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982982 - West Island WWTP - Cocos Keeling Islands

Infrastructure Improvements

Supporting information for approvals under Part V of the Environmental Protection Act 1986

Works Approval Supporting Information - May 2025









Document Information

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Contents

1	Purpose	6
2	Premises and Applicant Details	6
2.1	Occupier Details	6
2.2	Premises Details	6
2.2.1	Premises location	6
2.2.2	Prescribed Activity	7
2.2.3	Prescribed Premises Boundary	8
3	Proposed Activities	10
3.1	Description of works	10
3.2	Project emissions	19
3.2.1	Construction Activities	19
3.2.2	Commissioning Activities	20
3.2.3	Operational Activities	21
3.3	Management of Emissions	21
3.3.1	Einal offluont discharge	21
5.5.2	T mar embern discharge	21
4	Regulatory Context and Approvals	
4.1	Environmental Protection and Biodiversity Conservation Act 1999 (EPBC Act)	22
4.2	Environmental Protection Act 1986 – Part IV	22
4.3	Environmental Protection Act 1986 – Part V	22
5	Existing Environment	22
5.1	Specified Ecosystems	22
5.2	Land Use and Sensitive Receptors	22
5.3	Flora, vegetation, and fauna	23
5.4	Groundwater	23
5.5	Geology	23
6	Proposed Monitoring Program	24
7	Fee Calculation	25
8	Temporary Additional Treated Effluent Storage and Disposal	
8.1	Monitoring and Operational Measures	27
8.2	Ocean Outfall Dispersion Modelling	27



Fresh Water Thinking



Figures

Figure 1 - Premises Map	9
Figure 2 – Existing Process Flow including proposed improvements	13
Figure 3 - Existing site layout (with proposed upgrades, green represents new infrastructure,	blue
modified infrastructure, red items are no longer in scope)	14
Figure 4- New Inlet Screen and Platform adjacent to IAT	15
Figure 5- New Inlet Screen and Platform adjacent to IAT	16
Figure 6– Modifications to existing drying bed to accommodate geobags	17
Figure 7- Additional Concrete slab for geobag drying	18
Figure 8 - Site Location	24

Appendices

Appendix A	Environment Policy
Appendix B	Proof of Occupier Status
Appendix C Report (RPS,	Investigation of the Cocos Island WWTP Discharges – Dispersion Modelling 2023)

Table of attachments

The following table shows how the mandatory attachments referenced in the Department of Water and Environmental Regulation (DWER) application form have been addressed in this document.

DWER Attachment	Description	Location in this document	Comment
1A	Proof of occupier status	Appendix B	
1B	ASIC company extract	N/A	Water Corporation does not have an ASIC extract
1C	Authorisation to act as a representative of the occupier	N/A	
2	Premises map/s	Figure 8	
3A	Proposed activities	Section 3	
3B	Map of area proposed to be cleared (only applicable if clearing is proposed)	N/A	No clearing proposed
3C	Additional information for clearing assessment	N/A	
4	Biodiversity surveys	N/A	
5	Other approvals and consultation documentation	Section 4	
6A	Emissions and discharges	Section 3	
6B	Waste acceptance	N/A	





982982 - West Island WWTP Cocos Keeling Islands Infrastructure upgrade Works Approval Supporting Information



7	Siting and location	Figure 8	
8	Additional information submitted	N/A	
9	Proposed fee calculation	Section 7	
10	Request for exemption from publication	N/A	





1 Purpose

This document has been prepared to support an application for a Works Approval for the Cocos (West) Island Wastewater Treatment Plant (WWTP).

2 Premises and Applicant Details

2.1 Occupier Details

Water Corporation operates and maintains the Cocos (West) Island WWTP under a service delivery arrangement with the Australian Government, administered by the Department of Infrastructure, Transport, Regional Development, Communications and the Arts (DITRDCA).

Water Corporation is a statutory entity and was established by Section 4(1) of the *Water Corporations Act 1995* (WC Act). The Corporation is a body corporate (Section 4 of the WC Act) and as such does not have an ASIC company extract.

Water Corporation provides water, wastewater and drainage services to Perth and hundreds of towns and communities spread over 2.5 million square kilometres of Western Australia. Water Corporation holds many licences for WWTPs with the Department of Water and Environmental Regulation (DWER).

Water Corporation operates to an environmental management system certified to ISO 14001, which enables the systematic identification of environmental risks, setting of targets and development of environment improvement plans to reduce risks and ensure its activities are sustainable. The environmental management system is guide by the Corporation's Environment Policy (Attachment A).

2.2 Premises Details

2.2.1 Premises location

The Cocos (Keeling) Islands are a group of 27 coral islands located in the Indian Ocean. They are situated approximately 3000 km north-west of Perth 3,700 km west of Darwin and 900 km southwest of Christmas Island.

The Cocos (West) Island WWTP is a Category 85 prescribed premises under the *Environmental Protection Regulations* 1987. This plant is a registered plant by DWER since January 2006 (R1841) and is currently assessed at 53 kL/day treatment capacity. The wastewater is treated to secondary standard via an Intermittently Decanted Extended Aeration (IDEA) process. Treated wastewater is decanted from the aeration tank to the balance tank before being disinfected by Ultraviolet (UV) radiation.

Cocos (West) Island WWTP consists of the following treatment infrastructure:

- Inlet works macerator and flow monitoring
- Aeration tank with three sink air aerators
- Decant system to transfer Treated Wastewater (TWW) to the balance tank





- Balance Tank for storage of treated wastewater
- Effluent discharge pumps
- UV Disinfection Treatment
- Waste activated sludge pumps from aeration tank to the Drying Beds, with leachate return system
- Drying beds for solids/sludge management
- Lab/Control Room

As per the registration (R1841), treated wastewater is discharged to the Indian Ocean via the outfall pipeline approximately 400m offshore and at a depth of 10m. Sludge management is by manual wasting into covered drying beds.

DITRDCA have a lease arrangement with the Shire of Cocos Island for the West Island WWTP premises. Water Corporation is currently under a Service Delivery Arrangement with the Australian Government: Indian Ocean Territories, which authorises the Water Corporation to operate the WWTP infrastructure on behalf of the Australian Government. A copy of the lease is attached in Appendix B.

2.2.2 Prescribed Activity

The premises will continue to operate under registration (R1841) category 85 sewage facility, there will be no change to treatment capacity as a result of improvement works described by this works approval application. The current design capacity is greater than 20 cubic metres per day, but less than 100 cubic metres per day as shown in Table 1.

However, as described in Section 8, there will be a temporary increase to treated effluent discharge from West Island WWTP for a proposed 2 to 3-year period. This is to accommodate a temporary worker's camp associated with Defence runway upgrade on Island.

Wastewater from the camp will be treated by a standalone WWTP that will be operated and maintained by the camp facility contractors. West Island WWTP will receive this treated effluent for storage in the existing balance tank, and then disposed via the outfall pipeline

It is expected that Defence contractors will submit an application to DWER for works approval and any licencing requirements of this standalone treatment plant.

Therefore, the treatment capacity and design capacity of the West Island WWTP is unaffected and remains at 53kL/day. However total disposal of the 2 waste streams will be 70kL/day for this temporary period. This total discharge volume is within the Premise Category 85 threshold.





Table 1 - Prescribed Premises Category

Category	Description	Threshold	Current Capacity	Proposed 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	53 cubic metres per day	53 cubic meters per day

2.2.3 Prescribed Premises Boundary

The proposed activities will occur within the existing Cocos (West) Island premises boundary.

The premises boundary coordinates are displayed in Table 2. The site layout and boundary is shown in Figure 1.

Table 2 - West Island Premises Boundary Coordinates

Point	Latitude	Longitude	
1	96.821917	-12.168504	
2	96.822298	-12.168555	
3	96.822232	-12.169049	
4	96.821851	-12.168998	



982982 - West Island WWTP Cocos Keeling Islands Infrastructure upgrade Works Approval Supporting Information





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3 Proposed Activities

This application is to outline the improvements to existing assets at the Cocos (West) Island WWTP, for the purpose of improving the reliability and control of the plant, and to replace assets at the end of life. The proposed improvements will provide a mechanical and electrical upgrade to the treatment plant and <u>will not increase treatment capacity or change the treatment process</u>.

The Australian Government and Water Corporation are proposing the following

- Installation of an inlet screening platform and mechanical screening sieve to remove rags and solids from the incoming flow. Existing inlet grinder (muncher) will remain as standby treatment.
- Replacement of the existing Sinkair aerators to new Xylem Jet Aerators.
- Existing Waste Activated Sludge (WAS) pumps reconfigured to become Returned Activated Sludge (RAS) pumps.
- Improvements to sludge drying, installing polymer dosing system for dewatering, construction of a slab for geobags and modifications to the existing sludge drying bed to accommodate five geobags.
- Three new prefabricated buildings installed including: new Motor Control Centre (MCC) switchroom, new control room and ablutions, new laboratory and polymer preparation room.
- Realignment of the Sydney Highway fence line to align with the premises boundary and lease.
- Decommissioning existing lab/control room office and storage shed.
- Realignment of the underground effluent pipeline to enable clearance from new site buildings.

The existing gas-locked siphon decanter in the Intermittent Aeration Tank (IAT) will remain with improvements to solenoid valves only. The existing treated water disposal pumps and UV disinfection system will not be modified.

All proposed works will be contained within the existing registered premises boundary (R1841).

The activities covered by this application include construction, commissioning, and operation of the above improvements.

3.1 Description of works

The proposed improvements will provide a mechanical and electrical upgrade to the treatment plant and will not increase treatment capacity or change the treatment process.

Table 3 describes the key components of the proposed works to improve the reliability and control of the plant, and to replace assets at the end of life to ensure the asset operates in an environmentally sound manner.

Figure 2 details the Cocos (West) Island process, and Figure 4 details the site layout.





Table 3 Proposed infrastructure and equipment requirements

	Component	Requirements
1	Inlet works	Improvements to the inlet screening are proposed to allow for improved screenings removal. Infrastructure to be installed includes platform & stairs, inlet screening pump and mechanical sieve system to remove solids & rags from incoming wastewater. A bin will be below the sieve to collect screening material disposal to licenced landfill. This system is similar to the inlet screen infrastructure currently on Home Island. Existing macerator remains in service as a back-up process and flow monitoring remains in place as per the existing process.
2	Intermittent Aeration Tank (IAT) and Decant system	Existing Sinkair Aerators will be replaced by new Jet Aerators in alignment with the infrastructure on Home Island. The existing aerators are at end of life, and these new aerators are replacement items. Minor replacement of components of the decant system, however these items are like-for-like replacement and do not change the operation of this process.
3	Balance Tank	No modification to the balance tank is proposed by Water Corporation. Inlet pipe connection from the temporary Defence WWTP will be connected at the Balance Tank See section 8 on details of a temporary acceptance of a treated effluent stream from the Defence project camp. Treated effluent will be stored in the balance tank prior to discharge to marine environment. No impact to the West Island process will occur
4	Waste Activated Sludge (WAS) Pumps	The configuration of the WAS pumps will be converted to Return Activated Sludge (RAS) pumps with installation of additional pipework to enable this reconfiguration.







		This enables improved operability to direct activated sludge to the sludge drying beds, or to the inlet of the WWTP to allow improved biological process control in the IAT.
5	Sludge Drying	The current sludge drying system consists of WAS directed to two drying beds, with manual turning and shovelling of the waste into a chute which is labour intensive.
		A new system for sludge drying to improve safety for the operators will be used. A polymer dosing unit will be installed, and the existing drying beds converted into geobag storage areas. The drying bed will have modifications to the concrete wall for access, and improved drainage trenches in the floor for leachate draining from the geobags.
		draining system will also be installed for future use. Leachate from the drying bed/geobag system will return to the existing leachate pump station and be pumped
		back to the Aeration Tank as per current operation. This system will be the same as the current sludge drying set up on Home Island.
6	UV Disinfection and Final Effluent Pumps	No Change
7	Effluent disposal line	The effluent disposal pipeline will be rerouted on the premises to allow clearance from new buildings that will be constructed along the Northern boundary.

Figure 2 provides an overview of the process including the upgraded components.





Cocos West Island Wastewater Treatment Plant

flow diagram



Figure 2 - Existing Process Flow including proposed improvements



quality BOD: <10 mg/L SS: <20 mg/L TN: <10 mg/L E.coli: <150/100 mL











Figure 4- New Inlet Screen and Platform adjacent to IAT



982982 - West Island WWTP Cocos Keeling Islands





Figure 5- New Inlet Screen and Platform adjacent to IAT



982982 - West Island WWTP Cocos Keeling Islands



Figure 6- Modifications to existing drying bed to accommodate geobags



982982 - West Island WWTP Cocos Keeling Islands



Figure 7- Additional Concrete slab for geobag drying





3.2 Project emissions

The Cocos (West) Island WWTP is an operating wastewater treatment facility. The operation will continue during construction, and these existing emissions and discharges will continue to be managed under the current site operation and registration.

The Cocos (West) Island WWTP currently discharges treated wastewater into to the marine environment, and no changes to effluent quality are expected during the project or post construction and commissioning.

The following sections outline the expected emissions from the construction, commissioning and operation of the Cocos (West) Island WWTP.

See Section 8 for details on the temporary increase to treated effluent discharge as part of the Department of Defence project.

3.2.1 Construction Activities

The project involves two construction activities, upgrading components and physical construction of structures as outlined in Table 3.

#	Activity	Construction Activity	Potential Emission (outside routine emissions)
1	Upgrading component	Replacement of aerators in the IAT.	Construction noise, dust during installation
2	Construction of new structure	New buildings installed for the control room and facilities. Buildings to be constructed off site, installed only on site.	Construction noise, dust during installation
3	Construction of new structure	Construct a new inlet screen platform. Structural components build off site and assembled in situ. Existing screening to remain operational during installation.	Construction noise, dust during installation.
4	Construction of new structure	Installation of a new polymer dosing building for sludge drying – construction of building and dosing will be offsite, installation only on site.	Construction noise, dust during installation
5	Upgrading component	Upgrading existing drying beds to accommodate geobags. Concrete cutting of the concrete walls to allow access.	Construction noise, dust during installation
6	Construction of new structure	Concrete laydown area to allow additional geobag drying and storage.	Construction noise, dust during installation

Table 3 Construction emissions





982982 - West Island WWTP Cocos Keeling Islands Infrastructure upgrade Works Approval Supporting Information



7	Upgrading component	Existing Waste Activated Sludge (WAS) pumps reconfigured to become Returned Activated Sludge (RAS) pumps	None
8	Construction	Excavation and installation of process pipework for RAS pumps, Effluent pipeline and new Polymer dosing lines to Geobags	Construction noise, dust during installation

3.2.2 Commissioning Activities

Commissioning of equipment will be completed as each component is installed. A description of what will occur during commissioning activity is detailed in Table 4. It is not expected for any emissions to occur during commissioning.

Table 4	Commissioning	emissions

#	Component	Commissioning activity	Potential Emission
1	Replacement inlet screens (inlet works)	Once constructed, flows will be redirected to new screens and operators will monitor process.	None – no additional odours, inlet screens operate within a covered system. Noise will be contained within the premises boundary.
2	Existing aerators upgrade	Once installed, flows will be reinstated, and operators will monitor process performance and targets. Monitoring results can be provided on request post commissioning	None – operation will be the same
3	Sludge drying facility (polymer dosing & geobags)	Once constructed, facility will be brought into operation and operators will monitor process performance As constructed drawings can be provided post commissioning for evidence construction is in accordance with design	None – odours expected to be minimised using geobags
4	WAS pump reconfigured	Temporary pause to sludge wasting. Once installed, flows will be reinstated, and operators will monitor process.	None
5	New buildings for control room	Buildings constructed offsite. Once installed facility will be brought into operation – no impact to process emissions	None





3.2.3 Operational Activities

Operation of the proposed upgrades can occur immediately following commissioning without interruption to the wastewater treatment process.

The existing monitoring program undertaken as part of the plant process requirements will confirm the upgrade has not changed the characteristics of the treated wastewater.

The Cocos (West) Island WWTP will continue to discharge treated wastewater into the marine environment.

3.3 Management of Emissions

3.3.1 Construction and Commissioning emissions

Construction and commissioning emissions will be managed through a standard construction environmental management plan (CEMP). This management plan will include the following controls:

- During the construction phase, noise levels will be similar to those associated with normal construction projects involving the use of construction plant, equipment and power tools;
- Works will be conducted in accordance with the *Environmental Protection (Noise) Regulations 1997*;
- Construction will be undertaken during the hours of 6am-6pm 7 days per week, (noting Sundays would likely require approval of noise management plan from Local Government)
- however, should works be required outside these times Water Corporation will seek relevant approvals from DWER and the Local Government authority, prepare a Noise Management Plan and undertake community consultation in accordance with the *Environmental Protection (Noise) Regulations* 1997;
- Vehicles and equipment will be fitted with appropriate noise controls;
- All plant, equipment and vehicles will be regularly inspected and maintained;

Operational noise has been considered during this assessment and is expected to result in a minimal change.

3.3.2 Final effluent discharge

The Cocos (West) Island WWTP will continue to discharge treated wastewater into the marine environment though the existing outfall pipeline. No changes to effluent quality is expected as an outcome of these works.

See Section 8 for details on the temporary increase to treated effluent discharge as part of the Department of Defence project.





4 Regulatory Context and Approvals

4.1 Environmental Protection and Biodiversity Conservation Act 1999 (EPBC Act)

The project involves only minor improvements or replacement of aging equipment. No changes to discharge volume or quality will result from this works, and therefore no referral to EPBC is required.

4.2 Environmental Protection Act 1986 – Part IV

Cocos (West) Island WWTP discharges into Marine environment utilising an existing outfall discharge pipeline.

The upgrade will not change the water quality in the discharge to the marine environment.

4.3 Environmental Protection Act 1986 – Part V

The Cocos (West) Island WWTP is currently registered by DWER (R1841).

5 Existing Environment

The prescribed premises (0.25 ha) is located on the Western side of Cocos (West) Island. The land use surrounding the Cocos (West) Island WWTP is predominately planted coconut vegetation and industrial use. The proposed future West Island Seawater Reverse Osmosis Water Treatment facility is adjacent to the WWTP.

5.1 Specified Ecosystems

In accordance with the DWER *Guidance Statement: Environmental Siting* (DER, 2016) the following specified ecosystems do not occur adjacent to the premises:

- Not within a Public Drinking Water Source Area (PDWSA).
- No mapped risk of Acid Sulphate Soil (ASS) occurring.
- No mapped hydrographical features within or nearby the site.

Figure 8 shows the premises location in relation to sensitive receptors.

5.2 Land Use and Sensitive Receptors

The current land use of the site is a wastewater treatment plant.

The Cocos (West) Island WWTP is located approximately 3km North of the main residential area. The old quarantine station is approximately 300m to the south of the WWTP, however this site is not occupied on a permanent basis currently.

A protected matters search has identified 13 places on the Australian Heritage list on Cocos (Keeling) Island. No impact to Heritage listed places is anticipated from these works, as all works will be contained within the Cocos (West) Island WWTP premises boundary.





5.3 Flora, vegetation, and fauna

The proposed works will be undertaken on previously cleared areas, within the prescribed premises boundary.

5.4 Groundwater

The groundwater resource on West Island consists of a series of freshwater lenses, directly recharged via rainfall infiltration. West Island freshwater is approximately 1-2m below ground level.

The freshwater lenses consist of two layers or zones. The upper surface of the freshwater lens is the water table and the lower surface is a boundary between freshwater and saline water. The lower boundary, or interface, is a transition zone. Within the transition zone the water salinity increases from freshwater to seawater over a number of meters.

The main freshwater lens and the current public drinking water supply is located under the airfield more than 3km from the WWTP. A secondary freshwater lens is located to the North of West Island referred to as the Northern Lens. The WWTP not located in either the airfield or northern freshwater lens boundaries on West Island.

A new drinking water source is currently being investigated approximately 600m to the north of the WWTP with five seawater bores drilled in late 2022. and the seawater bores are screened at a depth between 9.4 - 24m below ground level. This new source does not draw from the groundwater/freshwater layer.

5.5 Geology

The geological conditions on Cocos Island consist of an upper layer of coral sands and gravels laid down in the Holocene period and a lower layer of older coral limestone laid down in the Pleistocene period.



982982 - West Island WWTP Cocos Keeling Islands Infrastructure upgrade Works Approval Supporting Information







6 Proposed Monitoring Program

The Cocos (West) Island WWTP effluent is comprehensively monitored as per the process control plan, and diving operations to monitor condition of the pipe occur approximately every six months.





The Water Corporation will continue to implement the Cocos (West) Island WWTP discharge monitoring program as per Table 5

Table 5 West Island Discharge Monitoring

Monitoring Point	Parameters	Frequency
WI WWTP Inflow Meter (M1)	Flow monitoring	Continuous
WI WWTP Outflow Meter (M4)	Flow monitoring	Continuous
SP WI WWTP Effluent Autosampler (S2)	Total Nitrogen Total Phosphorus Nitrate + Nitrite and N Ammonium E.coli Oil and Grease Biological Oxygen Demand TDSE Suspended Solids pH	Monthly
	Lead Cadmium Copper Zinc Mercury	6 Monthly
WI WWTP Outfall Pipe Inspection	Diving Inspection and Video of outfall pipe for leaks	6 Monthly

7 Fee Calculation

Estimated Works Approval fee calculation: \$10000 based on the total capital works of the project of approximately \$3.49M





8 Temporary Additional Treated Effluent Storage and Disposal

A Department of Defence (DoD) project to upgrade the runway on West Island is anticipated to start in late 2025. This will increase the number of people on Island for a period of approximately two-three years during the construction phase. To accommodate the construction team, a 96 bed camp will be built on West Island by DoD. Consultation with DoD project contractors have indicated an additional flow of 17kL/day will be generated from the construction camp at peak occupancy and conveyed to the West Island WWTP. (B.Glasson, personal communication to N.Wain, 8 May 2025)

Based on discussions with the Australian Government and the consultants for the DoD project, the project will supply its own Wastewater Treatment for the construction camp site.

The treated effluent will be pumped via a private pump station to the West Island WWTP. Treated effluent from the camp will be stored in the balance tank and disposal to ocean via the existing West Island Outfall.

Effluent quality from the construction camp must be equal to or better than the design criteria for the existing WWTP, and subject to any other conditions by DWER if required.

Information on expectations and acceptance criteria for this arrangement was provided to the DoD consultants, Fulton Hogan and AECOM in September 2023 and reiterated to the project team in early 2025 by the Australian Government. Table 6 outlines information provided to the consultants on the expected effluent quality to be received at the West Island WWTP and the total combined discharge quality to ocean.

At the completion of the Defence Project, the construction camp will be decommissioned, and it is expected Wastewater flows will return to pre-project average flows of around 40-50kL/day.

Total disposal of the 2 treated effluent streams will be 70kL/day for this temporary period. This total discharge volume is within the Premise Category 85 threshold of 100kL/day (m³/d)

Effluent Quality Parameters	Operational Targets
Total Effluent Discharge Volume	<53kL/day Community TWW and flow from Qstation operations <17kL/day Construction Camp
Total Nitrogen	≤10 mg/L
Total Phosphorus	≤15 mg/L
BOD	≤15 mg/L
E.coli	≤150 /100mL
Oil & Grease	≤20 mg/L
Suspended Solids	≤20 mg/L
pH	6.5-8.5
Metals (Mercury, Zinc, Copper, Cadmium, Lead)	Monitoring only

Table 6 Expected Effluent quality during this period.







8.1 Monitoring and Operational Measures

The current monitoring requirements outlined in Section 6 will continue throughout the period of the DoD project delivery. The below items are proposed in addition to the current monitoring to allow better control and response to adverse effluent quality events.

- Increased operator presence on site
 - Water Corporation has recently increased the local workforce capacity in the civil and treatment space for supporting this works. An additional Civil Operator is trained in Wastewater Treatment and will be responsible for the day-to-day operation of the site.
- Specialist Treatment expertise team quarterly site visits
 - Water Corporation has treatment experts that provide additional monitoring and support to treatment plant operations. Site visits will be coordinated on a quarterly basis at a minimum to support the local operations team the DoD project delivery phase.
- Flow monitoring and quality monitoring of the construction camp effluent received at the balance tank to ensure quality and flow meet expected requirements. Frequency of this monitoring will align with current operations for the West Island WWTP
- Camp facility management will also be required to provide effluent quality data and flow monitoring records to evidence compliance with Water Corporations criteria on a monthly basis.
- DoD contractors are also expected to undertake any regulatory approvals for the construction and operations of this WWTP, and inform Water Corporation of the conditions of any regulatory instrument issued.

8.2 Ocean Outfall Dispersion Modelling

Water Corporation commissioned RPS in 2023 to model the near-field dispersion of TWW from the ocean outfall, accounting for the geometry of the discharge (outlet diameter and angle), depth of discharge, and prevailing current speeds and ocean density profiles.

The key aim of this investigation was to understand the rates of near-field dilution of TWW that can be expected from the TWW discharge in normal operating mode, and when discharge volumes increase as a result of the defence project & construction camp

Modelling indicates that there is no significant change expected in TWW constituents on surfacing of the plume during the period of the runway project.

A copy of the Dispersion Modelling Report is provided in Appendix C





Appendix A Environment Policy



982982 - West Island WWTP Cocos Keeling Islands Infrastructure upgrade Works Approval Supporting Information



Environment Policy

Environmental leadership and improvement

Water Corporation provides essential water, wastewater and drainage services to our customers across Western Australia. We take water from, and then return drainage water, treated wastewater and by-products to the environment.

We are committed to accelerating environmental sustainability of the water cycle as our climate changes.



Our objectives include:

- accelerating our road to net zero; by achieving net zero for scope 1 and 2 greenhouse gas emissions by 2035
- impacting positively the land and water we influence, including no net clearing of native vegetation
- restoring and regenerating ecosystems
- educating the community on climate change impacts and maximise waterwise outcomes through water efficient programs to conserve resources
- using resources sustainably with increased wastewater recycling.

We'll regularly review our environmental objectives and measures to ensure they remain relevant. We'll report internally and publicly to measure our performance.



Chief Executive Officer, Water Corporation

This policy applies to all Water Corporation workers and includes all activities and services we provide in accordance with our operating licence. We will provide the necessary resources, systems, training and mechanisms to improve o anticommental performance.



PCY230 Environment Policy Date: March 2023 Next review: March 2026





Appendix B Proof of Occupier Status





Lease

GOVERNMENT OF WESTERN AUSTRALIA

123

Approved form 2017-82730 Reg 3 of the Transfer of Land Regulations 2004 The information in this form is collected under statutory authority and used for the purpose of maintaining publicly searchable registers and indexes.



Jurisdiction

Commonwealth of Australia

Territory of Cocos (Keeling) Islands

Legislation

Transfer of Land Act 1893 (W.A.)(C.K.I.)

Lodging party details Name	Infrastruc Developr Arts	Department of cture, Transport, Regional nent, Communications and the	Preparer details Name Phone Reference		
Address	PO BOX PERTH	Z5048 WA 6831			
Issuing box ¹ Phone	Sector Sector S	120 C 1 1 1 1 1 2 2 2 2 2 2 2 2 2 2 2 2 2 2			
- Fax Email					
Reference					
Land / Interest Title(volume-folio) Extent	Land description		Interest	
2103-109	Whole	LOT 100 ON PLAN 18500		FEE SIMPLE	

Lessor(s)

SHIRE OF COCOS (KEELING) ISLANDS (ABN 12325522841) OF PO BOX 1094 COCOS (KEELING) ISLANDS WA 6799

Lessee(s)

DEPARTMENT OF INFRASTRUCTURE, TRANSPORT, REGIONAL DEVELOPMENT, COMMUNICATIONS AND THE ARTS (ABN 86267354017) OF GPO BOX 594 CANBERRA ACT 2601

Terms and conditions

Commencement	01/01/2023
Duration	10 years 0 months 0 days
Option to renew	Yes

Operative words

The lessor(s) hereby leases to the lessee(s) the land described above in the terms and conditions set out or referred to in this lease subject to the limitations, interests, encumbrances and notifications as shown on the certificate of title and/or otherwise affect the land under the legislation stated above.

.

2

LEASE

Part Lot 100 West Island

SHIRE OF COCOS (KEELING) ISLANDS

("Lessor")

AND

COMMONWEALTH OF AUSTRALIA as represented by the DEPARTMENT OF INFRASTRUCTURE, TRANSPORT, REGIONAL DEVELOPMENT, COMMUNICATIONS AND THE ARTS ("Lessee")

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1

CONTENTS

1.	DEF	INITIONS AND INTERPRETATION	. 1
	1.1 1.2 1.3 1.4	Definitions Interpretation Commonwealth obligations Consents and approvals	. 1 . 6 . 8 . 9
2.	OPE	RATIVE PART	. 9
	2.1 2.2 2.3	Lease of Premises Quiet enjoyment Parties dealings with each other	. 9 . 9 . 9
3.	RES	ERVATION OF LESSOR'S RIGHTS	. 9
	3.1	Granting easements etc	. 9
4.	REN	Т	. 9
5.	REN	T REVIEW	10
	5.1 5.2 5.3 5.4	General CPI Rent Review Market Rent Review Fixed increase of Rent	10 10 11 12
6.	OUT	GOINGS	12
7.	USE	OF LEASED PREMISES	13
	7.1 7.2 7.3 7.4 7.5	Authorised Use Carrying out Authorised Use Licenses and Limitations Comply with requirements Lessee's consent required for entry by Lessor	13 13 13 13 13
8.	MAI	NTENANCE AND WORKS	15
	8.1 8.2 8.3 8.4 8.5	Obligation to Maintain Substantial Works Maintenance and Works Remove Non-approved Works Maintenance by the Lessor	15 15 16 16
9.	POS	ITIVE COVENANTS	17
	9.1 9.2 9.3 9.4 9.5	Costs and Expenses Report to Lessor Comply with Laws No interest payable Services.	17 17 17 17 17
10.	NEG	ATIVE COVENANTS	17
11.	LES	SEE'S OBLIGATION TO EFFECT INSURANCES	18
12.	INDE	EMNITIES	19
	12.1 12.2	General indemnity Nature of indemnity	19 19

i

13.	ASSIGNMENT	19
	 13.1 No assignment	19 19 19 20 20 20
14.	DAMAGE OR DESTRUCTION OF LEASED PREMISES	20
	14.1 Abatement of Rent and outgoings and charges14.2 Dispute as to abatement of Rent and outgoings and charges14.3 Termination	20 21 21
15.	LIMIT OF LESSOR'S LIABILITY	21
	15.1 Lessee acts at own risk and expense	21
16.	DEFAULT	21
17.	LESSOR'S POWERS ON DEFAULT	22
	17.1 Lessor's right of possession	22
	17.2 Lessor may remedy Lessee's default	22
	17.4 Exercise of rights by Lessor	23
18.	ESSENTIAL TERMS	23
	18.1 Breach of Essential Terms	23
	18.2 Damage for Breach of Essential Terms	23
	18.4 Lessor to Mitigate Damages	23
	18.5 Calculation of Damages.	24
19.	TERMINATION	24
	19.1 Yield up Leased Premises	24
	19.2 Remove Lessee's Fixtures	24
	19.4 Dealing with Lessee's property not removed at Termination	25
	19.5 Lessee to continue to pay Rent and other moneys payable	25
20.	OPTION OF RENEWAL	. 25
21.	HOLDING OVER	. 26
22.	WARRANTY OF FITNESS	. 26
	22.1 Lessor's Warranties22.2 Lessor's responsibilities	26 27
23.	RESERVATION	. 27
	23.1 Undertakings by Lessor to the Lessee in respect of the Land23.2 Use by the Lessor of the Balance Land	. 27 . 27
24.	SPECIAL CONDITIONS	28
25.	ENVIRONMENTAL MATTERS	28
	25.1 Definitions25.2 Lessee's Environmental Covenants	28 30

303707169.01

194 4

.19 20

5

ii

	 25.3 Remediate Contamination 25.4 Lessor's warranty 25.5 Lessee's rights to terminate Lease 	30 31 31
26.	CAVEATS AND REGISTRATION OF LEASE	32
	26.1 Registration26.2 Lessee must withdraw Caveat and any Registered Encumbrances	32 32
27.	DISPUTE RESOLUTION	33
	 27.1 Definitions	33 33 33 33 33 33 33 34
28.	LAND UNFIT FOR OCCUPATION AND USE	34
	28.1 Damage and destruction	34
~~	28.2 Termination of this Lease	34
29.	GS1	35
30.	MISCELLANEOUS	36
	30.1 Lessee not to permit prohibited matters	36
	30.3 Schedules	36
	30.4 Proper Law and Jurisdiction	36
	30.5 Time for payment	36
		00
	30.6 Time of the essence	36
	 30.6 Time of the essence 30.7 Certificates	36 36 36
	 30.6 Time of the essence	36 36 36 36 37
	 30.6 Time of the essence	36 36 36 37 37
	30.6 Time of the essence 30.7 Certificates 30.8 Exercise of rights by Lessor 30.9 Lessor may act by agent 30.10 Variation 30.11 Giving of notice 30.12 Eurther assurance	36 36 36 37 37 37
	30.6 Time of the essence 30.7 Certificates 30.8 Exercise of rights by Lessor 30.9 Lessor may act by agent 30.10 Variation 30.11 Giving of notice 30.12 Further assurances 30.13 Severance	36 36 36 37 37 37 37 38 38
	30.6 Time of the essence 30.7 Certificates 30.8 Exercise of rights by Lessor 30.9 Lessor may act by agent 30.10 Variation 30.11 Giving of notice 30.12 Further assurances 30.13 Severance 30.14 Entire Agreement	36 36 36 37 37 37 37 38 38 38 38
	30.6 Time of the essence 30.7 Certificates 30.8 Exercise of rights by Lessor 30.9 Lessor may act by agent 30.10 Variation 30.11 Giving of notice 30.12 Further assurances 30.13 Severance 30.14 Entire Agreement 30.15 Termination	36 36 36 37 37 37 38 38 38 38 38
•	30.6 Time of the essence 30.7 Certificates 30.8 Exercise of rights by Lessor 30.9 Lessor may act by agent 30.10 Variation 30.11 Giving of notice 30.12 Further assurances 30.13 Severance 30.14 Entire Agreement 30.15 Termination 30.16 Lease clauses that do not apply	36 36 36 37 37 37 37 38 38 38 38 38 38 38
	30.6 Time of the essence 30.7 Certificates 30.8 Exercise of rights by Lessor 30.9 Lessor may act by agent 30.10 Variation 30.11 Giving of notice 30.12 Further assurances 30.13 Severance 30.14 Entire Agreement 30.15 Termination 30.16 Lease clauses that do not apply 30.17 Applicable law 30.18 Additional rights	36 36 36 37 37 37 38 38 38 38 38 38 38 38 38
SCHI	30.6 Time of the essence 30.7 Certificates 30.8 Exercise of rights by Lessor 30.9 Lessor may act by agent 30.10 Variation 30.11 Giving of notice 30.12 Further assurances 30.13 Severance 30.14 Entire Agreement 30.16 Lease clauses that do not apply 30.17 Applicable law 30.18 Additional rights	36 36 37 37 37 37 38 38 38 38 38 38 38 38 38 38 38 38 38
SCHI	30.6 Time of the essence 30.7 Certificates 30.8 Exercise of rights by Lessor 30.9 Lessor may act by agent 30.10 Variation 30.11 Giving of notice 30.12 Further assurances 30.13 Severance 30.14 Entire Agreement 30.16 Lease clauses that do not apply 30.17 Applicable law 30.18 Additional rights EDULE 1	36 36 36 37 37 37 37 38 38 38 38 38 38 38 38 38 38 38 38 38
SCHI SCHI ANNI	30.6 Time of the essence 30.7 Certificates 30.8 Exercise of rights by Lessor 30.9 Lessor may act by agent 30.10 Variation 30.11 Giving of notice 30.12 Further assurances 30.13 Severance 30.14 Entire Agreement 30.16 Lease clauses that do not apply 30.17 Applicable law 30.18 Additional rights EDULE 1 EDULE 2 - SPECIAL CONDITIONS EXURE "A"	36 36 36 37 37 37 37 38 38 38 38 38 38 38 38 38 38 38 38 38

6
THIS DEED is made

2022.

BETWEEN

SHIRE OF COCOS (KEELING) ISLANDS of 1094 Home Island, Cocos (Keeling) Islands, Indian Ocean 6799 ("Lessor")

and

COMMONWEALTH OF AUSTRALIA AS represented by the DEPARTMENT OF INFRASTRUCTURE, TRANSPORT, REGIONAL DEVELOPMENT, COMMUNICATIONS AND THE ARTS of 111 Alinga Street, Canberra, ACT 2600 ("Lessee")

WHEREAS:

- A. The Lessor is the registered proprietor of the Land.
- B. The Lessor has agreed to lease the Leased Premises to the Lessee on the terms and conditions of this Lease.

THE PARTIES COVENANT AND AGREE AS FOLLOWS:

1. Definitions and Interpretation

In this Lease, unless such an interpretation is excluded by or contrary to the context:

1.1 Definitions

The following terms are defined:

"<u>Asbestos</u>" means the fibrous form of the mineral silicates belonging to the serpentine and amphibole groups of rock forming minerals, including actinolite, amosite (brown asbestos), anthophyllite, crocidolite (blue asbestos), chrysolite (white asbestos), tremolite, or any material or object containing one or more of these minerals.

"<u>Australian</u> <u>Standards</u>" means any standard published by Standards Australia Limited as they apply from time to time.

"Authorised Person" means:

- (a) an agent, employee, licensee, contractor or invitee of the Lessee;
- (b) any person visiting the Leased Premises with the express or implied consent of any person referred to in paragraph (a) of this definition; and

(c) any person claiming under or through the Lessee;

"Authorised Use" means the use specified in item 1 of Schedule 1;

"Balance Land" means the Land excluding the Leased Premises.

"<u>Business Day</u>" means a day other than a Saturday or Sunday or a day that is a Gazetted public holiday in the Territory;

"<u>Commencement Date</u>" means the commencement date specified in item 3 of Schedule 1;

"<u>Commonwealth Agency</u>" means each and every department or other body owned or controlled by the Commonwealth of Australia;

"<u>Consumer Price Index</u>" means the Consumer Price Index (All Groups) Perth number published from time to time by the Australian Bureau of Statistics;

"<u>CPI Rent Review Date</u>" means each rent review date specified in item 8 of Schedule 1 as a "CPI Rent Review";

"<u>Current CPI</u>" means the Consumer Price Index number last published before the relevant Rent Review Date, or if an actuary is appointed under clause 5.2 to determine an index, the number certified by that actuary;

"End Date" means the date specified in item 4 of Schedule 1;

"Event of Default" means the events specified in clause 16 of this Lease;

"Expert" means an appropriate practising professional appointed at the request of either party by:

- (a) the chairperson for the time being of the Resolution Institute ABN 69 008 651 232 in Western Australia; or
- (b) if there is no such body in existence at the time of the request, the chairperson for the time being of an equivalent body;

"<u>Facilities</u>" means the water supply, drainage, sewerage, gas and electrical fittings (if any) in or on the Land or the Leased Premises;

"<u>Fixed Rent Review Date</u>" means each rent review date specified in Item 8 of Schedule 1 as a "Fixed Rent Review";

"Force Majeure" includes the following:

- (a) Act of God;
- (b) fire, explosion, flood, fog or other adverse weather conditions or natural disaster;
- (c) the act of any Relevant Authority (other than the Lessor) (including refusal or revocation of any licence or consent);
- (d) power failure, failure of telecommunications lines, failure or breakdown of plant and equipment, machinery or vehicles;

- (e) default of suppliers or independent contractors;
- (f) theft or malicious damage;
- (g) outbreak of hostilities, riot, civil disturbance, acts of terrorism;
- (h) outbreak of infectious disease, epidemic or pandemic disease (whether at international, regional or local level, including any declared or undeclared epidemic or pandemic and includes the COVID-19 pandemic); or
- (i) any cause or circumstance whatsoever beyond the reasonable control of a party to this Lease;

"Further Term" means each further term specified in item 2(b) of Schedule 1;

"GST" means the same as in the GST Law.

"<u>GST Law</u>" means the same as GST law means in *A New Tax System (Goods and Services Tax) Act 1999* (Cth);

"Land" means the land described in item 5(a) of Schedule 1;

"<u>Laws</u>" means all applicable statutes, rules, regulations, proclamations, ordinances, legislative instruments or by-laws present or future that apply to the Land, the Leased Premises and this Lease;

"<u>Lease</u>" means this lease and the Schedules and, where applicable, any appendices, plans or other attachments to this lease as amended from time to time;

"Leased Premises" means that part of the Land described in item 5(b) of Schedule 1;

"<u>Lessee's Activities</u>" means the activities carried on by the Lessee from the Leased Premises;

"<u>Lessee's Fixtures</u>" means all fixtures and fittings installed by the Lessee in or on the Leased Premises with the Lessor's consent;

"<u>Lessee's Obligations</u>" means each covenant, obligation and duty contained or implied in this Lease or required by law to be performed by the Lessee, the Guarantors (if any) or any Authorised Persons;

"Lessee's Rights" means the Lessee's rights under this Lease or implied by law;

"<u>Lessor's Rights</u>" means the rights of the Lessor under this Lease or implied by law;

"<u>Maintain</u>" includes maintain, repair, renovate, replace, decorate and refurbish, and "<u>Maintenance</u>" and "<u>Maintaining</u>" have equivalent meanings;

"Market Rent" means the rent obtainable at the relevant Market Rent Review Date in a free and open market if the Leased Premises were unoccupied and offered for rent, or a new lease on similar terms, for a use permitted by and on

9

the same terms as are contained in this Lease determined on the basis that the following are taken into account:

- (a) any rent payable under a lease at the time of the Market Rent Review Date by a sitting tenant in a comparable location;
- (b) the same or substantially similar use of the Leased Premises;
- (c) the provisions of this Lease;
- (d) the Term and the benefit of any option to renew;
- (e) any other criteria, not inconsistent with any provision in this Lease, which the valuer regards as being relevant to the determination;

and the following are disregarded:

- (f) any default by the Lessee under this Lease;
- (g) any part of the Term which has expired; and
- (h) the value of the Lessee's Fixtures;

"Market Rent Review Dates" means each market rent review date specified in Item 8 of Schedule 1 as a "Market Rent Review";

"party" and "parties" mean respectively a party or parties to this Lease;

"<u>Previous CPI</u>" means the Consumer Price Index number last published before the date which is twelve (12) months before the relevant Rent Review Date, or if an actuary is appointed under clause 5.2 to determine an index, the number certified by that actuary;

"Rate" means the interest rate specified in item 6 of Schedule 1;

"Rates and Taxes" means:

- (a) council rates and charges including, but not limited to, rubbish removal rates and charges;
- (b) land tax (including metropolitan region improvement tax) on a single holding basis;
- (c) water, drainage and sewerage rates, including, but not limited to, meter rents, charges for the disposal of storm water and excess water charges;
- rates, taxes, charges, duties and fees levied, charged, assessed or imposed by a Relevant Authority in respect of any part of the Leased Premises or the ownership or occupation of any part of the Leased Premises,

but excluding any related interest, penalties, fines and expenses in connection with them and any tax imposed by the *Income Tax Assessment Act 1936* (Cth) or the *Income Tax Assessment Act 1997* (Cth);

4

"<u>Relevant Authority</u>" means any government, statutory, public or other authority or body having jurisdiction over the Leased Premises or any matter or thing relating to the Leased Premises;

"Relocating Expenses" means the Lessee's costs of:

- (a) vacating the Land during the Term;
- (b) obtaining and moving to alternative premises excluding rent except to the extent that rent for the alternative accommodation exceeds the Rent under this Lease;
- (c) the installation and establishment of alternative premises after deduction of any amount received by the Lessee from any party towards the installation and establishment of such alternative accommodation; and
- (d) if applicable, the return and re-establishment of the Lessee on the Land when it is again fit for the Lessee to occupy and use.

"<u>Rent</u>" means the rent specified in item 7 of Schedule 1 as reviewed in accordance with this Lease;

"<u>Rent Review Date</u>" means each rent review date as specified in item 8 of Schedule 1;

"Schedule" means a schedule to this Lease;

"<u>Services</u>" means any telecommunication, electricity, gas, oil, fuel, water or other similar commodity, facility or service in, to or on the Leased Premises or otherwise serving the Leased Premises or, where applicable, any other part of the Land;

"Term" means the term specified in item 2(a) of Schedule 1;

"<u>Termination</u>" means the expiry of the Term by effluxion of time or by termination in accordance with this Lease;

"Territory" means the Territory of Cocos (Keeling) Islands;

"<u>Works Conditions</u>" means in respect of any Maintenance or other works carried out on or to the Leased Premises by the Lessee, the Lessee must:

- (a) do so:
 - (i) if required by this Lease with the prior written approval of the Lessor (not to be unreasonably withheld) and all Relevant Authorities;
 - (ii) at the Lessee's cost;
 - (iii) in a safe and proper workmanlike manner and to the satisfaction of the Lessor, acting reasonably;

5

- (iv) using good quality materials;
- (v) in full compliance with:

- (A) any approval given and conditions imposed by the Lessor acting reasonably and all Relevant Authorities;
- (B) all plans and specifications approved by the Lessor;
- (C) all other requirements, notices, orders or directions of any Relevant Authority; and
- (D) all relevant Laws;
- (b) ensure that the Lessee and all its employees, agents, contractors and workmen employed in executing the relevant works:
 - (i) as soon as reasonably practicable comply with the reasonable directions of the Lessor in relation to their conduct in and access to the Leased Premises and when going to and from the Land and the Leased Premises; and
 - take all necessary steps to cause as minimum disturbance to the greatest extent possible to the Lessor and to the owners or occupiers of any nearby properties having regard to the nature of the works being carried out;
- (c) if required by the Lessor (acting reasonably), erect and maintain a fence around the Leased Premises during the erection and completion of the works and ensure that such fence is sufficiently sound, high and secure to prevent entry upon the Leased Premises by unauthorised persons and members of the public;
- (d) clean up the Leased Premises progressively during the construction, installation or demolition of the works as the case may be and promptly remove from the Leased Premises all rubbish and waste arising from such works; and
- (e) The Lessee must pay its own costs in connection with the relevant works including the Lessor's administrative and other reasonable costs of giving consent and the fees of any architect or other consultant used by the Lessor in connection with the relevant works; and

"<u>Written Law</u>" has the same meaning given to that term in the *Interpretation Act 1984* (WA) (CKI).

1.2 Interpretation

The following interpretations shall apply:

- (a) words importing the singular shall include the plural and vice versa, words importing gender shall include the masculine, feminine and neuter genders and words importing persons shall include individuals, firms, associations, partnerships, government authorities, incorporated and unincorporated entities and corporations;
- (b) if two (2) or more persons by this Lease undertake an obligation or make or give any warranty or undertaking, or waive any right or entitlement, they shall be bound both jointly and jointly and severally;

- (c) a reference to this Lease includes a reference to any Schedule, Recital, Part, Clause, Sub-Clause, paragraph or Annexure in or to this Lease, and in or to this Lease as amended, novated, supplemented, varied or replaced from time to time, and vice versa;
- (d) a reference to a statute, Act or Code, regulation or by-law or to any section, sub-section or paragraph thereof, includes any statutory amendment, replacement, consolidation, modification or re-enactment thereof from time to time, and for the time being in force, and all ordinances, by-laws, regulations and other statutory instruments issued under them;
- (e) where the day or last day for doing an action or for the payment of any money or on which any entitlement is due to arise or a notice is deemed served is not a Business Day, the day or last day for doing that act or payment of that money or on which that entitlement arises or notice is deemed served, shall be deemed to be the next Business Day;
- (f) where any requirement, calculation or payment of money might otherwise fall to be performed or paid on the 29th, 30th or 31st day of a month which does not contain such a date, then references thereto shall be construed as references to the last day of that month;
- (g) a reference to any party includes that party in its own right and in its capacity as trustee of any trust (whether specified or not), and also includes that party's executors, administrators, successors, substitutes and permitted assigns in accordance with this Lease, including any person taking by way of novation;
- (h) all headings and any table of contents or index have been inserted for convenience purposes only and shall not affect the interpretation hereof;
- where any word or phrase is given a defined meaning, any other part of speech or other grammatical form in respect of such word or phrase shall have a corresponding meaning;
- (j) all references to monetary amounts are references to Australian dollars unless stated otherwise;
- (k) a reference to:
 - (i) a right includes a benefit, remedy, discretion, authority or power;
 - (ii) an obligation includes a warranty or representation;
 - (iii) a failure to observe or perform an obligation includes a breach of warranty or representation;
 - (iv) provisions or terms of this Lease include a reference to both express and implied provisions or terms;
 - (v) writing includes any means or mode of representing or reproducing words in a tangible and permanently visible form, and includes facsimile transmissions.

7

- (vi) signature and signing includes due execution by a corporation or other relevant entity;
- (vii) a month means a calendar month;
- (viii) conduct includes, without limitation, an omission, statement or undertaking, whether or not in writing; and
- (ix) an amount for which a person is contingently liable includes, without limitation, an amount which that person may become actually or contingently liable to pay if a contingency occurs, whether or not that liability will actually arise;
- (I) each paragraph or sub-paragraph in a list is to be read independently from the others in that list;
- (m) no rule of construction of documents shall apply to the disadvantage of a party, on the basis that that party put forward this document or any relevant part of it;
- (n) "including" and similar expressions are not words of limitation;
- a covenant, agreement, representation or warranty in favour of two (2) or more persons is for the benefit of them jointly and severally;
- (p) a reference to a statutory, professional or industry body includes a reference to a successor or substitute for that body;
- (q) unless repugnant to the context, a covenant by a party to do or omit to do anything includes a covenant by an Authorised Person to do or omit to do that thing, and the party is liable for all acts or omissions of an Authorised Person;
- (r) a general description of any matter or thing whatever shall not be read down if followed by any specific examples of that matter or thing;
- (s) derivatives of a word or expression defined in clause 1.1 have a corresponding meaning to that assigned to it in that clause;
- (t) a reference to "Lessor" is a reference to the Shire of Cocos (Keeling) Islands only in its capacity as owner of the Leased Premises and not in its capacity as a Relevant Authority, and is separate and distinct from its capacity as a Relevant Authority; and
- (u) covenants implied by Laws are not incorporated in the Lease, unless the relevant Law provides that certain covenants are to be implied and cannot be excluded by agreement.

1.3 <u>Commonwealth obligations</u>

Despite anything in this Lease to the contrary, if the Lessee is:

- (a) a Commonwealth Agency; and
- (b) obliged by this Lease to comply with any Law or obtain any approval or consent,

8

it is only obliged to do to the extent it is otherwise legally bound to observe that Law or to obtain that approval or consent.

1.4 Consents and approvals

Unless otherwise stated, if a party's consent or approval is required:

- (a) the requested party must consider and respond to the request promptly;
- (b) the consent or approval must not be unreasonably withheld;
- (c) the requested party may require the requesting party to comply with reasonable conditions before giving consent; and
- (d) the consent or approval is not effective unless in writing.

2. Operative part

2.1 Lease of Premises

In consideration of the Lessee agreeing to duly pay the Rent and other money payable under this Lease and to duly observe and perform the Lessee's Obligations, the Lessor leases the Leased Premises and grants the Lessee's Rights to the Lessee for the Term subject to the reservation of the Lessor's Rights under this Lease.

2.2 Quiet enjoyment

Except as provided in the Lease and subject to the performance of the Lessee's Obligations, the Lessee may quietly hold and enjoy the Leased Premises during the Term without any interruption or disturbance from the Lessor or persons lawfully claiming through or under the Lessor.

2.3 Parties dealings with each other

The parties agree that in relation to this Lease they will act co-operatively and reasonably.

3. Reservation of Lessor's rights

Without limiting any other provision of this Lease, the Lessor reserves the following rights:

3.1 Granting easements etc

The Lessor may grant easements of support or any other easements or similar rights over any part of the Land or the Leased Premises but the Lessor shall not without the Lessee's prior consent do anything which may derogate from the quiet enjoyment of the Lessee's Rights by the Lessee.

4. <u>Rent</u>

The Lessee must pay the Rent to the Lessor in the manner set out in item 7 of Schedule 1 and the first payment is due on the Commencement Date.

5. **<u>Rent review</u>**

5.1 <u>General</u>

On each Rent Review Date, the Rent shall be reviewed to determine the Rent to be paid by the Lessee until the next Rent Review Date. The review will be either based on:

- (a) a CPI Rent Review;
- (b) a Market Rent Review; or
- (c) a Fixed increase of Rent.

5.2 CPI Rent Review

(a) With effect from each CPI Rent Review Date, the Rent shall be reviewed on the basis of the following formula:

RR = (R x CCPI) divided by PCPI

Where:

- "**RR**" = the annual Rent as reviewed;
- "R" = the annual Rent payable immediately before the relevant CPI Rent Review Date;
- "**CCPI**" = the Current CPI; and
- "**PCPI**" = the Previous CPI.
- (b) The Lessor may, not earlier than three (3) months before a CPI Rent Review Date, give the Lessee a notice setting out the amount of the reviewed Rent which shall be payable from the CPI Rent Review Date ("CPI Rent Review Notice"), except that the failure of the Lessor to give such a notice before the CPI Rent Review Date does not preclude the Lessor from giving such a notice in respect of that CPI Rent Review Date at any later time.
- (c) Determination of Current CPI or Previous CPI

If for the purposes of a CPI Rent Review under clause 5.2(a), the Consumer Price Index number is not published or no Consumer Price Index number was published in the twelve (12) to fifteen (15) month period before the relevant CPI Rent Review Date for the purposes of determining the Previous CPI, then the Lessor may appoint an actuary from the Fellows of the Institute of Actuaries of Australia to determine:

- (i) in respect of the Current CPI, an index number which reflects the prevailing levels of prices for the Leased Premises at that CPI Rent Review Date; and
- (ii) in respect of the Previous CPI, an index number which reflects the prevailing levels of prices for the Leased Premises at the date which is twelve (12) months prior to that CPI Rent Review Date;

and the actuary's determination will be binding on the Lessor and the Lessee except in the case of manifest error and the Lessor and the Lessee will pay the actuary's costs in equal shares.

5.3 Market Rent Review

With effect from each Market Rent Review Date, the Rent shall be reviewed in accordance with the following provisions:

- (a) The Lessor must, not earlier than three (3) months before and no later than three (3) months after a Market Rent Review Date, give the Lessee a notice setting the Rent at a rent which the Lessor considers to be the Market Rent ("Market Rent Review Notice") except that the failure of the Lessor to give such a notice before the Market Rent Review Date does not preclude the Lessor from giving such a notice in respect of that Market Rent Review Date at any later time.
- (b) If the Lessee disagrees with the Lessor's determination, the Lessee shall give the Lessor a notice within thirty (30) Business Days of service of the Market Rent Review Notice on the Lessee disputing the Lessor's determination ("Dispute Notice"), and the Market Rent shall be determined:
 - (i) by agreement between the Lessor and the Lessee; or
 - (ii) if the Lessor and the Lessee cannot agree on the Market Rent, by a licensed valuer jointly appointed by the Lessor and the Lessee or, failing agreement between the Lessor and the Lessee as to who to appoint, by a licensed valuer appointed by the President for the time being of the Australian Property Institute (Western Australian Division) (or if such body no longer exists, such other body which is then substantially performing the functions performed by that body at the relevant time);

and the licensed valuer shall:

- (iii) determine the Market Rent;
- (iv) act as an expert and not as an arbitrator; and
- (v) give the Lessor and the Lessee the licensed valuer's determination in writing setting out the reasons for it; and
- (vi) the annual Rent as reviewed and payable from the Market Rent Review Date shall be the Market Rent as determined by the licensed valuer under this clause;
- (vii) the Lessor and the Lessee shall be obliged to pay the licensed valuer's fees in equal shares;
- (viii) if the Lessee gives a Dispute Notice the Lessee shall continue to pay the Rent amount applicable immediately before the Market Rent Review Date ("Prevailing Rent") until the amount of the reviewed Rent is determined in accordance with this clause 5.3;

- (ix) if the Market Rent determined by the licensed valuer is less than the Prevailing Rent, the Lessor shall credit the Lessee with the amount of the overpayment in respect of any future instalments of Rent due; or
- (x) if the Market Rent determined by the licensed valuer is more than the Prevailing Rent, the Lessee shall immediately pay the Lessor the amount of the underpayment for the period from the Market Rent Review Date; and
- (xi) if the Lessee fails to give a Dispute Notice within the thirty (30) Business Day period stipulated in this clause, the Market Rent as determined by the Lessor and set out in the Lessor's Market Rent Review Notice shall apply and is payable by the Lessee from the relevant Market Rent Review Date.
- (c) If the Lessor does not give Lessee a Market Rent Review Notice in accordance with clause 5.3(a), the Lessee may initiate a market rent review process and clauses 5.3(a)-(b) will apply as if the reference to:
 - (i) "the Lessor" was a reference to the Lessee; and
 - (ii) "the Lessee" was a reference to the Lessor.
- (d) For clarity, the Rent payable from a Market Rent Review Date may be less than the Rent payable immediately before that date.

5.4 Fixed increase of Rent

With effect from each Fixed Rent Review Date, the Rent payable by the Lessee shall be calculated on the basis of the Rent payable immediately before that Fixed Rent Review Date increased by the percentage specified in Item 8 of Schedule 1 next to each Fixed Rent Review Date.

6. Outgoings

The Lessee must pay punctually to the Lessor, or to such person as the Lessor may from time to time direct, all the following outgoings or charges (if applicable), assessed or incurred in respect of the Leased Premises:

- (a) all Rates and Taxes;
- (b) telephone, electricity, gas and other power and light charges including but not limited to meter rents and the cost of installation of any meter, wiring, internet connections or telephone connection and the Lessee shall ensure that any accounts for all charges and outgoings in respect of telephone, gas and other power and light charges are taken out and issued in the name of the Lessee; and
- (c) any other consumption charge or cost, statutory impost or other obligation incurred or payable by reason of the Lessee's use and occupation of the Leased Premises.

12

7. Use of Leased Premises

7.1 <u>Authorised Use</u>

- (a) The Lessee is entitled to use the Leased Premises for the Authorised Use and any other associated activities in whatever way the Lessee deems necessary and appropriate.
- (b) If the Lessee wishes to use the Leased Premises for any use other than the Authorised Use, it must obtain consent from the Lessor, which consent must not be unreasonably withheld or delayed.

7.2 Carrying out Authorised Use

- (a) The Lessor acknowledges the Authorised Use and the Lessee's obligations under this Lease may be carried out by any natural person who is an officer, employee, agent or professional advisor of:
 - (i) the Lessee;
 - (ii) the Lessee's contractors; or
 - (iii) the Lessee's agent,

without the prior consent of the Lessor.

(b) The Lessee must ensure any party that carries out the Authorised Use under clause 7.2(a) complies with the terms and conditions of this Lease.

7.3 Licenses and Limitations

If the carrying on of the Lessee's Activities at the Leased Premises is permissible only with the consent, licence or authority under any Law, the Lessee shall obtain and maintain the currency of that consent, licence or authority and comply with that Law.

7.4 Comply with requirements

- (a) The Lessee shall:
 - not do or omit to do any thing which might materially interfere with or materially impair the efficient supply or operation of any existing Service (if any) in or on the Land; and
 - (ii) comply with all relevant requirements imposed by any Law or any Relevant Authority in respect of the Lessee's use of the Land to the extent the Lessee is bound by any requirement.
- (b) The Lessor must comply with all requirements (if any) relating to the Land except to the extent the Lessee is required to do so under clause 7.4(a).

7.5 Lessee's consent required for entry by Lessor

(a) The Lessor acknowledges:

- the Lessee, by carrying on the Permitted Use at the Leased Premises provides an essential public service to the Cocos (Keeling) Island community;
- (ii) it is necessary for the Lessee to restrict the Lessor's and other person's access to the Leased Premises to:
 - (iii) protect the legitimate interests of the Lessee; and
 - (iv) ensure the Lessee can continue to carry out the essential public service to the Cocos (Keeling) Island community during the Term.
- (b) The Lessor may only enter the Leased Premises in the following circumstances:

Purpose	Is Lessee consent required?	Lessor must request Lessee's consent not less than 48 hours before access required	Can Lessee withhold its consent in its absolute discretion?
Emergency	No	No	Not applicable
To confirm the Lessee's compliance with the Lessee's Obligations To comply with any requirement or order of a Local Government of an Authority To view the Leased Premises with a respective purchaser or a prospective occupier	Yes	Yes	No, the Lessee must not unreasonably withhold its consent
For any other purpose	Yes	Yes	Yes

- (c) If the Lessor accesses the Leased Premises, the Lessor must:
 - (i) not cause any undue interference with the conduct of the Lessee's Activities;
 - (ii) comply with the Lessee's reasonable directions regarding security or health and safety;

- (iii) not damage the Leased Premises;
- (iv) except in an emergency, be accompanied by a representative of the Lessee at all times (if required by the Lessee);
- (v) promptly repair any damage caused by the Lessor in exercising the Lessor's rights under this clause; and
- (vi) indemnify the Lessee against, and pay the Lessee on demand the amount of any Claims resulting from or in connection with the Lessor exercising those rights (including due to the Lessor's negligence).

8. Maintenance and Works

8.1 Obligation to Maintain

The Lessee shall:

- (a) maintain the Leased Premises in a reasonable condition and state of repair having regard to the condition of the Leased Premises as at the Commencement Date and the Authorised Use, except for:
 - (i) fair wear and tear; or
 - (ii) damage which is the responsibility of the Lessor or which will be reinstated from the proceeds of insurance;
- (b) promptly repair any damage to the Leased Premises for which the Lessee is responsible;
- (c) maintain the exterior of the building and improvements on the Leased Premises in good structural and weatherproof condition;
- (d) maintain the Services within the Leased Premises in good working order, repair and condition; and
- (e) keep the Leased Premises clean and free from rubbish and other debris

The Lessee is not required to repair:

- (f) any damage referred to in clause 8.1(a)(i) or 8.1(a)(ii);
- (g) any damage caused or contributed to by the Lessor;
- (h) any damage from a Force Majeure Event except to the extent the need for repair is caused by an act or omission of the Lessee; or
- (i) any thing which is the Lessor's responsibility to Maintain under this Lease.

8.2 Substantial Works

The Lessee must not carry out any major works or erect any buildings or structures on the Leased Premises without the prior written consent of the Lessor.

8.3 Maintenance and Works

The Lessee is permitted to carry out any works required to repair and maintain the Leased Premises without the consent of the Lessor.

8.4 <u>Remove Non-approved Works</u>

If the Lessee carries out any works or erects any building or structure on the Leased Premises which have not been previously approved in writing by the Lessor, or which are not undertaken in accordance with the provisions of this Lease, the Lessor may require the Lessee (but without limiting any other right or remedy available to the Lessor) at the Lessee's cost, to dismantle and remove any such works, building or structures and the Lessee shall carry out the same in accordance with the Lessor's reasonable directions.

8.5 Maintenance by the Lessor

- (a) The Lessor must comply with all Laws and policies relating to its obligations towards land in the name of the Lessor.
- (b) Despite any other right or cause of action available to the Lessee, if the occupation, use or enjoyment of the Land by the Lessee is diminished as a result of the Lessor not complying with clauses 8.5(a) from a cause not attributable to the negligent act or omission of the Lessee, the Lessee may give notice to the Lessor to rectify the diminishment.
- (c) If the cause of the diminishment in the occupation, use or enjoyment of the Land is not rectified within 2 (two) Business Days after receipt of the notice (the grace period), subject to clause 8.5(b) all money payable by the Lessee under this Lease abates and ceases to be payable as if the Land had been rendered wholly or partially (as the case may be) unfit for the Lessee to occupy and use from the expiration of the grace period until the full occupation, use or enjoyment is restored.
- (d) If the diminishment in the occupation, use or enjoyment of the Land remains uncorrected for a period of 5 (five) Business Days after the grace period the Lessee may carry out the necessary repairs and recover the cost of the repairs from the Lessor by a set-off in moneys payable by the Lessee under this Lease or upon the provision of a valid tax invoice to the Lessor. The Lessor must pay to the Lessee the amount of the payments together with all fines, reconnection fees and other like charges within 30 (thirty) days of receiving the tax invoice.
- (e) If the Lessee's act or omission contributes to a material degree to the diminishment the Lessee may exercise its rights under clauses 8.5(c) to 8.5(d) only to the extent that the Lessor is entitled to be indemnified from insurance against loss resulting from that diminishment or would have been so entitled if the Lessor had insured in accordance with this Lease.

16

9. **Positive covenants**

9.1 Costs and Expenses

- (a) Each party must pay its own costs incidental to the negotiation, preparation and execution of this Lease.
- (b) The Lessee must pay all registration fees and duty in relation to this Lease but (without limiting clause 1.3) only to the extent it is required to do so by law.

9.2 Report to Lessor

The Lessee shall report as soon as reasonably practicable to the Lessor in writing:

- (a) any notice or order received by the Lessee from any court relating to the Leased Premises or the Lessee's Fixtures; and
- (b) any circumstances which the Lessee is aware or ought reasonably to be aware are likely to be a danger or cause any damage or danger to the Leased Premises or any person in or on the Leased Premises of which the Lessee is aware.

9.3 Comply with Laws

Subject to clause 1.3, the Lessee shall comply promptly with all applicable Laws affecting the Leased Premises and the Lessee's Fixtures or the use of the Leased Premises and the Lessee's Fixtures.

9.4 <u>No interest payable</u>

Any provision expressed or implied in this Lease obliging the Lessee to pay interest on any moneys has no effect.

9.5 Services

- (a) The Lessee must observe and comply with any conditions of supply of any Services by the Lessor (acting reasonably and provided that the conditions are lawful), or where no conditions of supply are imposed by the Lessor, observe and comply with the conditions of supply of Services imposed by the Relevant Authority; and
- (b) If any Service is not provided by the Lessor at the Commencement Date, the Lessee is responsible to make the Lessee's own arrangements at the Lessee's own cost for the supply of the Service to the Leased Premises. For the avoidance of doubt, the Lessor is not obliged to provide or to facilitate the procuring of any Services or Facilities to or for the Leased Premises.

10. Negative covenants

The Lessee shall not:

(a) except for reasonable quantities for normal applications in connection with the Authorised Use and in the carrying out of the Lessee's Activities,

bring onto, store or use any chemical or inflammable substance in or the Leased Premises;

- (b) store goods on or in the Leased Premises other than those necessary in the carrying out of the Lessee's Activities;
- (c) except as is lawful and necessary and an ordinary incident of carrying out the Lessee's Activities, do or carry on in the Leased Premises any activity which might be illegal, or cause significant damage or significant disturbance to the Lessor or the owners or occupiers of any nearby properties unless with the prior consent of any Relevant Authority and the Lessor;
- (d) place any rubbish on or in any part or the Leased Premises except in a suitable receptacle;
- (e) burn any rubbish in or on the Leased Premises, unless permitted by Law or is otherwise necessary or an ordinary incident of carrying out the Lessee's Activities; and
- (f) deliver or permit to be delivered goods or materials to or from the Leased Premises except in a manner which causes minimum interference to the owners or occupiers of any nearby properties.

11. Lessee's Obligation to effect insurances

- (a) Subject to clause 11(c), the Lessee, at its own cost, shall effect and maintain with an insurance company authorised to transact insurance business in the Territory or Australia all policies of insurance relating to the Leased Premises referred to in item 9 of Schedule 1 and the Lessee shall:
 - supply to the Lessor upon request current details of all insurance effected in accordance with this clause in the form of a certificate of insurance; and
 - (ii) ensure that each policy of insurance includes a provision for cross liability and waiver of subrogation rights in favour of the Lessor.
- (b) The Lessee must not by any act or omission cause or allow anything to be done which might result in any insurance policy effected under this Lease or in respect of the Leased Premises becoming void or voidable or which might increase the premium on any policy.
- (c) Where the Lessee is a Commonwealth Agency, the Lessee will be deemed to have complied with its obligations under clauses 11(a)-11(b) (inclusive) if the Lessee:
 - (i) self-insures; or
 - (ii) makes captive arrangements for the risks referred to in clause 11(a), on terms and conditions similar to those which would have been put in place had the Lessee effected insurance, in accordance with clauses 11(a)-11(b) (inclusive), with an independent insurer.

18

12. Indemnities

12.1 General indemnity

Except to the extent caused or contributed to by the Lessor, the Lessee shall indemnify and keep indemnified the Lessor against all losses, claims, damages, demands, costs and expenses for which the Lessor becomes liable in respect of loss or damage to property or death or injury of any nature and however or wherever sustained:

- (a) to the extent caused or contributed to by the use or occupation of the Leased Premises and the Lessee's Fixtures by the Lessee or an Authorised Person; or
- (b) resulting from a negligent act or omission of the Lessee.

12.2 Nature of indemnity

The obligation of the Lessee to indemnify the Lessor under this Lease or at law is not affected by the obligation of the Lessee to effect insurance and all indemnities shall survive the termination of the Lease.

13. Assignment

13.1 No assignment

The Lessee shall not assign, mortgage or charge the Lessee's leasehold estate in the Leased Premises, nor sublet, part with possession or dispose of the Leased Premises in any way.

13.2 Property Law Act excluded

Sections 80 and 82 of the Property Law Act 1969 are excluded.

13.3 Changes in beneficial ownership of shares

If the Lessee is a company whose shares are not listed on any Stock Exchange in Australia, a change in the beneficial ownership of more than fifty per cent (50%) of the shares or the redemption, cancellation or issue of shares in that company or any holding company of that company will be deemed to be an assignment of the Lessee's leasehold estate.

13.4 Lessor may consent to assignment or sublease

The Lessee will not be in breach of the covenant in clause 13.1 in respect of an assignment or a sublease of the whole or part of the Leased Premises if the Lessor consents to the assignment or sublease. The Lessor will not unreasonably withhold consent if the following criteria are satisfied:

- (a) The Lessee satisfies the Lessor that:
 - the proposed assignee is capable of meeting all the financial commitments of the Lessee under this Lease or the sub-lessee under a sublease of this Lease whichever the case may be;

- (ii) there is no Rent or other money payable under this Lease due but unpaid; and
- (iii) there is no unremedied breach of the Lessee's Obligations; and
- (b) the Lessee procures the execution by the proposed assignee of an assignment of lease, or by the proposed sub-lessee of a sublease, prepared by the Lessor's solicitors at the Lessee's cost (provided the costs are reasonable) which contains terms consistent in all respects with this Lease and which are acceptable to the Lessor (acting reasonably).

13.5 Lessor may consent to charge

- (a) The Lessee will not be in breach of the covenant in clause 13.1 in respect of a charge or mortgage if the Lessee obtains the Lessor's consent to that charge or mortgage.
- (b) The Lessor may consent to, or refuse to give its consent to, a charge or mortgage in its absolute discretion.

13.6 <u>Compliance with Acts</u>

The Lessor and the Lessee acknowledge that if in granting its consent to any assignment or sublease the Lessor has to first comply with or satisfy any obligations or requirements under any applicable Written Law then the Lessor's consent is made expressly conditional upon and subject to satisfaction of the relevant obligations or requirements

13.7 <u>Commonwealth Agency</u>

Despite clause 13.1, while a Commonwealth Agency is the Lessee, the Lessee may, by notice to the Lessor (and without having to obtain the Lessor's consent):

- (a) transfer, sublet or create another interest in this Lease to another Commonwealth Agency; or
- (b) advise of a change of the department or body holding and administering this Lease, and the Lessee may lodge with the land titles registry such documents as are required to record the change.

14. Damage or Destruction of Leased Premises

14.1 Abatement of Rent and outgoings and charges

If the Leased Premises or any part of the Leased Premises are at any time during the Term, without neglect or default of the Lessee, destroyed or damaged by fire or other risk covered by insurance so as to render the same unfit for the use and occupation of the Lessee then the Rent and any outgoings or charges payable by the Lessee under clause 6 or a proportionate part thereof (according to the nature and extent of the damage) shall abate until the Leased Premises or the relevant part thereof have been rebuilt or made fit for the use and occupation of the Lessee.

14.2 Dispute as to abatement of Rent and outgoings and charges

Any dispute arising as to the abatement of Rent and outgoings and charges payable by the Lessee pursuant to clause 14.1 shall be resolved in accordance with the dispute resolution procedure set out in clause 27 of this Lease.

14.3 Termination

If the Leased Premises or any part of the Leased Premises are totally or partially damaged or destroyed so as to require major works, either party will have the option to terminate this Lease by giving a notice in writing to the other party within sixty (60) days of such occurrence. The Term will terminate upon such notice being given and the Lessee must vacate the Leased Premises and surrender the same to the Lessor but such termination will be without prejudice to the parties' rights against each other in respect of any antecedent breach of this Lease.

15. Limit of Lessor's liability

15.1 Lessee acts at own risk and expense

Unless this Lease provides otherwise, whenever the Lessee is obligated or required by this Lease to do or omit to do any act or thing, the doing or the omission of the act or thing will be at the sole risk and expense of the Lessee.

16. **Default**

An Event of Default occurs if:

- (a) the Lessee fails to pay the Rent or other money payable under this Lease for thirty (30) Business Days after the Lessor has given written notice to the Lessee of the default;
- (b) the Lessee fails to perform any of the Lessee's Obligations other than the payment of money referred to in clause 16(a) for a reasonable time (but not less than thirty (30) Business Days) taking into account the nature of the default, after the Lessor has given written notice to the Lessee of the default;
- (c) a receiver or receiver and manager or controller as defined in the *Corporations Act 2001* (Cth) is appointed in respect of any part of the Lessee's property;
- (d) where the Lessee is a company and:
 - (i) an application is made to a court for an order or an order is made that the Lessee be wound up;
 - (ii) an application is made to a court for an order appointing a liquidator or provisional liquidator in respect of the Lessee;
 - except for the purposes of reconstruction or amalgamation, the Lessee enters into a scheme of arrangement, deed of company arrangement or composition with, or assignment for the benefit of, all or any class of the Lessee's creditors;

- (iv) the Lessee resolves to wind itself up or otherwise dissolve itself;
- (v) the Lessee states that it is insolvent; or
- (vi) the Lessee takes any step to obtain protection or is granted protection from its creditors under any applicable legislation.

17. Lessor's powers on default

17.1 Lessor's right of possession

- (a) On the occurrence of an Event of Default the Lessor may:
 - give notice to the Lessee that it intends to enter and retake possession of the Leased Premises if the Lessee fails to remedy the Event of Default the subject of the notice within a reasonable time (but not less than thirty (30) days of the date of the notice); and
 - (ii) enter the Leased Premises and re-take possession of the Leased Premises if the Lessee fails to remedy the Event of Default within the notice period referred to in clause 17.1(a)(i) above.
- (b) If the Lessor enters and retakes possession of the Leased Premises pursuant to clause 17.1(a)(ii) above then the Term will immediately determine.

17.2 Lessor may remedy Lessee's default

- (a) If an Event of Default occurs or the Lessee otherwise fails to perform any of the Lessee's Obligations, the Lessor may without prejudice to the Lessor's rights arising from the Event of Default or the failure to perform, provided the Lessor has given the Lessee notice of the breach and the breach has not been remedied within a reasonable time (being not less than 30 days) after receiving notice, remedy that Event of Default or the failure to perform as if the Lessor was the Lessee, at the Lessee's cost. The Lessee must pay to the Lessor all reasonable costs incurred by the Lessor in remedying an Event of Default or failure to perform.
- (b) None of the following events constitutes a re-entry or forfeiture or waiver of the Lessor's rights to recover in full all Rent and other money payable by the Lessee under the Lease:
 - entry to the Leased Premises by the Lessor for the purpose of inspection or for the purpose of showing the Leased Premises to prospective lessees or to remedy an Event of Default; or
 - (ii) advertising the Leased Premises for re-letting.

17.3 No prejudice of Lessor's rights

Any re-possession or attempted re-possession of the Leased Premises by the Lessor or any demand for or acceptance of any of the Rent or other money payable under this Lease will not:

- (a) prejudice or affect the Lessor's rights under this Lease;
- (b) release the Lessee from performing the Lessee's Obligations; or
- (c) be deemed an election by the Lessor as to the exercise of the Lessor's rights under this Lease or at law.
- 17.4 Exercise of rights by Lessor

The Lessor may exercise the Lessor's rights under this Lease or at law notwithstanding laches, neglect or waiver in respect of any breach of the Lessee's Obligations, and without giving notice except in accordance with this Lease or as required by law, and without having to prove default by the Lessee or the continuance of that default.

18. Essential terms

- 18.1 Breach of Essential Terms
 - (a) If the Lessee's conduct constitutes a breach of an essential term of this Lease and the Lessor elects to treat that breach as repudiation or the conduct otherwise constitutes repudiation of this Lease, the Lessee shall compensate the Lessor for all reasonable loss or damage suffered by reason of or arising from the repudiation.
 - (b) Clauses 4 ("Rent"), 5 ("Rent Review"), 6 ("Outgoings"), 7 ("Use of Leased Premises"), 8 ("Maintenance and Works"), 11 ("Lessee's Obligations to effect insurances"), 13 ("Assignment") and 25 ("Environmental Matters") of this Lease are deemed to be essential terms.

18.2 Damage for Breach of Essential Terms

Any loss or damage for the unexpired residue of the Term suffered by the Lessor as a result of the Lessee's breach of an essential term may be recovered as damages at any time.

18.3 Lessor's Entitlement to Damages

The Lessor's entitlement to recover damages from the Lessee or any other person will not be limited or affected by any of the following:

- (a) if the Lessee abandons or vacates the Leased Premises;
- (b) if the Lessor elects to re-enter the Leased Premises or terminate this Lease;
- (c) if the Lessor accepts the Lessee's repudiation; or
- (d) if the parties' conduct (or that of any of their servants or agents) constitutes or may constitute a surrender by operation of law.

18.4 Lessor to Mitigate Damages

(a) If the Lessee vacates the Leased Premises or if the Lessor accepts the Lessee's repudiation based on the Lessee's breach of an essential term of this Lease and terminates this Lease, the Lessor must take reasonable steps to mitigate its loss and endeavour to re-lease the Leased Premises on reasonable terms.

- (b) The entitlement to damages will be assessed on the basis that the Lessor has observed the obligation to mitigate damages.
- (c) The Lessor's conduct in mitigating its damages will not of itself constitute acceptance of the breach or repudiation or a surrender by operation of law.

18.5 Calculation of Damages

Following repudiation by the Lessee if the Lessor terminates this Lease then, without prejudice to any other right or remedy, the Lessor may recover the difference between the aggregate of the Rent and the reasonable estimate of the other money payable by the Lessee for the unexpired residue of the Term less any amount the Lessor obtains, or could in the Lessor's opinion reasonably be expected to obtain, by observing clause 18.4.

19. <u>Termination</u>

19.1 Yield up Leased Premises

The Lessee shall on Termination surrender and yield up the Leased Premises to the Lessor in a condition consistent with the compliance of the Lessee's Obligations during the Term and deliver to the Lessor all keys, access cards and other security devices (if any) for the Leased Premises and the Land.

19.2 <u>Remove Lessee's Fixtures</u>

The Lessee shall:

- (a) prior to Termination or on the termination of any period of holding over, remove from the Leased Premises all of the Lessee's Fixtures and other property and make good any damage caused to the Leased Premises by the removal of the Lessee's Fixtures and other property;
- (b) comply with the Works Conditions in respect of the removal of those items specified in clause 19.2(a); and
- (c) submit details of the proposed removal works for the Lessor's approval not less than two (2) months prior to Termination, or in the event of the sooner determination of this Lease, on or prior to that sooner determination.

19.3 Lessor Can Make Good

If the Lessee does not comply with the obligation to make good as set out in clause 19.1, the Lessee shall pay the Lessor within thirty (30) Business Days after the Lessor requests payment of any costs reasonably incurred by the Lessor to make good the Leased Premises. The obligation to pay those costs does not limit any other rights of the Lessor in relation to the Lessee's default.

19.4 Dealing with Lessee's property not removed at Termination

The Lessor may exercise any of the following rights in respect of the Lessee's property, including Lessee's Fixtures, which are not removed at Termination:

- (a) demolish and dispose of the Lessee's property or remove and store the Lessee's property in alternative premises at the Lessee's cost;
- (b) sell or dispose of the Lessee's property and apply the proceeds of sale towards payment of any unpaid Rent or other money payable under this Lease; and
- (c) elect that the Lessee's property is the absolute property of the Lessor and deal with the Lessee's property as the Lessor sees fit;

and the Lessee shall indemnify the Lessor in respect of any loss or damage suffered by the Lessor as a result of:

- (d) the Lessee failing to remove all of the Lessee's property by Termination; or
- (e) any claim against the Lessor by any person by reason of the exercise by the Lessor of its rights under this clause 19.4.

19.5 Lessee to continue to pay Rent and other moneys payable

If the Lessee fails to make good the Leased Premises as specified in clause 19.1, or fails to remove the Lessee's property by Termination, then until the Leased Premises are restored in accordance with this Lease or the Lessor elects to take the absolute property in the Lessee's property left after Termination, the Lessee shall continue to pay the Rent and other moneys payable under this Lease as if the Lessee were holding over in the Leased Premises.

20. Option of Renewal

If, and only if, no earlier than six (6) months or no later than three (3) months before the date of Termination, the Lessee gives notice to the Lessor exercising an option of renewal for a Further Term, and the Lessor is satisfied that:

- (a) there is no Rent or other money payable under this Lease which is due but unpaid; and
- (b) there is no unremedied breach of the Lessee's Obligations; and
- (c) any prior breach of any of the essential terms of this Lease during the Term has been waived or rectified,

the Lessor will grant the Lessee a lease of the Leased Premises for the relevant Further Term at the Rent payable immediately before Termination as varied and reviewed pursuant to this Lease and otherwise on the same terms and conditions of this Lease except for:

- (d) this provision of renewal unless there is more than one (1) Further Term in which event the number of Further Terms will be reduced by the Further Term then exercised; and
- (e) any incentive or inducement to enter into this Lease or any waiver or abatement of Rent or any other payment to the Lessee or any benefit given to the Lessee, which is expressly excluded and which will not apply to a Further Term.

21. Holding Over

If after the expiry of the Term the Lessee continues in possession of the Leased Premises, the Lessee shall be deemed to hold the Land under a half-yearly tenancy; and:

- (a) the Rent shall be reviewed on the expiry of the Term and on each anniversary of the Commencement Date of holding over as if each such anniversary is a Rent Review Date;
- (b) the Lessee's right to remain in possession of the Leased Premises shall be subject to the continued performance of the Lessee's Obligations; and
- (c) the half yearly tenancy created by this clause may be terminated by either party giving the other party six (6) months' written notice of termination which notice may be given at any time.

22. Warranty of fitness

- 22.1 Lessor's Warranties
 - (a) The Lessor warrants to the best of its knowledge that at the Commencement Date the Land is fit for use and occupation for the Authorised Use and further warrants that if it is to deal with the Land or cause the Land to be dealt with in any way in accordance with clause 23.2(b) it will;
 - comply or cause compliance with any relevant Australian Standards and the industry standards effective at the relevant time provided that in the event of inconsistency, the highest standard will apply;
 - (ii) manage its obligations under this Lease to a standard expected of a reasonable landlord;
 - (iii) not:
 - (A) erect or permit to be erected any structure on or under the Land;
 - (B) alter the surface level of the Land, carry out any form of construction affecting its surface, under-surface or subsoil, and will not do or permit
 - (C) anything to be done or fail to do anything whereby access to the Land by the Lessee is restricted; and

- (D) erect or permit to be erected a structure of any type on or on the boundary of the Land which is likely to prevent or delay access to it by the Lessee,
- (E) without the prior written permission of the Lessee and in accordance with such conditions as the Lessee may reasonably impose.

22.2 Lessor's responsibilities

The Lessor is responsible for all loss and damage suffered by the Lessee, including Relocation Expenses occasioned by or arising out of the negligent act or omission of the Lessor (including negligence) which makes the Land unfit for use and occupation by the Lessee, including the carrying out of the Authorised Use.

23. <u>Reservation</u>

23.1 Undertakings by Lessor to the Lessee in respect of the Land

Subject to clause 23.2, the Lessor agrees and undertakes it must not approach, discuss or negotiate or make any agreement, undertaking or promise or enter into any other form of dealing with any third party during the Term that will, in any way:

- (a) affect or impact the Lessee's access to and use of the Land for the Authorised Use;
- (b) affect or have impact upon the Land;
- (c) affect or impact any of the Lessee's rights and obligations in this Lease.

23.2 Use by the Lessor of the Balance Land

- (a) If the Lessor wishes to approach, discuss or negotiate or make any agreement, undertaking or promise or enter into any other form of dealing with any third party involving the Balance Land, it must first discuss the reasons for doing so with the Lessee and obtain the Lessee's consent. This includes the Lessor building or placing anything on or under the Balance Land and discussions, agreements or otherwise in relation to the provision of services to the Balance Land.
- (b) If the Lessee is satisfied that the action of the Lessor proposed in clause 23.2(a) will not impact the Lessee's rights in this Lease, the Lessee must provide its consent to the Lessor. The Lessor agrees that the Lessee may impose any conditions in giving its consent to the Lessor and the Lessor must comply with any such conditions.
- (c) The Lessor agrees that the Lessee may either participate or be a party to the discussions and/or final agreement between the Lessor and the third party. The Lessor further agrees that, as far as is reasonable and practicable, the rights and interests of the Lessee will have first priority over those of any third party.

24. Special Conditions

- (a) The special conditions (if any) set out in Schedule 2 shall be deemed to be incorporated into and form part of this Lease as if fully set out in the body of this Lease.
- (b) If there is any inconsistency between the provisions of this Lease generally and the special conditions, the special conditions shall prevail to the extent of the inconsistency.

25. Environmental Matters

25.1 Definitions

In this clause 24:

- (a) "<u>Contamination</u>" means the affectation of land (including any surface water, ground water or other waters and airspace) by any matter or substance, including but not limited to a solid, liquid, gas, odour, heat, sound, vibration or radiation which:
 - (i) makes or may make such land or the surrounding Environment:
 - (A) unsafe or unfit for habitation or occupation by persons or animals;
 - (B) environmentally degraded; or
 - (C) not comply with any Environmental Law; or
 - (ii) otherwise gives rise to a risk or possible risk of harm to human health or the Environment;
- (b) "<u>Contamination Event</u>" means any incident originating on the Leased Premises involving:
 - (i) any Contamination of the Leased Premises or the Environment in the vicinity of the Leased Premises; or
 - (ii) the unlawful disposal of Waste in a manner which harms or is likely to harm the Environment;
- (c) "<u>Environment</u>" means all components of the earth, including:
 - (i) land, air and water;
 - (ii) any layer of the atmosphere;
 - (iii) any organic or inorganic matter and any living organism including humans;
 - (iv) human made or modified structures and areas; and
 - (v) ecosystems with any combinations of the above;
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(d) "<u>Environmental Law</u>" means any law, whether statute or common law (including the laws of negligence and nuisance), concerning the Environment and includes laws concerning:

- (i) the carrying out of uses, works or development or the subdivision of land;
- (ii) emissions of substances into the atmosphere, waters and land;
- (iii) pollution and contamination of the atmosphere, waters and land;
- (iv) production, use, handling, storage, transportation and disposal of:
 - (A) Waste;
 - (B) Hazardous Materials; and
 - (C) dangerous goods;
- (v) conservation, heritage and natural resources;
- (vi) threatened and endangered and other flora and fauna species;
- (vii) the erection and use of structures; and
- (viii) the health and safety of people,

whether made or in force before or after the date of this Lease;

- (e) "<u>Environmental Notice</u>" means any direction, order demand or other requirement to take any action or refrain from taking any action in respect of the Leased Premises or its use from any Government Authority in connection with any Environmental Law;
- (f) "<u>Government Authority</u>" means any state, federal or local government department or authority, government Minister, governmental, semigovernmental, administrative or judicial person or any other person (whether autonomous or not) charged with the administration of any applicable Laws;
- (g) "<u>Hazardous Material</u>" means material which, because it is toxic, corrosive, flammable, explosive or infectious or possesses some other dangerous characteristics, is potentially dangerous to the Environment when stored or handled or when any part of the Environment is exposed to it;
- (h) "<u>Remediation</u>" includes the investigation, clean up, removal, abatement, disposal, control, containment, encapsulation or other treatment of Contamination and includes the monitoring and risk management of any Contamination, and "<u>Remediated</u>" and "<u>remediate</u>" has a corresponding meaning;
- "<u>Remediation Notice</u>" means a statement of the works necessary to remediate any Contamination at the Leased Premises or the surrounding Environment to an appropriate standard;

- (j) <u>"Waste</u>" means any discarded, rejected, unwanted, surplus or abandoned substance whether or not:
 - (i) it is intentionally discarded;
 - (ii) it has a value or use; or
 - (iii) it is intended for sale, recycling, reprocesssing, recovery or purification.

25.2 Lessee's Environmental Covenants

The Lessee must:

- (a) comply with all Environmental Laws including, without limitation, obtaining all necessary permits, authorisations and approvals required for the Lessee to carry out the Authorised Use on the Leased Premises;
- (b) take reasonable precautions to ensure that no Contamination of the Leased Premises is caused by the Lessee's Activities;
- (c) not discharge into the ground or into any stormwater or stormwater drain any trade effluent, Hazardous Material or Waste, other than that which is authorised by the relevant Government Authority;
- (d) immediately notify the Lessor if:
 - (i) it becomes aware of a Contamination Event on the Leased Premises; or
 - (ii) an Environmental Notice is served on the Lessee;
- (e) at the Lessee's own cost, comply with every Environmental Notice issued in respect of, or arising from, the Lessee's Activities, whether the notice is served on the Lessor or the Lessee;
- (f) allow the Lessor and its employees and contractors:
 - (i) after receiving reasonable notice from the Lessor, access to the Leased Premises to conduct environmental audits or inspections from time to time provided the Lessor complies with clause 7.5; and
 - (ii) immediate access to the Leased Premises to conduct an inspection following a Contamination Event.

25.3 Remediate Contamination

- (a) The Lessee must ensure that at the expiration of the Term it has Remediated any Contamination of the Leased Premises or any land in the vicinity of the Leased Premises caused by the Lessee to the satisfaction of the Lessor (acting reasonably).
- (b) Not later than six months before the expiration of the Term, should the Lessor be able to provide reasonable evidence that the Lesse's Activities on the Leased Premises have caused any Contamination, the

Lessee must arrange for a reputable environmental consultant approved by the Lessor (whose approval must not be unreasonably withheld) to:

- (i) carry out an investigation of Contamination at the Leased Premises;
- (ii) prepare a report with respect to any Contamination at the Leased Premises; and
- (iii) prepare a Remediation Notice (if applicable).
- (c) Subject to clause 25.3(b), the Lessee must, at its own expense, promptly carry out all the works specified in the Remediation Notice to the reasonable satisfaction of the Lessor.
- (d) The Lessee is under no obligation to carry out remedial works in respect of Contamination of the Leased Premises:
 - shown to exist at the Commencement Date, except to the extent that the Lessee has disturbed the Contamination in a manner which creates a risk of harm to people or the Environment; and
 - (ii) to the extent caused or contributed to by the Lessor or the Lessor's officers, agents, employees, invitees or contractors.
- (e) If this Lease is terminated by the Lessor prior to the expiration of the Term and the Lessor can provide reasonable evidence that the Lessee has caused any Contamination, the Lessor may:
 - (i) arrange for the investigation of Contamination and for the preparation of a Remediation Notice (if applicable); and
 - (ii) carry out the works specified in the Remediation Notice at the Lessee's expense.
- (f) For the avoidance of doubt,
 - (i) this clause 25.3 is for the benefit of the Lessor and can only be waived by the Lessor; and
 - (ii) the Lessee is not obliged to do anything or incur any expense in respect of Contamination existing in, on, or under the surface of the Leased Premises before the Commencement Date.

25.4 Lessor's warranty

The Lessor warrants to the best of its knowledge at the time it executes this Lease that no materials containing Asbestos or any other Hazardous Substance exist in or on the Land or in any buildings, structures or improvements on the Land.

25.5 Lessee's rights to terminate Lease

(a) The Lessee may give notice to the Lessor terminate this Lease if:

- the Lessee's use or occupation of the Leased Premises is rendered unsafe because of the presence of a Hazardous Substance or Hazardous Disease in, on or under the Land and:
 - (A) in the written opinion of an Expert the Land is unlikely to be rendered safe within 3 (three) months from the date of that opinion; or
 - (B) the Lessor fails to render safe the Land within 3 (three) months from the date on which the presence of the Hazardous Substance or Hazardous Disease is identified.
- (b) Neither party is required to give to the other notice of a dispute before requesting the appointment of an Expert to provide a written opinion under clause 25.5(a)(i)(A).
- (c) If the Lessee gives the notice to the Lessor referred to in clause 25.5(a) then:
 - (i) this Lease terminates on the date of that notice; and
 - (ii) the termination will not prejudice the rights or claims of either party in existence prior to that termination.

26. Caveats and registration of Lease

26.1 Registration

The Lessee may register this Lease but must not lodge an absolute caveat over the Leased Premises to protect the interest of the Lessee under this Lease and the Lessee must surrender any registered lease and withdraw any caveat lodged by or on behalf of the Lessee over the Leased Premises on Termination of the Lease.

26.2 Lessee must withdraw Caveat and any Registered Encumbrances

- (a) The Lessee on or before the Termination of the Lease must:
 - (i) withdraw any caveat lodged by the Lessee over the Leased Premises;
 - (ii) discharge any mortgage or other registered encumbrance relating to any liability of the Lessee registered over the Leased Premises;
 - (iii) surrender any registered lease over the Leased Premises;
 - (iv) execute a withdrawal of caveat in a form approved or any other document that may be required to remove any encumbrance on the certificate of title for the Leased Premises, and to execute a deed or surrender of lease in the form approved or any other document that may be required in order to remove any lease or notification of it as an encumbrance on the Certificate of Title for the Leased Premises;

(v) if requested by the Lessor, do all things necessary to assist in the cancellation of any qualified title for the Leased Premises.

27. Dispute Resolution

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27.1 Definitions

In this clause:

"ADC" means Australian Disputes Centre; and

"CAA" means the Commercial Arbitration Act 2012 (WA).

27.2 Application

This clause applies to any dispute which arises in respect of this Lease ("Dispute").

27.3 <u>Notice</u>

A party claiming that a Dispute has arisen in respect of this Lease must give notice of the Dispute to the other party specifying the nature of the Dispute ("Dispute Notice").

- 27.4 Good Faith Meeting
 - (a) Within seven (7) Business Days of receipt of a Dispute Notice, the Lessor and the Lessee agree that a representative on behalf of the Lessor and a representative on behalf of the Lessee must meet together to resolve the Dispute in good faith and acting reasonably.
 - (b) Both parties are committed to use their reasonable endeavours to resolve any Dispute under this clause without first resorting to termination of the agreement evidenced by this Lease or by litigation.
 - (c) If the parties are unable to resolve the Dispute within fourteen (14) days after receipt of the Dispute Notice, the Dispute must be referred to mediation before any arbitration or litigation proceedings are instituted.
- 27.5 Mediation
 - (a) The mediator must be appointed by agreement between the parties to the Dispute. Where the parties are unable to agree on the appointment of a mediator, the mediator must be appointed by the ADC.
 - (b) The mediation must be conducted in accordance with the procedure determined by the mediator in consultation with the parties.
- 27.6 Arbitration
 - (a) Where the Dispute has not been settled within fourteen (14) days after appointment of the mediator, the Dispute may be referred to arbitration under the CAA.

- (b) The arbitrator must be appointed by agreement between the parties. Where the parties fail to agree on the appointment of an arbitrator, the arbitrator must be appointed by the ADC.
- (c) The arbitrator must not be the same person as the mediator.
- (d) The arbitration must be conducted in accordance with the CAA.
- (e) If a Dispute has been referred to arbitration by a party pursuant to this clause, no party may commence any legal action relating to the dispute before the arbitration proceedings have been completed.

27.7 Right to Injunctions Preserved

Nothing in the preceding sub-clauses shall be construed as limiting the rights of a party to seek urgent injunctive orders from a Court to restrain another party from an ongoing or repetitive breach of this Lease where an order for damages would not be an adequate remedy.

28. Land unfit for occupation and use

28.1 Damage and destruction

- (a) If, for whatever reason (other than as a result of the Lessor's breach of clause 8.5) the Land or the Leased Premises becomes wholly or partially unfit for the Lessee to occupy and use for the Authorised Use or becomes otherwise inaccessible then:
 - (i) all moneys payable by the Lessee under this Lease (or a fair and just proportion) according to the nature and extent of the unfitness and/or inaccessibility will be suspended and cease to be payable in respect of the period from the date the unfitness commences until:
 - (A) the Leased Premises has been made fit for occupation and use for the Authorised Use and is otherwise accessible; and
 - (B) a further period has elapsed which is reasonable in all the circumstances to allow the Lessee to carry out any necessary works to the Land or the Leased Premises; and
 - (ii) the Lessee may elect in its sole and absolute discretion to:
 - (A) repair any damage caused to the Lessee's Fixtures and the Leased Premises; or
 - (B) terminate this Lease by giving notice to the Lessor.
- (b) Noting in this clause 28.1 obliges the Lessee to do any thing in connection with repairing or reinstating the Lessee's Fixtures or Leased Premises.
- 28.2 <u>Termination of this Lease</u>
 - (a) If the Lessee gives the notice to the Lessor referred to in clause 28.1(a)(ii)(B) then:

- (i) this Lease terminates on the date of that notice; and
- (ii) the termination will not prejudice the rights or claims of either party in existence prior to that termination.
- (b) If clause 28.1(a) applies and the Lessee has:
 - (i) not elected to undertake repairs under clause 28.1(a)(ii)(A); or
 - (ii) has elected to undertake repairs under clause 28.1(a)(ii)(A) but does not start undertaking that work,

by the date that is 6 months' after the Land or the Leased Premises was damaged, the Lessor may terminate the Lease by giving 1 months' notice to the Lessee under this clause 28.

- (c) If the Lessor gives the notice to the Lessor referred to in clause 28.2(b) then:
 - (i) this Lease terminates on the date that is 1 month after the date of the notice; and
 - (ii) the termination will not prejudice the rights or claims of either party in existence prior to that termination.

29. <u>GST</u>

- (a) Unless otherwise indicated, all consideration for any supply made under this Lease is exclusive of any GST imposed on the supply.
- (b) Subject to this clause 29, if one party ("<u>Supplier</u>") makes a taxable supply under this Lease to the other party ("<u>Recipient</u>"), the Recipient on receipt of a tax invoice from the Supplier must pay without setoff an additional amount to the Supplier equal to the GST imposed on the supply in guestion.
- (c) Unless the context otherwise requires, terms used in this clause 29, which are defined in the GST law have the meaning attributed to them in the GST law.
- (d) No party may claim or retain from the other party any amount in relation to a supply made under this Lease for which the first party can obtain an input tax credit or decreasing adjustment.
- (e) If any payment under this Lease is calculated as a percentage of or by reference to another amount or revenue, that payment will be calculated by reference to or as a percentage of that other amount or revenue, net of any GST component.

30. <u>Miscellaneous</u>

30.1 Lessee not to permit prohibited matters

If under this Lease the Lessee is required to do or is prohibited from doing any act, matter or thing the Lessee must also ensure that the Authorised Persons comply with that requirement or prohibition.

30.2 Cost of Complying with Obligations

Unless otherwise stated in this Lease, the Lessee must pay the cost of performing or complying with every obligation of the Lessee under this Lease.

30.3 Schedules

The Schedules shall form part of this Lease.

30.4 Proper Law and Jurisdiction

This Lease is governed by the law in force in the Territory, or where applicable, the Commonwealth of Australia, and the parties consent to the jurisdiction of the courts of the Territory.

30.5 Time for payment

Any amount payable by the Lessee to the Lessor unless otherwise specified must be paid to the Lessor within fourteen (14) Business Days after the Lessor gives a notice to the Lessee requiring payment.

30.6 <u>Time of the essence</u>

Time shall be of the essence in all respects.

30.7 Certificates

A certificate signed by the Lessor or the Lessor's solicitors about a matter or a sum payable is sufficient evidence of the matter or sum stated in the certificate unless the matter or sum is proved to be false.

30.8 Exercise of rights by Lessor

The Lessor may exercise each right, power or remedy at its discretion, separately or concurrently with any other right, power or remedy, and:

- (a) a single or partial exercise of a right, power or remedy does not prevent a further exercise of that right, power or remedy;
- (b) a failure to exercise or any delay in the exercise of a right, power or remedy does not prevent its exercise;
- (c) the rights, powers and remedies of the Lessor are cumulative with and not exclusive of the rights, powers and remedies provided by law; and
- (d) any demand made shall not in any way be deemed to constitute a waiver by the Lessor of any breach or non-observance of a Lessee's Obligation
and shall not prejudice any other right of the Lessor in relation to such breach.

30.9 Lessor may act by agent

All acts and things which may be done by the Lessor may be done by a solicitor, agent, employee or contractor of the Lessor, including, without limitation, a managing agent.

30.10 Variation

This Lease may not be varied except in writing signed by all of the parties.

30.11 Giving of notice

Any notice, approval, consent or other communication given under this Lease:

- (a) shall be in writing and in English;
- (b) may be served on the recipient:
 - (i) personally; or
 - by addressing it to the person and leaving it at or posting it by registered post to the address of the party appearing in this Lease or any other address nominated by the party by notice to the other;
 - (iii) by email to the recipient's email address;
 - (iv) by facsimile transmission sent to the recipient's facsimile number (if known);
- (c) will be deemed to be given or made:
 - (i) if served personally at the time of handing the notice to the recipient;
 - (ii) if left at the recipient's address as specified in clause 30.11(b)(ii) above - at the time of leaving the notice;
 - (iii) if sent by pre-paid post to the recipient's address as specified in clause 30.11(b)(ii) above on the sixth Business Day after the date of posting;
 - (iv) if sent by facsimile transmission, on the same date as transmitted if transmitted prior to 4:00pm on a Business Day and if transmitted on a non-Business Day at or after 4:00pm on a Business Day then on the next Business Day;
 - (v) if sent by email, is treated as having been duly given and received, if sent:
 - (A) by 5.00pm (local time in the place of receipt) on a Business
 Day on that day; or

(B) after 5.00pm (local time in the place of receipt) on a Business Day, or on a day that is not a Business Day – on the next Business Day,

provided that the sender does not receive an automated notice generated by the sender's or the recipient's email service that the email was not delivered; and

(d) if given by the Lessor, may be signed by the Lessor or a solicitor or agent of the Lessor.

30.12 Further assurances

Each party shall execute and do all acts and things necessary to give full force and effect to this Lease.

30.13 Severance

If any part of this Lease is or becomes unenforceable or void or voidable, that part will be severed from this Lease and those parts that are unaffected shall continue to have full force and effect.

30.14 Entire Agreement

This Lease constitutes the entire agreement between the parties and contains all the representations, warranties, covenants and agreements of the parties in relation to the subject matter of this Lease. This Lease supersedes all previous correspondence or documentation relating to the Lessee's leasehold interest in the Leased Premises.

30.15 Termination

The Termination of this Lease does not affect the Lessee's obligation to pay any money which is payable or do any act which is to be done after Termination as provided by this Lease.

30.16 Lease clauses that do not apply

The parties agree that the clauses of this Lease specified in Item 11 of Schedule 1 (if any) do not apply to this Lease.

30.17 Applicable law

This Lease is to be construed in accordance with, and any matter related to it is to be governed by, the Law applying in Western Australia.

30.18 Additional rights

Any right available to the Lessee under this Lease is in addition to (and not in substation for) any right otherwise available to the Lessee.

Item 1 Authorised Use

Waste Water Treatment Plant and associated infrastructure, including the Lessee's Works and other related works

Item 2 Term and Option for Further Term

(a) Term

Ten (10) years commencing on the Commencement Date and ending on the End Date.

(b) Further Term(s)

One further term of ten (10) years

Item 3 Commencement Date

1 January 2023

Item 4 End Date

31 December 2032

Item 5 Land and Leased Premises

Land

Lot 100 West Island commonly known as the Waste Water Treatment Plant

Leased Premises

That **part** of the Land outlined in black on the plan in Annexure "A" to this Lease.

Item 6 Interest Rate

Five Point Five PER CENTUM (5.5%) per annum.

Item 7 Rent

From the Commencement Date until varied, the Rent is Five Thousand Five Hundred and Sixty Four Dollars (\$5,564.00) per annum payable by equal monthly instalments in advance on the first day of each month with the first payment due on the Commencement Date.

Item 8 Rent Review Dates

The Rent shall be reviewed on the following dates in accordance with the mechanism set out alongside each date:

Date	Method
(a) On the anniversary of the Commencement Date in each year of the Term	CPI Review
(b) On the commencement date of each Further Term	Market Review
(c) On the anniversary of the Commencement Date during each year of the Further Term(s) except where stated in (b) above.	CPI Review
(d) If the Lessee holds over pursuant to clause 21 then on the anniversary of the Commencement Date in each year of holding over.	CPI Review

Item 9 Lessee's Insurance Obligations

Without affecting any further insurance to be effected by the Lessee as specified by the Lessor in writing to the Lessee, the Lessee shall effect policies of insurance in respect of:

public liability insurance for an amount not less than

for any one incident or such greater amount as may be specified from time to time by the Lessor;

employers' indemnity insurance (if applicable) including workers' compensation insurance in respect of all employees of the Lessee employed in or about the Leased Premises;

the full insurable value on a replacement or reinstatement basis of all plate glass windows and doors forming part of the Leased Premises,

40

on the terms specified in clause 11 of the Lease.

Item 10 The Lessor's Fixtures

Not applicable

Item 11 Lease clauses that do not apply

None

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SCHEDULE 2 - SPECIAL CONDITIONS

These are the special conditions referred to in clause 24 of the Lease.

All words and expressions used but not defined in these special conditions but which are defined in clause 1 of the main body of the Lease, shall have the same meanings respectively assigned to them in clause 1 of the Lease.

1. LESSEE'S WORKS

(a) <u>Definitions</u>

For the purpose of this special condition:

"<u>Approvals</u>" means all permits, approvals, and consents necessary for carrying out the Lessee's Works, including but not limited to, a building licence and development approval;

"<u>Lessee's Works</u>" means the upgrade of the Leased Premises by the Lessee in accordance with:

- (i) the Approvals;
- (ii) the Plans and Specifications; and
- (iii) the terms and conditions set out in the Lease;

"<u>Lessee's Works Period</u>" means the period from which the Lessee's Works commence until to the date that all Lessee's Works have been completed;

"<u>Plans and Specifications</u>" means all plans, specifications and working drawings in relation to the Lessee's Works as prepared by or on behalf of the Lessee and in the form approved by the Lessor and all Relevant Authorities; and

"<u>Works Equipment</u>" means those things used, or work undertaken by the Lessee or its contractors to construct the Lessee's Works but which will not form part of the Lessee's Works.

(b) Lessee's Development Covenants

The Lessee must:

- (i) carry out and execute the Lessee's Works in accordance with the Works Conditions; and
- (ii) not make any alterations to the Plans or Specifications or include, construct or erect any works on the Leased Premises which have not been previously approved in writing by the Lessor without:
 - (A) the prior written consent of the Lessor which consent must not be unreasonably withheld or delayed; and
 - (B) if applicable, the prior approval of any Relevant Authority.

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- (c) <u>Variation of Lessee's Works</u>
 - (i) In this clause 1(c), Variation means any variation or addition to the Lessee's Works.
 - (ii) The Lessee may make any Variation required by a Relevant Authority or any Variation which the Lessee considers desirable. The Lessor is not entitled to make any objection or claim for compensation in respect of any such Variation.

(d) Access to the Leased Premises

- (i) The Lessee is entitled to take possession of the Leased Premises and to enter upon the Leased Premises and commence the Lessee's Works from and including the Commencement Date PROVIDED:
 - (A) the Lease has been executed by the Lessee, the Lessor and the Guarantor (if applicable) and all other consenting parties;
 - (B) the conditions precedents of the Lease (if any) have been satisfied; and
 - (C) the Lessee has delivered to the Lessor any bank guarantee or other form of security (if any) required to be given by the Lessee to the Lessor under the Lease.
- (ii) For the avoidance of doubt, the Lessee is obliged to pay full Rent and all other money payable under the Lease from the Commencement Date regardless of whether the Lessee has commenced or completed the Lessee's Works or whether the Lessee can operate the Lessee's Activities from the Leased Premises.

(e) <u>Facilities for Lessee's Contractors</u>

The Lessee and the Lessee's contractors must provide and, as necessary, negotiate with the Lessor for all temporary services (including, without limitation, electricity, water and telephone services), toilet facilities, hoisting facilities, lunch rooms and other amenities, and the carting away of rubbish which the Lessee or its contractors may require, and must pay to the Lessor on demand any reasonable expenses which the Lessor incurs in providing those services.

(f) Lessee Responsible for Damage

The Lessee shall, at the option of the Lessor, either repair and make good any damage which may be caused to the Land or Leased Premises or any part thereof as a result of the construction, erection or installation of the Lessee's Works, to the satisfaction of the Lessor (acting reasonably) or alternatively, reimburse on demand the Lessor for the reasonable costs incurred by the Lessor in having such damage made good by the Lessor's own contractors.

- (g) <u>Lessee's Insurance</u>
 - (i) Prior to the commencement of the Lessee's Works (or any associated or incidental works on the Leased Premises), the Lessee must have:

42

- (A) procured the insurance policies that the Lessee is required to procure under the Lease; and
- (B) otherwise complied with the terms of the Lease in respect of those insurance policies.
- (ii) For the avoidance of doubt and without limiting any other provision of the Lease, the Lessee must, prior to the commencement of any Lessee's Works or associated or incidental works on the Leased Premises, insure against and ensure that all of its contractors engaged in carrying out the Lessee's Works, throughout the Lessee's Works Period insure against any liability, loss, claim or proceeding whatsoever arising by virtue of any Laws relating to workers' compensation or employer's liability, by any person employed in or about the execution of the Lessee's Works and shall also insure for the Lessee's and its contractors' common law liability to all such persons for such amount as shall be nominated by the Lessor.
- (iii) The Lessee may discharge its obligations under this clause if the Lessee effects insurances under clause 11(c).

(h) Assumption of Risk by Lessee

- (i) The parties expressly acknowledge and agree that:
 - (A) the construction of all of Lessee's Works (whether undertaken by the Lessee or the Lessor or any contractor on behalf of or at the direction of either the Lessee or the Lessor) shall be at the risk of the Lessee in all respects;
 - (B) the Lessee bears the risk of the Lessee's Works, all Works Equipment and all unfixed goods and materials used or to be used in carrying out the Lessee's Works, including anything provided by the Lessor to the Lessee or brought onto the Leased Premises by any contractor.
- (ii) The Lessee releases and discharges the Lessor from all claims for loss of or damage to the Land or Leased Premises, and any plant, equipment, fixtures, fittings, merchandise, good or property of the Lessee contained in or about the Land or Leased Premises for the purpose of the Lessee's Works and from any loss of profits resulting from such loss or damage.
- (i) <u>Property in Works</u>

Despite any rule of law or equity to the contrary, title to and ownership of the Lessee's Works shall be the property of the Lessee regardless of their attachment or affixation to the Leased Premises, and shall be a Lessee's Fixture, unless re-classified as a Lessor's Fixture in accordance with this Lease.

- (j) <u>Default</u>
 - (i) For the avoidance of doubt, a failure by the Lessee to perform or comply with any of its obligations under this special condition is:

- (A) an Event of Default if the Lessor has given the Lessee notice of the failure to perform or comply with its obligations under this clause and the Lessee has not performed or complied with its obligations within twenty (20) Business Days after receiving notice; and
- (B) a breach of an essential term of the Lease ("Development Default").
- (ii) Without prejudice to any other rights or remedies available to the Lessor, if the Lessor terminates this Lease on the occurrence of a Development Default:
 - (A) the Lessee shall, unless otherwise directed by the Lessor, within sixty (60) days from the date upon which the Lessor terminates the Lease remove from the Leased Premises the Lessee's Works in compliance with the Works Conditions and make good the Leased Premises to the satisfaction of the Lessor;
 - (B) the termination of the Lease shall be without prejudice to the obligations of the Lessee to pay the Lessor any moneys which shall be due and owing as at the date on which the Lessor terminates the Lease; and
 - (C) the Lessee shall pay to the Lessor on demand all costs and expenses incurred by the Lessor as a consequence of the Lessee's Development Default and in the exercise of the rights of the Lessor under this special condition.
- (iii) Until the Leased Premises are restored in accordance with the Lease (whether by the Lessee or the Lessor) or until the Lessor elects to take the absolute property in the Lessee's property (which includes the Lessee's Fixtures) left after termination, the Lessee shall continue to pay the Rent and all other moneys payable under the Lease as if the Lessee were holding over in the Leased Premises.
- (k) Indemnity

Without limiting any other provision of the Lease, the Lessee indemnifies the Lessor and the Lessor's employees against all claims, demands, loss, damage, costs and expenses of every description which the Lessor may suffer or incur in connection with or arising directly or indirectly from the Lessee's entry upon and occupation of the Leased Premises for the purpose of the Lessee's Works or the construction, installation or carrying out the Lessee's Works (whether undertaken by the Lessee or the Lessor or any contractor on behalf of or at the direction of either the Lessee or the Lessor, except to the extent the claim, demand, loss or damage was caused or contributed to by the Lessor or the Lessor's officers, agents, employees, invitees or contractors).

44

2. <u>COMPLETION OF TARGETS</u>

(a) <u>Definitions</u>

For the purpose of this special condition:

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"<u>Approvals</u>" means all permits, approvals, and consents necessary for carrying out the Lessee's Works, including but not limited to, a building licence and development approval;

"<u>Building Permit Application</u>" means the submission of an application for a building permit to carry out the Lessee's Works to the Shire of Cocos (Keeling) Islands in its capacity as consent authority;

"<u>Building Permit</u>" means a building permit issued by the Shire of Cocos (Keeling) Islands in its capacity as consent authority to the Building Permit Application;

"<u>Development Application</u>" means the submission of development plans for the Lessee's Works requiring the approval of the Shire of Cocos (Keeling) Islands in its capacity as consent authority;

"<u>Development Approval</u>" means the consent of the Shire of Cocos (Keeling) Islands in its capacity as consent authority to the Development Application;

"<u>Lessee's Works</u>" means the upgrade of the Leased Premises by the Lessee in accordance with:

- (i) the Approvals;
- (ii) the Plans and Specifications; and
- (iii) the terms and conditions set out in the Lease; and

"<u>Plans and Specifications</u>" means all plans, specifications and working drawings in relation to the Lessee's Works as prepared by or on behalf of the Lessee and in the form approved by the Lessor and all Relevant Authorities.

(b) Milestones

The Lessee agrees that the following milestones in respect of the Lessee's Works are to be completed by no later than the latest time specified:

(i) Lodge Development Application:

36 months from the Commencement Date

(ii) Lodge Building Permit Application:

6 months from the date of issue of a Development Approval

(iii) Commence Lessee's Works:

12 months from the date of issue of a Building Permit

(iv) Practical Completion of Lessee's Works:

24 months from the date of issue of a Development Approval

45

(c) Extension of Milestone

If the milestone has not been satisfied by the due date and the Lessee acting reasonably believes that the milestone can be satisfied, the Lessee may by notice to the Lessor extend the due date by a further 90 days.

- (d) Force Majeure
 - (i) The Lessee may extend the satisfaction date for a milestone in accordance with this clause 2(d), if the Lessee is delayed from achieving a milestone because of a Force Majeure event.
 - (ii) The Lessee may exercise its rights under this clause 2(d) more than once.
 - (iii) If a Force Majeure event occurs, the Lessee must:
 - (A) use reasonable endeavours to mitigate the effect of the Force Majeure event;
 - (B) within 10 Business Days of the commencement of the delay, give the Lessor notice in writing including the details and cause of the delay;
 - (C) within 10 Business Days of the end of the delay, give the Lessor further notice in writing stating:
 - (aa) a fair and reasonable time, in the Lessee's opinion, by which the date for achieving a milestone should be extended, together with reasonable supporting documentation; and
 - (bb) the new date for achieving a milestone given the required extension.
 - (iv) If the Lessor does not agree with the Lessee's extension of the date for achieving a milestone, clause 27 of the Lease applies.
- (e) <u>Lessee's Default</u>
 - (i) If the Lessee fails to comply with the milestones specified above, and has not extended the milestone due date, either party may terminate this Lease by giving the other party notice at any time one (1) Business Day after the milestone due date.
 - (ii) If a party gives the notice referred to in special condition 2(e)(i), the Lease terminate immediately and neither party has any further obligation to the other party.
- (f) Lessor's Assistance

The Lessor:

- (i) consents to the Lessee making and pursuing the application for the Development Approval;
- (ii) must provide promptly when requested by the Lessee a signed and written consent as owner of the Property in the form required by the Local Government or other Authority;

 (iii) consents to the erection on the Land of any notice required in connection with the application for the Development Approval;

 (iv) must do all things the Lessee may reasonably require as incidental to the Lessee's application for the Development Approval; and

(v) must not submit a negative submission with respect to any application.

3. ECO-FRIENDLY PRINCIPLES

(a) Definitions

For the purpose of this special condition:

"<u>Approvals</u>" means all permits, approvals, and consents necessary for carrying out the Lessee's Works, including but not limited to, a building licence and development approval;

"<u>Development Application</u>" means the submission of development plans for the Lessee's Works requiring the approval of the Shire of Cocos (Keeling) Islands in its capacity as consent authority;

"Lessee's Works" means the development of the Leased Premises by the Lessee in accordance with:

- (i) the Approvals;
- (ii) the Plans and Specifications; and
- (iii) the terms and conditions set out in the Lease; and

"<u>Plans and Specifications</u>" means all plans, specifications and working drawings in relation to the Lessee's Works as prepared by or on behalf of the Lessee and in the form approved by the Lessor and all Relevant Authorities.

(b) Lessee's covenants

The Lessee covenants and agrees that:

- the Development Application shall demonstrate a commitment to ecofriendly principles including the following:
 - (A) preserving existing natural areas, plants and wildlife to the greatest extent possible;
 - (B) minimising usage and wastage of resources; and
 - (C) reducing environmental impacts.
- the Lessee will preserve any existing plants and wildlife on the Leased Premises to the greatest extent practicable; and
- the Lessee will use reasonable endeavours to complete the Lessee's Works and operate the Lessee's Activities in accordance with eco-friendly principles.

303707169.01

EXECUTED BY THE PARTIES AS A DEED

EXECUTION BY THE LESSOR:

The COMMON SEAL of the SHIRE OF COCOS (KEELING) ISLANDS was hereunto affixed by the authority of a resolution of the Council in the presence of:

)

Executed by Commonwealth of Australia

. 303707169.01

ANNEXURE "A"

PLAN WHICH IDENTIFIES LEASED PREMISES





303707169.01

Execution date

1 1

Lessor(s) execution

The common seal of SHIRE OF COCOS (KEELING) ISLANDS (ABN 12325522841) was hereunto affixed in the presence of

Signature Signer name Signer designation

n Shike President

Signature

Signer name

Signer designation

CHIEF EXECUTIVE OFFICER (ALTING)

Lessee(s) execution

Executed on behalf of DEPARTMENT OF INFRASTRUCTURE, TRANSPORT, REGIONAL DEVELOPMENT, COMMUNICATIONS AND THE ARTS (ABN 86267354017) under authority of the LANDS ACQUISITION ACT 1989

Signature

Signer name

Signer organisation

DEPARTMENT OF INFRASTRUCTURE, TRANSPORT, REGIONAL DEVELOPMENT, COMMUNICATIONS AND THE ARTS

Signer designation

ASSISTANT SECRETARY

e0c1001b-ba02-4c8e-af25-cb7c4f3388cb



Common Seal





982982 - West Island WWTP Cocos Keeling Islands Infrastructure upgrade Works Approval Supporting Information



Appendix C Investigation of the Cocos Island WWTP Discharges – Dispersion Modelling Report (RPS,2023)





INVESTIGATIONS OF THE COCOS ISLANDS WWTP DISCHARGES

Dispersion Modelling Report

MAW1299J.000 Rev 2 29/9/2023

rpsgroup.com

REPORT

Docume	nent status				
Version	Purpose of document	Authored by	Reviewed by	Approved by	Review date
Rev A	For internal review				25/07/2023
Rev 0	For client review				25/07/2023
Rev 1	With clarifications				1/09/2023
Rev 2	With clarifications				29/09/2023

Approval for issue

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	e	29/09/2023	

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Contents

1	INTF	ODUCTION	3
	1.1	Background	3
	1.2	Regional setting	3
	1.3	West Island wastewater treatment plant and outfall	4
2	CAL	CULATION FOR THE DILUTION AND GENERAL BEHAVIOUR OF THE TWW	
	DISC	CHARGE	5
	2.1	General considerations	5
	2.2	Selection of the dispersion model	5
	2.3	Allowance for prevailing current	7
	2.4	Allowance for waves	7
3	RES	ULTS OF THE NEAR-FIELD SIMULATIONS	8
	3.1	Dilution calculations	8
	3.2	Implications for constituent concentrations	10
4	REF	ERENCES	13

Tables

Table 2-1	Assumed rates of discharge of TWW for the current and proposed operations based on a 2-hour discharge per day.	6
Table 2-2	Water quality variables for the current and proposed TWW discharges specified by Water Corporation	6
Table 2-3	Summary of the inputs to the CORMIX model representing the TWW discharge conditions through the TWW outfall.	7
Table 3-1	Calculations for plume dilutions as a function of current speed for the TWW discharge rate (assuming discharge at 60° from 10 m below sea level across the prevailing current)	.10
Table 3-2	Calculations for the initial dilution of TWW constituents on surfacing of the plume calculated for the 95 th % current speed and assuming the concentrations expected in the TWW on discharge are as in Table 2-2.	.11
Table 3-3	Calculations for the initial dilution of TWW constituents on surfacing of the plume based on the median current speed and assuming the concentrations expected in the TWW on discharge are as in Table 2-2	.11
Table 3-4	Calculations for the initial dilution of TWW constituents on surfacing of the plume based on the 95 th % current speed and assuming the concentrations expected in the TWW on discharge are as in Table 2-2	.12

Figures

Figure 1-1	Location of the TWW outfall off the south-west coastline of West Island, Cocos (Keeling)	
	Islands. The panel on the right shows the bathymetric setting.	4
Figure 3-1	Near-field behaviour of the buoyant TWW plume calculated for variations in the prevailing	
	cross-current. The examples are for the proposed discharge rate assuming a 60° angle	
	on the discharge, directed across the current. The upper panel indicates the case of low	
	current speed (5%ile). The lower panel illustrates the case of higher current speed	
	(95%ile). Current is directed from the left of each panel. Grey shading indicates the water	
	surface. Fawn shading indicates the seabed level. Plume colour indicates level of dilution	9

1 INTRODUCTION

1.1 Background

Water Corporation is responsible for the provision of water and wastewater services to the Cocos (Keeling) Islands under a Service Delivery Agreement with the Commonwealth Government. Existing water and wastewater infrastructure on West Island includes a wastewater treatment plant (WWTP), associated ocean outfall, infiltration galleries for private and public water sources, and a water treatment plant (WTP). Treated wastewater (TWW) is discharged to the sea via a 400 m long pipeline that traverses the reef shelf and terminates near the edge of a steep drop-off.

The infiltration galleries sourced for potable water on the islands is under the existing aircraft runway and at risk of contamination and the Department of Defence is currently planning an upgrade to the runway on the Cocos (Keeling) Islands. This work will require a large temporary workforce on West Island, which will exceed the capacity of the existing WWTP. Defence has proposed to manage the excess by installing a temporary package treatment plant with TWW from that plant directed through the existing ocean outfall. In addition to the TWW that would be directed from the temporary treatment plant, Water Corporation anticipates an increase in the TWW that must be managed through the existing plant.

Water Corporation commissioned RPS to model the near-field dispersion of TWW from the outfall, accounting for the geometry of the discharge (outlet diameter and angle), depth of discharge, and prevailing current speeds and ocean density profiles.

RPS has previously assessed near-field dispersion of brine wastewater from a seawater desalination plant (SDP), which Water Corporation propose to discharge through the same outfall but with alternation of the brine and TWW discharges, hence with no co-mingling (RPS, 2022). Alternation of TWW and SDP discharge requires that the daily production of TWW must be discharged over a portion of each day. The existing practice is to pump out TWW over a 2-hour period each day. Discharge of the larger volume of TWW that must be disposed over the construction period would use the same pumping capacity, hence discharge rate as the existing practice, requiring a longer discharge period (~ 3.3 hours per day).

The key aim of this investigation is to understand the rates of near-field dilution of TWW that can be expected from the TWW discharge. Because the same rate of discharge will occur through the same discharge facility over the period of the construction work by Defence, the calculations for nearfield dilution will apply to both conditions. The implication of the expected dilutions would differ among the existing and construction phase operations only with respect to any differences in the concentration of nutrients, suspended sediments, and enteric bacteria that are discharged.

1.2 Regional setting

The Cocos (Keeling) Islands are a group of 27 coral islands located in the Indian Ocean arranged around coral atolls. The atolls rise sharply from the surrounding seafloor where the water depth exceeds 1,000 m. The island group sits ~2,768 kilometres (km) north-west of Perth, 3,685 km west of Darwin, 900 km south-west of Christmas Island and 1,000 km south-west of Java and Sumatra. The islands are in a tropical zone and are affected by cyclonic conditions but are rarely in the direct path of cyclones; see Shire of Cocos (Keeling) Islands, 2020.

The islands form portions of two large atolls. The northern atoll is not populated while the southern atoll has populations (some 600 persons as at 2022) divided among two islands: Home Island (~25%) and West Island (~75%). The southern atoll extends approximately 12 km in the east to west direction and 15 km north to south (Harper et al., 2001) and consists of a horseshoe chain of 26 islands of varying size arranged in a ring around a shallow central lagoon; see Shire of Cocos (Keeling) Islands 2020.

The shallow, central lagoon of the southern atoll can be divided into two broad regions, the deeper (8-15 m) northern basin and the shallower (0-3 m) southern basin. The lagoon floor is a sandy plain with numerous mounds of coral rock. Eleven shallow passages (less than 2 m depth) connect the ocean and reef to the southern lagoon on the eastern and southern sides of the atoll (Kench, 1994) with the morphology of the atoll (i.e., shape and geographical distribution of islets) controlling circulation through the lagoon, which is dominated by tidal currents. Tidal current speeds of 0.16-0.31 m/s in the lagoon and 0.26-0.65 m/s in the deep passages have been previously measured (Kench, 1994, 1998).

The outer coastlines of the islands and reefs are ringed by a narrow band of shallow (~ 10-12 m deep) reef platforms and shoals and are exposed to ocean swells and currents.

1.3 West Island wastewater treatment plant and outfall

Water Corporation is the service provider for water and wastewater services on the Cocos Islands under a Service Delivery Agreement with the Australian Government. Water Corporation operates a wastewater treatment facility located on the south-west corner of West Island with TWW discharged through a pipeline that extends approximately 400 m across a subtidal platform and truncates as an open pipe positioned at a depth of approximately 10 metres below sea level (BSL). The outfall pipe lies across a gently down-sloping seabed that is predominantly reef habitat composed of coral bomboras and reef-rubble, with some areas of bare sand habitat proximate to the shoreline. The end of the outfall pipe is positioned near the lip of the reef platform beyond which the seabed slopes steeply downwards to over 1,000 m BSL (Figure 1-1; Source: Navionics). Present operations result in discharge of an average of 44 kL of TWW per day with discharge over approximately two hours per day, indicating an average rate of approximately 22 kL/hr (22 m³/hr).

When first installed, the terminal end of the outfall pipe was set up to point ~60 degrees from the horizontal, pointed toward the lip of the reef, but wave damage had realigned the terminal end when inspected in 2021. Assessment of the performance of the outfall for brine dispersal by RPS included the recommendation that the terminal end of the pipeline should be reinstated to assist the dispersal of brine. This study has assumed that the alignment would be restored before the construction period and that there would be no co-mingling with brine from the SDP.



Figure 1-1 Location of the TWW outfall off the south-west coastline of West Island, Cocos (Keeling) Islands. The panel on the right shows the bathymetric setting.

2 CALCULATION FOR THE DILUTION AND GENERAL BEHAVIOUR OF THE TWW DISCHARGE

2.1 General considerations

The rate of dispersion (dilution) of water streams discharged from an outfall will depend, initially, on the geometry and hydrodynamics of the discharge jet, which induces momentum and turbulence, the relative buoyancy of the discharge, which affects whether the discharge will sink or rise, and the effect of the prevailing current upon the jet. Outcomes will also vary depending on the interaction of the plume with the seabed or water surface.

The region where these processes dominate the dilution of the discharge is generally referred to as the "near-field zone", because processes affecting the plume can be characterised by variations over short time (seconds or tens of seconds to minutes) and space scales (centimetres to a few metres) near to the discharge point.

As the momentum and buoyancy signatures of the discharge are eroded, the background, or ambient, processes become the dominant forces that will control the rate of dispersion of the remnant plume. Beyond the near-field and into the "far-field zone", the dominant processes that will affect further dilution will include flushing and dilution induced by ambient currents as well as the level of turbulence that is generated in the water column by wave action and the flow of ambient current over the seabed. Mixing over this zone typically occurs at substantially longer time (tens of minutes to hours) and spatial scales (tens to hundreds of metres) further from the source.

Due to the different space and time scales involved, different models are typically applied to each zone. For this study, the focus of the calculations was on the near-field mixing zone, requiring application of a near-field dispersion model.

2.2 Selection of the dispersion model

The near-field mixing and dispersion of TWW through the outfall was simulated using the three-dimensional flow model, CORMIX. CORMIX is a mixing zone model and decision support system for environmental impact assessment of regulatory mixing zones. CORMIX contains a series of elements for the analysis and design of conventional or toxic, single or multi-port, submerged or surface, buoyant or nonbuoyant, pollutant discharges into stratified or unstratified watercourses, with emphasis on the geometry and dilution characteristics of the initial mixing zone (Doneker & Jirka 1990). CORMIX has been validated in many independent studies (http://www.cormix.info/validations.php) and was therefore considered to be appropriate for this investigation. The model was previously applied to near-field dispersion modelling for brine from the WWTP outfall (RPS, 2022).

CORMIX is a collection of analytic solutions to the mathematical equations describing transport and dispersion of water borne constituents. Based on the inputs, the model defines the appropriate equations for the situation; for example, if the plume is positively or negatively buoyant relative to the receiving water.

Inputs to the CORMIX model include:

- Height (above bed) and depth (below surface) of the discharge point.
- Horizontal separation from a coast or channel edge.
- Orientation relative to the seabed and prevailing current.
- Number, dimensions and horizontal spacings of the port(s).
- Discharge rate.
- Temperature and salinity of the discharge.
- The vertical profile of temperature and salinity within the receiving waters.
- Ambient current speed and direction relative to the discharge direction.
- Roughness of the seabed.

CORMIX calculates a shape and centreline dilution for the discharge jet and subsequent evolution of the plume in response to density and ambient current. The centreline is defined by the points of maximum concentration

(maximum temperature, minimum dilution, etc.) at each vertical section along the longitudinal axis. Accordingly, centreline depth is defined as the depth of the maximum concentration point (maximum temperature, minimum dilution, etc.) along the longitudinal axis. An average dilution of the cross-section of the plume is also calculated as 1.7 times the centreline dilution.

Although CORMIX does calculate far-field dispersion, the assumptions of the algorithms limit application to homogeneous environments with no eddies in the ambient flow and little recirculation. Because these assumptions would be unlikely to hold for the proposed discharge, the CORMIX calculations for this study were limited to the near-field zone.

Water Corporation has advised that discharge of TWW under both the present operations and proposed operations during the construction period would involve discharge over periods of hours per day at a rate that is determined by existing pumping equipment. The existing discharge period averages ~ 2 hours at a discharge rate of 22 KL/hr (~ 6.1 L/s; Table 2-1). Pumping of the larger volume of TWW that would be generated during the construction phase would be pumped at this same rate for a longer period each day (~ 3.3 hours).

The discharge rate during construction combines inputs from the community (~52 kL/d) and a plant that would be operated by Defence, with additional volume expected through the existing plant (up to 17 kL/d).

Table 2-1 Assumed rates of discharge of TWW for the present and proposed operations based on a 2hour discharge per day.

Operation level	Daily discharge (kL)	Discharge rate (L/s)	Discharge duration (hr)
Present operation	44	6.1	2
During construction	72	6.1	3.3

TWW will be derived from potable water drawn from an aquifer, and will have low salinity but with remnant nutrients, suspended solids and enteric bacteria after treatment. Details provided by Water Corporation indicate that the water discharged over the construction period may have a slight (but undefined) increase in nutrients, suspended solids and enteric bacteria but the density would not vary from the existing (Table 2-2).

Table 2-2 Water quality variables for the present and proposed TWW discharges specified by Water Corporation.

Variable	Present operation	During construction
Total nitrogen (mg/L)	7.6	<10
Total phosphorus (mg/L)	4.7	<15
Total dissolved salts (mg/L)	440	550
Density (kg/m³ @ 30 °C)	1000.4	1000.4
Suspended solids (mg/L)	12	<20
E. coli (most probable number)	<10	<150

The total dissolved salts concentrations indicate that the density of the existing discharge and construction phase discharge would be ~1,000 kg/m³ at 30 °C. By comparison, the density of the receiving water would be approximately 1,023.2 kg/m³ at the same temperature. Consequently, the TWW would be positively buoyant which will induce the plume to rise toward the sea surface. No change in the buoyancy is indicated between the existing and construction period operations.

Given the same rate of discharge through the same discharge port and no change in density, the initial dilution generated on discharge will not vary between the existing and construction phase. Hence, CORMIX was applied to one set of inputs for a range of current speeds spanning from the 5th percentile to the 95th percentile of estimated background speeds, assuming that the current flow would be across (perpendicular to) the axis of the discharge. Specifications used as input to CORMIX are summarised in Table 2-3.

Table 2-3	Summary of the inputs to the CORMIX model representing the TWW discharge conditions through
	the TWW outfall.

Variable	Present operation
Depth below MSL (m)	10
Height above bed (m)	1
Distance to the shore (m)	400
Slope of the seabed below discharge (° from horizontal)	1.43
Orientation of discharge to the seabed (° from horizontal)	60
Ambient current velocity (m/s)	0.05 to 0.5
Ambient current direction (° from discharge direction)	90 (along the shelf, perpendicular to discharge)
Discharge direction (° relative to shoreline and shelf edge)	90 (perpendicular)
Ambient water density (kg/m ³)	1,022.2
Discharge density (kg/m ³)	1000
Port diameter (m)	0.11
Discharge flow rate (m ³ /s)	0.0611
Discharge velocity (m/s)	7.6
Seabed friction factor (Darcy Weisbach)	0.05

2.3 Allowance for prevailing current

No measurement of current speeds and directions have been made near the TWW outlet but current speeds and directions have been previously estimated allowing for ocean currents and tidal flows (RPS, 2022). Tidal modelling indicates that tidal currents will flood and ebb parallel with the reef shelf that supports the TWW outlet in the lee of West Island and the wider atoll, so that ocean currents would tend to also flow parallel with the local reef shelf, predominantly from the south. These details indicate that the combination of tidal and ocean currents would frequently be perpendicular to the TWW discharge. Current speeds of the order of 0.05 m/s (5th percentile) to 0.5 m/s (95th percentile) were indicated, with the lower current speeds occurring over the turn of the tides when ocean currents are weak and the higher current speeds occurring when ocean currents migrate along the shelf. The median current speed was calculated at 0.2 m/s.

2.4 Allowance for waves

Wave action will assist the mixing and flushing of wastewater discharges. Review of wave data calculated by an ocean wave model (five-year hindcast from the WAVEWATCH III program) for a location offshore from the TWW outlet data indicates that the reef edge is frequently exposed directly to ocean swells approaching from the south-west to south and therefore directed onto the shelf supporting the TWW outlet. Swell waves can be expected to set up orbital velocities extending to the depth of the proposed discharge, adding to the vertical mixing of the TWW. Wave mixing becomes more significant for dispersion over the far-field, beyond the initial dilution rates considered in this study, and will be absent or low under conditions when waves approach from the east and under low swells; these calm conditions have been allowed for in the dispersion modelling as a conservative approach.

3 **RESULTS OF THE NEAR-FIELD SIMULATIONS**

3.1 Dilution calculations

CORMIX modelling indicated that discharge at 6 L/s through a 110 mm port that is angled at 60° upwards from horizontal would generate a jet directed at 60° upwards from the seabed, following the alignment of the discharge pipe (Figure 3-1). An initial discharge velocity of ~7.6 m/s was calculated, as a cross-sectional average, but with higher velocity at the centreline and lower velocity at the edges. This jet velocity would be markedly higher than the prevailing current speeds, allowing the jet to propagate for some distance before the jet began to bend in response to the balance of forces contributed by residual buoyancy (forcing the residual plume upwards) and the prevailing current (forcing the plume to align with the current flow). The length of this jet phase will vary with the prevailing current speed. CORMIX indicated that discharge under the 5th % current speed would allow the jet to propagate to the water surface with little variation from the discharge angle. However, marked bending of the jet to align with the prevailing current was indicated after 3-4 m if discharge occurs across the 95th % current speed. These results indicate that the plume would tend to flag vertically with variation in the prevailing current.

The initial jet phase would set up turbulent mixing with the ambient water to generate initial dilution of the plume. Further dilution would occur through entrainment of ambient water as the remnant plume rises under buoyancy. This dilution would also lower the relative buoyancy of the plume but surfacing of the plume to form a surface layer was indicated for the range of current speeds. However, the prevailing current is calculated to affect the time and distance over which the plume surfaces, hence the level of dilution that has occurred when the plume surfaces.

Calculations for the expected rates of dilution at the water surface are provided in Table 3-1. Dilutions at surface indicates the dilutions at the centre of the plume when the plume reaches surface. Dilutions after buoyancy spreading are calculations for the dilutions at the centre of the plume after the remnant plume has spread out on the surface due to remnant buoyancy gradients.

Under relatively weak cross-current, the plume is calculated to reach the surface with a width of the order of ~ 2 m and then spread across- and down-current as a buoyant layer, then continue to dilute downstream until neutral buoyancy is achieved. Initial dilution rates of ~ 20 -fold are calculated for the plume on reaching surface within ~ 4 m down-current of the discharge point, within ~ 7 seconds of discharge. Further dilution to ~ 52 -fold is indicated due to buoyancy driven spreading over ~ 130 m downstream of the discharge.

Increased speed of the cross-current is calculated to divert the plume further downstream before surfacing, resulting in higher rates of initial dilution and lower residual buoyancy. Under the median current, initial dilution to ~77-fold is indicated on surfacing of the plume around 8 m downstream of the source. The remnant buoyancy is then indicated to set up a phase of further dilution extending to ~ 130 m down-current.

The stronger deflection set up by current speeds at the 95% ile was calculated to generate higher dilutions (~149-fold) by the longer time and distance over which the plume reaches surface. Spreading of the remnant plume under residual buoyancy is then indicated to result in dilution rates of ~410-fold.





Proposed 95th pc cross current

Figure 3-1 Near-field behaviour of the buoyant TWW plume calculated for variations in the prevailing crosscurrent. The examples are for the proposed discharge rate assuming a 60° angle on the discharge, directed across the current. The upper panel indicates the case of low current speed (5%ile). The lower panel illustrates the case of higher current speed (95%ile). Current is directed from the left of each panel. Grey shading indicates the water surface. Fawn shading indicates the seabed level. Plume colour indicates level of dilution. metres])

Variable	0.05 m/s (5%ile)	0.2 m/s (50%ile)	0.5 m/s (95%ile)
Discharge rate (m ³ /s)	0.06	0.06	0.06
Discharge velocity (m/s)	7.64	7.64	7.64
Dilution at surface	20.4	77.2	149
Downstream distance at surface (m)	3.9	8.1	53.1
Time to surface (s)	7.4	28.6	53.0
Dilutions after buoyancy spreading ([distance in	52 [129]	148 [130]	412 [131]

Table 3-1 Calculations for plume dilutions as a function of current speed for the TWW discharge rate (assuming discharge at 60° from 10 m below sea level across the prevailing current).

3.2 Implications for constituent concentrations

Based on the expected concentrations of constituents in the discharge under existing and construction phase operations, the remaining concentrations set up by initial dilutions of the discharge, on surfacing, have been summarised for the 5th% current speed (Table 3-2), median current speed (Table 3-3) and 95th % current speed (Table 3-4). One caveat on these calculations is that they assume dilution with water that has not previously been contaminated by the constituents listed. This assumption should be valid when the discharge period coincides with current flow from a constant direction but may not be true if the current changes direction and brings previously contaminated water back to the discharge, allowing for double-dosing.

Table 3-2 Calculations for the initial dilution of TWW constituents on surfacing of the plume calculated for the 5th% current speed and assuming the concentrations expected in the TWW on discharge are as in Table 2-2.

Variable	Present Operation		During Construction	
	On discharge	At surface	On discharge	At surface
Total nitrogen (mg/L)	7.6	0.4	<10	<0.5
Total phosphorus (mg/L)	4.7	0.2	<15	<0.7
Suspended solids (mg/L)	12	0.6	<20	< 1.0
<i>E. coli</i> (most probable number per 100 ml)	10	0.5	<150	<7.4

Table 3-3 Calculations for the initial dilution of TWW constituents on surfacing of the plume based on the median current speed and assuming the concentrations expected in the TWW on discharge are as in Table 2-2.

Variable	Present Operation		During Construction	
	On discharge	At surface	On discharge	At surface
Total nitrogen (mg/L)	7.6	0.10	<10	<0.13
Total phosphorus (mg/L)	4.7	0.06	<15	<0.19
Suspended solids (mg/L)	12	0.16	<20	<0.26
E. coli (most probable number per 100 ml)	10	0.13	<150	<1.94

Table 3-4 Calculations for the initial dilution of TWW constituents on surfacing of the plume based on the 95th % current speed and assuming the concentrations expected in the TWW on discharge are as in Table 2-2.

Variable	Present Operation		During Construction	
	On discharge	At surface	On discharge	At surface
Total nitrogen (mg/L)	7.6	0.05	<10	<0.07
Total phosphorus (mg/L)	4.7	0.03	<15	<0.10
Suspended solids (mg/L)	12	0.08	<20	<0.13
E. coli (most probable number per 100 ml)	10	0.07	<150	<1.01

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