has strong or special associations with the life or works of a person, or group of persons, of importance in the local area's cultural or natural history.*	**Dog Leg Fence** The dog leg fence was constructed on land owned and occupied by Thomas Hobden. While it is likely to have historical associations with the Hobden family, this is not confirmed. This criterion is not met. **Timber Bridge** The timber bridge was constructed on land owned and occupied by Richard and then John Hobden. While it is likely to have historical associations with the Hobden family, this is not confirmed. This criterion is not met.

Criteria	Significance Assessment
C – Aesthetic Significance *An item is important in demonstrating aesthetic characteristics and/or a high degree of creative or technical achievement in the local area.*	**Dog Leg Fence** **While the dog leg fence does not demonstrate distinctive aesthetic attributes in form or composition, it does demonstrate innovation in the use of local materials to meet the Conditional Purchase conditions requiring a fence to be erected within the first three years of purchase.** This criterion is met at a local level. **Timber Bridge** The timber bridge is not considered to demonstrate picturesque attributes and it is a standard timber bridge construction. This criterion is not met.
D – Social Significance *An item has strong or special association with a particular community or cultural group in the local area for social, cultural or spiritual reasons.*	**Dog Leg Fence** The fence is not documented as being valued by the community. This criterion is not met. **Timber Bridge** The timber bridge is not documented as being valued by the community. This criterion is not met.
E – Research Potential *An item has potential to yield information that will contribute to an understanding of the local area's cultural or natural history.*	**Dog Leg Fence** **Further physical and archival investigation into the fence has the potential to contribute to our understanding of both the development of the region and this early form of fencing.** This criterion is met at a local level. **Timber Bridge** The bridge is of a standard timber bridge design and not considered to be able to provide additional information which would contribute to our knowledge of the history and development of the area. This criterion is not met.

Criteria	Significance Assessment
F – Rarity *An item possesses uncommon, rare or endangered aspects of the local area's cultural or natural history.*	**Dog Leg Fence** **The fence is a unique form of dog-leg fence using stone blocks to support the bottom log. No other examples have been described or have been recorded (Pickard in Umwelt 2016). As such it comprises a rare and endangered example of earlier technology. It provides evidence of a once common aspect of early settlement and the use and changing of the landscape by the development of farms and its use as pastoral land.** This criterion is met at a State level. **Timber Bridge** The timber bridge is not considered rare or uncommon. This criterion is not met.
G – Representative *An item is important in demonstrating the principal characteristics of a class of NSWs (or the local area's):* • *cultural or natural places; or* • *cultural or natural environments.*	**Dog Leg Fence** **While not demonstrating a high degree of integrity, the dog leg, with the use of supporting stone blocks, demonstrates an unusual variation to this early type of fencing.** This criterion is met at a State level. **Timber Bridge** The bridge has been constructed to a standard design but is in poor condition and not a good example of its type. This criterion is not met.

5. MANAGEMENT RECOMMENDATIONS

The following recommendations have been made in accordance with Burra Charter principles which requires personnel involved in the management of the heritage place to have an understanding of its significance prior to making decisions about its ongoing use and conservation.

5.1. TIMBER BRIDGE

The bridge was assessed as not meeting threshold for heritage listing, demonstrating that it has a low level of cultural heritage significance. The historic feature has been photographically recorded, measured, and its location recorded. No additional management measures are recommended.

5.2. DOG LEG FENCE

The dog leg fence has been assessed as being of potential State significance, and the following recommendations are made to ensure its ongoing conservation:

1. The fence and area adjacent should be cleared of vegetation and debris with assistance from an historical archaeologist to ensure all associated heritage fabric is retained.

2. An archival recording of the feature should be undertaken following clearance activities in accordance with NSW Heritage Office guidelines "*How to Prepare Archival Records of Heritage Items*," NSW Heritage Office, 1998.

3. Following full survey and recording, the extent of the fence should be clearly recorded in HVO's Geographic Information System.

4. All personnel and contractors undertaking maintenance works in the vicinity should be made aware of the presence of the heritage feature and ensure that no fabric is removed or altered.

5. Prior to any works which may have a direct or indirect impact on the fence, a Heritage Impact Assessment should be prepared by a suitably qualified heritage professional to ensure any potential impacts are mitigated.

6. CONCLUSION

6.1. TIMBER BRIDGE

No historical records for the bridge have been located as part of this assessment. Nineteenth and twentieth plans do not show the bridge, and the tributary is unnamed so not considered to be a major crossing in the historical record. While a road existed to the south since the mid-late nineteenth century, a road running in this direction has only existed in the last few decades since the land has been used for mining.

The physical fabric also indicated a twentieth century construction with timber planks used for abutments have been circular sawn, and transverse rather than longitudinal timber decking.

Timber girders are the most common bridge type (RTA 2008), and the example does not demonstrate any unique or rare attributes.

This is not considered to be significant at State or local level.

6.2. DOG LEG FENCE

The dog leg fence was likely constructed in the latter part of the nineteenth century, with the earliest historical records of its existence dating to 1920.

While overall the fence is considered to be in poor condition, this assessment recorded over 300m of the structure, demonstrating that the fence is still legible in the environment.

No similar examples with the use of stone blocks are known to exist and it has previously been assessed by heritage fence expert, John Pickard as potentially being of State significance.

This assessment concurs with Pickard's assessment that it has historical, technological and research value and potentially of State heritage significance.

7. REFERENCES

Department of Transport and Main Roads 2005 *Timber Bridge Maintenance Manual Part Two – Component Maintenance,* Bridge Asset Management, Structures Division Road System and Engineering

Heritage Office 2001, Assessing Heritage Significance, Heritage Office, Parramatta.

Pickard, John. 2009. Illustrated Glossary of Australian Rural Fence terms. Heritage Council of NSW.

Pickard 2013 Dog-leg and cockatoos: clarifying two confused and confusing early Australian fencing terms. Australasian Historical Archaeology, 31:2013.

Roads and Traffic Authority 2008 *Timber Bridge Manual Edition 1, Revision 0*

Umwelt 2016 United Wambo Open Cut Coal Mine Project Heritage Impact Assessment, May 2016

DISCLAIMER

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