

**Central Goldfields Shire Council**

**Carisbrook Flood and Drainage Mitigation Treatments**

# **Aboriginal Cultural Heritage Due Diligence Assessment**



**Report to Central Goldfields Shire Council**

**17 October 2018**

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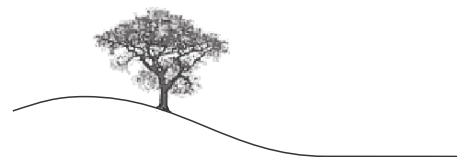
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**Landscape**

Natural and Cultural Heritage Management

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## Executive Summary

Central Goldfields Shire Council proposes to undertake works to mitigate flooding at Carisbrook in central Victoria. Works include construction of an earthen levee and installation of drainage infrastructure.

As part of the planning approvals process preceding the proposed infrastructure upgrade Landscape's principal research scientist Dr Matt Cupper was engaged by Central Goldfields Shire Council to conduct a due diligence investigation to identify any possible Aboriginal cultural heritage issues that might need to be addressed prior to construction of the proposed infrastructure. Dr Cupper is a qualified archaeologist and geoscientist, with 19 years' experience as a cultural heritage practitioner and high-level expertise in geomorphology and soil science.

No Aboriginal cultural heritage sites have previously been recorded in the upgraded infrastructure corridor proposed for flood mitigation works. Predictive modelling shows that there is a low to negligible potential for Aboriginal cultural heritage to occur in the proposed work corridor.

**This scoping study concludes the activity area for the proposed flood mitigation works is not an area of cultural heritage sensitivity according to the *Aboriginal Heritage Regulations 2018*.**

**Accordingly, the proposed flood mitigation works do not require a mandatory Cultural Heritage Management Plan (CHMP) under Section 46 of the *Aboriginal Heritage Act 2006*.**

## Contents

<b>EXECUTIVE SUMMARY</b> .....	<b>ii</b>
<b>CONTENTS</b> .....	<b>iii</b>
<b>1 INTRODUCTION</b> .....	<b>1</b>
1.1 Aims of the Investigation.....	1
1.2 Personnel Involved in the Assessment .....	2
<b>2 CONTEXTUAL INFORMATION</b> .....	<b>3</b>
2.1 Legislative Context .....	3
2.1.1 <i>Aboriginal Heritage Act 2006</i> .....	3
2.2 Environmental Context .....	3
2.3 Aboriginal Cultural Heritage Context.....	4
2.3.1 Aboriginal Ethno-History .....	4
2.3.2 Previous Aboriginal Archaeological Studies.....	5
2.3.3 Previously Identified Aboriginal Cultural Heritage in the Study Area .....	6
<b>3 CULTURAL HERITAGE PREDICTIVE MODEL</b> .....	<b>7</b>
<b>4 FIELD INSPECTION</b> .....	<b>8</b>
<b>5 ASSESSMENT OF PROPOSED DEVELOPMENT ACCORDING TO ABORIGINAL HERITAGE REGULATIONS 2018</b> .....	<b>11</b>
<b>6 CONCLUSIONS AND RECOMMENDATIONS</b> .....	<b>14</b>
<b>7 REFERENCES</b> .....	<b>15</b>

## List of Figures

<b>Figure 1.</b> Southern section of corridor proposed for levee construction.....	8
<b>Figure 2.</b> Southern section of corridor proposed for levee construction.....	9
<b>Figure 3.</b> Northern section of corridor proposed for levee construction. ....	9
<b>Figure 4.</b> Southern section of corridor proposed for levee construction.....	10
<b>Figure 5.</b> Northern section of corridor proposed for levee construction. ....	10
<b>Figure 6.</b> Carisbrook 1:25,000 topographic map showing the watercourse within Bluchers Gully terminating in a dam 1500 m west of the activity area and an intermittent floodway and artificial drain within/near the activity area.....	12
<b>Figure 7.</b> Southern section of corridor demonstrating the significant ground disturbance caused by drain construction. ....	13
<b>Figure 8.</b> Significant ground disturbance caused by alluvial gold mining.....	13

## List of Tables

<b>Table 1.</b> Desktop predictive model of encountering Aboriginal cultural heritage sites in the activity area.....	7
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## List of Abbreviations

AV – Aboriginal Victoria

CHMP – Cultural Heritage Management Plan

VAHR - Victorian Aboriginal Heritage Register

# 1 Introduction

Central Goldfields Shire Council proposes to undertake works to mitigate flooding at Carisbrook in central Victoria. Works include construction of an earthen levee and installation of drainage infrastructure.

As part of the planning approvals process preceding the proposed infrastructure upgrade Landskape's principal research scientist Dr Matt Cupper was engaged by Central Goldfields Shire Council to conduct a due diligence investigation to identify any possible Aboriginal cultural heritage issues that might need to be addressed prior to construction of the proposed infrastructure. Dr Cupper is a qualified archaeologist and geoscientist, with high-level expertise in geomorphology and soil science. He is also a Research Fellow in the School of Earth Sciences at The University of Melbourne and an Honorary Research Associate in the School of Geography and the Environment at the University of Oxford (see Section 1.2).

## 1.1 Aims of the Investigation

The aim of this cultural heritage due diligence investigation was to prepare a general statement identifying known Aboriginal cultural heritage places and objects and any areas of archaeological potential within the proposed flood mitigation work areas. Statutory requirements pertaining to Aboriginal cultural heritage were also examined to determine their applicability to the proposed development.

Preparation of this due diligence study involved review of the *Aboriginal Heritage Act 2006* and the *Aboriginal Heritage Regulations 2018*. Any Aboriginal cultural heritage places or objects recorded previously in the proposed work corridor were identified by searching the Victorian Aboriginal Heritage Register (VAHR) site database maintained by Aboriginal Victoria (AV).

A general predictive model examining possible cultural heritage site locations within the proposed upgraded infrastructure corridor was formulated from this and other relevant archaeological and environmental data. Preparation of this model also involved the use of topographic and geological maps and aerial photographs to identify landscape features likely to contain archaeological sites.

A field inspection of the proposed upgraded infrastructure corridor was undertaken to complement the predictive model of the desktop assessment, examine the ground surface and determine the actual risk to cultural heritage.

## 1.2 Personnel Involved in the Assessment

Landscape's principal research scientist Dr Matt Cupper undertook the investigation and produced this report. Appendix A contains a summary copy of Dr Cupper's CV.

Dr Cupper has a wide background in the sciences and humanities, with degrees (including a PhD) in archaeology and classical history, geology and botany, with particular expertise in understanding the formation of archaeological sites and Quaternary environments. He has published extensively on these topics in high-profile, peer-reviewed scientific journals and was lead author for the Quaternary chapter of the *Geology of Victoria* (Cupper *et al.* 2003), the current, premier reference to Victoria's geology.

Dr Cupper is currently a Research Fellow in the School of Earth Sciences at The University of Melbourne ([www.findanexpert.unimelb.edu.au/display/person20521](http://www.findanexpert.unimelb.edu.au/display/person20521)), where he manages the luminescence dating facility in addition to teaching geological methods and sedimentary geology to undergraduate students and supervising postgraduate research. Dr Cupper is also an Honorary Research Associate in the Landscape Dynamics group of the Oxford Centre for the Environment in the School of Geography and the Environment at the University of Oxford (<http://www.geog.ox.ac.uk/research/landscape/old/people.html>).

As a consulting archaeologist and geoscientist, Dr Cupper has been engaged in hundreds of management and research-oriented studies throughout southeastern Australia for industry and government.

Dr Cupper is also a Heritage Advisor according to the standards of Aboriginal Victoria: (<http://www.dpc.vic.gov.au/index.php/aboriginal-affairs/aboriginal-cultural-heritage/cultural-heritage-advisors>).

## 2 Contextual Information

### 2.1 Legislative Context

All Victorian registered and unregistered Aboriginal cultural heritage sites are protected by the *Aboriginal Heritage Act 2006* (commenced 28 May 2007). This Act prohibits the wilful destruction or disturbance of any Aboriginal cultural heritage site, place or object, whether on private or public land.

Aboriginal Victoria is the Victorian State Government agency that administers this Act.

#### 2.1.1 *Aboriginal Heritage Act 2006*

The *Aboriginal Heritage Act 2006* and its *Aboriginal Heritage Regulations 2018* are of particular relevance to the proposed development. A core component of this Act is the preparation of Aboriginal Cultural Heritage Management Plans (CHMPs), which are required under certain circumstances for high impact activities.

The regulations can be used to determine if an Aboriginal Cultural Heritage Management Plan is required for an activity. Section 5 of this scoping study makes such a determination for the proposed flood mitigation works. The regulations also detail the standards expected of an Aboriginal Cultural Heritage Management Plan.

### 2.2 Environmental Context

The proposed works would be located on alluvial plains at Carisbrook in the Midlands of Victoria. The geological framework of these dissected uplands of central Victoria comprises hills and plateaux of Ordovician (500-465 million year old) marine sandstones of the Castlemaine Group and late Neogene and Quaternary (past few million year old) volcanic lava flows (VandenBerg 1997). The geology of the study area is alluvial sediments deposited in the valleys of Deep, McCallum and Tullaroop Creeks and precursor streams over the Quaternary (the past 2 million years; Joyce and Webb 2003).

Prior to settlement by Europeans, the alluvial plains are likely to have supported a vegetation cover of eucalypt woodlands with a grassy understorey (DELWP 2018).

Overall, the environment of the proposed work corridor have been extensively modified by past land use. Since the establishment of Carisbrook pastoral run in 1839 (Spreadborough and Anderson 1983), Europeans have cleared and levelled the proposed work areas. Extensive earthworks have previously occurred along its entire length to construct infrastructure including roads, fences, culverts, drains and levees and during past alluvial gold mining.



## 2.3 Aboriginal Cultural Heritage Context

### 2.3.1 Aboriginal Ethno-History

At the time of first contact with Europeans, Aboriginal people of the Dja Dja Wurrung language group occupied the part of the Victorian Midlands encompassing the study area (Barwick 1984, Clark 1990). The Dja Dja Wurrung were part of the Kulin group of languages, who included peoples of the related Bun wurrung (or Bunurong)–, Daung wurrung (or Taungurong)–, Djab wurrung–, Ngurai-illam wurrung–, Wath wurrung (or Wathaurong) and Woi wurrung (or Woiworung)–speakers (Barwick 1984, Clark 1990). These language groups shared similar language and kinship systems, notably the division members into patrilineal moieties (two-part social classification) termed ‘Waa’ (raven) and ‘Bungil’ (eagle) (Clark 1990).

Clark (1990) estimates that there were at least 25 clans in the Victorian Midlands encompassing the study area, with between 40-120 adult men, women, adolescents and children in each, suggesting a total population of around 1000-3000 people.

Aboriginal people caught fish including eels, freshwater crayfish, yabbies and tortoises in the streams and wetlands in the region (Dawson 1881). Fish traps were also constructed, with Chief Protector of Aborigines George Augustus Robinson noting a system of channels and weirs near the Grampians (Bird 1984). Nets were used to catch waterbirds, whose eggs were also collected. Some of the other animals that Aboriginal people of the Midlands hunted include kangaroos, wallabies, emus, possums, echidnas, lizards, snakes and frogs (Dawson 1881, Howitt 1904). Plant foods included native millet, panic grass, pigface fruits, wild cherries, kangaroo apple, tubers, yams, roots and other grass grains (Dawson 1881, Gott 1983, Zola and Gott 1992).

Aspects of the initial interaction between Europeans and the Aboriginal people of the Midlands led to violent conflict. Aborigines were shot, poisoned and displaced from their land by pastoral settlers and, in retaliation, sheep were speared and settlers threatened (Bride 1898, Clark 1990). In response, the Aboriginal Protectorate system was introduced, with Assistant Protector Edward Park establishing the Mount Franklin Protectorate Station near Daylesford (Clark 1990). The Aboriginal Protectorate recorded a rapid decline in Dja Dja Wurrung numbers, caused by dispossession of land and the consequent destruction of habitat and social networks. Diseases including malnutrition also took their toll.

Many Dja Dja Wurrung continued to live by “fringe dwelling” on the outskirts of mining settlements and survived largely through begging, as their traditional food resources

were greatly depleted. Honorary Correspondent depots were set up around Victoria to dispense food and other supplies to Aboriginal people. The Aboriginal Protectorate system was replaced in 1860 by the Central Board for the Protection of Aborigines (Barwick 1984). It established Coranderrk Station at Healesville and the Framlingham Mission at Purnim for the surviving Dja Dja Wurrung people.

Today, the interests of Aboriginal cultural heritage are in the custodianship of the Dja Dja Wurrung Clans Aboriginal Corporation.

### **2.3.2 Previous Aboriginal Archaeological Studies**

Previous archaeological studies of sites in the Victorian Midlands have demonstrated Aboriginal occupation dating back to the last glacial period some 26,000 years ago. The oldest archaeological site in the region is a swamp near Lancefield, approximately 80 km southeast of the study area (Gillespie *et al.* 1978). The deposits of this swamp contain the fossilized bones of extinct giant marsupials or 'megafauna' in association with Aboriginal stone artefacts. These finds indicate that Aboriginal people and megafauna interacted for at least 7,000 years. However, no evidence was recovered to suggest that Aboriginal people had hunted the megafauna or had butchered them for food.

Early Aboriginal occupation of the Western Uplands is also evident from the Dual rockshelter in the Grampians, approximately 100 km west of the study area. Stone artefacts and ochre at the lower levels of the Dual sequence have been radiocarbon dated to 22,140 ± 160 years before present (Beta-88523; Bird *et al.* 1998). The only formal tool types in these early assemblages are thumbnail scrapers, which are present throughout the sequence. Later mid-Holocene (around 5000 years ago) assemblages include backed microliths and greenstone flakes. This is the oldest, continuous cultural sequence in Victoria.

One of the most impressive Aboriginal sites in Victoria is the Carisbrook Ceremonial Stone Arrangement first described by Massola (1963). It is a large, boomerang-shaped stone arrangement 60 m long and 5 m wide associated with two stone circles and a small rock cairn. The site overlooks Tullaroop Creek some 4 km southeast of Carisbrook. Massola (1956) also recorded three Aboriginal rock wells on the outskirts of Maryborough, west of the study area.

Most surface archaeological sites in the region probably date to within the past 5000 years. One of the most significant is the Mount William Axe Quarry also located near Lancefield (McBryde 1984). This is a site where Aboriginal people have extracted diorite or 'greenstone' for the manufacture and trade of stone axe heads. Ground edge axe heads from this quarry have been found throughout Victoria and as far afield as Broken

Hill in NSW. The geographical spread of these axe heads is used by archaeologists to infer past Aboriginal exchange networks. Other significant Aboriginal stone quarries in the region are located at Mount Camel (Mitchell 1949) some 80 km east of Carisbrook. These sites comprise worked greenstone strewn over the hillsides of Mount Camel. Among the artefact types represented are axe blanks and large struck flakes. These were also used by McBryde (1984) to reconstruct trade networks in the region.

### **2.3.3 Previously Identified Aboriginal Cultural Heritage in the Study Area**

According to Aboriginal Victoria's Victorian Aboriginal Heritage Register (VAHR), accessed on 4 October 2018, no Aboriginal cultural heritage places have been located previously in the proposed work corridor. The nearest Aboriginal archaeological site is a low density artefact distribution (VAHR site number 7623-0226), some 1 km west of the proposed work corridor. There are also a number of Aboriginal cultural heritage places along Tullaroop Creek, approximately 3-4 km east of the proposed work corridor. These include stone artefact scatters, a tree scarred by Aboriginal people, and a stone arrangement.

### 3 Cultural Heritage Predictive Model

Previous archaeological studies indicate that the most frequently recorded Aboriginal cultural heritage places in the Victorian Midlands are stone artefact scatters and scarred trees (AV Victorian Aboriginal Heritage Register for Creswick 7623 1:100,000 map sheet area). Earthen features such as mounds have also been identified in the archaeological record. Other site types include stone sources, rock art and rock shelter sites, stone arrangements and burials. Based on these observations of archaeological site types and their distribution and landscape setting, the following predictive model of Aboriginal cultural heritage site locations for the Carisbrook flood mitigation works can be proposed. A summary of the predictive model is presented in Table 1.

Past Aboriginal occupation of the Victorian Midlands would have focussed on the region's creeks and their associated wetlands because these water sources would have offered a richer resource zone than more poorly watered parts of the landscape. Consequently, most archaeological sites can be expected adjacent to water sources. However, the proposed infrastructure areas for the Carisbrook flood mitigation works would largely traverse the flood plains perpendicularly, rather than paralleling them, reducing the potential for encountering cultural heritage.

The potential for encountering Aboriginal cultural heritage in the planned infrastructure corridor for the Carisbrook flood mitigation works is also substantially reduced by the high degree of previous disturbance of the study area. The past removal the original vegetation lessens the probability that scarred trees would be encountered. Similarly, substantial modification of the original land surface by earthworks associated with previous gold mining, the construction of roads, culverts, drains, dams and levees, installation of fences, power lines and telecommunication cables, and agricultural clearing and ploughed cultivation would have destroyed earthen features such as mounds and hearths and stone features such as arrangements and ceremonial rings, had they previously existed in the proposed infrastructure areas.

**Table 1.** Desktop predictive model of encountering Aboriginal cultural heritage sites in the activity area.

Scarred trees	Stone artefacts	Earthen features	Stone features	Burials	Hearths	Shell middens
Low	Low	Negligible	Negligible	Negligible	Negligible	Negligible

## 4 Field Inspection

Project archaeologist Dr Matt Cupper inspected the proposed upgraded infrastructure corridor on 19 June 2015 and 30 September 2018. No Aboriginal archaeological sites were observed. Moreover, the area has little archaeological potential and detailed archaeological investigation is not warranted. If Aboriginal people had occupied the subject land, any possible traces of this occupation are likely to have been destroyed by past development.

The corridor has been extensively modified by past European land use practices. Almost all of the original vegetation has been completely removed and most of the corridor cut and levelled. The topsoil and subsoil has been substantially disturbed during past excavations for the construction of roads, culverts, drains and levees (Figures 1-5). This has included cutting up to several metres into the original land surface. Earthworks have also heavily modified the remainder of the topsoil and subsoil during past excavations during alluvial gold mining and to install utilities, destroying all of the original land surface. This extensive previous ground disturbance means that little of the original land surface for the entire infrastructure corridor remains intact.



**Figure 1.** Southern section of corridor proposed for levee construction.



**Figure 2.** Southern section of corridor proposed for levee construction.



**Figure 3.** Northern section of corridor proposed for levee construction.



**Figure 4.** Southern section of corridor proposed for levee construction.



**Figure 5.** Northern section of corridor proposed for levee construction.

## 5 Assessment of Proposed Development According to *Aboriginal Heritage Regulations 2018*

All Aboriginal cultural heritage is protected by the State *Aboriginal Heritage Act 2006*. Responsibility rests with the proponent of a development to demonstrate that due care and diligence have been taken to identify and avoid impacts on archaeological sites through construction. Aboriginal Cultural Heritage Management Plans (CHMPs) are required by the Act under certain circumstances for high impact activities.

Using the *Aboriginal Heritage Regulations 2018* that accompany the *Aboriginal Heritage Act 2006* it is possible to determine whether the development proposal for the Carisbrook flood mitigation works would trigger the requirement for an Aboriginal CHMP.

The *Aboriginal Heritage Regulations 2018* (r. 7) stipulate that an Aboriginal CHMP is required for a proposed activity, if:

- (a) all or part of the activity area for the activity is an area of *cultural heritage sensitivity*; and,
- (b) all or part of the activity is a *high impact activity*.

Part (b) of regulation 7 is met because a utility installation impacting an area exceeding 25 square metres is a high impact activity (see r.46[1][b][xxvii][D]).

However, the development area is not located within an area of cultural heritage sensitivity as defined by Division 3 of the Victorian *Aboriginal Heritage Regulations 2018*. Specifically, the area is not within 50 metres of a registered Aboriginal place (r.25[2]), 200 metres of a waterway (r.26[1]), prior waterway (r.27[1]), ancient lake (r.28[1]), declared Ramsar wetland (r.29[1]), coastal crown land (r.30[1]) or coastal land (r.31[1]), a park (r.32[1]), the High Plains (r.33[1]), the Koo Wee Rup Plain (r.34[1]), a greenstone outcrop (r.35[1]), a stony rise (r.36[1]), a volcanic cone (r.37[1]), a cave (r.38), a lunette (r.39[1]), a dune (r.40[1]) or a sand sheet (r.41[1]).

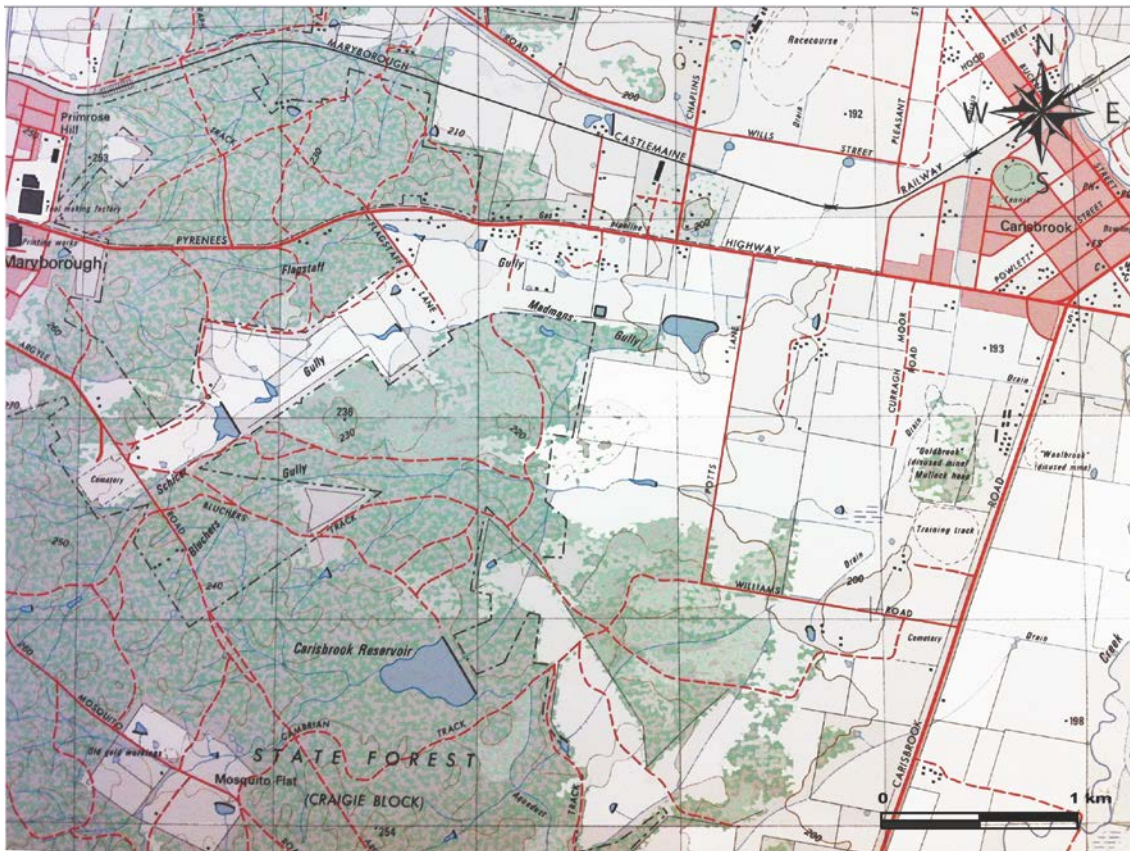
The proposed infrastructure traverses an intermittent floodway and is near an artificial drain that intermittently carry stormwater, but these are not waterways as defined by r.4 of the *Aboriginal Heritage Regulations 2018* because they are not named according to the *Geographic Place Names Act 1998*. It has been argued (AV pers. comm. 20 March 2017) that these features are part of Bluchers Gully and hence named. However, the name *Bluchers Gully* on the VICNAMES register is a point feature several kilometres east, extrapolated from the superseded 1968 1:25,000 Carisbrook 7623 1-4 topographic map (Figure 6). The floodway and artificial drain are unnamed on the 1:25,000 Carisbrook 7623 1-4 topographic map. The features are similarly not named on the



current 1:30,000 Carisbrook 7623-1-4-4 topographic map or VICMAP HYDRO (the State's official waterways spatial data), nor is Bluchers Gully named on these. Additionally, the 1:25,000 Carisbrook 7623 1-4 topographic map does not depict the floodway and artificial drain as being part of Bluchers Gully. Moreover, the Macquarie Australian Dictionary defines a gully as “a fold in a mountain or hill with an intermittent watercourse running down it at its lowest point” and thus the term “Bluchers Gully” strictly refers to the fold rather than its watercourse.

AV's cultural heritage sensitivity mapping has no statutory weight, as reiterated in the Victorian Civil and Administrative Tribunal's (VCAT) *Morgan & Others v Mildura Rural City Council* [2014] VCAT 471 (5 December 2014) case. In that instance, VCAT agreed a feature that AV had deemed a waterway was not a waterway and therefore not an area of cultural heritage sensitivity. VCAT stated: “Dr Cupper's assessment quite correctly sets out that it is Division 3 of Part 2 of the AH Regulations that specifies what is an area of cultural heritage sensitivity and not the AAV plans”.

All of the floodway has been subject to significant ground disturbance during earthworks associated with past alluvial gold mining and artificial drain construction (Figures 7 and 8).



**Figure 6.** Carisbrook 1:25,000 topographic map showing the watercourse within Bluchers Gully terminating in a dam 1500 m west of the activity area and an intermittent floodway and artificial drain within/near the activity area.



**Figure 7.** Southern section of corridor demonstrating the significant ground disturbance caused by drain construction.



**Figure 8.** Significant ground disturbance caused by alluvial gold mining.

## 6 Conclusions and Recommendations

No Aboriginal cultural heritage sites have previously been recorded in the upgraded infrastructure corridor proposed for flood mitigation works. Predictive modelling shows that there is a low to negligible potential for Aboriginal cultural heritage to occur in the proposed work corridor.

**This scoping study concludes the activity area for the proposed flood mitigation works is not an area of cultural heritage sensitivity according to the *Aboriginal Heritage Regulations 2018*.**

**Accordingly, the proposed flood mitigation works do not require a mandatory Cultural Heritage Management Plan (CHMP) under Section 46 of the *Aboriginal Heritage Act 2006*.**

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