



Licence Holder	Water Corporation
ACN	28 003 434 917
Licence Number	L5976/1991/10
File Number	2010/003112
Category	54 – Sewage Facility
Premises	Carnarvon Wastewater Treatment Plant Babbage Island Road Morgantown WA 6701 Lot 1321 on Plan 193061, portion of Lot 1205 on Plan 240108 and portion of Lot 1146 on Plan 210835.
Date of amendment	25/05/2017

Amendment

The Chief Executive Officer (CEO) of the Department of Environment Regulation (DER) has amended the above Licence in accordance with section 59 of the *Environmental Protection Act 1986* as set out in this Amendment Notice. This Amendment Notice constitutes written notice of the amendment in accordance with section 59B(9) of the EP Act and follows.

Date signed: 25 May2017

Steve Checker

MANAGER LICENSING (WASTE INDUSTRIES)

an officer delegated under section 20 of the Environmental Protection Act 1986 (WA)

Amendment Notice

This amendment is made pursuant to section 59 of the *Environmental Protection Act 1986* (EP Act) to amend the licence issued under the EP Act for a prescribed premises as set out below. This notice of amendment is given under section 59B(9) of the EP Act.

This notice is limited only to an amendment of the following:

1. Change to the prescribed premises boundary due to an increase in premises area including portions of Department of Lands land (Lot 1205 on Plan 240108) and Shire of Carnarvon land (Lot 1146 on Plan 210835), and
2. To identify an upgrade of the reuse scheme infrastructure that is being handed over by the Shire of Carnarvon to Water Corporation. The infrastructure and its operation will now become the responsibility, management and ownership of Water Corporation to ensure that treated wastewater discharged from the premises meets Department of Health infrastructure and discharge requirements.

No other changes to the aspects of the original licence have been requested by the Licence Holder.

The following DER Guidance Statements have informed the decision made on this amendment:

- *Guidance Statement: Regulatory Principles* (July 2015)
- *Guidance Statement: Land Use Planning* (February 2017)
- *Guidance Statement: Decision Making* (February 2017)
- *Guidance Statement: Risk Assessment* (February 2017)

Amendment Description

Water Corporation initiated an application for an amendment to Licence L5976/1991/10 for the upgrade of the Shire Reuse Scheme infrastructure and a realignment of their prescribed premises boundary to incorporate additional lands under Department of Lands (Lot 1205 on Plan 240108) and Shire of Carnarvon land (Lot 1146 on Plan 210835).

Water Corporation own and operate the Carnarvon Wastewater Treatment Plant prescribed premises, Category 54 – Sewage facility as defined under Schedule 1 of the *Environmental Protection Regulations 1987*. The plant consists of three stabilisation ponds made up of a primary aeration pond and two maturation ponds. An onsite emergency infiltration basin also exists within the premises boundary along with a sludge drying bed area.

The inlet pipe at the premises is fitted with a grit and screening facility and the area is bunded and filters the waste stream prior to discharge into pond 1. A copper ioniser/doser has been in operation at the Premises since 2006, for use as an algaecide and microbicide, as part of the wastewater treatment process.

The treated wastewater effluent is pumped into the Shire of Carnarvon's reuse storage facility. Reuse accounts for 100% of the effluent discharged from the Water Corporation's facility. On-site infiltration is retained for emergency events and exceptional circumstances only.

Treated wastewater is discharged via the adjacent Shire of Carnarvon reuse scheme to the Town Beach, Northwater Public Open Space, Brockman Park, Football Oval/Festival Grounds, Van Dongen Park and High School. This effluent reuse is managed under the Recycling Water Supply Agreement (RWSA) (signed 10/03/2011), which is managed by the Department of Health.

Water Corporation undertook an assessment of the Shire of Carnarvon's infrastructure used for the filtration and chlorination of the wastewater from Water Corporations premises and

determined that it was in a state of “disrepair” and did “not meet Department of Health requirements under the Reuse Agreement”. Water Corporation has therefore agreed to (in consultation and agreement with the Shire of Carnarvon) decommission the old infrastructure and rebuild them to Department of Health standards. Once completed, the new infrastructure and its operation will fall under the ownership and management of Water Corporation.

The proposed infrastructure details upgrade will include:

- Installation of a new pump station;
- New filtration system;
- New Chlorinator (gaseous); and
- New tanks – 2 x 400kL (over flow to sump).

The existing filtration and chlorination system at the Shire will be decommissioned on completion of the new works upgrade.

Clearing of the additional 0.72 hectares of land will be undertaken in accordance with Water Corporations’ state-wide clearing permit CPS185/7. No variances with the clearing principles were determined through their assessment process.

The infrastructure will be located on a portion of Lot 1205 on Plan 240108 and a portion of Lot 1146 on Plan 210835 which is land owned by the Shire. The Shire has endorsed through council resolution (FC 17/1/17 / Ref. 5R0105), and signed a letter (4/4/2017) in agreement for Water Corporation to undertake the upgrade of the reuse scheme infrastructure which Water Corporation will then own, operate and maintain in order to supply treated wastewater to the Shire on Shire land (See Section Table 1 and Appendix 1).

The Carnarvon WWTP and Shire storage ponds are less than 500 metres from residences in the nearby built-up area. Long term plans involve decommissioning the current plant and utilising a new site.

Map 1 below outlines the proposed changes to the prescribed premises boundary. The thick red line defines the new premises boundary with the yellow broken line defining the old section of the previous prescribed premises boundary that has been altered:

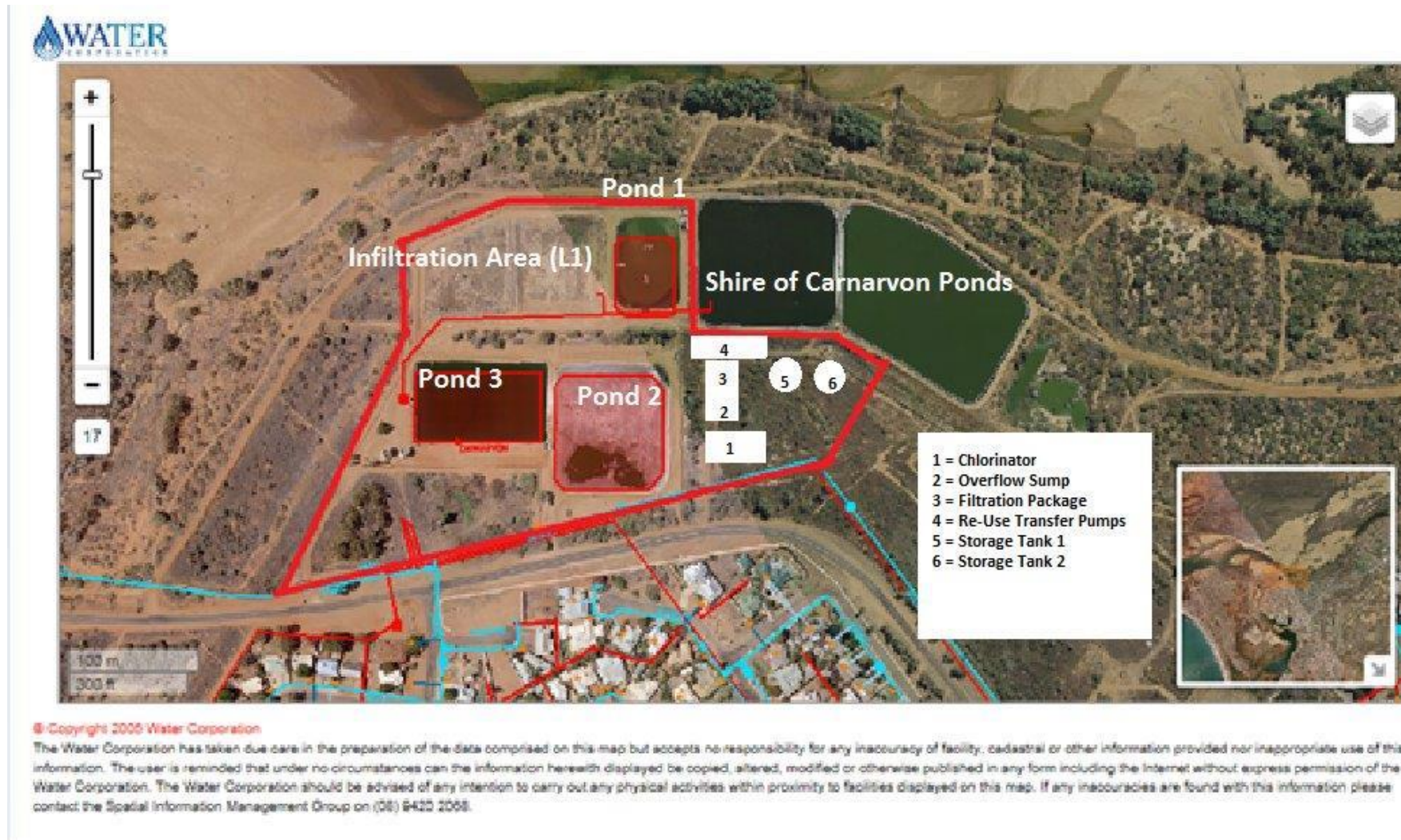


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Map 2 below identifies the yellow hatched area to be cleared:



Map 3 below identifies the location of the new infrastructure and operational assets to replace the old infrastructure used for the filtration and chlorination of wastewater from the Carnarvon Wastewater Treatment Plant:



Other approvals

The Licence Holder has provided the following information relating to other approvals as outlined in Table 1.

Table 1: Relevant approvals

Legislation	Number	Approval
Local Planning approval – Shire of Carnarvon	N/A	Gazettal of the <i>Water Services Act 2012</i> (as gazetted on 18 November 2013) states a 'Development Approval' is not required for the proposed works at the premises. Section 137 of the <i>Water Services Act 2012</i> , identifies that Water Corporation (in its capacity as service provider) is exempt from the requirement to obtain development approvals for Public Service Works.
<i>Environmental Protection (Clearing of Native Vegetation) Regulations 2004</i>	Native Vegetation Clearing permit CPS185/7	Water Corporation has determined that under their Statewide vegetation clearing permit they are not required to obtain any further clearing permits for the clearing of 0.72 hectares of land within their Lot 1321 on Plan 193061 boundary.
Land ownership and infrastructure management - Shire of Carnarvon (Shire)	N/A	Water Corporation submitted a letter co-signed by A/ Chief Executive Officer, Mark Dacombe (Shire) and Manager Water Quality Branch, Rachael Miller (Water Corporation) confirming that Water Corporation will own, operate and maintain the filtration, disinfection and storage assets located on Lot 1321(Shire land) (See Appendix 1).

Location, environmental siting and potential receptors

Table 2 below lists the relevant sensitive land uses in the vicinity of the prescribed premises which may be receptors relevant to the proposed amendment.

Table 2: Receptors and distance from prescribed premises

Residential and sensitive premises	Distance from Prescribed Premises
Residential area	< 500 m south of the prescribed premises boundary

Table 3 below lists the relevant environmental receptors in the vicinity of the prescribed premises which may be receptors relevant to the proposed amendment.

Table 3: Environmental receptors and distance from prescribed premises

Environmental receptors	Distance from Prescribed Premises
Gascoyne River	Approximately 200 m north of the prescribed premises boundary

Risk assessment

Tables 4 and 5 below describe the Risk Events associated with the amendment consistent with the *Guidance Statement: Risk Assessments*. Both tables identify whether the emissions present a material risk to human health or the environment, requiring regulatory controls.

Table 4: Risk assessment for proposed amendments during construction

Risk Event					Consequence rating	Likelihood rating	Risk	Reasoning
Source/Activities	Potential Emissions	Potential Receptors	Potential Pathway	Potential Adverse Impacts				
<p>Category 54: Sewage Facility</p>	<p>Waste Water Treatment Facility</p>	<p><i>Odour: associated with removal of effluent treatment infrastructure</i></p>	<p><i>Residential receptors (< 500 m south of the premises boundary)</i></p>	<p><i>Air</i></p>	<p><i>Health and Amenity impacts</i></p>	<p><i>Slight</i></p>	<p><i>Unlikely</i></p>	<p><i>Low</i></p>

		Dust: associated with construction activities	Residential receptors (< 500 m south of the premises boundary)	Air	Health and amenity impacts	Slight	Possible	Low	<p>The works that are to be undertaken are predominantly of an electrical and mechanical (infrastructure placement) nature. Levelling of ground works will result in the placement of soil for foundations however this is considered to be of low volumes and low ground disturbance.</p> <p>Based on the type of works being undertaken and the separation distance to sensitive receptors and extremely low volumes of potential earth works to be undertaken that may discharge dust, the Delegated Officer considers that the consequence would be slight and the likelihood is possible. Therefore the potential risk of emissions is considered low.</p>
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Table 5: Risk assessment for proposed amendments during operation

Risk Event					Consequence rating	Likelihood rating	Risk	Reasoning	
Source/Activities	Potential Emissions	Potential Receptors	Potential Pathway	Potential Adverse Impacts					
Category 54: Sewage Facility	Waste Water Treatment Facility	Odour: associated with pipe backwash/wasting operations and treatment	Residential receptors (< 500 m south of the premises boundary)	Air	Health and amenity impacts	Slight	Rare	Low	No discharge to land is proposed through the operation of the infrastructure under normal operations. Should an abnormal event occur to

		process							<p>infrastructure then the premises has been bunded and will only allow for a limited flow through the system under low pressure reducing the potential for significant odour generation. In addition, waste water discharged through the pipeline is from the final treatment pond which generally has low odour generating potential.</p> <p>Based on the type of works being undertaken and the separation distance to sensitive receptors, the Delegated Officer considers that the consequence would be slight and the likelihood is rare. Therefore the potential risk of emissions is considered low.</p>
		Emissions to land	Surface water with beneficial use (Gascoyne river system approximately 200 m north of the premises boundary)	Seepage of leachate	Adverse impacts to the health and survival of aquatic flora and fauna dependent upon a healthy surface water system	N/A	N/A	N/A	<p>The filtration and chlorination infrastructure proposed does not result in any emissions to land under normal operating processes. 'Emissions to land' occur post filtration and chlorination as part of the standard operational process of the premises and are not applicable to this amendment process.</p> <p>However, the premises will include mitigation measures in the event of abnormal operations from the infrastructure with the</p>

									<i>inclusion of earthen bunds to inhibit flow off the premises from associated infrastructure/ pipe works.</i>
Category 54 Sewage Facility	<i>Waste Water Treatment Facility</i>	Dust: <i>associated with operational activities from the filtration and chlorination infrastructure</i>	<i>Residential receptors (< 500 m south of the premises boundary)</i>	<i>Air</i>	<i>Health and amenity impacts</i>	<i>N/A</i>	<i>N/A</i>	<i>N/A</i>	<i>No dust emissions are expected from the normal operation of the filtration and chlorination infrastructure.</i>

Decision

Controls proposed by the Licence Holder for the construction of the works are conditioned on the licence to ensure that the upgrade of the filtration and chlorination system and change to premises boundary is done in accordance with the submitted details supplied by Water Corporation and in accordance with relevant Department of Health standards.

The front page of the Licence has been amended to update the premises boundary description to include the additional land being incorporated from Department of Lands and the Shire of Carnarvon for the operation and management of the filtration and chlorination system.

The Delegated Officer considers this approach appropriate and consistent with the regulatory controls applied across the State in defining the location of prescribed premises, as regulated under DER guidance shown within Appendix 1, 2-5 of the Amendment Notice.

Section 1.2 has been updated to include conditions relating to the proposed works upgrade.

Conditions 1.2.4-1.2.8 relate to the establishment of an upgraded filtration and chlorination system that will meet Department of Health requirements under this licence amendment application. A risk assessment for odour, dust and emissions to land is detailed in Table 4 above.

Condition 1.2.4 requires the proponent to ensure that construction meets or exceeds the standards defined within Table 1.2.1 of the Licence condition. These specifications are consistent with the application requirements submitted by the proponent for the construction of the works.

Condition 1.2.5 relates to potential deviations/ departures from the proposed upgrade construction requirements (as based upon any variations to the works specifications, Table 1.2.1), and how these should be addressed.

Condition 1.2.6 requires upgrades or minor departures from the defined construction requirements to be listed and submitted through to DER, and should be submitted within the construction compliance document, stated within condition 1.2.7. This ensures that departures from the approved works can be assessed and actioned as required.

Conditions 1.2.7 and 1.2.8 require the submission of a construction compliance document prior to operation of the premises upgrade and signed by an appropriate person. This will ensure that upgrades undertaken (installation of the irrigation area) are certified as having been constructed in accordance with the Licence requirements, and that the appropriate testing has been conducted by the proponent for inclusion within the compliance report document.

The Delegated Officer considers the treatment of wastewater from the plant, through the filtration and chlorination system, impacts upon the capability of the proponent to discharge waste from the premises boundary to an appropriate standard for reuse offsite. The inclusion of additional infrastructure within the premises boundary alters the activities and processes being undertaken or stated within the Licence. As such, conditions 1.2.4-1.2.8 have been included within the Licence to define these alterations in consideration of Section 53 of the EP Act.

Condition 1.3.3 and 1.3.4 have been updated to include the new premises process controls relating to filtration and chlorination of the treated wastewater which will become the responsibility of Water Corporation on the completion of the works upgrade.

The Delegated Officer considers these inclusions appropriate to better define the relevant process activities and infrastructure controls required as a result of the additional infrastructure now included within the prescribed premises boundary, under the management of Water Corporation.

Condition 3.3.1 has been updated with the inclusion of monitoring of chlorine at the premises as a result of the process change as part of the works upgrade.

The Delegated Officer determined that the requirement to monitor for chlorine is appropriate and necessary to validate the risk determinations and regulatory controls for 'emissions to land' and 'monitoring'. The condition has been updated to specify what process changes and equipment (i.e. wastewater filtration and chlorination) is required to be maintained and operated at the premises through the monitoring of inputs/ outputs.

The Delegated Officer noted that DER has one record of an odour complaint (5/1/2016) from the facility within DER 'Incidents and Complaints Management System' (ICMS). The Delegated Officer considered that the general onsite housekeeping and distance to sensitive receptors is expected to mitigate any odour issues. As the risk from odour has been determined as 'Low', the Delegated Officer considers that impacts from odour emissions can be sufficiently regulated under section 49 of the *Environmental Protection Act 1986*.

The Delegated Officer has determined that risk of dust emissions is considered low due to the short term nature of the earth works required at the premises, and the relatively small volumes of soil disturbance required to level and prepare the site. Under normal operating processes, dust emissions are not expected to pose a potential environmental risk.

The premises is scheduled to be subject to a full risk-based review by DER in the near future.

Amendment History

Table 6 provides the amendment history for L5976/1991/10.

Table 6: Licence amendments

Instrument	Issued	Amendment
L5976/1991/10	25/05/2017	Amendment Notice 1 – Upgrade of filtration and chlorination system and change to premises boundary.

Licence Holder's Comments

The Licence Holder was provided with the draft Amendment Notice on 18 April 2017. Comments received from the Licence Holder have been considered by the Delegated Officer as shown in Appendix 2.

Amendment

1. Front Page of the Licence

Premises address is to be amended by the inclusion of the in red text shown in underline below:

“Being Lot 1321 on Plan 193061, portion of Lot 1205 on Plan 240108 and portion of Lot 1146 on Plan 210835 as depicted in schedule 1”

2. Section 1.2 of the Licence is amended with the insertion of the following conditions relevant to the installation of the new infrastructure at the premises:

1.2.4 *The Licensee must ensure that the proposed Works specified in Column 1 of Table 1.2.1 are designed and constructed to meet or exceed the specifications in Column 2 of Table 1.2.1 for the infrastructure in each row of Table 1.2.1.*

1.2.5 *The Licensee must not depart from the specifications in Table 1.2.1 except:*
(a) *where such departure is minor in nature and does not materially change or affect the infrastructure; or*
(b) *where such departure improves the functionality of the infrastructure and does not increase risks to public health, public amenity or the environment; and all other Conditions in this Licence are still satisfied.*

Table 1.2.1:	Works specifications
<i>Column 1</i>	<i>Column 2</i>
<i>Infrastructure</i>	<i>Specifications (design and construction)</i>

Table 1.2.1: Works specifications	
Column 1	Column 2
Infrastructure	Specifications (design and construction)
Filtration and Chlorination system (See Map 3)	<p>The Licensee must ensure that the filtration and chlorination area:</p> <ol style="list-style-type: none"> 1. is contained within the premises boundary; 2. is not accessible to the public (non-operational staff) at any time; 3. is earthen bunded to mitigate against accidental discharge from the infrastructure under abnormal operating conditions; 4. has signage placed around the boundary of the premises identifying chlorination treatment of wastewater within the premises boundary; 5. includes the installation of a filtration unit, chlorination unit, 2 x 400 kL storage tanks, low permeability (concrete) overflow/ backwash sump/s and transfer pumps; 6. is linked via a pipeline network from pond 3 only to receive wastewater for filtration and chlorination purposes prior to discharge to the Shire storage ponds, outside of the premises boundary; and 7. complies with Department of Health requirements.

1.2.6 If departures under Condition 1.2.5 apply, then the Licensee must provide the CEO with a list of departures which are certified as complying with Condition 1.2.5 at the same time as the certifications under Condition 1.2.7.

1.2.7 The Licensee must submit a construction compliance document to the CEO, within one month, following the construction of the Works and prior to operating the new works at the premises.

1.2.8 The Licensee must ensure the construction compliance document:

- (a) is certified by a suitably qualified professional engineer or builder that each item of infrastructure specified in Condition 1.2.3, Table 1.2.1 has been constructed in accordance with the Conditions of the Licence with no material defects; and
- (b) be signed by a person authorised to represent the Licensee and contain the printed name and position of that person within the company.

3. Condition 1.3.3, Table 1.3.2 of the licence is amended by the inclusion of additional process treatment requirements as shown in red underlined text below:

Table 1.3.2: Waste processing		
Waste type	Process	Process requirements
Sewage	Physical, biological and <u>chemical</u> treatment	<ul style="list-style-type: none"> • Treatment of sewage waste shall be at or below the treatment capacity of 1 800 m³/day; • <u>Treated wastewater shall be filtered and chlorinated prior to discharge beyond the premises boundary for reuse.</u>
Sewage sludge	Storage – sludge drying bed	<ul style="list-style-type: none"> • Returns sludge leachate to the start of the treatment process.

4. Condition 1.3.4, Table 1.3.3 of the licence is amended by the inclusion of the following containment infrastructure as shown in red underlined text below:

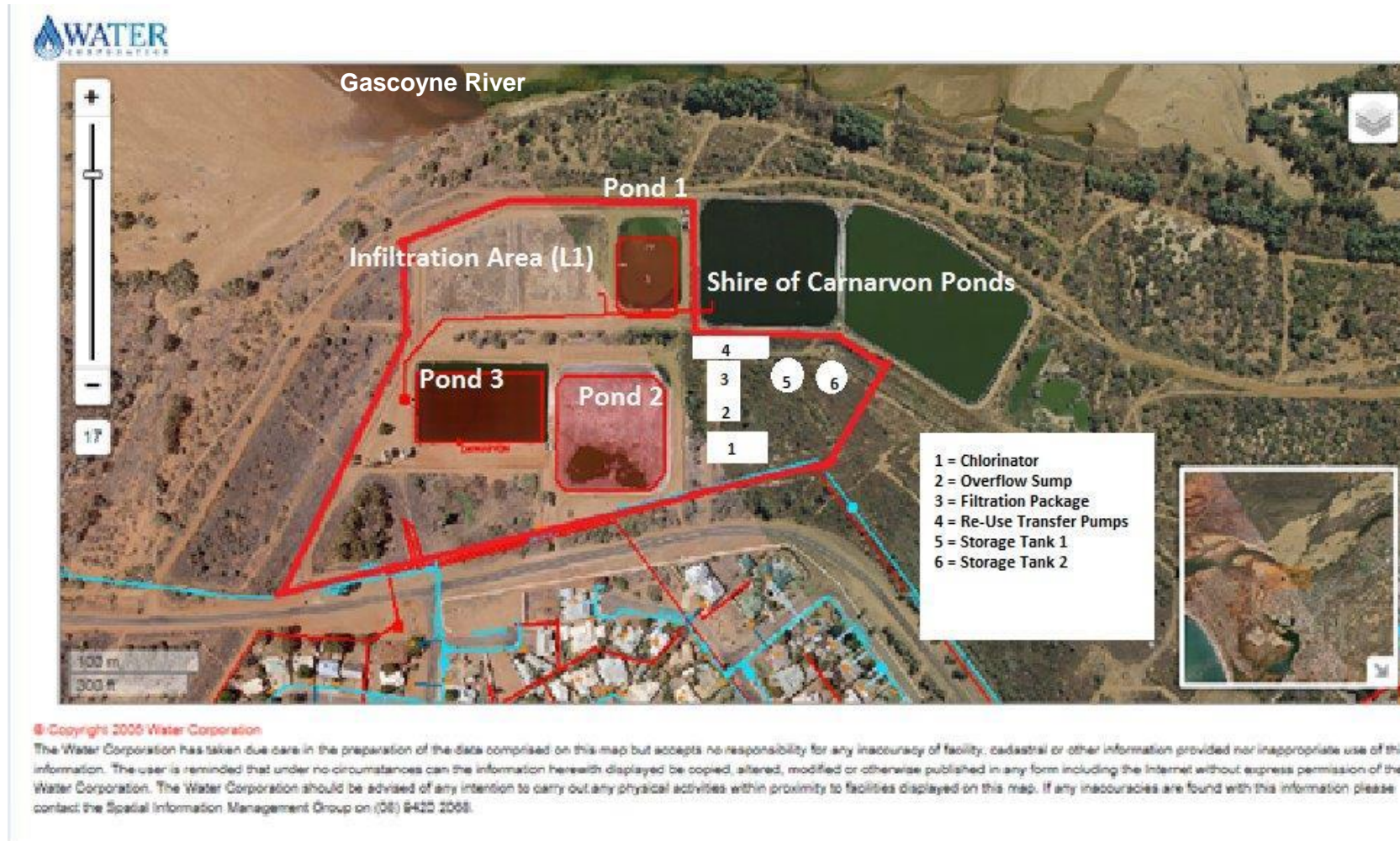
Table 1.3.3: Containment infrastructure		
Vessel or compound	Material	Requirements
Inlet works	Screening	Stored in a sealed bin which is surrounded by a bunded hardstand area which returns sludge leachate to the start of the treatment process.

Pond 1 (aeration)	Wastewater	Clay lined to achieve a permeability of less than 10 ⁻⁹ m/s or equivalent.
Pond 2 (facultative)	Wastewater	
Pond 3 (maturation)	Treated wastewater	
Infiltration area	Treated wastewater	Unlined, in-situ soils. Used in emergency events only.
<u>Filtration and chlorination system</u>	<u>Treated wastewater</u>	<u>Filtration and gaseous chlorination of treated wastewater prior to discharge to Shire of Carnarvon storage ponds for reuse.</u>
<u>Storage tanks</u>	<u>Treated wastewater</u>	<u>Holding tanks for the containment of overflow to sump</u>
Sludge drying bed	Sewage sludge	Temporary or permanent infrastructure to consist of a bunded hardstand or lined area (lined to achieve a permeability of less than 10 ⁻⁹ m/s or equivalent), capable of preventing surface run-off of leachate and sludge and which includes a leachate collection system.

5. Condition 3.3.1, Table 3.3.1 of the licence is amended by the inclusion of the following input as shown in red underlined text below:

Table 3.3.1: Monitoring of inputs and outputs					
Input/ Output	Monitoring point reference	Parameter¹	Units	Averaging period	Frequency
Wastewater Treatment Plant - Inlet Flow	Inflow meter (M1 – S2042103)	Volumetric flow rate (cumulative)	m ³ /day	Monthly	Continuous
Treated wastewater discharged to Shire of Carnarvon ponds	Outflow meter (M2 - S0037360)	Volumetric flow rate (cumulative)	m ³ /day	Monthly	Continuous
Treated wastewater discharged to on-site infiltration ponds	Outflow meter or mass balance calculation (M3)	Volumetric flow rate (cumulative)	m ³ /day	Monthly	Emergency/ abnormal events only
<u>Treated wastewater discharged from pond 3 (post chlorination)</u>	<u>Final treated water discharge monitoring point</u>	<u>Chlorine</u>	<u>mg/L</u>	<u>Monthly</u>	<u>Continuous</u>

6. **Schedule 1: Maps – Premises map** of the Licence is to be updated and replaced with the following map to reflect the changes to premises boundary, as shown below:



Appendix 1: Key Documents

	Document Title	In text ref	Availability
1	Licence amendment application – PM-#16370598-v1-Carnarvon WWTP - Re-Use Scheme Upgrade Approval Application - 2017	L5976/1991/10	DER records (A1377434)
2	Email: Carnarvon reuse scheme - Letter to DER re Licence amendment from Craig Chaudhry, 30/03/2017.	Project No. CS03208 (dated 14/3/17)	DER records (A1406227) 'Infrastructure ownership and management.'
3	Email: FW: CS03208 Carnarvon Shire Reuse - Shire letter to support DER licence amendment from Craig Chaudhry, 3/4/2017.	Shire of Carnarvon - Council Resolution (Ref. 5R0105)	DER records (A1407182)
4	DER, July 2015. <i>Guidance Statement: Regulatory principles.</i> Department of Environment Regulation, Perth.	DER 2015a	accessed at http://www.der.wa.gov.au
5	DER, October 2015. <i>Guidance Statement: Setting conditions.</i> Department of Environment Regulation, Perth.	DER 2015b	
6	DER, November 2016. <i>Guidance Statement: Risk Assessments.</i> Department of Environment Regulation, Perth.	DER 2016b	
7	DER, November 2016. <i>Guidance Statement: Decision Making.</i> Department of Environment Regulation, Perth.	DER 2016c	

Appendix 2: Summary of Licence Holder comments

The Licence Holder was provided with the draft Amendment Notice on 19 April 2017 for review and comment. One comment was submitted on the draft Amendment Notice within the 21 day comment period, which expired on 19 May 2017.

Comments received	DER consideration of risk
One comment received via email from Craig Chaudhry on 18/05/2017 requesting the removal of mention of the sprinkler system within 'Table 1.2.1 Works specifications'. This infrastructure will not be owned or managed by Water Corporation and will continue to be the responsibility of the Shire of Carnarvon, as part of the reuse scheme infrastructure for application to the various areas within the Shire.	Removed from Table 1.2.1 within the Amendment Notice.