Government of Western Australia
Department of Water and Environmental Regulation

Works Approval

Works approval number	W6459/2020/1
Works approval holder	Water Corporation
Registered business address	629 Newcastle Street LEEDERVILLE 6007 WA
DWER file number	DER2020/000433
Duration	02/09/2021 to 02/09/2026
Date of Amendment	28 February 2023
Premises details	Canning Beach Road Pumping Station Reserve 41516 60 Canning Beach Road, APPLECROSS 6153 WA Legal description - Lot 11312 on Deposited Plan 189373 and part of Canning Beach Road Reserve Certificate of Title Volume LR3000 Folio 695 As defined by the coordinates in Schedule 2

Prescribed premises category description (Schedule 1, *Environmental Protection Regulations 1987*)	**Assessed design capacity**
Category 85A: Sewage pumping station: premises on which sewage is pumped (other than to or from septic tanks) and where a discharge of waste from the station may enter the Swan River or the Canning River.	N/A

This works approval is granted to the works approval holder, subject to the attached conditions, on 28 February 2023, by:

Koby Anderson

Digitally signed by Koby Anderson
Date: 2023.02.28 10:38:23 +08'00'

SENIOR ENVIRONMENTAL OFFICER
REGULATORY SERVICES
Officer delegated under section 20
of the Environmental Protection Act 1986

Works approval history

Date	Reference number	Summary of changes
02/09/2021	W6459/2020/1	Works approval granted.
28/02/2023	W6459/2020/1	Works approval amended to authorise dewatering effluent to be discharged to the stormwater system.

Interpretation

In this works approval:

(a) the words 'including', 'includes' and 'include' in conditions mean "including but not limited to", and similar, as appropriate;

(b) where any word or phrase is given a defined meaning, any other part of speech or other grammatical form of that word or phrase has a corresponding meaning;

(c) where tables are used in a condition, each row in a table constitutes a separate condition;

(d) any reference to an Australian or other standard, guideline, or code of practice in this works approval:

  (i) if dated, refers to that particular version; and

  (ii) if not dated, refers to the latest version and therefore may be subject to change over time;

(e) unless specified otherwise, any reference to a section of an Act refers to that section of the EP Act; and

(f) unless specified otherwise, all definitions are in accordance with the EP Act.

NOTE: This works approval requires specific conditions to be met but does not provide any implied authorisation for other emissions, discharges, or activities not specified in this works approval.

Works approval conditions

The works approval holder must ensure that the following conditions are complied with:

Construction phase

Management plans

1. The works approval holder must implement the Construction Environmental Management Plan (CEMP) and the Dewatering Management Plan (DMP) during construction activities.

2. The works approval holder must implement the Emergency Discharge Response Procedure (EDRP) for the management, response and mitigation of impacts from a possible emergency discharge from the sewage pumping station.

Infrastructure and equipment

3. The works approval holder must:

(a) construct and/or install the infrastructure and equipment;

(b) in accordance with the corresponding design and construction / installation requirements; and

(c) at the corresponding infrastructure location;

as set out in Table 1.

Table 1: Design and construction / installation requirements

Infrastructure and equipment		Design and construction / installation requirements	Infrastructure location
1.	Pumps upgrades	The design is in accordance with the Water Corporation design standard *DS 51 – The Design and Construction of Wastewater Pumping Stations and Pressure Mains.* 1) The pump station upgrade is to include a total of two pumps similar to a *Flygt NT 3171 SH3 dry mount submersible wastewater pump* with one for duty and one for standby as contingency. 2) Seven alarms are to be in place during the pump station operation to ensure operators are aware of suspected failures or issues with the pump station prior to flowing into the emergency storage system. 3) Hydrostatic testing of the sewage pump station must be undertaken for a minimum 24 hours and any defects resolved.	As defined in Schedule 1: Maps
2.	Pipework	1) Pipework upgrades within the existing pump station. 2) The design is in accordance with the Water Corporation design standard DS 65 – Pipe Fittings Standard Drawings.	As defined in Schedule 1: Maps

Infrastructure and equipment		Design and construction / installation requirements	Infrastructure location
3.	Emergency Storage	The emergency storage pipework upgraded as follows: 1) an additional 111 m^3 overflow storage capacity and total emergency overflow storage capacity of 227 m^3; 2) Upgraded storage is to include an additional 18 concrete pipes to be installed adjacent to the existing emergency storage underground within the road reserve; 3) The emergency storage pipes to be reinforced concrete pipes, 95 mm thick, constructed to achieve a very low permeability of 10^{-13} m/s; and 4) Odour filters for the upgraded emergency storage to be installed.	As defined in Schedule 1: Maps
4.	Electrical upgrades	1) Electrical upgrades to be undertaken in accordance with the following Water Corporation design standards: • *DS20 – Design Process for Electrical Works;* • *DS22 – Ancillary Plant and Minor Pump Stations; and* • *DS29 – Arc Flash Hazard Assessment of Switchgear Assemblies.* 2) Switchboards designed in accordance with Water Corporation design standard *DS26-09 Design Process for Electrical Works and Drawings* under *the MN01 Small Pump Station Standard Electrical Design*. 3) The existing underground switchboard and associated wiring to be completely decommissioned. 4) The new switchboards to be installed on a platform height of RL2.2 m (or 1.1m above ground level) to stay above the 1-in-100 year ARI flood plain level.	As defined in Schedule 1: Maps

Acid sulfate soils management

4. The works approval holder must ensure stockpiling, and treatment of ASS or PASS soil does not occur within the premises.

5. The works approval holder must ensure ASS or PASS excavated during the works is removed off-site to an appropriately authorised facility and the works approval holder must provide receipts or other acceptance records from the relevant appropriately authorised facility, including details of the total amount of ASS or PASS material taken to the chosen facility, within the Environmental Compliance Report required under Condition 13.

6. The works approval holder must ensure that treated ASS or PASS is only re-used onsite after validation sampling confirms that neutralisation has been achieved.

Dewatering management

7. The works approval holder must ensure dewatering effluent is only discharged at the dewatering effluent discharge locations specified in Table 2, in accordance with the corresponding discharge requirements.

Table 2: Management of dewatering effluent

Dewatering effluent discharge location	Discharge requirements
Sewer system	(a) The rate of discharge does not exceed 2 L/s. (b) Dewatering effluent is required to meet the following criteria: (i) pH range between 6.5 and 8.5; and (ii) total acidity or total titratable acidity level not exceeding 40 mg/L as $CaCO_3$
Stormwater system	(a) Discharge to the stormwater system only occurs when the sewer system capacity of 2 L/s is exceeded. (b) The rate of discharge does not exceed 8 L/s. (c) Where scouring of the riverbed and/or a silt plume on the Canning River occurs, the discharge flow rate must be reduced below 8 L/s, so that scouring and/or silt plumes no longer occur as a result of the discharge. (d) Dewatering effluent is required to meet the following criteria: (i) pH range between 6.5 and 8.5; (ii) total acidity or total titratable acidity level not exceeding 40 mg/L as $CaCO_3$; (iii) total iron not exceeding 1.0 mg/L; (iv) total aluminum not exceeding 0.15 mg/L; (v) total nitrogen not exceeding 0.72 mg/L; and (vi) ammonia as nitrogen not exceeding 0.04 mg/L. (e) If treatment of dewatering effluent is required to achieve the above dewatering effluent criteria, the treatment chain must consist of the following: (i) clarification using baffled clarifier tanks, pH dosing and chemical flocculation; (ii) chlorine dosage; (iii) filtration using metals reduction module and carbon; and (iv) nitrate removal unit.

8. The works approval holder must ensure that discharge of dewatering effluent to the stormwater system is managed to prevent:

(a) scouring of the riverbed at the stormwater outlet; and

(b) formation of a visible silt plume in the Canning River.

Discharge monitoring requirements

9. The works approval holder must monitor discharges of dewatering effluent to the stormwater system:

(a) from each monitoring location;

(b) at the corresponding frequency;

(c) using the corresponding method;

(d) for the corresponding parameters; and

(e) in the corresponding units,

as set out in Table 3.

Table 3: Monitoring of dewatering effluent discharge

Monitoring location	Frequency	Method	Parameters	Units
Discharge outlet into stormwater system	Continuous	Flow meter	Flow rate[2]	L/s
			Cumulative volume[2]	kL
Untreated dewatering effluent tap Treated dewatering effluent tap	Daily or twice daily[1]	AS/NZS 5667.1 and AS/NZS 5667.10	pH[2]	-
			Electrical conductivity[2]	µS/cm
			Dissolved oxygen[2]	mg/L
			Redox Potential[2]	mV
			Total Titratable Acidity[2]	mg/L as $CaCO_3$
			Total Alkalinity[2]	mg/L
Treated dewatering effluent tap	Weekly		pH	-
			Total acidity	mg/L as $CaCO_3$
			Electrical conductivity	µS/cm
			Total dissolved solids	mg/L
			Total suspended solids	
			Turbidity	NTU
			Total Alkalinity	mg/L
			Major ions: Calcium, Magnesium, Potassium, Sulfate, Chloride, Sodium	
			Total and Dissolved Metals: Aluminum, Arsenic, Cadmium, Chromium, Iron, Manganese, Nickel, Selenium, Zinc	

Monitoring location	Frequency	Method	Parameters	Units
Treated dewatering effluent tap	Weekly	AS/NZS 5667.1 and AS/NZS 5667.10	Ammonia as Nitrogen, Nitrate as Nitrogen, Total Nitrogen, Reactive Phosphorus, Total Phosphorus	mg/L
			E. coli	CFU/100 mL or MPN/100 mL

Note 1: When pre-treatment pH exceeds 4, Total Titratable Acidity exceeds 100 mg/L as CaCO3 and/or Total Alkalinity exceeds 30mg/L, frequency is to be twice daily

Note 2: In-field non-NATA accredited analysis permitted

10. All sample analysis must be undertaken by laboratories with current accreditation from the National Association of Testing Authorities (NATA) for the relevant parameters, unless otherwise specified in Table 3: Monitoring of dewatering effluent discharge.

Groundwater monitoring requirements

11. The works approval holder must undertake groundwater monitoring:

(a) from each monitoring location;

(b) at the corresponding frequency;

(c) using the corresponding method;

(d) for the corresponding parameters; and

(e) in the corresponding units,

as set out in Table 4.

Table 4: Monitoring of ambient groundwater

Monitoring location	Frequency	Method	Parameters	Units
Monitoring Wells (BH01, BH03)	2nd Daily (weekdays)	AS/NZS 5667.1 and AS/NZS 5667.11	Standing water level[1]	mBTOC mbgl
			pH[1]	-
			Electrical conductivity[1]	µS/cm
			Dissolved oxygen[1]	mg/L
			Temperature[1]	^{0}C
			Redox Potential[1]	mV
			Total Titratable Acidity[1]	mg/L as $CaCO_3$
			Total Alkalinity[1]	mg/L
	Fortnightly		pH	-
			Electrical conductivity	µS/cm
			Total dissolved solids	mg/L
			Total acidity	mg/L as $CaCO_3$
			Total Alkalinity	mg/L

Monitoring location	Frequency	Method	Parameters	Units
Monitoring Wells (BH01, BH03)	Fortnightly	AS/NZS 5667.1 and AS/NZS 5667.11	Major ions: Calcium, Magnesium, Sodium, Potassium, Sulfate, Chloride, Sulfide	mg/L
			Total and Dissolved Metals: Aluminum, Arsenic, Cadmium, Chromium, Iron, Manganese, Nickel, Selenium, Zinc	
			Ammonia as Nitrogen, Nitrate as Nitrogen, Total Nitrogen, Reactive Phosphorus, Total Phosphorus	
			E. coli	CFU/100 mL or MPN/100 mL

Note 1: In-field non-NATA accredited analysis permitted

12. All sample analysis must be undertaken by laboratories with current accreditation from the National Association of Testing Authorities (NATA) for the relevant parameters, unless otherwise specified in Table 4.

Compliance reporting

13. The works approval holder must within 30 calendar days of an item of infrastructure or equipment required by condition 3 being constructed and / or installed:

(a) undertake an audit of their compliance with the requirements of condition 3; and

(b) prepare and submit to the CEO an Environmental Compliance Report on that compliance.

14. The Environmental Compliance Report required by condition 13, must include as a minimum the following:

(a) certification by a Qualified, Competent Civil or Structural Engineer that the items of infrastructure or component(s) thereof, as specified in condition 3, have been constructed in accordance with the relevant requirements specified in condition 3;

(b) as constructed plans and a detailed site plan for each item of infrastructure or component of infrastructure specified in condition 3;

(c) a summary of the ASS / PASS dewatering management measures undertaken at the premises during construction;

(d) a summary of the groundwater monitoring data obtained;

(e) a summary of the dewatering effluent monitoring data obtained;

(f) a summary of the environmental commissioning activities undertaken, including timeframes and amount of wastewater processed;

(g) where they have not been met, measures proposed to meet the manufacturer's design specifications and the conditions of this works approval, together with timeframes for implementing the proposed measures; and

(h) be signed by a person authorised to represent the works approval holder and contains the printed name and position of that person.

Records and reporting (general)

15. The works approval holder must record the following information in relation to complaints received by the works approval holder (whether received directly from a complainant or forwarded to them by the Department or another party) about any alleged emissions from the premises:

(a) the name and contact details of the complainant, (if provided);

(b) the time and date of the complaint;

(c) the complete details of the complaint and any other concerns or other issues raised; and

(d) the complete details and dates of any action taken by the works approval holder to investigate or respond to any complaint.

16. The works approval holder must maintain accurate and auditable books including the following records, information, reports, and data required by this works approval:

(a) the works conducted in accordance with condition 3;

(b) any maintenance of infrastructure that is performed in the course of complying with condition 3;

(c) monitoring programmes undertaken in accordance with conditions 9 to 12; and

(d) complaints received under condition 15.

17. The books specified under condition 16 must:

(a) be legible;

(b) if amended, be amended in such a way that the original version(s) and any subsequent amendments remain legible and are capable of retrieval;

(c) be retained by the works approval holder for the duration of the works approval; and be available to be produced to an inspector or the CEO as required

Definitions

In this works approval, the terms in Table 5 have the meanings defined.

Table 5: Definitions

Term	Definition
Acid sulfate soils	includes both sulfidic soil materials as potential acid sulfate soils and sulfuric soil materials as actual acid sulfate soils.
annual period	a 12 month period commencing from 1 July until 30 June of the immediately following year.
appropriately authorised facility	means a facility which holds approval under the EP Act for the acceptance of the relevant waste type as defined in the *Landfill Waste Classification and Waste Definitions 1996*
ASS	means acid sulfate soils
books	has the same meaning given to that term under the EP Act.
$CaCO_3$	means Calcium carbonate
Construction Environmental Management Plan	means the report titled *'Construction Environmental Management Plan – Mount Pleasant Canning Beach Road Pump Station and Pressure Main Project'*, prepared by Site Environmental and Remediation Services Pty Ltd for Valmec Australia Pty Ltd dated 21 October 2022.
CEO	means Chief Executive Officer. CEO for the purposes of notification means: Director General Department administering the *Environmental Protection Act 1986* Locked Bag 10 Joondalup DC WA 6919 info@dwer.wa.gov.au
CFU	means colony forming units
Department	means the department established under section 35 of the *Public Sector Management Act 1994* and designated as responsible for the administration of Part V Division 3 of the EP Act.
Dewatering Management Plan	means the report titled *'Dewatering Management Plan Mt Pleasant Canning Beach Road Pump Station and Pressure Main'*, prepared by National Pump & Energy for Valmec Australia Pty Ltd issued 9 November 2022.
discharge	has the same meaning given to that term under the EP Act.
Emergency Discharge Response Procedure	means the report titled *'Mt Pleasant, Canning Beach Sewer Pump Station – Emergency Discharge Response Procedure'* prepared by Water Corporation and submitted to the CEO on 7 October 2022
emission	has the same meaning given to that term under the EP Act.

Term	Definition
environmental commissioning	means the sequence of activities to be undertaken to test equipment integrity and operation, or to determine the environmental performance, of equipment and infrastructure to establish or test a steady state operation and confirm design specifications.
Environmental Compliance Report	means a report to satisfy the CEO that the conditioned infrastructure and/or equipment has been constructed and/or installed in accordance with the works approval.
EP Act	*Environmental Protection Act 1986* (WA)
EP Regulations	*Environmental Protection Regulations 1987* (WA)
m^3	cubic metres
mbgl	metres below ground level
MPN	means most probable number
Neutralisation	Is the process of soil treatment meeting the following performance criteria: a) the neutralising capacity of the treated soil must exceed the existing plus potential acidity of the soil (e.g. pH_{fox} must be >5); b) the neutralising material has been thoroughly mixed with the soil; c) soil pH must be in the range of 6.0 to 8.5; and d) excess neutralising agent must remain within the soil until all acid generation reactions are complete and the soil has no further capacity to generate acidity.
NTU	means nephelometric turbidity units
PASS	means potential acid sulphate soils
Potential acid sulfate soils	are soils or sediments which contain iron sulfides and/or other sulfidic minerals that have not been oxidised. The field pH of these soils in their undisturbed state is more than pH 4 and is commonly neutral to alkaline (pH 7 to pH 9). These soils or sediments are invariably saturated with water in their natural state. The waterlogged layer may be peat, clay, loam, silt, or sand and is usually dark grey and soft but may also be dark brown, or medium to pale grey to white.
premises	the premises to which this works approval applies, as specified at the front of this works approval and as shown on the premises map (Figure 1) in Schedule 1 to this works approval.
Prescribed Premises	has the same meaning given to that term under the EP Act.

Term	Definition
Qualified, Competent Civil or Structural Engineer	means a person who: a) holds a Bachelors degree recognised by Engineers Australia; and b) has a minimum of five years experience working in a supervisory role in civil or structural engineering; and c) is employed by an independent third party external to the Works Approval Holder's business; or is otherwise approved in writing by the CEO to act in this capacity.
waste	has the same meaning given to that term under the EP Act.
works approval	refers to this document, which evidences the grant of the works approval by the CEO under section 54 of the EP Act, subject to the conditions.
works approval holder	refers to the occupier of the premises being the person to whom this works approval has been granted, as specified at the front of this works approval.

END OF CONDITIONS

Schedule 1: Maps

Premises map

The boundary of the prescribed premises is shown in the map below (**Figure 1**).

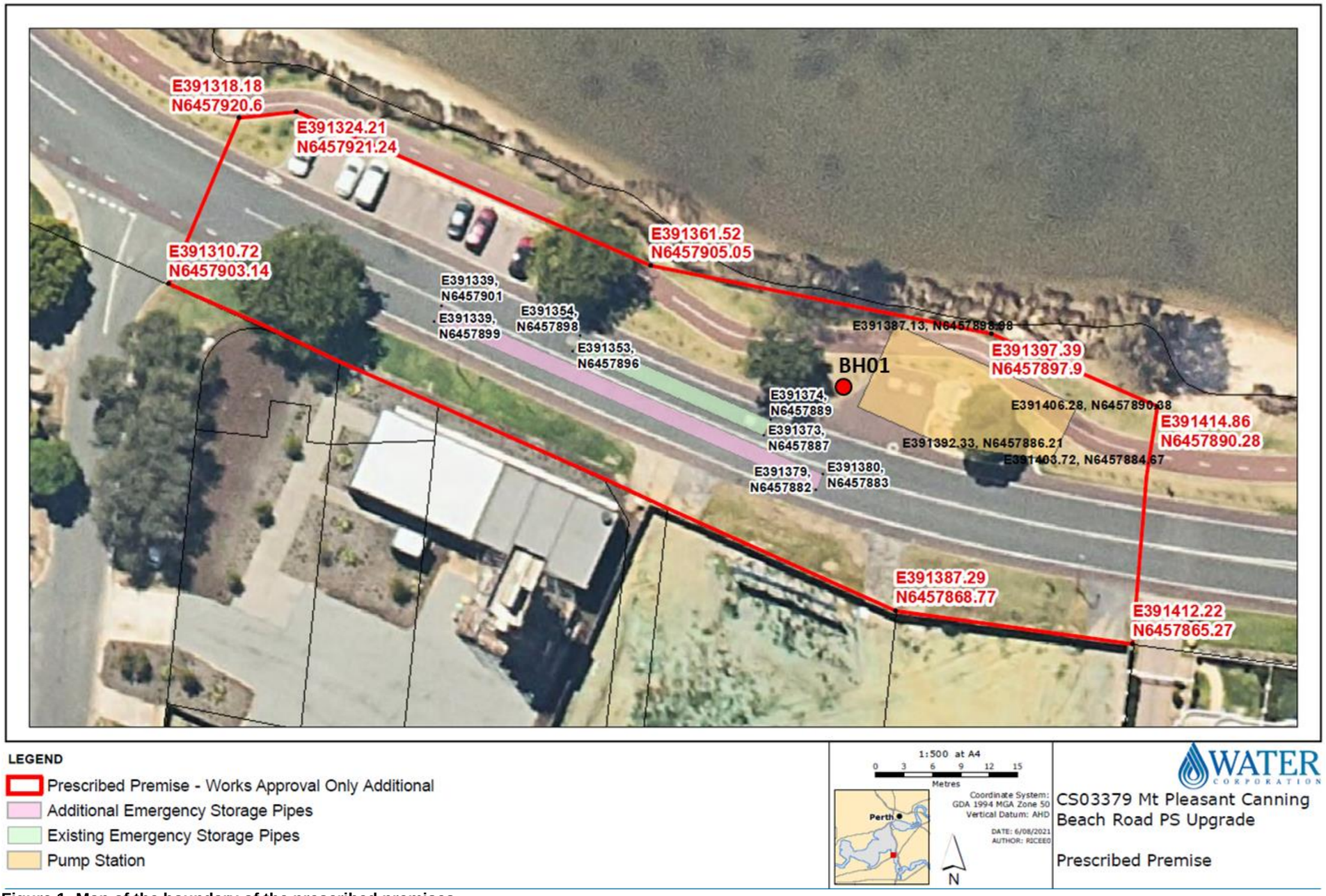

Figure 1: Map of the boundary of the prescribed premises

Site plan

The site plan of the prescribed premises is shown in the map below (**Figure 2: Site plan**)

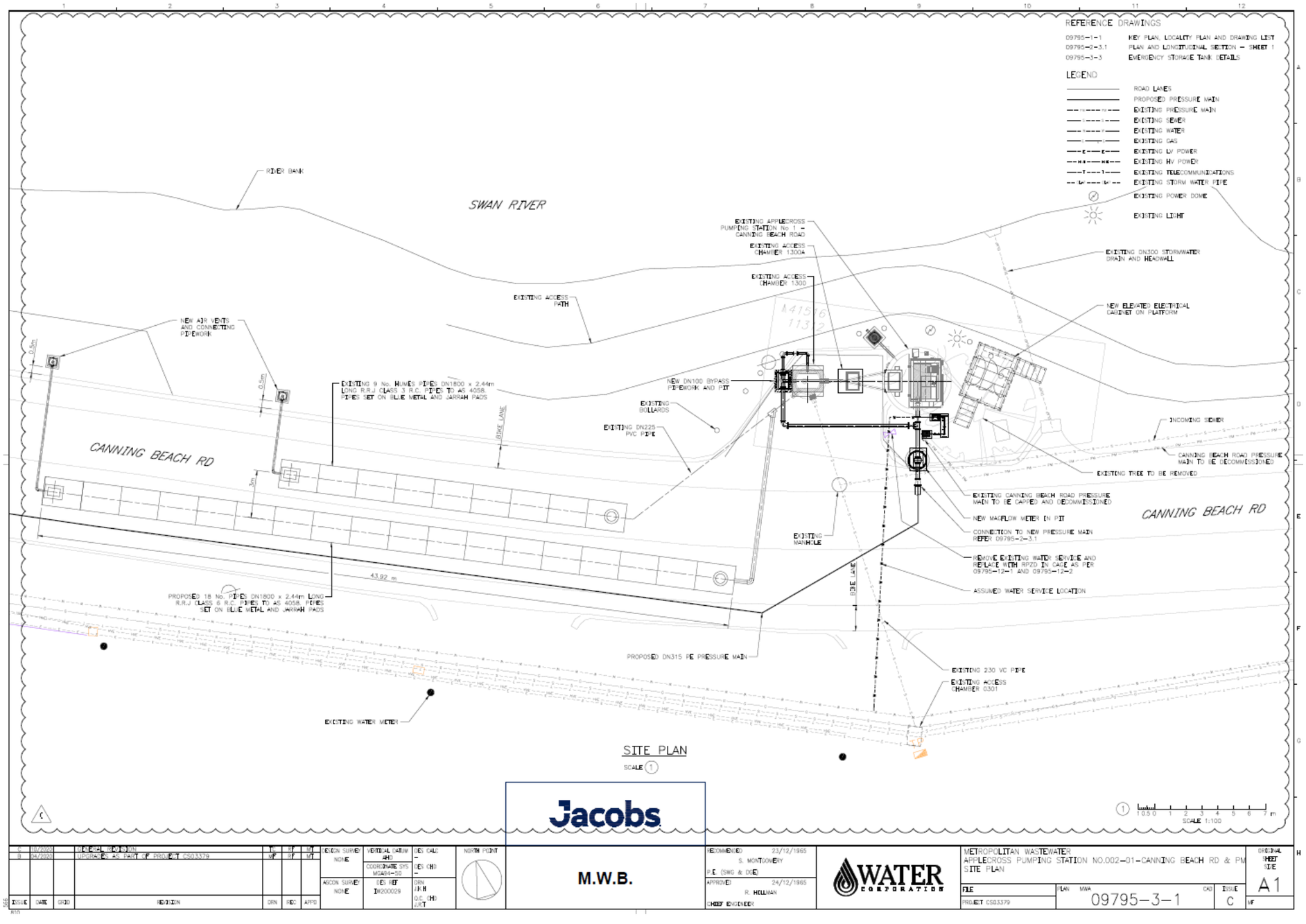

Figure 2: Site plan

Pump station and pressure main upgrades

The pump station upgrades of the prescribed premises and pressure main upgrades are shown below (**Figure 3**)

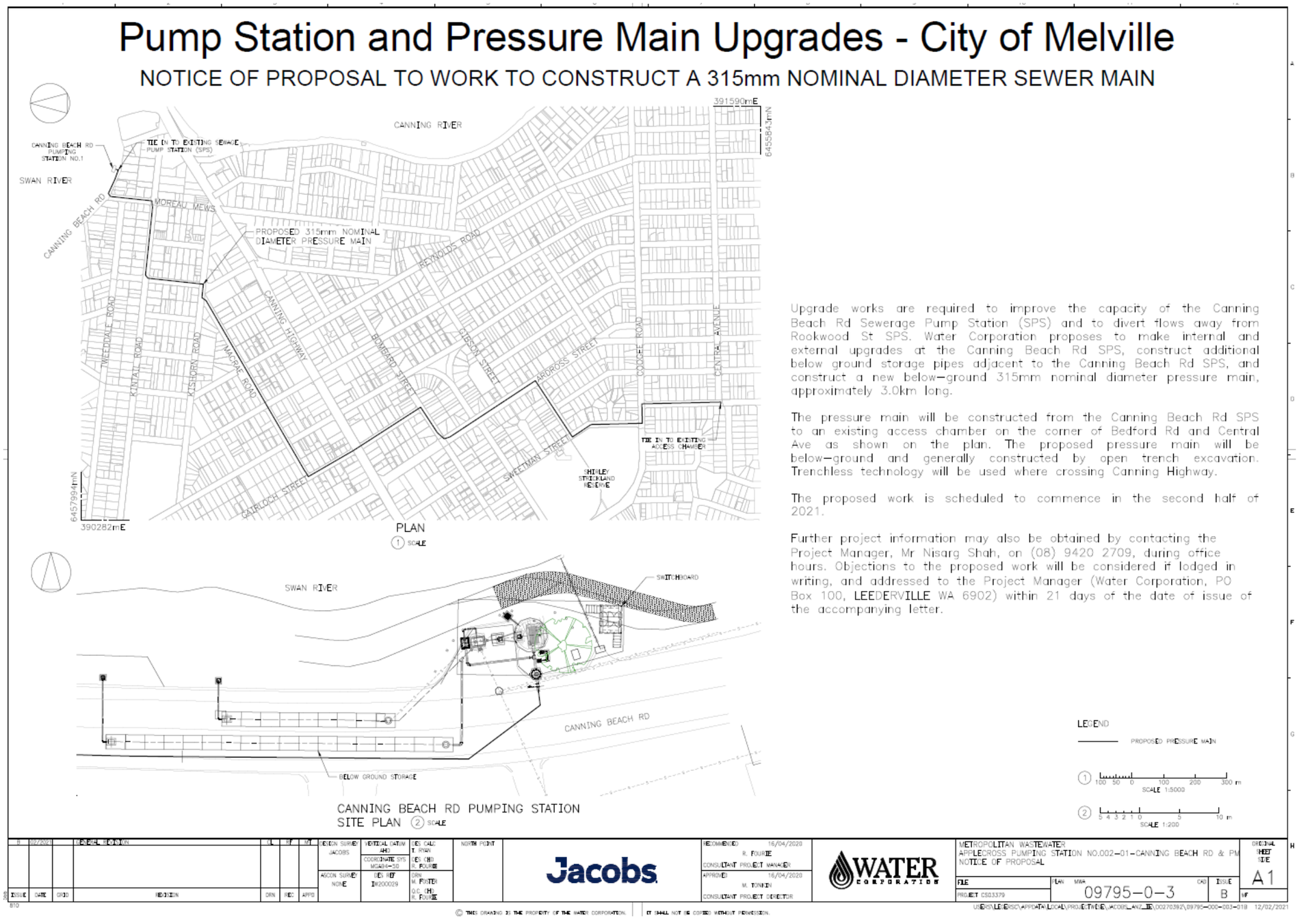

Figure 3: Pump station and pressure main upgrades

Schedule 2: Premises boundary

The premises boundary is defined by the coordinates in Table 6.

Table 6: **Premises boundary coordinates** (GDA 2020 MGA Zone 50)

Easting	Northing
391319.18	6457922.11
391325.21	6457922.75
391362.52	6457906.56
391398.39	6457899.41
391415.86	6457891.79
391413.22	6457866.78
391388.29	6457870.28
391311.72	6457904.65