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CONSULTING

Review of Environmental Factors

Euston Park Pumpsite

June 2021

F8618

SURVEYING

ENGINEERING

IRRIGATION

PROJECT MANAGEMENT

Version	Doc version	Written by	Approved by	Date issued
Original	1	SG	PMC	February 2021
Final			PMC	June 2021

Project Details

Project Name	Euston Park – Model Farm
Client	Pat & Kevin Hope
Report Authors	Price Merrett Consulting P/L
PMC Project Reference	F8618
Consultant Contact	PO Box 313 9478 Murray Valley Highway Kerang VIC 3579 PH: 03 5452 2490

DRAFT

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FIGURES

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1.0 Property Details

Land Owner:	Euston Park Pat & Kevin Hope
Lot:	**Pumpsite:** 4/DP1170452 easement 'N' **Irrigation:** Lot 5 & 6 DP756075
Local Government:	Balranald Shire Council
Street Address:	Sturt Highway EUSTON NSW

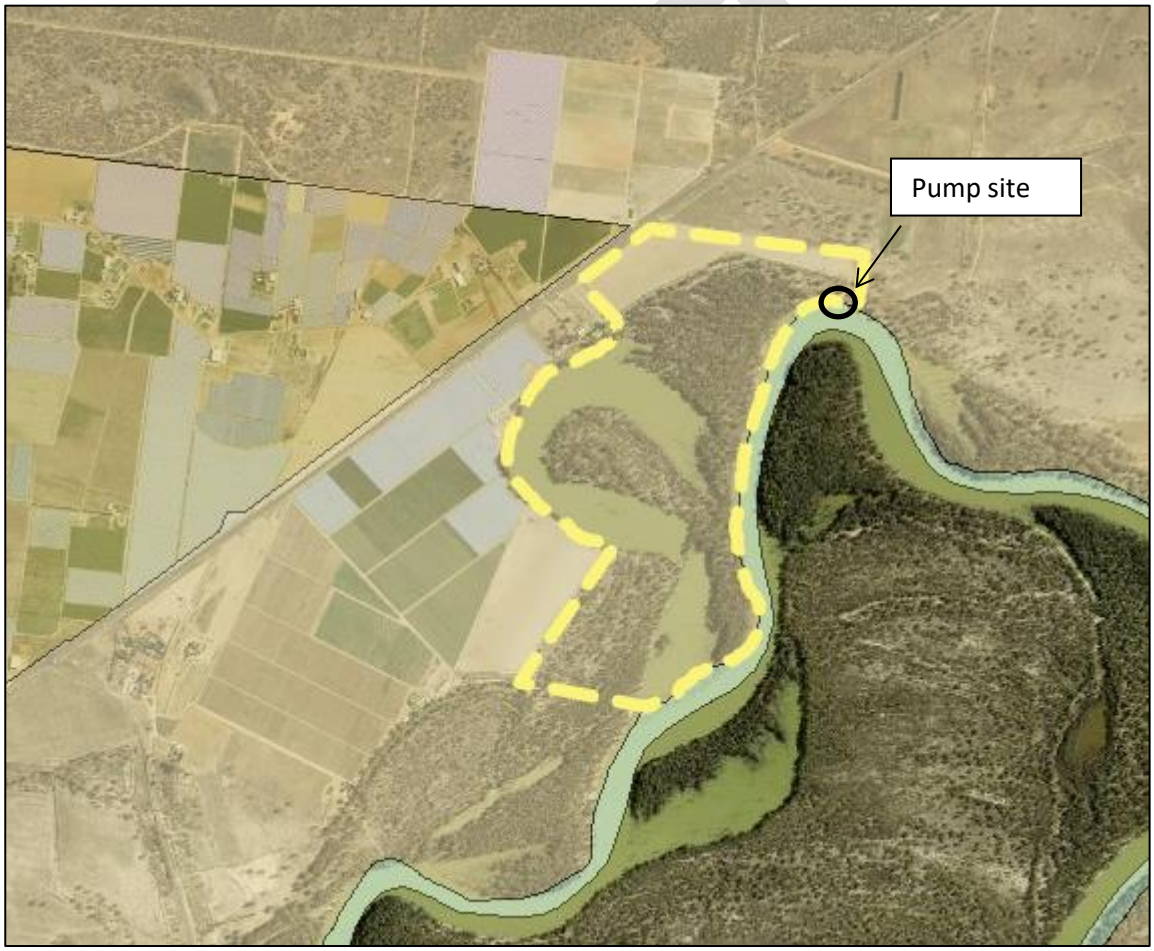


Figure 1: Lot 4 DP1170452 location of proposed works

1.1 Introduction

Euston Park Pty Ltd is seeking development approval to install 3 additional pumps adjacent to the existing boom and pontoon structure and associated infrastructure in the Murray River.

Euston Park Pty Ltd has an extensive horticultural enterprise in the Euston area. It is also in the process of expanding an additional 12.5 pivots to increase the area of irrigated potato production. To ensure the viability of the new plantings additional irrigation water will have to be supplied. The existing irrigation pumping infrastructure is insufficient to supply the additional irrigation capacity at the site.

The site is located on the northern bank of the Murray River approximately 7.2km downstream of the Euston-Robinvale Bridge and approximately 74km west of the township of Balranald. The site is an existing pump site consisting of three pumps on a floating boom and associated infrastructure. This pump supplies irrigation water to an on-farm storage dam. This pump supplies irrigation water for an existing irrigated pivot potato crop. The capacity of the existing pump installation will not be sufficient enough to supply water for optimal growth and production of the new irrigation development on Model Farm to the north.

Following consideration of the Balranald LEP, Murray REP No.2, relevant SEPPs and various other approval requirements the proposal to install the new pumps and associated works is considered worthy of support

The REF will contain a full description of the proposal and will include:

- The size of the proposed activity footprint
- A description of any ancillary activities
- A description of all the stages of the project
- Project plans
- A description of any possible maintenance, future extensions or additions
- Construction timetable
- Collection, storage and onsite management for all materials
- Any earthworks
- Measures to support sustainability outcomes, including materials choice
- Any mitigation measures and management options.

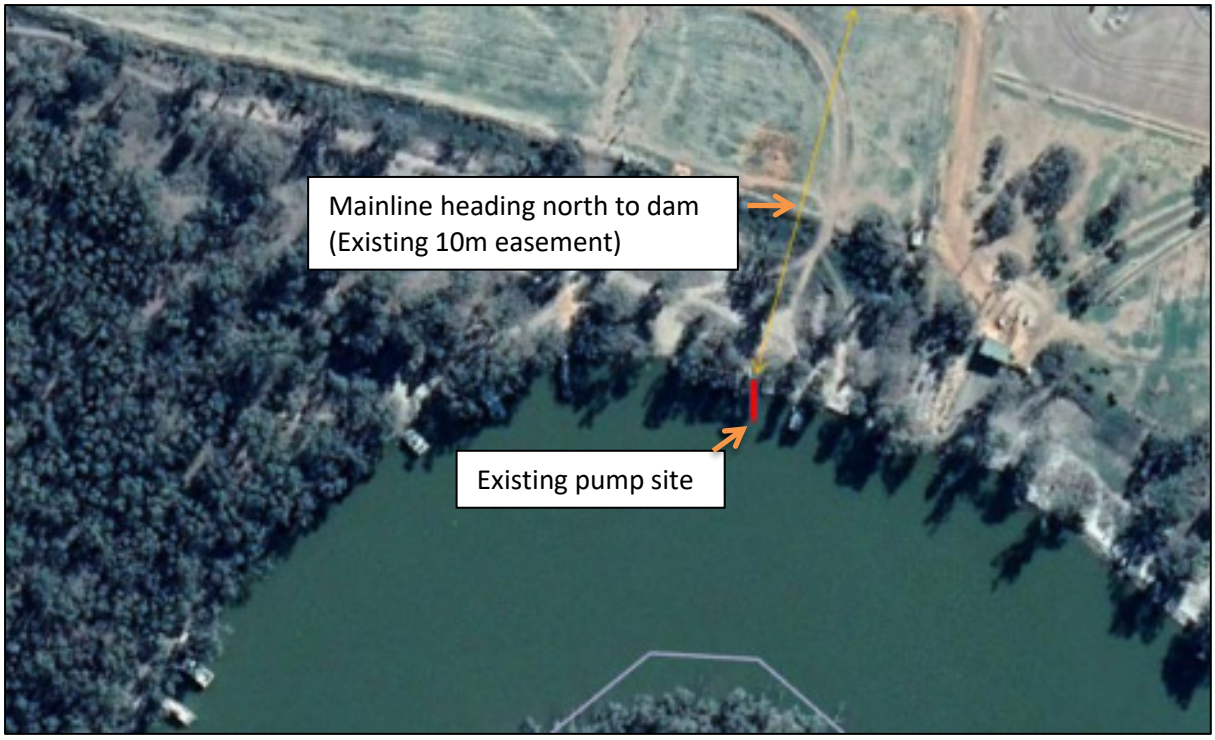


Figure 2: Location of existing pump site

1.2 Project in brief

Price Merrett Consulting Pty Ltd (PMC) has been engaged by Kevin & Pat Hope to apply for water supply works approval and new water use approval as part of the pump site development in order to irrigate 405 HA under centre pivots to grow potatoes. The pump site is located at Lot 4/DP1170452. The site is located at 50942 Sturt Highway, Euston, situated approximately 6km north of the Murray River and 1.2km north of the Sturt Highway.

The irrigation area is located on Lot 5 & 6 DP756075 which lies 53km west of the township of Balranald.

The development proposes to install an additional boom and floating pontoon with three 250mm pumps at the existing pump site on 4/DP1170452 which has an existing easement on the Murray River. Two existing pump licences on Dry Lake will be transferred to the river infrastructure, as well as application for two additional licences. This will consolidate the licensing for efficiency and reduce the overall footprint on the waterways to offer a decreased environmental impact.

The focus of this Review of Environmental Factors (REF) will be on the effects that the development has on the environment as a result of the construction of the pumpsite.

1.3 Prior Approvals & Consultations

The development at Euston Park is seeking approval for:

- Water supply approval

As part of the preparation for the project, consultation with the following relevant authorities was undertaken:

- Water NSW
- Crown Lands
- Local Lands Services
- Nutrien Water - Irrigation Design Management Plan (IDMP)

on the Murray River site (resulting in a total of 6 x pumps on the Murray River site).

Current Approvals:

60CA582135: Approval for 2 x 250mm pumps on Dry Lake Lot 64/756112 and irrigation on Lot 1/1123678 in accordance with your Statement of Approval (SoA) and Works & Use Diagram

60WA582183: Approval for 2 x 250mm pumps on the Murray River Lot 4/1170452 (SoA and location plan attached).

60WA582291: Approval for 1 x Off River Storage Dam on Lot 1/1123678 (SoA and location plan attached).

Proposal:

To amalgamate the three approvals mentioned above into the one combined approval as follows.

Incorporate the 1 x off river storage dam approval and the 2 x approved pumps authorised on the Murray River approval under the combined approval number 60CA582135.

Relocate the 2 pump licences on Dry Lake to the pumpsite on the Murray River.

Plus an additional application for 2 x 250mm pumps.

Result is 6 x 250mm pumps on River under one approval number.

2.0 Location and Site Description

2.1 Location

Irrigation water will be supplied to the property from the existing pump station consisting of a boom and three pumps on the Murray River. The existing pump station site is located at Lot 4/DP1170452 at E: 664475E N: 6175957 Zone 54, in a 10m wide easement on the Murray River approximately 6.3km south west of the proposed agricultural development. The existing pipeline runs into a 300ML on-farm storage dam and water will be accessed from this dam to supply the centre pivots for irrigation.
See figure 3 for photographs of existing pump structure.

Figure 3: Existing pumps on floating boom

3.0 Proposal

The installation of the additional pumps at the existing site is integral to Euston Parks operation and management of its potato development at Euston.

The new pump station will be a modern pontoon-based system. It will feature a pontoon positioned in the river that will accommodate the pumps and one end of a gantry. The other end of the gantry will be anchored at the top of the riverbank directly in front of the pump control room. This design means that there are no points of contact with either the delivery main, electrical and control cabling, and an accessway providing safe and convenient access to the pumps located on the pontoon.

Vegetation will require clearing from the direct footprint of the footings for the gantry. Species at the site include River Red Gum saplings and native grass and weed species.

The existing electrical power will be extended to the new pumps.

The pontoon will be lifted into position in the river and then the prefabricated gantry will be lifted into position and affixed to the pontoon and the pump control room.

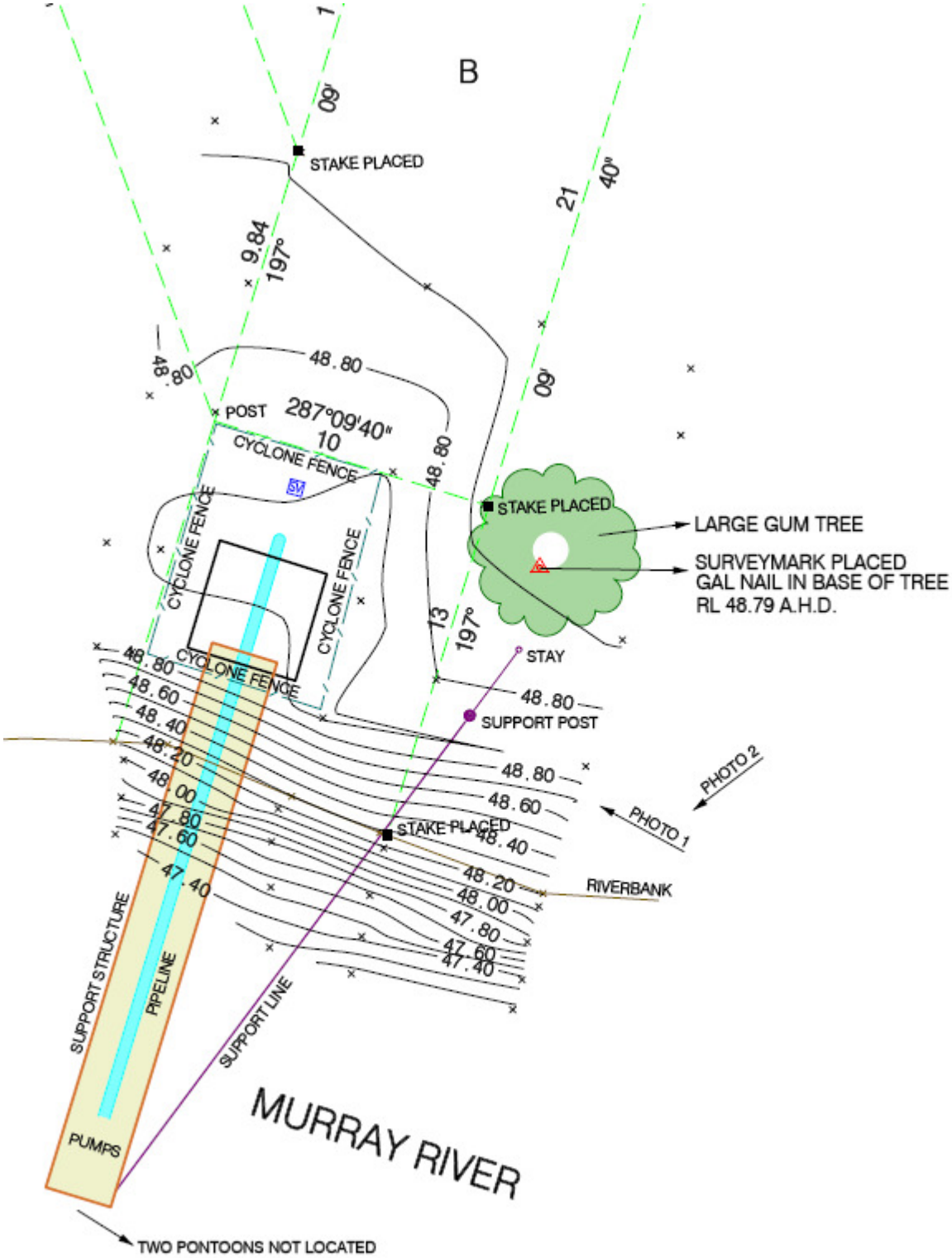
The pumps, suctions and connection to existing delivery main will be installed.

The pump station will be energised and commissioned.

Figure 4: Proposed pump site

Figure 5: Vegetation at Pump site

Figure 6 shows the location of the existing pump site within the easement. Dimensions indicate ample room for the additional structure to be contained within the easement.



EXISTING EASEMENTS

A. EASEMENT FOR ELECTRICITY PURPOSES AND RIGHT OF CARRIAGEWAY 6 WIDE
B. EASEMENT FOR WATER SUPPLY AND RIGHT OF CARRIAGEWAY 10 WIDE.

Figure 6: Surveyed location of existing pumpsite within easment

4.0 Construction Timetable

Development of the site is expected to begin on approval of the water usage at the site from Water NSW. Works should be completed in 2021.

Pivot installation	2021
Transfer of two pump licenses from Dry Lake to River	2-3 months
Installation of boom and floating pontoon with three pumps	1-5 years
Mainline addition	2-5 years

5.0 Existing Environment

Figure 7: Existing pump structure and location of proposed new pump

5.1 Topography

The topography of Euston Park pump site is on a section of low bank to the river. The lack of native bushland and proximity to the Sturt Highway provide for easy access to the pumps.

5.2 Climate

The average annual rainfall is approximately 300 millimetres per year but there is considerable variation from one year to the next. Rain occurs mainly during the winter months. Winters are cool with a moderate frost risk whilst summers are hot with temperatures regularly exceeding 40°C in January and February. Mean annual evaporation is approximately 2500mm, which exceeds annual precipitation.

5.3 Surrounding Land Use

This section of the river has a long history with pump sites and numerous existing pumping structures, servicing a number of different developments, are located along the river.

6.0 Planning Assessment

The proposed works will duplicate an existing pump station. The works are required to meet the increasing demand of the horticultural development for irrigation water. The current pumping capacity for the property is insufficient to supply the needs of the farm in the future.

6.1 Murray REP No.2

The main constraint at the site for the proposed pump development is that it includes part of the sloping bank of the Murray River. This presents certain complexities that have been accounted for both in the project design and the proposed works plan.

Bank Disturbance

The works proposed will have some minor disturbance to the high bank of the river. However, given the nature of the installation there will be no material change or disturbance to the shape or profile of the river bank as piles are driven into the ground to secure the boom and mainline to the bank.

Soils & Land Degradation

The development will have limited impact on the riverbank. The only point of contact will be the gantry support structure located beyond the top of the bank. The other end of the gantry is located on the floating pontoon.

Understory species will be allowed to regenerate the riverbank underneath the support gantry.

There will be no excavation at the site as part of the proposed works. This will eliminate the likelihood of impact with groundwater or contributing to raising the potential for increases in soil acidity.

Vegetation

The proposed and existing pump site is located above the high-water mark of the Murray River and is generally surrounded by riparian vegetation of predominantly River Red Gum (eucalyptus camaldulensis) close to the water's edge, and juvenile and mature Black Box (E. largiflorens) surrounding the site. Beneath the tree canopy, the site largely contains small red gum saplings which

probably regenerated after the last flood event, and form the largest vegetation within the disturbance footprint.

Vegetation removal will not involve the removal of any large trees and the section of bank which will house the support structure for the gantry. This will require understory vegetation removal, mainly regenerated River Red Gum saplings. Once construction is complete, the understory species will be left undisturbed and will be encouraged to re-establish underneath the support gantry and surrounds.

Access

The proposed works will not adversely impact the public's ability to access the river or foreshore areas, and there will be no changes to the surrounding area as a result of the proposed works.

Landscape

The main feature of the landscape is the Murray River being a 1st order stream. Beyond this are access tracks to the site and houseboat moorings. Approximately 80m north of the site is undulating cropping country extending to the Sturt Highway.

Water Quality

All reasonable measures will be taken during the construction phase to ensure there will be no effect on water quality. No snags will be removed from the river. As the pump does not discharge at this site, water quality is not expected to be impacted.

Settlement

The site is located amongst other similar irrigation facilities and cannot be located anywhere else. This proposal will not impact on the availability of cropping, pastoral or food and fibre producing land.

Flooding

The site is subject to inundation by floodwaters, and the proposed development will not deprive the surrounding ecosystem of the benefits of periodic flooding. There will be no redistributive effect of floodwaters as a result of the development.

The proposed works will not impact the ability of emergency services to access the bank and there will be no increased risk of pollution during flooding as a result of this proposal.

Wetlands

The proposed pump site and pipeline is identified on the Natural Resources Sensitivity- Biodiversity Map as being in a 'Wetlands' overlay. Wetlands are defined as supporting waterbird, fish, amphibian, reptile and plant species during important life stages by providing roosting, nesting, and feeding habitat as well as refuge during extreme weather conditions. They also form a corridor or stepping stone habitat that supports the migration of species, including waterbirds and marine mammals.

It is envisaged that the proposal will have no adverse impacts on the flora and fauna, their habitat and their relationship with the environment.

6.2 Balranald LEP

The site is located in Zone W1 Natural Waterways. The proposed works are consistent with the relevant objectives of this zone:

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

As the site of the proposed works is an existing operational pump station there is no significant ecological value as habitat. The aquatic habitat will not be interfered with as there is no contact with the bed of the river. No snags will be removed from the river.

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

Groundwater vulnerability will not be affected by the pipeline alignment. The pipeline does not discharge into this zone so it is unlikely that it will have an effect on the characteristics of the groundwater in this area. Bank stability will not be compromised as there will be no changes to the profile of the bank.

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

There will be no adverse impacts on fishing or fish populations as a result of the proposed development. Pump intakes will be fitted with mesh exclusion screens to prevent macroinvertebrates from entering the pumping system.

6.3 Potential Impacts

The following lists the identified potential impacts which have been identified and the steps that will be undertaken to minimise these effects of these impacts.

Damage to Native Vegetation

A Biodiversity Assessment report will be prepared and a Test of Significance Report to determine the level of ecosystem disturbance as no vegetation requires removal, however an assessment is triggered as a Biodiversity value area.

Visual & Aesthetic Impact

The site is an existing pump station, and the duplication of the existing design to be constructed adjacent to the existing structure is not expected to dominate the landscape excessively. The low profile of the infrastructure is considered to reflect the least oppressive design, and the visual impact at the site will reflect its function.

Traffic Impacts

There will be a slight increase in traffic impacts during the construction phase of the project, but these impacts will be minor. Once construction is complete there will be no additional traffic at the site.

Impact on Flow Paths

There will be no impacts on any river flows as a result of this proposed development.

Waste Management

The production of waste will be limited to the construction phase of the project. Workers will remove all waste and the operational pump station will produce no waste.

Siting Impacts

The pump station will not interrupt views of, or impede access to, the river or its environs.

Design Impacts

The site is an existing pump station and the infrastructure at the site reflects this use.

7.0 Cultural Heritage

The works will occur in an area that has undergone a high level of previous disturbance. Consequently, the possibility of interaction with any cultural heritage items or objects is effectively zero.

In accordance with the 'Due Diligence Code of Practice for the protection of Aboriginal Objects in NSW' a search of the AHIMS database was conducted and the search found that one record of Aboriginal sites or places have been recorded or declared on or near the location of the proposed development area or on river pump site.

See Appendix 2 for AHIMS online search.

According to the due diligence search on the AHIMS database, one significant object was found within 50m of Lot 4/DP1170452. A single Habitation Structure – Modified Tree (Scarred or Carved) is located on the neighbouring property to the east on Billa Downs. The tree is approximately 140m from the pumpsite.

Figure 8: Distance to Scar tree

8.0 Biodiversity

The design of the pump station will not produce any impacts on the riverbed or the riverbank. No snags will be removed.

The pump intakes will be fitted with mesh exclusion screens to prevent fish and other aquatic species from entering the pumping system.

Figure 9: Threshold Map

Biodiversity Values Map and Threshold Report

Results Summary

Date of Calculation	04/05/2021 9:24 AM	**BDAR Required***
Total Digitised Area	0.01 ha	
Minimum Lot Size Method	LEP	
Minimum Lot Size	40 ha	
Area Clearing Threshold	1 ha	
Area clearing trigger Area of native vegetation cleared	no	no
Biodiversity values map trigger Impact on biodiversity values map(not including values added within the last 90 days)?	yes	yes
Date of the 90 day Expiry	N/A	

A Biodiversity Assessment Report will be required to be prepared as works will be within the 25m riparian zone of the bank of the Murray River and clearing will be required even though no vegetation will require removal.

See Appendix 1 for Biodiversity Development Assessment Report.

9.0 Construction Impact & Minimisation

Storm Water

Objective: To minimise the quantity of uncontaminated storm water entering cleared areas	
Actions	1. Establish cut-off or intercept drains, or if required silt fencing, to redirect storm water away from cleared areas and slopes to stable (vegetated) areas or effective treatment installations
	2. Reduce water velocities by adding rock check dam

Air Quality & Dust Control

Objective: To manage construction activities with the potential to impact on air quality	
Actions	1. Ensure that all vehicles and machinery are fitted with appropriate emission control equipment, maintained frequently and serviced to the manufacturer's specifications
	2. Smoke from internal combustion engines should not be visible for more than 10 seconds
	3. Implement a dust prevention strategy
	4. Take dust suppression measures, such as promptly watering exposed areas when visible dust is observed

Noise and Vibration

Objective: To appropriately manage noise during construction activities to minimise impact to workers, neighbours & community members		
Actions	1.	Ensure that all vehicles and earth moving equipment on site are fitted with appropriate mufflers which are maintained frequently and serviced to the manufacturer's specifications
	2.	Enclose noisy equipment
	3.	Provide noise attention screens where appropriate
	4.	Where an activity is likely to cause a noise nuisance to nearby residents, restrict operating hours to between 7am to 6pm weekdays and 7am to 1pm Saturdays, except where, for practical reasons, the activity is unavoidable
	5.	Noise should not be above background levels inside any adjacent residence between 10pm to 7am.
	6.	Advise local residents when unavoidable out of hours work will occur
	7.	Schedule deliveries to the site so that disruption to local amenity and traffic are minimised

Hazardous substances

Objective: To manage construction activities with the potential to cause contaminated soil		
Actions	1.	Minimise fuel and chemicals stored on site
	2.	Install bunds and other precautions to reduce the risk of spills
	3.	Implement a contingency plan to handle spills, so that environmental damage is avoided
	4.	Ensure safety data sheets are available for all hazardous chemicals on site

Minimising Erosion

Objective: To manage construction activities to minimise erosion		
Actions	1.	Minimise cleared area and keep the cleared area for a very short time
	2.	Mulch, roughen and seed (with sterile grass) cleared slopes and stockpiles where no works are planned for more than 28 days
	3.	Keep vehicles to well defined haul roads
	4.	Rehabilitate cleared areas promptly with at least 75% native ground cover species*

* Recommended groundcover species would be those indigenous to the Balranald Floodplain area. A list of these is available from the 'Native Vegetation Guide for the Riverina' Subregion 'Penarie' pages 218-219. Of the listed species limited groundcovers are available commercially. Some species which are available and appropriate include *Agrostis avenacea* (Blown Grass), *Austrodanthonia spps*. and *Atriplex semibaccata* (creeping saltbush).

Sediment Controls

Objective: To manage construction activities to minimise sediment run off		
Actions	1.	Install erosion and sediment control measures, if possible before construction commences
	2.	Identify drainage lines and install control measures to handle protected stormwater and sediment loads generated in the mini catchment

	3.	Straw bale filter to be installed appropriately to control run-off erosion and sediment run-off to site conditions to handle a 1 in 2 year storm event (2 year ARI with intensity of 6 hours) for temporary structures and 1 in 50 year storm event for permanent structures
	4.	Establish an adequate inspection, maintenance and cleaning program for sediment run-off control structures
	5.	Continually assess the effectiveness of sediment control measures and make necessary improvements

Stockpile and Batter Management

Objective: To manage stockpiles and batters during construction activities		
Actions	1.	Minimise the number of stockpile, and the area and the time stockpiles are exposed
	2.	Keep topsoil and underburden stockpiles separate
	3.	Locate stockpiles away from drainage lines, at least 10 meters away from natural waterways and where they will be least susceptible to wind erosion
	4.	Ensure that stockpiles and batters have slopes no greater than 2:1 (horizontal/vertical)
	5.	Stabilise stockpiles and batters that will remain bare for more than 28 day by covering with mulch or anchored fabrics or seeding with sterile grass
	6.	Establish sediment controls around un-stabilised stockpiles and batters
	7.	Suppress dust on stockpiles and batters, as circumstances demand

Waste Management

Objective: To appropriately manage waste during construction activities		
Actions	1.	Maintain a high quality of housekeeping and ensure that materials are not where they can be wasted or blown away to become litter
	2.	Provide bins for construction workers and staff at locations where they consume food
	3.	Conduct ongoing awareness with staff of the need to avoid littering

Access Roads

Objective: To appropriately manage access roads during construction activities		
Actions	1.	Ensure that the roads are swept at least once a day on uncontrolled road crossings when construction vehicles are travelling off the sites
	2.	Cover all loads of soil being taken off site for disposal
	3.	Install litter traps lined with filter cloth in all side entry pits

10.0 Appendix

10.1 Appendix 1 – Biodiversity Assessment report

10.2 Appendix 2 – Cultural Heritage Assessment Report

Office of Environment & Heritage NSW

AHIMS Web Services (AWS)
Search Result

Purchase Order/Reference : F8618
Client Service ID : 573272

Price Merrett Consulting
PO Box 313
Kerang Victoria 3579
Attention: Arundeep Saini
Email: arundeep.saini@pricemerrett.com.au

Date: 04 March 2021

Dear Sir or Madam:

AHIMS Web Service search for the following area at Lot : 4, DP:DP1170452 with a Buffer of 200 meters, conducted by Arundeep Saini on 04 March 2021.

The context area of your search is shown in the map below. Please note that the map does not accurately display the exact boundaries of the search as defined in the paragraph above. The map is to be used for general reference purposes only.

A search of the Office of the Environment and Heritage AHIMS Web Services (Aboriginal Heritage Information Management System) has shown that:

1	Aboriginal sites are recorded in or near the above location.
0	Aboriginal places have been declared in or near the above location. *

Office of Environment & Heritage NSW

AHIMS Web Services (AWS)

Extensive search - Site list report

Your Ref/PO Number : F8618
Client Service ID : 573292

SiteID	SiteName	Datum	Zone	Easting	Northing	Context	Site Status	SiteFeatures	SiteTypes	Reports
47-4-0031	Billa Downs 26	GDA	54	664479	6176825	Open site	Valid	Habitation Structure : -, Modified Tree (Carved or Scarred) : -		101408

Contact **Recorders** Doctor,Sarah Martin **Permits**

Report generated by AHIMS Web Service on 04/03/2021 for Arundeep Saini for the following area at Lot : 4, DP:DP1170452 with a Buffer of 50 meters. Additional Info : development application. Number of Aboriginal sites and Aboriginal objects found is 1

This information is not guaranteed to be free from error omission. Office of Environment and Heritage (NSW) and its employees disclaim liability for any act done or omission made on the information and consequences of such acts or omission.

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