

# Statement of Environmental Effects

Accompanying a development application for

## INSTALLATION OF DOMESTIC WATER SUPPLY

From

DP751228-6- Crown Land

To

DP850927-5- S & S Carmichael

Kyalite NSW

March 2021

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## 1. Introduction

This statement of environmental effects has been prepared by the applicant, Simone Carmichael *B. App Sci (Environmental Analysis)*, to accompany a development application for new domestic water supply infrastructure at Kyalite NSW. The application is being lodged by Stuart and Simone Carmichael pursuant to Clause 4.12 of the Environmental Planning and Assessment Act 1979.

The proposal has been designed to achieve the relevant provisions of Balranald Local Environmental Plan 2010, Murray REP No. 2, relevant SEPPs, integrated approval requirements, other legislation and documents.

The applicants purchased land in Kyalite Village in January 2021 with the understanding that they would be required to apply for a domestic water pump site to supply water to their property. The land is comprised of two ½ acre lots; 12 Keogh Road (DP850927-5- ) has a three bedroom residence, 14 Keogh Road (DP850927-4- ) has a large shed where the applicants run a fabrication engineering business. The proposal would also supply lots adjacent, 1 to 3, under a shared water supply works approval from Water NSW.

Previously water had been supplied to all five lots via The Kyalite Hotel which was sold separately and the new owners have separated their pump and water access licence (WAL) and physically terminated the water supply.

The proposal involves installing a small electric pump and 265 meters of underground 2-inch polypropylene pipeline to supply domestic water to 12 Keogh Rd, Kyalite (DP850927-5- ) and adjoining lots.

This statement has been prepared having regard to the following documentation:

- Application for Development, Balranald Shire Council
- Landowners Consent Application, NSW Dept Planning Industry & Environment - Crown Lands
- Application for approval for water supply works, and / or water use, Water NSW

## 2. Site description and analysis

### 2.1 Location and property description

Kyalite is a small village on the Wakool River with a handful of houses, a pub and a population of around 100 people with surrounding farms. Kyalite is at the southern end of the Balranald Shire, 37km from the town of Balranald to the north and 56km from the rural city of Swan Hill in Victoria to the south.



Figure 1: Location of Kyalite NSW,

The proposal starts on Crown Land fronting the Wakool River with a 2-inch pipe transferring water from the Wakool River up an incline to Kyalite Rd then to existing line from the hotel at 12 Keogh Rd as shown on the plan below.



### Legend

- PUMP eg Orpa 544
- 2" POLY PIPELINE 265mm
- Lot/CP

## S & S CARMICHAEL Domestic Water Supply Proposal

Copyright. This map is not guaranteed to be free from error or omission. The reader should verify for any and all uses all the information in the map and any consequences of such use or omissions.



Datum/Projection: GCS GDA 1984  
IMAGERY DATE: 2013



Figure 2: Aerial view showing proposed pipeline and pump site. NB There is a drawing error on cadastre layer resulting in misalignment of lot boundaries.

## 2.2 Site characteristics

The site extends from the Wakool River with a gentle slope from the river edge to the preferred pump location which is on a flat section of riverbank 30 metres from the normal river edge. There are large River Red Gum (*Eucalyptus camaldulensis*) and immature River Cooba (*Acacia stenophylla*) trees lining the river edge with sparse native grasses & saltbush sp. On slope up to and along Kyalite & Keogh roads.

The site is an existing pump site servicing existing Water Access Licences, it is easily accessed by vehicle and no new roads will need to be constructed. Where practical trenches will follow previously disturbed land.



Figure 3: View of proposed Wakool River extraction site (pipes from other water users)



Figure 4: View from proposed pump site, 30m from the Wakool River.

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There is a moderate 1:6 slope from the pump site to Kyalite Road where the topography levels out again.



Figure 5: View from proposed pump site to the Kyalite Road.



Figure 6: View from Kyalite Road showing pipeline path north of Keogh Road.

There is a variety of existing utilities in the vicinity of the proposal including other pipelines, underground telecommunications, above ground powerlines, and fibre-optic cable. It is the intention of the applicants to engage professional consultants to locate all known and unknown utilities in the project pathway.



**Figure 7: House and shed 12 – 14 Keogh Road. Circle indicates junction with existing delivery line from the Kyalite Hotel.**

### **2.3 Surrounding development**

Kyalite is traditionally an agricultural production area producing wheat, beef and wool. More recently permanent plantings dominated by an extensive area of Pistachio trees have been developed close to the village.

There are numerous public camping reserves along the Wakool and Edward Rivers attracting increasing numbers of people enjoying the outdoors. The Crown land identified for this project also has a recreation reserve with a concrete boat ramp and picnic furniture installed and maintained by Balranald Shire to facilitate boating activities and visitors to the area.

The proposed pump and pipeline will not impact on the recreation reserve or those using it.

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**Figure 8: Bitumen access to boat ramp and picnic furniture adjacent to proposed pump site.**

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Figure 9: Pontoon walkway in Rec reserve and Pistachio irrigation infrastructure upstream of proposal site.



Figure 10: View downstream of the site

### 3. Details of proposal

#### 3.1 Proposed works

The installation of a pump and pipeline is essential to supply domestic water for the landholders of lots 1 to 5 on Keogh Road. The pre-existing water supply has been terminated at the Kyalite Hotel.

The design of the planned water supply infrastructure offers the lowest impact whilst being fit-for-purpose to reliably deliver a maximum of 15 Megalitres annually to the five lots on this proposal (Stock & domestic allocation is 3ML/lot).

The pump suction line will be 2-inch (blue stripe) polyethylene pipe with compliant foot valve suspended at least 1m below a float on the river surface and anchored to the river bed. The suction and float will be approximately 25m from the edge of the river.

The small centrifugal electric pump will be approximately 55m from the end of the suction hose (30m from the river's edge). It will be of a type similar to that shown below with maximum head (difference in elevation) 41m and maximum flow of 118lpm.

**500 SERIES**  
 MOULDED JET FARMMASTER PUMP  
 JET ASSISTED PRESSURE PUMP

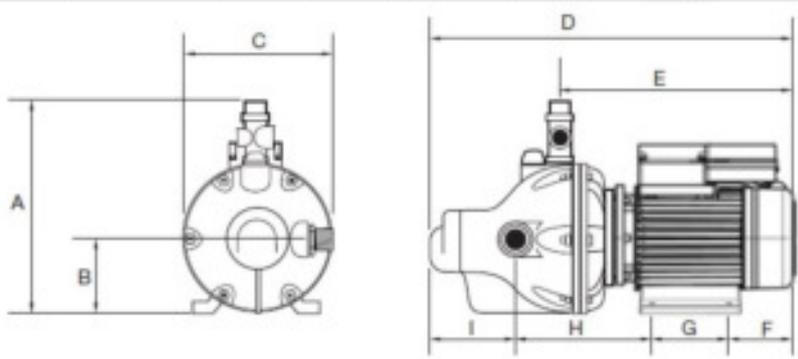


**FEATURES**

- Industrial grade corrosion resistant thermoplastics.
- No moving parts down bore.
- Built-in check valve.
- Shallow well lifts to 7.6m.
- Manual or automatic system.
- Max. head - 41m.
- Max. flow - 118lpm.

**DIMENSIONS**

Type	Maximum L x W x H	Weight approx.	Inlet	Pump outlet	Pressure kit outlet	Carton L x W x H	Packed weight
543/544	530 x 230 x 290 mm	25 kg	1 1/4" BSP (male)	3/4" BSP (female)	1" BSP (female)	590 x 300 x 330 mm	27 kg



Type	A	B	C	D	E	F	G	H	I
543/544	290	100	230	530	330	110	110	205	115

**PENTAIR**

L1100265 0515

Figure 11: Size specs for Onga 544 electric pump.

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The pump will be placed on a concrete pad and housed within a small purpose-built lockable pump shed, with steel frame and clad in colorbond corrugated iron, Pale Eucalypt® to blend into the surroundings. Power will be connected from a nearby pole by a suitably qualified electrician with permit of the relevant electrical provider.

The delivery pipe is 2-inch polyethylene which will be buried to a depth of no less than 600mm cover in a trench as close as possible to existing pipes where the ground has been previously disturbed. It will enter into the road reserve and travel under Kyalite Rd either through an existing pipe or by under-boring the road. It will remain in the road reserve for a further 100m following the northern side of Keogh Rd where it turns south and goes under Keogh Rd to join the existing inlet for 12 Keogh Rd.

The trench will be dug using suitable machinery (e.g. chain digger or mini excavator) 300mm wide and 900mm deep to ensure a minimum 600mm cover over the pipe. The trench digging will be under the direction of consultants qualified to locate all known and unknown utility services in the area including fibre optic cables.

There is a 21m difference in elevation from the pump to the house (min. elevation 60.00m, max. elevation 81.00m above sea level) as shown in the plan below. The specifications of the pump and pipe are adequate for this difference.

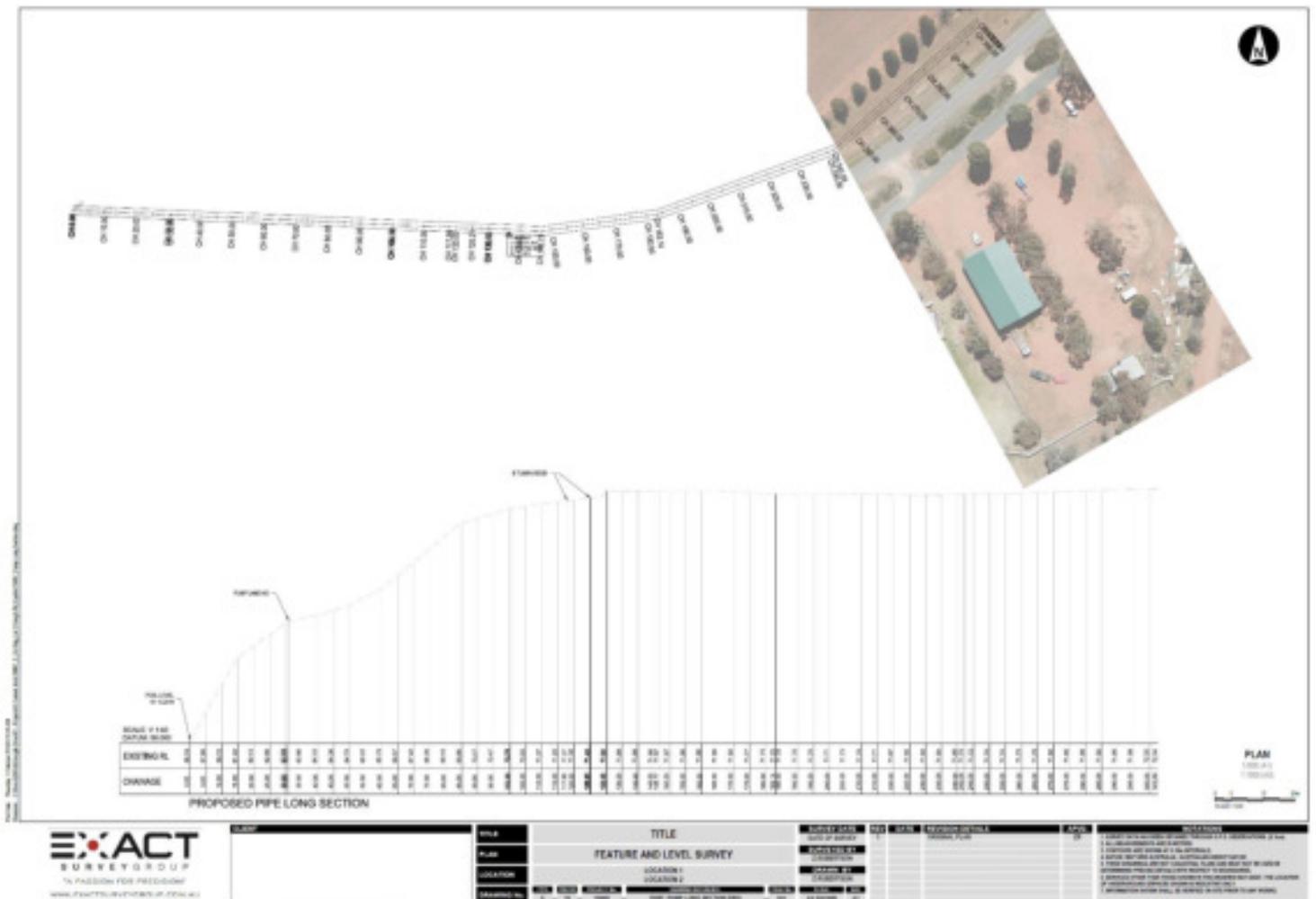


Figure 12: Pump long section feature and level survey conducted in 2019

## 4 Planning controls

### 4.1 Definition

The proposed pump and pipeline are defined as a Water Supply System for which the Balranald Local Environmental Plan 2010 provides the definition as:

*any of the following:*

- (a) a water reticulation system,*
- (b) a water storage facility,*
- (c) a water treatment facility,*
- (d) a building or place that is a combination of any of the things referred to in paragraphs (a)–(c).*

### 4.2 Zoning

In accordance with the Balranald LEP zoning maps the project covers three zones;

W1 Zone – Natural Waterways.

RU1 Zone – Primary Production

RU5 Zone - Village

The objectives of zone W1 is:

- To protect the ecological and scenic values of natural waterways.
- To prevent development that would have an adverse effect on the natural values of waterways in this zone.
- To provide for sustainable fishing industries and recreational fishing.

Development consent is required under zone W1 for the Water Supply System.

The objective of zone RU1 is:

- To encourage sustainable primary industry production by maintaining and enhancing the natural resource base.
- To encourage diversity in primary industry enterprises and systems appropriate for the area.
- To minimise the fragmentation and alienation of resource lands.
- To minimise conflict between land uses within this zone and land uses within adjoining zones.
- To encourage development that is in accordance with sound management and land capability practices, and that takes into account the environmental sensitivity and biodiversity of the locality.
- To support rural communities.
- To ensure the provision of accommodation for itinerant workers.

Development consent is required under zone RU1 for the Water Supply System.

The objective of zone RU5 is:

- To provide for a range of land uses, services and facilities that are associated with a rural village.
- To define the town boundaries of Balranald, Euston and Kyalite.
- To encourage and provide opportunities for population and local employment growth.
- To ensure development maintains and contributes to the character of the zone.
- To protect the amenity of residents.

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- To ensure that development does not create unreasonable or uneconomic demands for the provision or extension of services.
- To retain and facilitate expansion and redevelopment of the existing central business districts of the townships of Balranald and Euston and to further strengthen the core retail functions of those areas.

The Water Supply System is not specified as “Permitted without consent” or “Prohibited” so is permitted with consent.

Other relevant clauses from the LEP are as follows:

- 6.1 Biodiversity
- 6.2 Riparian land, waterways and groundwater vulnerability
- 6.3 Public utility infrastructure availability in Zone RU5 Village
- 6.5 Development on riverfront areas
- 6.6 Development on riverbeds and banks
- 6.7 Earthworks

An assessment of the relevant clauses is outlined below.

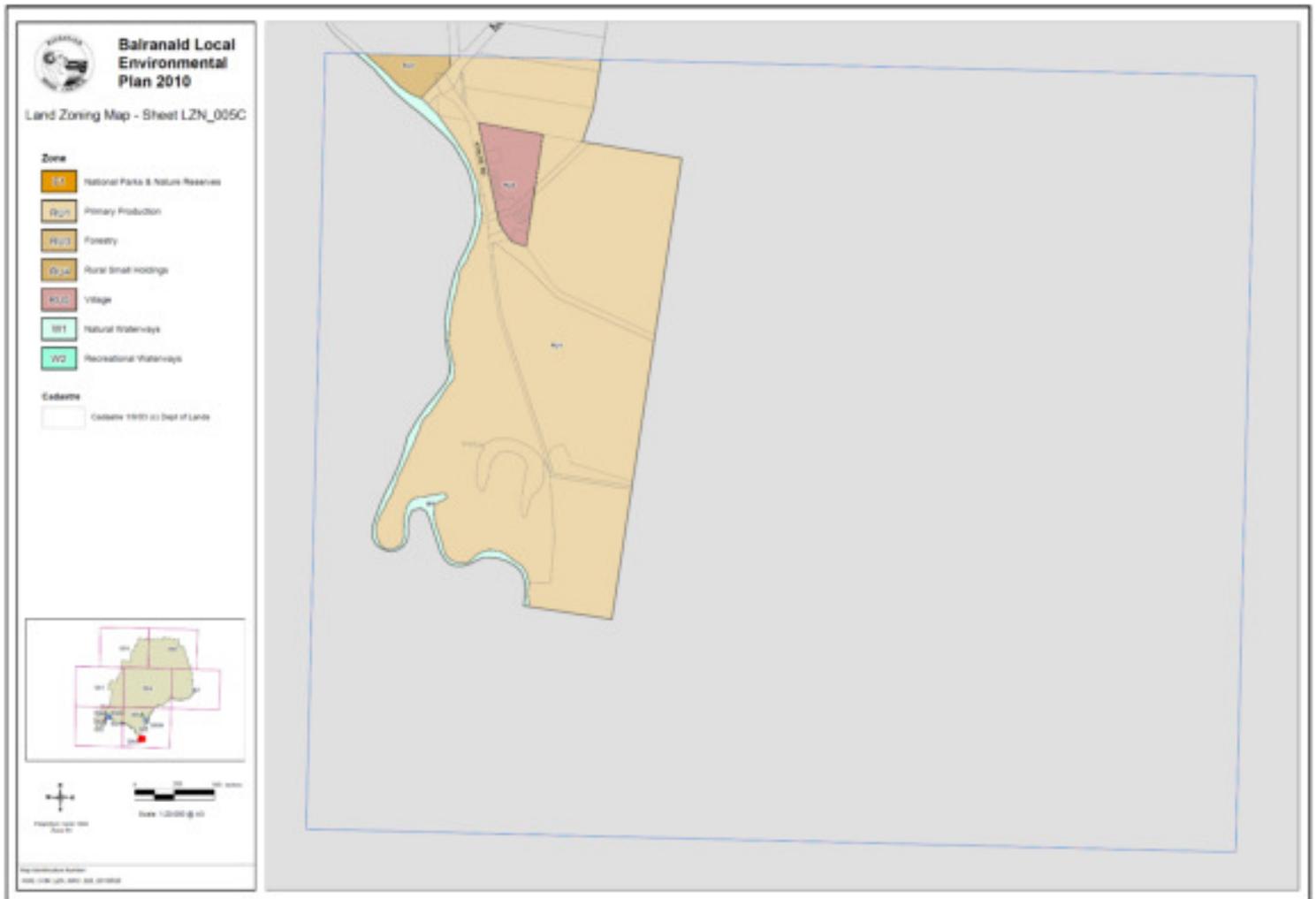


Figure 13: Zone map.

#### **4.3 Planning Controls**

The land is affected by the following mapping in addition to the zoning of the land:

- Riparian lands and waterways
- Biodiversity
- Wetlands

#### **4.4 Murray Regional Environmental Plan No.2 – Riverine land**

This plan applies to the area covered by the Balranald shire Council and is applicable in the assessment of this proposal. The objectives of this plan are:

- (a) to ensure that appropriate consideration is given to development with the potential to adversely affect the riverine environment of the River Murray, and
- (b) to establish a consistent and co-ordinated approach to environmental planning and assessment along the River Murray, and
- (c) to conserve and promote the better management of the natural and cultural heritage values of the riverine environment of the River Murray.

The plan outlines specific principles and planning controls that apply to this proposal and consultation which is required under the plan. Clause 12 does not specifically identify consultation for a water supply system. Clause 14 provides direction for the setback of development.

#### **4.5 Aboriginal cultural heritage**

All Aboriginal cultural heritage is protected by the NSW National Parks and Wildlife Act 1974. 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 works.

The proposed works are in line with the Due Diligence Code of Practice for the Protection of Aboriginal Objects in NSW

#### **4.5 Water Management Act**

A controlled activity approval authorises its holder to carry out a specified controlled activity at a specified location in, on or under waterfront land. Under the Water Management Act 2000 (WM Act), a controlled activity means:

- the erection of a building or the carrying out of a work (within the meaning of Environmental Planning and Assessment Act 1979), or
- the removal of material (whether or not extractive material) or vegetation from land, whether by way of excavation or otherwise, or
- the deposition of material (whether or not extractive material) on land, whether by way of landfill operations or otherwise, or
- the carrying out of any other activity that affects the quantity or flow of water in a water source.

## 5. Planning Assessment

### 5.1 Aboriginal Cultural Heritage

The Due Diligence Code of Practice steps through a series of questions aimed at ensuring the protection of Aboriginal Cultural Heritage. These are addressed below;

#### Step 1. Will the activity disturb the ground surface?

This project will involve disturbance of the ground surface. Trenches will be dug with a machine into ground that has previously been disturbed but also undisturbed ground.

If the answer is yes, move on to step 2a.

#### Step 2a. Search the AHIMS database and use any other sources of information of which you are already aware.

A search of the AHIMS records was conducted on 22 March 2021 locating two recorded sites in the area;

- 47-5-0005 Kyalite Picnic Reserve Midden (50m west of the proposed pump site)
- 47-5-0004 Kyalite Bridge Midden 1 (800m to the north of proposed works)

Both sites are freshwater mussel shell middens.

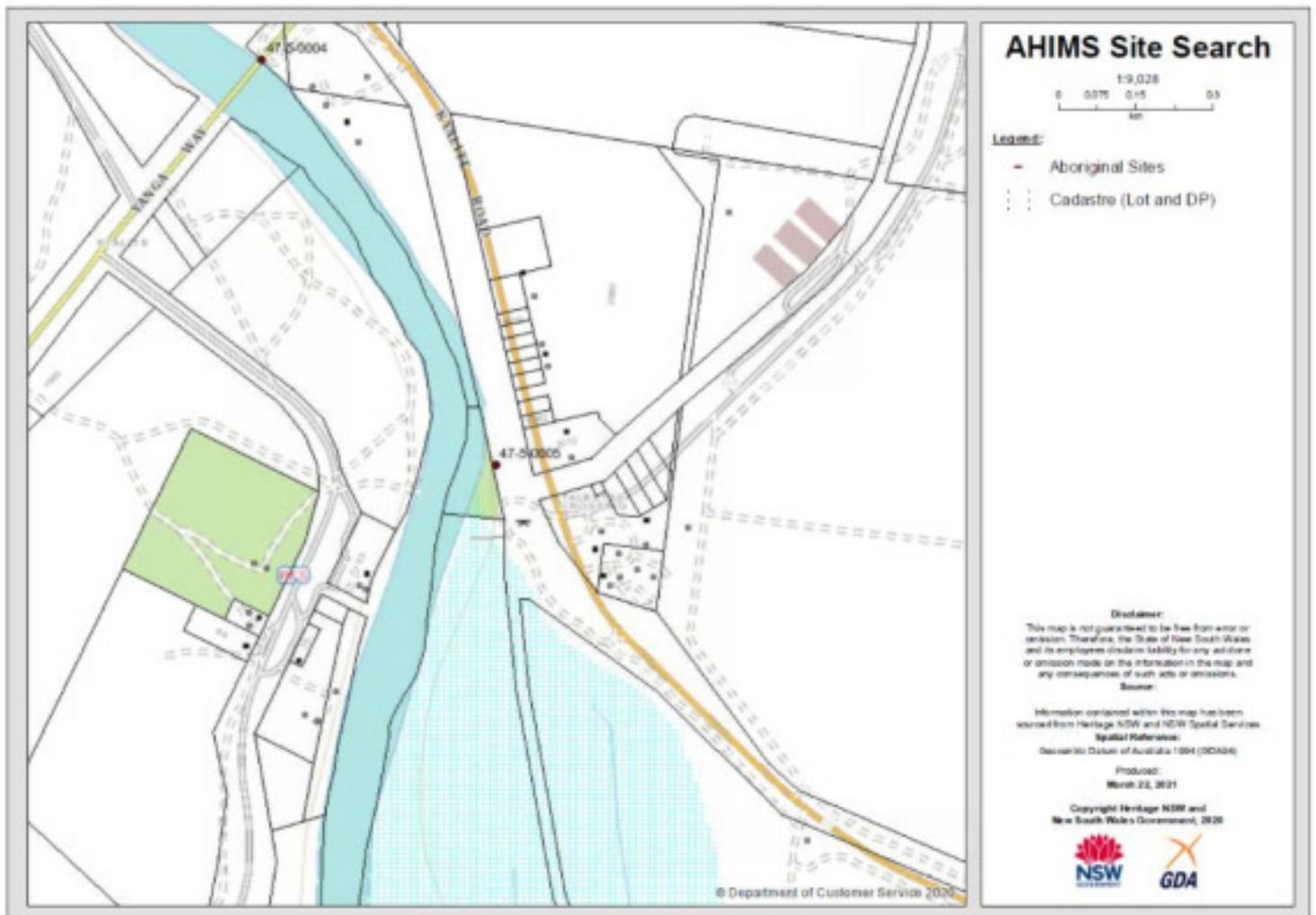


Figure 14: AHIMS search results

### Step 2b. Activities in areas where landscape features indicate the presence of Aboriginal objects

The proposed activity is:

- ✓ within 200m of waters, or
- ✗ located within a sand dune system, or
- ✗ located on a ridge top, ridge line or headland, or
- ✗ located within 200m below or above a cliff face, or
- ✗ within 20m of or in a cave, rock shelter, or a cave mouth

and is on land that is not disturbed land (see Definitions) then you must go to step 3

### Step 3. Can you avoid harm to the object or disturbance of the landscape feature?

Yes, the identified site is 50m away and no trenching or digging will be carried out in that area. The site will not be disturbed or impacted in any way.

### Step 4: Desktop assessment and visual inspection

This step is not mandatory as harm can be avoided, however a thorough visual inspection was conducted on 22/03/2021 by the author who is trained in Aboriginal Site Identification with extensive experience with this feature type.

A large midden was located containing packed mussel shell, heat retainers and burnt material. It is 48m from the proposed pump site and can be avoided hence no harm will come to this site. No other sites were located during this inspection.



Figure 15: AHIMS Site 47-5-0005 location and distance from pump



**Figure 16: Image taken during site inspection AHIMS site 47-5-0005 Mussel shell midden**

#### **Step 5. Further investigations and impact assessment**

Not Required, site can be avoided.

This does not preclude any unexpected finds. If, during the pipe-laying any Aboriginal objects, as defined under the National Parks and Wildlife Act, are uncovered or discovered the applicant will cease work immediately and notify the Environment Line on 131555, Work must not recommence until written advice to do so has been provided.

If, during the course of the activity, any human skeletal remains are located the applicant must:  
immediately cease the activity and not further harm these remains;  
secure the area to avoid further harm to the remains;  
notify the local police and Environment Line on 131555 as soon as practicable and at that time provide any available details about the nature and location of the remains;

recommence the activity only after receiving confirmation in writing from the local police or heritage authority that it is appropriate to do so.

## 5.2 Fauna & Flora

A search of NSW Bionet covering an area 10x10km around the project site was conducted on 23/03/2021. The results listed a total of 161 species.

These included 1 reptile (Marbled Gecko), 6 birds – 4 of which are classed as threatened, 1 mammal - Common Brushtail Possum, and the rest are plants – 40 of which are introduced species however one native grass is also listed as threatened.

Common name	Scientific name	NSW status	Comm. status	No. of records
Black Falcon	<i>Falco subniger</i>	V		1
Australian Bustard	<i>Ardeotis australis</i>	E1		1
Major Mitchell's Cockatoo	<i>Lophochroa leadbeateri</i>	V,2		1
Regent Parrot (eastern subspecies)	<i>Polytelis anthopeplus monarchoides</i>	E1,3	V	3
A spear-grass	<i>Austrostipa metatoris</i>	V	V	9

**Table1: showing threatened species from Bionet search V = Vulnerable, E1 = Endangered (Biodiversity Conservation Act 2016), 2 = Sensitivity Class 2 (Sensitive Species Data Policy), 3 = Sensitivity Class 3 (Sensitive Species Data Policy)**

The birds listed will not be impacted as they are highly mobile and likely to move away if disturbed. The site will be checked for hollow-bearing trees and nests to ensure nesting is not occurring during construction.

The site of the pump and pipeline will not require removal of trees. Some introduced weed species will be removed and native shrubs and grasses may have minor disturbance during construction, however, these plants will quickly regenerate and not be disturbed by the project in the long term.

A thorough check has been conducted and no *Austrostipa metatoris* located along the proposed pipeline. The Bionet search results showed the closest known records of this spear-grass spp. to be located over 2km away in Murray Valley Regional Park.

The project does not constitute a threat to any of the listed threatened species.

## 5.3 Murray REP No. 2

The Murray REP No2 sets out specific principles that need to be considered when undertaking any development on land that the plan applies to. A response to the principles is offered below.

### Access

The proposed works will not adversely impact the public's ability to access the river or foreshore areas. Access will remain as it was prior to the activities subject to this application.

The suction pipe and float will extend into the River however will not hinder river navigation.

**Bank disturbance**

The works proposed will not disturb the bank of the river. The suction pipe will be laid on top of the bank surface, similar to the pipe shown in Figure 4 (P2).

**Flooding**

The site is subject to inundation by floodwater in a moderate flood event but the works will not be adversely impacted by floods. The suction pipe and pump will be moved to higher ground out of reach of flood water when flooding is anticipated.

The proposed development of the site will not deprive the surrounding ecosystems of the benefits of periodic flooding.

There will no increased hazards or risks from flooding as a result of this proposed development. The proposed development will not have any material impact on risk from flooding.

There will be no redistributive effect on flooding as a result of the proposed works. There will be no impact of this development on the flow of floodwaters.

The proposed works will not impact any other land in the vicinity. All adjoining land consists of the river bank and by definition is subject to inundation.

There will no impact on the ability of emergency services to have flood free access

There will be no increased risk of pollution during flooding as a result of this proposal.

There will be no measurable impact of this development on floodwater.

**Land degradation**

The land subject to the proposed development consists entirely of the river bank from the waterline to the high point at the top of the bank.

There will be minimal excavation at the site as part of the proposed works. This will minimize the likelihood of impact with groundwater and soil acidity.

**Landscape**

There is large trees and ground cover vegetation at the site. The construction phase of the works may impact on these lower level species depending on their location in relation to the pipe and pump. After the construction phase these species will remain undisturbed and be allowed to regrow.

There are abundant populations of all species in the area that will not be impacted.

**River related uses**

The project has a fundamental relationship with the Wakool River and must be located at the proposed site. The river is the only reliable source of domestic water in the vicinity and the development cannot occur elsewhere or be set back from the river.

**Settlement**

Kyalite is a long established settlement and is likely to expand as a result of agricultural industry opportunities in the area. As such there is a growing need for domestic water infrastructure as more houses are built.

The project must be located in flood-prone land by its very purpose. It is close to existing services and utilities, and it does not compromise the potential of prime crop and pasture land to produce food or fiber in any way.

#### **Water quality**

There will be no effect on water quality as a result of the proposed works.

#### **Wetlands**

The works are not located on wetlands and will not impact upon any wetlands.

#### **5.4 Balranald LEP**

The site is located in Zone W1 Natural Waterways, Zone RU1 – Primary Production & RU5 Zone – Village of the Balranald LEP.

#### **The proposed works are consistent with the relevant objectives of Zone W1, including:**

- *To protect the ecological and scenic values of natural waterways.*

The site is located close to similar pumping infrastructure. The proposed development will have minimal additional impact on the ecological values of the location. The works will be located on an extremely small footprint that has no significant ecological value as habitat. The aquatic habitat will be preserved by avoiding any snags present within the activity area.

- *To prevent development that would have an adverse effect on the natural values of waterways in this zone.*

The project is similar to other domestic water facilities close by. There will be negligible additional impacts resulting from this proposal.

- *To provide for sustainable fishing industries and recreational fishing.*

There will no adverse impacts on the recreational fishing that is popular in this area.

#### **The proposed works are consistent with the relevant objectives of Zone RU1, including:**

- *To encourage sustainable primary industry production by maintaining and enhancing the natural resource base.*

There will be negligible impact on the amount of extractive water availability at the site.

- *To encourage diversity in primary industry enterprises and systems appropriate for the area.*

The project will have no effect on primary industry in the area.

- *To minimise the fragmentation and alienation of resource lands.*

The project will not impact on resource lands.

- *To minimise conflict between land uses within this zone and land uses within adjoining zones.*

There will be no conflict on use of the land. Recreational users of the boat ramp and other facilities will not be impacted or restricted as a result.

- *To encourage development that is in accordance with sound management and land capability practices, and that takes into account the environmental sensitivity and biodiversity of the locality.*

This document comprehensively addresses the environmental status and biodiversity of the site and any potential impacts on the environment.

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- *To support rural communities.*

The provision of reliable domestic water to five residential blocks of land in Kyalite, three of which may potentially have new houses in the future will support growth and development of the community.

Ensuring the viability of the new engineering business at 14 Keogh Rd further supports the local community and economic development in the area.

- *To ensure the provision of accommodation for itinerant workers.*

Many itinerant workers are attracted to the area due to the recent expansion of permanent crops such as Pistachios and Almonds. These workers often stay at the Hotel whose water supply was not adequate to supply the five blocks who will be serviced this project. The project allows the Hotel to have a stand-alone water supply system.

**The proposed works are consistent with the relevant objectives of Zone RU5, including:**

- *To provide for a range of land uses, services and facilities that are associated with a rural village.*

As it stands each individual resident of Kyalite are responsible for their domestic water supply. This project is in line with that approach.

- *To define the town boundaries of Balranald, Euston and Kyalite.*

The project will not have any impacts on this objective.

- *To encourage and provide opportunities for population and local employment growth.*

As stated above, the project will enhance the potential for further housing in the village. The expansion of the engineering business also has the potential to increase local employment.

It allows the Kyalite Hotel to have a viable water supply to maintain picturesque and pleasant lawned grounds attracting more visitors to the area and encouraging overnight stays.

- *To ensure development maintains and contributes to the character of the zone.*

The provision of this water supply will not detract from the character of the village as it will be underground in this zone.

- *To protect the amenity of residents.*

This project will not impact on the availability of domestic water to other residents, it may provide for new residents in the future.

- *To ensure that development does not create unreasonable or uneconomic demands for the provision or extension of services.*

This project will have no impact on the availability or cost of domestic water in Kyalite.

- *To retain and facilitate expansion and redevelopment of the existing central business districts of the townships of Balranald and Euston and to further strengthen the core retail functions of those areas.*

The project has no bearing on the townships of Balranald or Euston.

## 6.0 Conclusion

In conclusion, it is considered for the reasons outlined above the project should be approved, it responds well to the opportunities and constraints of the site and is consistent with the relevant provisions.

The project is considered appropriate for the site for the following reasons:

- It is consistent with Balranald LEP.
- It is consistent with the Murray Regional Environmental Plan No 2 – Riverine land.
- It supports the growth of industry, population and local employment in the region with the added benefits this brings to the wider region.
- There will be no permanent loss of vegetation or other substantial impact on ecological or biodiversity values of the locality.

The proposal responds well to the site's characteristics and opportunities and has considered the potential impacts upon the locality and that particularly of the Wakool River.