



# Licence

## *Environmental Protection Act 1986, Part V*

**Licensee:** Discovery Parks Onslow Pty Limited

**Licence:** L8884/2015/1

**Registered office:** Level 2  
157 Grenfell St  
ADELAIDE SA 5000

**ACN:** 163 484 937

**Premises address:** Beadon Bay Caravan Park  
Lots 555 and 556 on Plan 181876 and Lot 557 on Plan 173181  
ONSLOW WA 6710

**Issue date:** Thursday, 10 December 2015

**Commencement date:** Monday, 14 December 2015

**Expiry date:** Sunday, 13 December 2020

**Prescribed premises category**  
Schedule 1 of the *Environmental Protection Regulations 1987*

Category number	Category description	Category production or design capacity	Approved premises production or design capacity
85	Sewage facility premises – (a) on which sewage is treated (excluding septic tanks); or (b) from which treated sewage is discharged onto land or into waters.	More than 20 but less than 100 cubic metres per day	90 cubic metres per day

### Conditions

This licence is subject to the conditions set out in the attached pages.

Date signed: 10 December 2015

.....  
Steve Checker  
Manager Licensing (Waste Industries)  
Officer delegated under section 20  
of the *Environmental Protection Act 1986*



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## Introduction

This Introduction is not part of the Licence conditions.

### The DER's industry licensing role

The Department of Environment Regulation (DER) is a government department for the state of Western Australia in the portfolio of the Minister for Environment. The DER's purpose is to advise on and implement strategies for a healthy environment for the benefit of all current and future Western Australians.

The DER has responsibilities under Part V of the *Environmental Protection Act 1986* (the Act) for the licensing of prescribed premises. Through this process the DER regulates prevent, control and abate pollution and environmental harm to conserve and protect the environment. The DER also monitors and audits compliance with works approvals and licence conditions, takes enforcement action as appropriate and develops and implements licensing and industry regulation policy.

### Licence requirements

This Licence is issued under Part V of the Act. Conditions contained within the Licence relate to the prevention, reduction or control of emissions and discharges to the environment and to the monitoring and reporting of them.

Where other statutory instruments impose obligations on the Premises/Licensee the intention is not to replicate them in the Licence conditions. You should therefore ensure that you are aware of all your statutory obligations under the Act and any other statutory instrument. Legislation can be accessed through the State Law Publisher website using the following link: <http://www.slp.wa.gov.au/legislation/statutes.nsf/default.html>

For your Premises relevant statutory instruments include but are not limited to obligations under the:

- *Environmental Protection (Unauthorised Discharges) Regulations 2004* – these Regulations make it an offence to discharge certain materials such as contaminated stormwater into the environment other than in the circumstances set out in the Regulations.
- *Environmental Protection (Controlled Waste) Regulations 2004* - these Regulations place obligations on you if you produce, accept, transport or dispose of controlled waste.
- *Environmental Protection (Noise) Regulations 1997* – these Regulations require noise emissions from the Premises to comply with the assigned noise levels set out in the Regulations.

You must comply with your Licence. Non-compliance with your Licence is an offence and strict penalties exist for those who do not comply.



Licence holders are also reminded of the requirements of section 53 of the Act which places restrictions on making certain changes to prescribed premises unless the changes are in accordance with a works approval, licence, closure notice or environmental protection notice.

Other Guidelines which you should be aware of include:

- *Western Australian Guidelines for Biosolids Management*, Department of Environment and Conservation, December 2012 (as amended from time to time).

#### Licence fees

If you have a licence that is issued for more than one year, you are required to pay an annual licence fee prior to the anniversary date of issue of your licence. Non payment of annual licence fees will result in your licence ceasing to have effect meaning that it will no longer be valid and you will need to apply for a new licence for your Premises.

#### Ministerial conditions

If your Premises has been assessed under Part IV of the Act you may have had conditions imposed by the Minister for Environment. You are required to comply with any conditions imposed by the Minister.

#### Premises description and Licence summary

Discovery Parks Onslow Pty Limited (Discovery Parks Onslow) operate a Wastewater Treatment Plant (WWTP) servicing the Beadon Bay Caravan Park in the Town of Onslow. The maximum capacity of the WWTP is 90m<sup>3</sup>/day, which meets the requirements for a category 85 registration, however, due to the sensitivity of the receiving environment the proponent has applied for a licence.

The WWTP includes two 45m<sup>3</sup>/day systems each containing the following:

- A 32 kilolitre (kL) balance tank;
- A 45,000 litre (L) Submerged Aeration Filter (SAF) treatment system including balance and primary compartments, anaerobic, aerobic and anoxic compartments, clarifier and disinfection system;
- Media filtration;
- Ultra filtration system; and
- Two 32kL treated water storage tanks.

Treated water from the WWTP is either recycled onsite for use in laundries and ablutions, disposed of via irrigation for landscaping, or to a designated irrigation field. Use of the WWTP is only expected to be temporary pending the connection of the Caravan Park to Water Corporation's sewer system. Discovery Parks Onslow is currently in negotiations with Water Corporation regarding this matter.

The main emissions from the WWTP are emissions to land through the irrigation of treated wastewater (TWW) to the onsite irrigation field which potentially may infiltrate to groundwater. The irrigation field is open access, however, signs are erected notifying residents that recycled water is used.

This Licence is for the operation of a new facility established under works approval W5567/2013/1. The licences and works approvals issued for the Premises are:

Instrument log		
Instrument	Issued	Description
W5567/2013/1	06/02/2014	Works Approval for the construction of the WWTP
L8884/2015/1	10/12/2015	Licence issued for the operation of the WWTP

#### Severance

It is the intent of these Licence conditions that they shall operate so that, if a condition or a part of a condition is beyond the power of this Licence to impose, or is otherwise *ultra vires* or invalid, that condition or part of a condition shall be severed and the remainder of these conditions shall nevertheless be valid to the extent that they are within the power of this Licence to impose and are not otherwise *ultra vires* or invalid.

#### END OF INTRODUCTION



## Licence conditions

### 1 General

#### 1.1 Interpretation

1.1.1 In the Licence, definitions from the *Environmental Protection Act 1986* apply unless the contrary intention appears.

1.1.2 For the purposes of this Licence, unless the contrary intention appears:

**'Act'** means the *Environmental Protection Act 1986*;

**'AHD'** means the Australian height datum;

**'annual period'** means the inclusive period from 1 January until 31 December each year;

**'AS/NZS 5667.1'** means the Australian Standard AS/NZS 5667.1 *Water Quality – Sampling – Guidance of the Design of sampling programs, sampling techniques and the preservation and handling of samples*;

**'AS/NZS 5667.10'** means the Australian Standard AS/NZS 5667.10 *Water Quality – Sampling – Guidance on sampling of waste waters*;

**'AS/NZS 5667.11'** means the Australian Standard AS/NZS 5667.11 *Water Quality – Sampling – Guidance on sampling of groundwaters*;

**'averaging period'** means the time over which a limit or target is measured or a monitoring result is obtained;

**'CEMS'** means continuous emissions monitoring system;

**'CEMS Code'** means the current version of the Continuous Emission Monitoring System (CEMS) Code for Stationary Source Air Emissions, Department of Environment & Conservation, Government of Western Australia;

**'CEO'** means Chief Executive Officer of the Department of Environment Regulation;

**'CEO'** for the purpose of correspondence means:

Chief Executive Officer  
Department Administering the Environmental Protection Act 1986  
Locked Bag 33  
CLOISTERS SQUARE WA 6850  
Email: info@der.wa.gov.au

**'controlled waste'** has the definition in *Environmental Protection (Controlled Waste) Regulations 2004*.

**'Geobag'** means a geotextile dewatering bag that allows solids to dewater over time while containing the solid component.

**'hardstand'** means a surface with a permeability of  $10^{-9}$  metres/second or less;

**'leachate'** means liquid released by or water that has percolated through waste and which contains some of its constituents.

**'Licence'** means this Licence numbered L8884/2015/1 and issued under the Act;

**'Licensee'** means the person or organisation named as Licensee on page 1 of the Licence;



**'NATA'** means the National Association of Testing Authorities, Australia;

**'NATA accredited'** means in relation to the analysis of a sample that the laboratory is NATA accredited for the specified analysis at the time of the analysis;

**'normal operating conditions'** means any operation of a particular process (including abatement equipment) excluding start-up, shut-down and upset conditions, in relation to stack sampling or monitoring;

**'Nutrient Irrigation Management Plan'** means document titled "Beadon Bay Caravan Park, Onslow, Western Australia Nutrient and Irrigation Management Plan" dated 24 April 2015.

**'Premises'** means the area defined in the Premises Map in Schedule 1 and listed as the Premises address on page 1 of the Licence;

**'process equipment'** means any wastewater or sludge containment infrastructure or wastewater treatment vessel;

**'quarterly'** means the 4 inclusive periods from ,1 January to 31 March, 1 April to 30 June, 1 July to 30 September and 1 October to 31 December in the same year

**'Schedule 1'** means Schedule 1 of this Licence unless otherwise stated;

**'Schedule 2'** means Schedule 2 of this Licence unless otherwise stated;

**'shut-down'** means the period when plant or equipment is brought from normal operating conditions to inactivity;

**'spot sample'** means a discrete sample representative at the time and place at which the sample is taken;

**'start-up'** means the period when plant or equipment is brought from inactivity to normal operating conditions;

**'usual working day'** means 0800 – 1700 hours, Monday to Friday excluding public holidays in Western Australia;

**'Waste Code'** means the Waste Code assigned to a type of controlled waste for purposes of waste tracking and reporting as specified in the Department of Environment Regulation "Controlled Waste Category List" (July 2014), as amended from time to time;

**'wastewater treatment vessels'** means any vessel or tank containment infrastructure associated with the treatment of wastewater; and

**'µS/cm'** means microsiemens per centimetre.

1.1.3 Any reference to an Australian or other standard in the Licence means the relevant parts of the standard in force from time to time during the term of this Licence.

1.1.4 Any reference to a guideline or code of practice in the Licence means the current version of the guideline or code of practice in force from time to time, and shall include any amendments or replacements to that guidelines or code of practice made during the term of this Licence.

1.1.5 Nothing in the Licence shall be taken to authorise any emission that is not mentioned in the Licence, where the emission amounts to:

- (a) pollution;
- (b) unreasonable emission;
- (c) discharge of waste in circumstances likely to cause pollution; or
- (d) being contrary to any written law.



## 1.2 General conditions

- 1.2.1 The Licensee shall operate and maintain the waste water treatment and disposal system including all alarms, tanks, filtration systems, subsurface moisture probes and the Magflow output meter in accordance with manufacturer's specifications.
- 1.2.2 The Licensee shall immediately recover, or remove and dispose of spills of chlorine, alum, sewage, partially treated sewage and/or sewage sludge associated with the treatment of sewage onsite where the spill occurs or migrates outside of an engineered containment system.

## 1.3 Premises operation

- 1.3.1 The Licensee shall record and investigate the exceedance of any descriptive or numerical limit in this section.
- 1.3.2 The Licensee shall only allow waste to be accepted on to the Premises if:
- (a) it is of a type listed in Table 1.3.1; and
  - (b) the quantity accepted is below any limit listed in Table 1.3.1; and
  - (c) it meets any specification listed in Table 1.3.1

**Table 1.3.1: Waste acceptance**

Waste	Waste Code	Quantity Limit	Specification <sup>1</sup>
<b>Putrescible and Organic wastes</b>			
Sewage	N/A	90m <sup>3</sup> /day	Accepted through sewer inflow(s) only

Note 1: Additional requirements for the acceptance of controlled waste are set out in the *Environmental Protection (Controlled Waste) Regulations 2004*.

- 1.3.3 The Licensee shall ensure that the wastes accepted onto the Premises are only subjected to the process(es) set out in Table 1.3.2 and in accordance with any process requirements described in that table.

**Table 1.3.2: Waste processing**

Waste type	Process	Process requirements
Sewage	Biological and chemical treatment	Treatment of sewage waste shall be at or below the treatment capacity of 90 m <sup>3</sup> /day.

- 1.3.4 The Licensee shall ensure that waste material is only stored and/or treated within vessels or compounds provided with the infrastructure detailed in Table 1.3.3.

**Table 1.3.3: Containment infrastructure**

Vessel or compound	Material	Requirements
Balance Tank 1, 2 & 3	Wastewater	Impermeable receptacle or storage chamber
SAF treatment system	Wastewater	Impermeable receptacle or storage chamber
Treated Water Storage Tanks 1, 2 & 3	Treated Wastewater	Impermeable receptacle or storage chamber
A+ Treated Wastewater Storage Tanks	Treated Wastewater	Impermeable receptacle or storage chamber

- 1.3.5 The Licensee shall manage the irrigation of treated wastewater such that:



- (a) no irrigation generated run-off or discharge occurs beyond the boundary of the defined irrigation area(s);
- (b) treated wastewater is evenly distributed over the irrigation area;
- (c) no soil erosion occurs;
- (d) irrigation does not occur on land that is waterlogged; and
- (e) vegetation cover is maintained over the irrigation area.

1.3.6 The Licensee shall manage the wastewater treatment vessels such that:

- (a) overtopping of the vessels does not occur;
- (b) stormwater runoff is prevented from entering the vessels; and
- (c) there is no discernible seepage loss from the vessels.

1.3.7 The Licensee shall ensure that irrigation is conducted in accordance with the Nutrient Irrigation Management Plan.





## 2 Emissions

### 2.1 General

2.1.1 The Licensee shall record and investigate the exceedance of any descriptive or numerical limit or target specified in any part of section 2 of this Licence.

### 2.2 Emissions to land

2.2.1 The Licensee shall ensure that where waste is emitted to land from the emission points in Table 2.2.1 [and identified on the map of emission points in Schedule 1] it is done so in accordance with the conditions of this Licence.

**Table 2.2.1: Emissions to land**

Emission point reference [and location on Map of emission points]	Emission point reference on Map of emission points	Description	Source including abatement
Purple shaded areas of emissions to land map (Schedule 1)	On-site irrigation area	Discharge from sub-surface drip irrigation pump system to on-site irrigation area	Treated wastewater pumped from Treated Water Storage Tanks
Green shaded areas of emissions to land map (Schedule 1)	Designated garden areas	Discharge from sub-surface drip irrigation pump system designated garden areas	Treated wastewater pumped from Treated Water Storage Tanks

2.2.2 The Licensee shall not cause or allow emissions to land greater than the limits listed in Table 2.2.2.

**Table 2.2.2: Emission limits to land**

Emission point reference	Parameter	Limit (including units)	Averaging period
L1	Load of Total Phosphorus	<50 kg/ha/yr	Annual
	Load of Total Nitrogen	<300 kg/ha/yr	Annual





## 3 Monitoring

### 3.1 General monitoring

3.1.1 The licensee shall ensure that:

- (a) all water samples are collected and preserved in accordance with AS/NZS 5667.1;
- (b) all wastewater sampling is conducted in accordance with AS/NZS 5667.10; and
- (c) all groundwater sampling is conducted in accordance with AS/NZS 5667.11;

3.1.2 The Licensee shall ensure that quarterly monitoring is undertaken at least 45 days apart;

### 3.2 Monitoring of emissions to land

There are no specified conditions relating to monitoring of emissions to land in this section.

3.2.1 The Licensee shall undertake the monitoring in Table 3.2.1 according to the specifications in that table.

Table 3.2.1: Monitoring of emissions to land				
Emission point reference	Monitoring point reference	Parameter	Units	Frequency
L1	Magflow meter to irrigation areas and designated gardened areas	Volumetric flow rate (cumulative) <sup>1</sup>	m <sup>3</sup> /day	Continuous
		pH <sup>1</sup>	pH units	Quarterly
		Biochemical Oxygen Demand	mg/L	
		Total Dissolved Solids		
		Total Suspended Solids		
		Total Nitrogen		
		Total Phosphorus		
		<i>E.coli</i>	cfu/100 mL	Annual
		Load of Total Nitrogen	kg/ha/yr	
		Load of Total Phosphorus	kg/ha/yr	

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

### 3.3 Monitoring of inputs and outputs

3.3.1 The Licensee shall undertake the monitoring in Table 3.3.1 according to the specifications in that table.

Table 3.3.1: Monitoring of inputs and outputs					
Input/Output	Monitoring point reference	Parameter	Units	Averaging period	Frequency
Treated wastewater discharged to on-site irrigation area and designated garden areas.	Outflow meter (M1)	Volumetric flow rate (cumulative)	m <sup>3</sup> /day	Monthly	Continuous

### 3.4 Process Monitoring

3.4.1 The Licensee shall undertake the monitoring in Table 3.4.1 according to the specifications in that table.



**Table 3.4.1: Leachate monitoring**

Monitoring point reference	Parameter	Units	Averaging period	Frequency
P1 – subsoil monitoring drain	pH	pH units	Spot sample	Quarterly
	Total organic carbon	mg/L		
	Total nitrogen			
	Total phosphorus			
	Total dissolved solids			

### 3.5 Ambient environmental quality monitoring

3.5.1 The Licensee shall undertake the monitoring in Table 3.5.1 according to the specifications in that table and record and investigate results that do not meet any target specified.

**Table 3.5.1: Monitoring of ambient groundwater quality**

Monitoring point reference and location	Parameter	Units	Averaging period	Frequency
MB 01 – MB 04	Standing water level <sup>1</sup>	m(AHD) mBGL	Spot sample	Quarterly
	pH <sup>1</sup>	pH units		
	Electrical conductivity <sup>1</sup>	µS/cm		
	Total Dissolved Solids	mg/L		
	Total Nitrogen			
	Total Phosphorus			
	Total organic carbon			
	Ammonium Nitrogen			
	Nitrate + Nitrite Nitrogen			
	Chloride			
	Sulphate			
	Inorganic nitrogen			
	Reactive phosphorus			
	Turbidity	NTU		

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



## 4 Information

### 4.1 Records

4.1.1 All information and records required by the Licence shall:

- (a) be legible;
- (b) if amended, be amended in such a way that the original and subsequent amendments remain legible or are capable of retrieval;
- (c) except for records listed in 4.1.1(d) be retained for at least 6 years from the date the records were made or until the expiry of the Licence or any subsequent licence; and
- (d) for those following records, be retained until the expiry of the Licence and any subsequent licence:
  - (i) off-site environmental effects; or
  - (ii) matters which affect the condition of the land or waters.

4.1.2 The Licensee shall ensure that:

- (a) any person left in charge of the Premises is aware of the conditions of the Licence and has access at all times to the Licence or copies thereof; and
- (b) any person who performs tasks on the Premises is informed of all of the conditions of the Licence that relate to the tasks which that person is performing.

4.1.3 The Licensee shall complete an Annual Audit Compliance Report indicating the extent to which the Licensee has complied with the conditions of the Licence, and any previous licence issued under Part V of the Act for the Premises for the previous annual period.

4.1.4 The Licensee shall implement a complaints management system that as a minimum records the number and details of complaints received concerning the environmental impact of the activities undertaken at the Premises and any action taken in response to the complaint.

### 4.2 Reporting

4.2.1 The Licensee shall submit to the CEO an Annual Environmental Report within 60 calendar days after the end of the annual period. The report shall contain the information listed in Table 4.2.1 in the format or form specified in that table.

**Table 4.2.1: Annual Environmental Report**

Condition or table (if relevant)	Parameter	Format or form <sup>1</sup>
-	Summary of any failure or malfunction of any pollution control equipment and any environmental incidents that have occurred during the annual period and any action taken	None specified
Table 1.3.2	Summary of any waste acceptance capacity limit exceedances and any action taken	None specified
Table 3.2.1	Monitoring of emissions to land	Tabular form
Table 3.3.1	Monitoring of inputs and outputs	Tabular form
Table 3.4.1	Monitoring of subsoil monitoring drain	Tabular form
Table 3.5.1	Monitoring of ambient groundwater quality	Tabular form
4.1.3	Compliance	Annual Audit Compliance Report (AACR)
4.1.4	Complaints summary	None specified

Note 1: Forms are in Schedule 2

4.2.2 The Licensee shall ensure that the Annual Environmental Report also contains an assessment of the information contained within the report against previous monitoring results and Licence limits and/or targets.



4.2.3 The Licensee shall submit the information in Table 4.2.2 to the CEO according to the specifications in that table.

**Table 4.2.2: Non-annual reporting requirements**

Condition or table (if relevant)	Parameter	Reporting period	Reporting date (after end of the reporting period)	Format or form <sup>1</sup>
-	Copies of original monitoring reports submitted to the Licensee by third parties	Not Applicable	Within 14 days of the CEO's request	As received by the Licensee from third parties

Note 1: Forms are in Schedule 2

#### 4.3 Notification

4.3.1 The Licensee shall ensure that the parameters listed in Table 4.3.1 are notified to the CEO in accordance with the notification requirements of the table.

**Table 4.3.1: Notification requirements**

Condition or table (if relevant)	Parameter	Notification requirement <sup>1</sup>	Format or form <sup>2</sup>
1.3.1 and 2.1.1	Breach of any limit specified in the Licence	Part A: As soon as practicable but no later than 5pm of the next working day  Part B: As soon as practicable	N1
-	Any failure or malfunction of any pollution control equipment or any incident, which has caused, is causing or may cause pollution		
2.2.2	Breach of nutrient loading rate	No less than 72 hours after breach detected. Notification is to specify alternative methods for TWW disposal to be employed until the end of the annual period.	None specified
-	Alarm triggered for 2 <sup>nd</sup> (1200 mm depth) soil moisture probe	No less than 72 hours after event. Notification is to include confirmation of cessation of irrigation as per Nutrient Irrigation Management Plan (condition 1.3.7).	None specified

Note 1: No notification requirement in the Licence shall negate the requirement to comply with s72 of the Act.

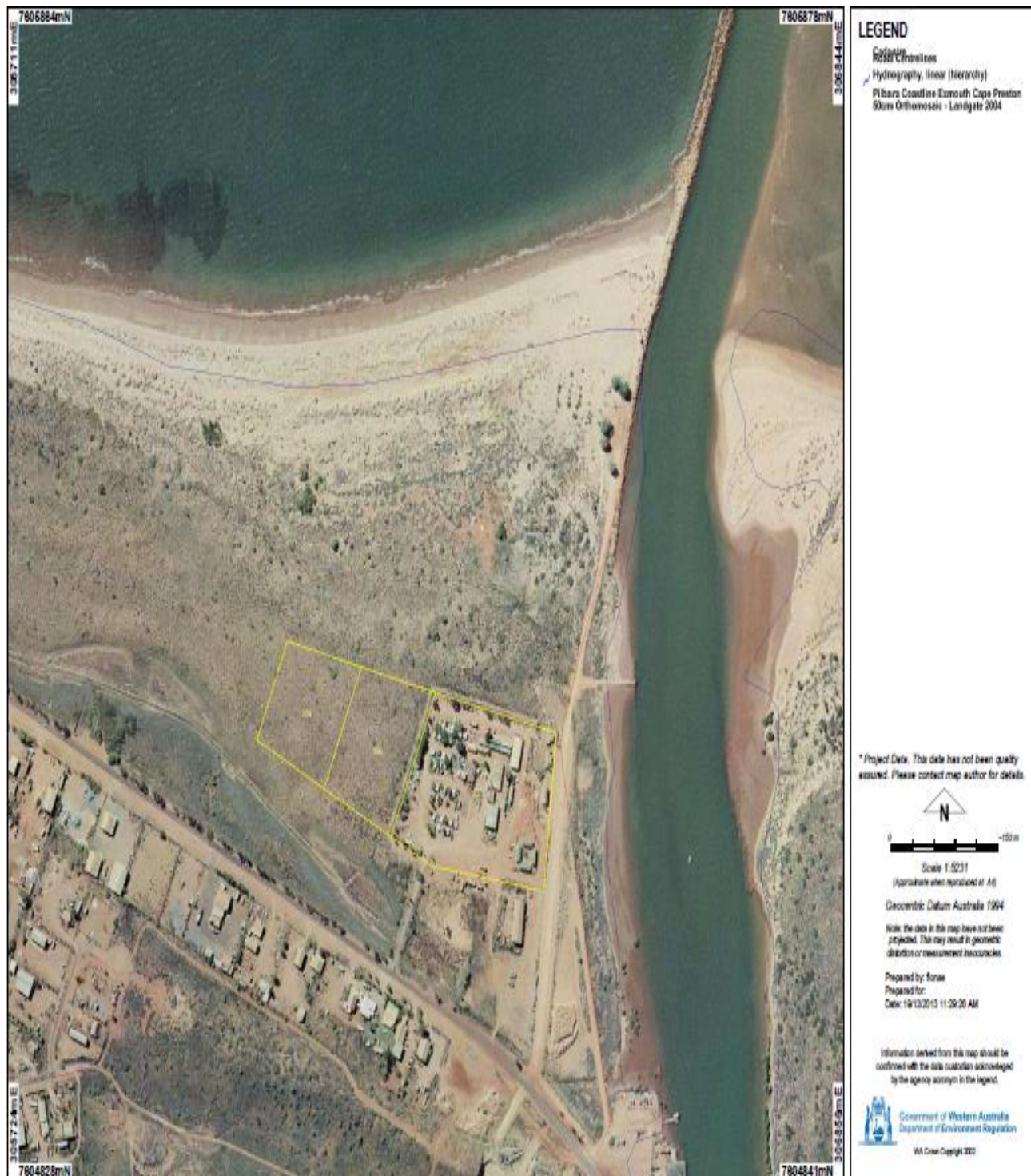
Note 2: Forms are in Schedule 2



## Schedule 1: Maps

### Premises map

The Premises is shown in the map below. The yellow line depicts the Premises boundary.





## Map of emission points

The locations of the emission points defined in Table 2.2.1 and the monitoring points defined in Table 3.4.1 are shown below.





## Schedule 2: Reporting & notification forms

These forms are provided for the proponent to report monitoring and other data required by the Licence. They can be requested in an electronic format.

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### ANNUAL AUDIT COMPLIANCE REPORT PROFORMA

#### SECTION A LICENCE DETAILS

Licence Number:	Licence File Number:
Company Name:	ABN:
Trading as:	
Reporting period: _____ to _____	

#### STATEMENT OF COMPLIANCE WITH LICENCE CONDITIONS

1. Were all conditions of the Licence complied with within the reporting period? (please tick the appropriate box)

Yes ☐ Please proceed to Section C

No ☐ Please proceed to Section B

Each page must be initialled by the person(s) who signs Section C of this Annual Audit Compliance Report (AACR).

Initial:





## SECTION B

### DETAILS OF NON-COMPLIANCE WITH LICENCE CONDITION.

Please use a separate page for each Licence condition that was not complied with.

a) Licence condition not complied with:	
b) Date(s) when the non compliance occurred, if applicable:	
c) Was this non compliance reported to the DER?:	
<input type="checkbox"/> Yes <input type="checkbox"/> Reported to the DER verbally Date _____ <input type="checkbox"/> Reported to the DER in writing Date _____	<input type="checkbox"/> No
d) Has DER taken, or finalised any action in relation to the non compliance?:	
e) Summary of particulars of the non compliance, and what was the environmental impact:	
f) If relevant, the precise location where the non compliance occurred (attach map or diagram):	
g) Cause of non compliance:	
h) Action taken, or that will be taken to mitigate any adverse effects of the non compliance:	
i) Action taken or that will be taken to prevent recurrence of the non compliance:	

Each page must be initialled by the person(s) who signs Section C of this AACR

Initial:



## SECTION C

### SIGNATURE AND CERTIFICATION

This Annual Audit Compliance Report (AACR) must only be signed by a person(s) with legal authority to sign it. The ways in which the AACR must be signed and certified, and the people who may sign the statement, are set out below.

Please tick the box next to the category that describes how this AACR is being signed. If you are uncertain about who is entitled to sign or which category to tick, please contact the licensing officer for your premises.

If the licence holder is		The Annual Audit Compliance Report must be signed and certified:
An individual	<input type="checkbox"/> <input type="checkbox"/>	by the individual licence holder, or by a person approved in writing by the Chief Executive Officer of the Department of Environment Regulation to sign on the licensee's behalf.
A firm or other unincorporated company	<input type="checkbox"/> <input type="checkbox"/>	by the principal executive officer of the licensee; or by a person with authority to sign on the licensee's behalf who is approved in writing by the Chief Executive Officer of the Department of Environment Regulation.
A corporation	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	by affixing the common seal of the licensee in accordance with the <i>Corporations Act 2001</i> ; or by two directors of the licensee; or by a director and a company secretary of the licensee, or if the licensee is a proprietary company that has a sole director who is also the sole company secretary – by that director, or by the principal executive officer of the licensee; or by a person with authority to sign on the licensee's behalf who is approved in writing by the Chief Executive Officer of the Department of Environment Regulation.
A public authority (other than a local government)	<input type="checkbox"/> <input type="checkbox"/>	by the principal executive officer of the licensee; or by a person with authority to sign on the licensee's behalf who is approved in writing by the Chief Executive Officer of the Department of Environment Regulation.
a local government	<input type="checkbox"/> <input type="checkbox"/>	by the chief executive officer of the licensee; or by affixing the seal of the local government.

It is an offence under section 112 of the *Environmental Protection Act 1986* for a person to give information on this form that to their knowledge is false or misleading in a material particular. There is a maximum penalty of \$50,000 for an individual or body corporate.

I/We declare that the information in this annual audit compliance report is correct and not false or misleading in a material particular.

SIGNATURE: \_\_\_\_\_

NAME:  
(printed) \_\_\_\_\_

POSITION: \_\_\_\_\_

DATE: \_\_\_\_/\_\_\_\_/\_\_\_\_

SEAL (if signing under seal)

SIGNATURE: \_\_\_\_\_

NAME:  
(printed) \_\_\_\_\_

POSITION: \_\_\_\_\_

DATE: \_\_\_\_/\_\_\_\_/\_\_\_\_



Licence: L8884/2015/1  
Form: N1

Licensee: Discovery Parks Onslow Pty Limited  
Date of breach:

### Notification of detection of the breach of a limit.

These pages outline the information that the operator must provide.

Units of measurement used in information supplied under Part A and B requirements shall be appropriate to the circumstances of the emission. Where appropriate, a comparison should be made of actual emissions and authorised emission limits.

## Part A

Licence Number	
Name of operator	Discovery Parks Onslow Pty Limited
Location of Premises	
Time and date of the detection	

### Notification requirements for the breach of a limit

Emission point reference/ source	
Parameter(s)	
Limit	
Measured value	
Date and time of monitoring	
Measures taken, or intended to be taken, to stop the emission	

## Part B

Any more accurate information on the matters for notification under Part A.	
Measures taken, or intended to be taken, to prevent a recurrence of the incident.	
Measures taken, or intended to be taken, to rectify, limit or prevent any pollution of the environment which has been or may be caused by the emission.	
The dates of any previous N1 notifications for the Premises in the preceding 24 months.	



Name	
Post	
Signature on behalf of Discovery Parks Onslow Pty Limited	
Date	



# Decision Document

## *Environmental Protection Act 1986, Part V*

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**Proponent:**      **Discovery Parks Onslow Pty Limited**

**Licence:**          **L8884/2015/1**

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**Registered office:**      Level 2  
157 Grenfell St  
ADELAIDE SA 5000

**ACN:**                      163 484 937

**Premises address:**      Beadon Bay Caravan Park  
Lots 555 and 556 on Plan 181876 and Lot 557 on Plan 173181  
ONSLOW WA 6710

**Issue date:**              Thursday, 10 December 2015

**Commencement date:**   Monday, 14 December 2015

**Expiry date:**             Sunday, 13 December 2020

### **Decision**

Based on the assessment detailed in this document the Department of Environment Regulation (DER), has decided to issue a licence. The DER considers that in reaching this decision, it has taken into account all relevant considerations and legal requirements and that the licence and its conditions will ensure that an appropriate level of environmental protection is provided.

Decision Document prepared by:

Chris Slavin  
Licensing Officer

Decision Document authorised by:

Steve Checker  
Delegated Officer



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## 1 Purpose of this Document

This decision document explains how the DER has assessed and determined the application and provides a record of the DER's decision-making process and how relevant factors have been taken into account. Stakeholders should note that this document is limited to the DER's assessment and decision making under Part V of the *Environmental Protection Act 1986*. Other approvals may be required for the proposal, and it is the proponent's responsibility to ensure they have all relevant approvals for their Premises.



## 2 Administrative summary

Administrative details		
Application type	Works Approval <input type="checkbox"/> New Licence <input checked="" type="checkbox"/> Licence amendment <input type="checkbox"/> Works Approval amendment <input type="checkbox"/>	
Activities that cause the premises to become prescribed premises	<b>Category number(s)</b>	<b>Assessed design capacity</b>
	85	90 cubic metres per day
Application verified	Date: 30/03/2015	
Application fee paid	Date: 10/04/2015	
Works Approval has been complied with	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A <input type="checkbox"/>	
Compliance Certificate received	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A <input type="checkbox"/>	
Commercial-in-confidence claim	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	
Commercial-in-confidence claim outcome	N/A	
Is the proposal a Major Resource Project?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	
Was the proposal referred to the Environmental Protection Authority (EPA) under Part IV of the <i>Environmental Protection Act 1986</i> ?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Referral decision No: Managed under Part V <input type="checkbox"/> Assessed under Part IV <input type="checkbox"/>
Is the proposal subject to Ministerial Conditions?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Ministerial statement No: EPA Report No:
Does the proposal involve a discharge of waste into a designated area (as defined in section 57 of the <i>Environmental Protection Act 1986</i> )?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Department of Water consulted Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	
Is the Premises within an Environmental Protection Policy (EPP) Area Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> If Yes include details of which EPP(s) here.		
Is the Premises subject to any EPP requirements? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> If Yes, include details here, eg Site is subject to SO <sub>2</sub> requirements of Kwinana EPP.		





### 3 Executive summary of proposal and assessment

Discovery Parks Onslow Pty Limited operates the Beadon Bay Caravan Park and associated Wastewater Treatment Plant (WWTP). The Beadon Bay Caravan Park is located approximately 1.5 km) east-south east of the Onslow township and adjacent to the Onslow Industrial Area (Figure 1).

The Licence is in relation to Discovery Parks Onslow being granted Works Approval W5567/2013/1 to upgrade the WWTP 14m<sup>3</sup>/day to 90m<sup>3</sup>/day. This is within the capacity for a category 85 sewage facility normally subject to registration however, due to the sensitivity of the receiving environment the proponent has applied for a licence.

Compliance documents for the construction of the WWTP were received by DER on 3 March 2015 and the Commissioning Report was submitted on 25 June 2015. The upgraded WWTP supports the expansion of the existing accommodation facilities.

The WWTP includes two 45m<sup>3</sup>/day systems each containing the following:

- A 32 kilolitre (kL) balance tank;
- A 45,000 litre (L) Submerged Aeration Filter (SAF) treatment system including balance and primary compartments, anaerobic, aerobic and anoxic compartments, clarifier and disinfection system;
- Media filtration;
- Ultra filtration system; and
- Two 32kL treated water storage tanks.

Treated water from the WWTP is recycled onsite for use in laundries and ablutions, disposed of via irrigation for landscaping (12kL/day), or to a designated irrigation field (up to 78 kL/day at 100% occupancy). Use of the facility is only expected to be temporary pending the connection of the Caravan Park to Water Corporation's sewer system. Discovery Parks Onslow is currently in negotiations with Water Corporation regarding this matter.

Limits for nutrient loading have been applied to the licence based on the expectation that connection to sewer will occur within two years. The project will require reassessment in accordance with the forthcoming DER guidance on irrigation with treated wastewater if the connection does not occur as planned.



Figure 1. Location of Beadon Bay Caravan Park (area outlined in green).



## 4 Decision table

All applications are assessed in line with the *Environmental Protection Act 1986*, the *Environmental Protection Regulations 1987*, and the DER's Operational Procedure on Assessing Emissions and Discharges from Prescribed Premises. Where other references have been used in making the decision they are detailed in the decision document.

DECISION TABLE			
Works Approval / Licence section	Condition number W = Works Approval L = Licence	Justification (including risk description & decision methodology where relevant)	Reference documents
General conditions	L1.2.2	<p><u>Emission Description</u> <i>Emission:</i> Discharge/spill of sewage or chlorine and alum stored onsite for treatment of raw wastewater. <i>Impact:</i> Contamination of surrounding land and surface water drainage systems. Potential impacts on ecology of surface water from the addition of contaminants. Beadon Creek is situated approximately 100 metres (m) to the east, and Beadon Bay approximately 300m to the north. <i>Controls:</i> The Licensee will ensure that all chemicals are stored in secondary containment to capture spills and spill kits are maintained onsite. All raw and treated wastewater will be stored in impermeable storage tanks and a covered at all times. The storage capacity provided for treated recycled water will be four (4) 32kL tanks. The balance tanks, SAF tanks and treated water tanks are all fitted with high water and low water alarms</p> <p><u>Risk Assessment</u> <i>Consequence:</i> Minor <i>Likelihood:</i> Unlikely <i>Risk Rating:</i> Moderate</p> <p><u>Regulatory Controls</u> Licence condition 1.2.2 has been added to the Licence to ensure that spills of materials associated with the prescribed activity are managed correctly.</p>	<p>General provisions of the <i>Environmental Protection Act 1986</i></p> <p><i>Environmental Protection (Unauthorised Discharges) Regulations 2004</i></p> <p>Code of Practice for the Storage and Handling of Dangerous Goods, Department of Mines and Petroleum, Government of Western Australia</p> <p>Application supporting documentation</p>





DECISION TABLE			
Works Approval / Licence section	Condition number W = Works Approval L= Licence	Justification (including risk description & decision methodology where relevant)	Reference documents
		<u>Residual Risk</u> <i>Consequence:</i> Minor <i>Likelihood:</i> Rare <i>Risk Rating:</i> Low	
Premises operation	L1.3.1 – L1.3.7	<u>Emission Description</u> <i>Emission:</i> Potential discharge of raw and partially treated wastewater from the WWTP through overflows and compromised infrastructure. <i>Impact:</i> Contamination of surrounding land and surface water drainage systems. Potential impacts on ecology of surface water from the addition of excessive nutrients. Beadon Creek is situated approximately 100 metres (m) to the east, and Beadon Bay approximately 300m to the north, which is readily accessible to the public for recreational activities. <i>Controls:</i> All raw and treated wastewater will be stored in impermeable storage tanks and a covered at all times. The storage capacity provided for treated recycled water will be four (4) 32kL tanks.  <u>Risk Assessment</u> <i>Consequence:</i> Insignificant <i>Likelihood:</i> Unlikely <i>Risk Rating:</i> Low  <u>Regulatory Controls</u> Licence condition 1.3.1 has been added to the Licence to ensure any numeric or descriptive limit in the Licence is investigated which will ensure the potential reduction of future exceedances.  Licence condition 1.3.2 has been added to the Licence to ensure less than the treatment capacity of 90m <sup>3</sup> /day of sewage is accepted at the WWTP.	



DECISION TABLE			
Works Approval / Licence section	Condition number W = Works Approval L= Licence	Justification (including risk description & decision methodology where relevant)	Reference documents
		<p>Licence condition 1.3.3 has been added to the Licence to ensure that less than the 90m<sup>3</sup>/day treatment capacity is processed at the WWTP.</p> <p>Licence condition 1.3.4 has been added to the Licence to specify containment infrastructure requirements associated with the WWTP to minimise the likelihood of a discharge to the environment.</p> <p>Licence condition 1.3.5 has been added to the Licence to ensure irrigation is done in a manner that does not impact the receiving environment from excess TWW applied to the area causing erosion and nutrient accumulation potentially leading to groundwater contamination.</p> <p>Licence condition 1.3.6 has been added to the Licence to ensure that the WWTP infrastructure is maintained to prevent a discharge to the environment.</p> <p>Licence condition 1.3.7 has been added to the Licence to ensure that irrigation is conducted in accordance with the approved management plan.</p> <p><u>Residual Risk</u>  <i>Consequence:</i> Insignificant  <i>Likelihood:</i> Rare  <i>Risk Rating:</i> Low</p>	
Emissions general	L2.1.1	Descriptive limits will be set through condition 2.1.1 of the licence and therefore Licence condition regarding recording and investigation of exceedances of limits or targets has been included	N/A
Point source emissions to surface water including	NA	There are no point source emissions to surface water during operation of the WWTP. The nearest surface water body is Beadon Creek which is approximately 100m east from the Beadon Bay Caravan Park (300m from the WWTP & sprayfield). Beadon Bay is located a similar distance away to the north. No	General provisions of the <i>Environmental Protection Act 1986</i>



DECISION TABLE			
Works Approval / Licence section	Condition number W = Works Approval L= Licence	Justification (including risk description & decision methodology where relevant)	Reference documents
monitoring		specified conditions relating to point source emissions to surface water or the monitoring of such emissions are required to be added to the Licence.	<i>Environmental Protection (Unauthorised Discharges) Regulations 2004</i>  Application supporting documentation
Emissions to land including monitoring	L2.2.1 - L2.2.2 and L3.21 – L3.2.2	Treated wastewater discharged to the irrigation field and gardens within the premises on a daily basis which has the potential to enrich soil and groundwater with excess nutrients and pollutants which flows directly in the Indian Ocean.  Details of the DER's assessment and decision making are included in Appendix A.	General provisions of the <i>Environmental Protection Act 1986</i>  <i>Environmental Protection (Unauthorised Discharges) Regulations 2004</i>  Application supporting documentation
Odour	NA	<b>Operation</b> <u>Emission Description</u> <i>Emission:</i> Potential odour produced from airborne particulates and Volatile Organic Compounds (VOC's) the treatment of raw wastewater during abnormal operations. <i>Impact:</i> Objectionable smells emitted from the irrigation field from discharged of treated wastewater, potentially affect persons at caravan park site. <i>Controls:</i> Treated wastewater discharged to the irrigation field will contain a biochemical oxygen demand of <10mg/L of and <1 cfu/100 of <i>E.coli</i> . Only treated wastewater will be applied to the irrigation field in a subterranean system, 100mm below the surface.	General provisions of the <i>Environmental Protection Act 1986</i>  Application supporting documentation



DECISION TABLE			
Works Approval / Licence section	Condition number W = Works Approval L= Licence	Justification (including risk description & decision methodology where relevant)	Reference documents
		<p><u>Risk Assessment</u>  <i>Consequence</i>: Minor  <i>Likelihood</i>: Rare  <i>Risk Rating</i>: Low</p> <p><u>Regulatory Controls</u>            Odour can be sufficiently regulated under section 49 of the <i>Environmental Protection Act 1986</i>. In accordance with the DER's licensing process, no specified conditions for odour emissions have been included on this licence.</p> <p><u>Residual Risk</u>  <i>Consequence</i>: Minor  <i>Likelihood</i>: Rare  <i>Risk Rating</i>: Low</p>	
Noise	NA	Operational noise will occur from pumps and blowers, however, this is not expected to be significant. Noise emissions 1m from the WWTP are expected to be 50dB(A). No specified conditions related to noise are required to be added to the Licence. Discovery Parks Onslow are required to comply with the <i>Environmental Protection (Noise) Regulations 1997</i> .	<p>General provisions of the <i>Environmental Protection Act 1986</i></p> <p>Application supporting documentation</p>
Monitoring general	L3.1.1 –L3.1.4	<p>Licence condition 3.1.1 has been added to the Licence to ensure wastewater samples are collected and preserved in line with the relevant Australian Standards.</p> <p>Licence condition 3.1.2 has been added to the Licence to ensure monitoring is undertaken in a consistent time frame based on monitoring frequency.</p> <p>Licence condition 3.1.3 has been added to the Licence to ensure there is a record of throughput data, which includes inflows into the WWTP.</p>	





DECISION TABLE			
Works Approval / Licence section	Condition number W = Works Approval L= Licence	Justification (including risk description & decision methodology where relevant)	Reference documents
		<p>Licence condition 3.1.4 has been added to the Licence to ensure monitoring equipment is calibrated in accordance with relevant specifications to ensure accurate measurements/readings of monitoring equipment</p> <p>Licence condition 3.1.5 has been added to the Licence to ensure the Licensee notifies DER if there is a discrepancy the calibration of equipment.</p>	
Monitoring of inputs and outputs	L3.2.1	Licence condition 3.2.1 has been added to the Licence to ensure raw wastewater is calculated coming into the WWTP and treated wastewater discharged to the irrigation field is also calculated to enable accurate accounts of TWW discharged to the irrigation field.	N/A
Process monitoring	3.4.1	Licence condition 3.4.1 has been added to the Licence to ensure Discovery Parks monitors potential leachate via the sub soil monitoring drain. The sub soil monitoring drain was constructed as per the Department of Water's <i>Water Quality Protection Note 31: Subsoil monitor drains and water recovery sumps</i> (WQPN 31). The sump will be monitored on a quarterly basis to determine the quantity and quality of any leachate permeating through the soil. Results of monitoring will be compared against groundwater monitoring data to assess potential impacts to groundwater. The sump drain is 1.5m deep from the surface of the irrigation field. Please refer to Appendix A for further information.	<p>Application supporting documentation</p> <p>WQPN 31.</p>
Ambient quality monitoring	L3.4.1	Licence condition 3.5.1 has been added to the Licence to ensure groundwater is monitored on a quarterly basis at the premises. This is a commitment made by the proponent during the Works Approval stage. Four groundwater monitoring bores are installed around the boundary of the premises to assess potential impacts to groundwater, and possible migration towards Beadon Bay or Beadon Creek. Monitoring of ground water will assist in determining potential contamination of groundwater at the site. Groundwater is 2. 7mgbl.	Application supporting documentation
Meteorological monitoring	L3.9	There are no specified conditions relating to meteorological monitoring which are required to be added to the Licence.	N/A
Improvements	NA	There are specified conditions relating to improvements which are required to be added to the Licence.	N/A



DECISION TABLE			
Works Approval / Licence section	Condition number W = Works Approval L= Licence	Justification (including risk description & decision methodology where relevant)	Reference documents
Information	L4.1 – L4.3	<p>Licence condition 4.2.2 has been added to the Licence to ensure all production an operational data is submitted as part of the Annual Environmental Report to be reviewed and assessed by the DER to ensure compliance with the conditions of the Licence</p> <p>Licence condition 4.2.3 has been added to the Licence to ensure that limit and target exceedances are made aware to the DER, including monitoring reports from third parties to verify the results.</p> <p>Licence condition 4.3.1 has been added to the Licence to ensure the DER is notified the following occurs:</p> <ul style="list-style-type: none"><li>• breach of any limit specified in the licence;</li><li>• any malfunction or failure of pollution control equipment;</li><li>• alarm raised when 1<sup>st</sup> soil moisture probe exceedance level is reached;</li><li>• cessation of irrigation when 2<sup>nd</sup> soil moisture probe exceedance level is reached ; and</li><li>• calibration reports.</li></ul>	N/A
Licence Duration	N/A	Discovery Parks Onslow have applied for a new Licence after being issued Works Approval W5567/2013/1. As detailed in Appendix A, the nutrient loading rates as per WQPN 22 will be exceeded with potential for nutrient leaching to groundwater. Discovery Parks Onslow are in negotiations with the Water Corporation to have the site hooked up to the main sewer in Onslow. DER will issue the Licence for a five year period. After five years it is expected that the site will be connected to the sewer main and the irrigation field will be decommissioned.	N/A



## 5 Advertisement and consultation table

Date	Event		How comments were taken into consideration
20/04/2015	Application advertised in the West Australian	No comments received	NA
20/04/2015	Application referred to the Shire of Ashburton	No comments received	NA
20/04/2015	Application referred to the Department of Water	No comments received	NA
02/12/2015	Proponent sent a copy of draft instrument	<p>Following comments received:</p> <ol style="list-style-type: none"><li>1. Request removal of condition 3.1.3 requiring recording of production or throughput data and any other process parameters relevant to any non-continuous or CEMS monitoring undertaken.</li><li>2. Request removal of condition 3.1.5 requiring discrepancies of calibration reports to be brought to the attention of the CEO</li><li>3. Condition 4.3.1 requiring the Licensee to inform the CEO if process equipment offline for maintenance works that may result in increased odour emissions</li><li>4. Condition 3.3.1 requiring separate monitoring of TWW directed to irrigation and TWW used in laundry and ablutions merged, as there is only one flow meter.</li><li>5. Condition 1.3.4 requested to be updated to outline storage of A+ TWW in storage tanks located around the premises.</li><li>6. Condition 1.3.5 regarding vegetation cover be amended to outline that irrigation areas only be vegetated subject to sufficient irrigation discharged to support vegetation growth.</li></ol>	<p>Response:</p> <ol style="list-style-type: none"><li>1. Condition removed as per risk assessment</li><li>2. Condition removed as per risk assessment</li><li>3. Condition part of condition 4.3.1 removed as per risk assessment. Odour emissions will need to be managed as per s.49 of the <i>Environmental Protection Act 1986</i>.</li><li>4. Requirement for monitoring of TWW volume to laundry's and ablutions removed, as there is no discharge or emission to the environment.</li><li>5. Condition 1.3.4 updated to include storage of A+ TWW in storage tanks located around the premises.</li><li>6. Condition 1.3.5 will remain unchanged. Vegetation is required on all irrigated areas to assist in nutrient uptake as per the NIMP submitted by the proponent in support of the proposal. Proponent notified of decision 4/12/2015.</li></ol>



## 6 Risk Assessment

*Note: This matrix is taken from the DER Corporate Policy Statement No. 07 - Operational Risk Management*

**Table 1: Emissions Risk Matrix**

Likelihood	Consequence				
	Insignificant	Minor	Moderate	Major	Severe
Almost Certain	Moderate	High	High	Extreme	Extreme
Likely	Moderate	Moderate	High	High	Extreme
Possible	Low	Moderate	Moderate	High	Extreme
Unlikely	Low	Moderate	Moderate	Moderate	High
Rare	Low	Low	Moderate	Moderate	High



## Appendix A

### Emissions to land including monitoring

The maximum operating capacity of the WWTP is 90m<sup>3</sup>/day. Based on 100% occupancy, the expected demand for recycled water (i.e. use in ablutions and laundries) is 12m<sup>3</sup>/day, resulting in a projected maximum discharge to the irrigation area of 78m<sup>3</sup>/day. Discovery Parks are the process of applying for a licence to reuse the water onsite (ablutions/laundries) through the Department of Health. Treated effluent is expected to meet the *Australian Guidelines for Sewage Systems – Effluent Management* (ANZECC/ARMCANZ 1997). The use of recycled water in ablutions/laundries is not regulated or assessed under this licence as it does not involve a discharge to the environment. The expected quality of treated effluent is shown in Table 1.

**Table 1: Expected effluent quality.**

Parameter	Expected output	Guidelines*	Percentage of guideline
Biochemical oxygen demand (mg/L)	<10	20 – 30	33%
Total suspended solids (mg/L)	<10	25 - 40	25%
pH	6 – 8.5	-	-
Total nitrogen (mg/L)	<30	20 – 50	60%
Total phosphorus (mg/L)	<3.5	6 – 12	30%
<i>E. coli</i> (cfu/100mL)	<1	10 <sup>5</sup> - 10 <sup>6</sup>	<1%

\* ANZECC/ARMCANZ *Australian Guidelines for Sewage Systems – Effluent Management* for Secondary Treatment.

The irrigation area is 1.08 hectares (ha). Irrigation is via sub-surface drip irrigation, located 100mm underground to reduce the risk of exposure, and will be applied at a rate of 7.2mm per day. The area is open access; however, signs notify residents that recycled water is used. There are four 32kL storage tanks that can be utilised for the storage of TWW, which equates to 2.8 days capacity, in the event of an emergency. TWW will also be applied to vegetated garden areas around the premises. The total area of the gardened areas is 0.6 ha.

Soils at the premises are medium dense (fine and medium size) sands. Soil testing was undertaken to determine the Phosphorus Buffering Index (PBI) of soils at the site. Results of testing are shown in Table 2 and show that between 0-500mm, the PBI of soils is <100, however, between 500-750mm, the average PBI is slightly above 100.

**Table 2: PBI results for soil at the site.**

Soil Depth (mm)	Average PBI
0-250	22.7
250-500	63.4
500-750	110.9

The proponent has provided an assessment of nutrient loading against the DoW's WQPN 22 which outlines that the nutrient loading rates applicable to the site for nitrogen and phosphorus are 300 kilograms per hectare per year (kg/ha/yr) and 50kg/ha/yr respectively. Based on the expected water quality outputs shown in Table 3, the WWTP will exceed the nutrient loading guidelines set out in WQPN 22 (Table 3).

The DER is in the process of developing guidance for the irrigation of treated wastewater. The use of WQPN 22 is not normally considered appropriate or indicative of sustainable loading rates for coastal/marine environments. Due to the short-term nature of this proposal (expected to be connected to sewer within two years) limits based on WQPN 22 are considered appropriate in this instance, however it is crucial they are reassessed in accordance with the forthcoming DER guidance if the connection does not occur as planned.



**Table 3: Nutrient loading rates.**

	Nitrogen	Phosphorus
Maximum discharge (m <sup>3</sup> /day)	78	
Area to be irrigated (ha)	1.68	
Discharge concentration (mg/L)	30	3.5
<b>Loading rates (kg/ha/yr)</b>	<b>508</b>	<b>59</b>
Guidelines (kg/ha/yr)*	300	50

\* From WQPN 22 based on Risk Category C

Despite high evaporation rates and low rainfall received in Onslow, the high nutrient loadings means there is a potential risk of nutrients leaching to the environment. Groundwater at the site is relatively shallow (approximately 2.7m below ground level) and the marine environment is located only a few hundred metres away.

#### Emission Description

*Emission:* Treated wastewater discharged to the irrigation field and gardens within the premises on a nightly basis. The application rate of a 78kL/day, based on 100% occupancy. The current inflow of raw wastewater to the WWTP is 45 kl/day.

*Impact:* Potential to enrich soil and groundwater with excess nutrients and pollutants which flows directly in the Indian Ocean. Beadon Creek is situated approximately 100 metres (m) to the east, and Beadon Bay approximately 300m to the north. Nitrogen is a limiting factor in marine and coastal environments with elevated levels potentially causing algal blooms. Potential human health impacts from exposure to pathogens as part of the irrigation of TWW.

*Controls:* Discovery Parks Onslow have implemented a Nutrient Irrigation Management Plan (NIMP). The NIMP outlines measures and procedures that mitigate impacts to the receiving environment. Discovery Parks Onslow will ensure that only TWW is discharged to the irrigation field and gardens. Grass will be used on the irrigation field, which will aid in nutrient uptake. The irrigation system will contain sub soil collection drain to monitor water percolating through the soil and to measure leachate of nutrients (TN and TP). Soil moisture sensors (two in total) will be used to monitor water draining through the soil. If irrigated water reaches the 1st soil probe at 400mm beneath the surface an alarm will be raised. If irrigated water percolates to the second probe at 1200mm beneath the surface irrigation will cease. In this instance, DER will be notified, groundwater will be monitored and irrigation will only recommence to the satisfaction of DER. Wastewater will also be transported offsite in the event that potential leaching of nutrients will impact groundwater at the site.

#### Risk Assessment

*Consequence:* Moderate

*Likelihood:* Likely

*Risk Rating:* High

#### Regulatory Controls

Licence condition 4.3.1 has been added to the Licence which includes notification requirements of mitigation measures that Discovery Parks will implement, such as the tankering of TWW offsite when irrigation ceases due to percolation of TWW reaching a depth of 1200mm.

Licence condition 2.2.2 has been added to the Licence which includes limits (based on WQPN 22) for discharge of TWW to the irrigation field and gardens. WQPN 22 is not normally considered appropriate or indicative of sustainable loading rates for coastal/marine environments. Due to the short-term nature of this proposal (expected to be connected to sewer within two years) these limits are considered appropriate in this instance, however it is crucial they are reassessed in accordance with the forthcoming DER guidance if the connection does not occur as planned.



Licence condition 3.2.1 has been added to the Licence to ensure the Licensee monitors wastewater and ensures wastewater quality is within the limits specified in Licence condition 2.2.2.

Residual Risk

*Consequence:* Moderate

*Likelihood:* Likely

*Risk Rating:* High