



Certificate of Accreditation

Sewage Management Facility

Aerated Wastewater Treatment System

This Certificate of Accreditation is issued by the Secretary of the NSW Ministry of Health pursuant to Clause 41(1) of the Local Government (General) Regulation 2005.

System: *Ozzi Kleen RP10S Nutrient Reduction AWTS*

Manufacturer: *Suncoast Waste Water Management*

Of: *59 Industrial Ave, Kunda Park, QLD, 4556*

The Ozzi Kleen RP10S Nutrient Reduction AWTS as described in Schedule 1, has been accredited as a sewage management facility for use in single domestic premises in NSW. This accreditation is subject to the conditions of accreditation specified in Schedule 2.

*Director, Environmental Health
for Secretary (delegation PH335)*

Issued: *11/8/22*
Certificate No: *STS-AWTS062*
Expires: *31 December 2026*

Schedule 1: Specification

Ozzi Kleen RP10S Aerated Wastewater Treatment System

Name and Model of STS: Ozzi Kleen RP10S

The STS is designed to treat sewage from a residential dwelling occupied by a maximum of 10 persons. The STS is contained in a septic tank/collection well with design capacity of 4150 L. NSW Health Accreditation Number STCW041

Chamber	Design capacities
Primary Treatment / pre-aeration	850 L
Secondary treatment	
• Aeration chamber	4150 L
• Irrigation chamber	300 L
Emergency storage	1000 L
Operational water level (depth)	
• secondary	1600mm

The emergency storage capacity is achieved by the decanting system holding water in the aeration chamber. This activates a high-water level alarm, and the PLC steps the cycle to the settling and decant cycle to remove excess water.

The Ozzi Kleen Treatment Process

The Ozzi Kleen sewage treatment units work with a cyclic aeration process built into a single tank designed to accept and treat the sewage. The waste products in the sewage are completely consumed by naturally occurring bacteria in the oxygen-rich environment in the aeration tank. The system treats the organic waste to produce treated water of a high standard. The unit consists of a round polyethylene tank with an internal effluent compartment and pumping system. The sewage is treated in a "Bioreactor" which is a suspended growth activated sludge process using Cyclic Extended Aeration process with intermittent decanting. It is treated in a series of batch phases within the Bioreactor to achieve the desired effluent quality. The treatment operation in the bioreactor is automatically controlled by the PLC system in a pre-determined cycle. The treatment can be operated at different cycle times to enable operational flexibility. For normal operation, the operation consists of the following cycles:

Feed and Aeration Cycle

Incoming sewage flows into the bioreactor and is mixed with the biomass held in the aeration tanks. This is aerated and oxygenated by diffused air supplied from an air blower. Aeration is provided to meet the process oxygen demand for carbonaceous oxidation, nitrification and for mixing. As aeration takes place and continues, an ideal aerobic environment for micro-organisms and a humus type activated sludge is formed. With this balanced aeration and a good healthy activated sludge, digestion and oxidation of the organic waste occurs. A balance of aeration in relation to the organic / hydraulic load is maintained for a good steady reliable treatment process. BOD oxidation and nitrification also occurs during this phase of operation. In this phase of operation Alum is dosed into the system to aid the reduction of phosphorus by chemically bonding the phosphorus into the biomass / SS for removal in the sludge wasting process

Settling Cycle

Immediately after the aeration cycle, a settling condition is created to provide solids-liquid separation, which allows a quiet period where the biomass has time to settle. As the biomass is settling it acts as a filter blanket trapping all the waste that is in suspension in the mixed liquor of the aerobic biomass and settles it to the floor. This provides for further carbonaceous oxidation (anoxically), clarification, and denitrification. A zone of clear water is generated at the surface of the aeration tank, which is now acting as a clarifier.

Decant Cycle

After a predetermined settling period a decanting cycle takes place. The floating decanter draws off water from just under the surface to a predetermined level. During the decanting cycle the anoxic treatment process continues carbonaceous oxidation, clarification, and denitrification, and automatically decants highly treated clarified effluent which flows into the

chlorinator for disinfection by gravity. The decanting cycle continues drawing off effluent until the electronic process control puts the system back into the aeration cycle. At the end of the decanting cycle which is the start of the next aeration cycle the blower on timer starts the blower again causing air pressure to purge the liquid from the decanter and an air-lock is created in the decanter's bladder, thus stopping any flow of water and the decanting procedure. Variable duration for each cycle can be chosen for optimum treatment.

Automatic Sludge Wasting and Storage

Waste sludge is pumped from the bioreactor at the beginning of each aeration cycle by the PLC controlled sludge pumps into a 850 litre sludge holding tube / primary aeration tank. The sludge that is wasted from the aeration tanks moves on to digestion in the sludge tube. As sludge is settling and thickening a separation of water and sludge occurs. The concentrated solids (waste sludge) are eventually pumped out for disposal, and the supernatant from the sludge tube flows into the main aeration tank for further treatment. The sludge wasting programme will not need to be activated until there is sufficient biomass which would be determined at the time of each service.

Basket Strainer

The decanted effluent from the aeration tank will flow through a sock strainer to remove the scum from the decanted effluent.

Chlorination

The treated effluent from the RP10S will be disinfected through the chlorinator and an effluent chlorine contact tank. Although the effluent is treated, it contains many types of human enteric organisms that are associated with various waterborne diseases. Disinfection can selectively destruct the disease-causing organisms in the sewage effluent. The chlorinator and the chlorine contact tank are designed to meet the disinfection requirements. A disinfection process of effluent is carried out using chlorination equipment to treat the final water before discharge. The chlorinator uses tablet chlorine (TICA Trichloroisocyanuric Acid) and is self-compensating for variations in flow. The bottom tablet is always submerged and during periods of low flow this ensures sufficient chlorine is released, and during periods of high flow the water level in the chlorinator increases and more tablets are exposed as these are dissolved, more chlorine is released in sufficient quantities to ensure disinfection. A dose rate residual chlorine is maintained in the effluent of between 0.5-to 2.0 mg/l free chlorine prior to being delivered to the effluent storage or disposal area.

Effluent Pump and Controls

The effluent storage compartment of the unit holds approximately 300 litres of water which gives sufficient storage. The effluent storage compartment has a submersible pump controlled by a float switch that is part of the submersible pump.

Effluent Discharge

When the liquid has reached the predetermined level in the chlorine contact tank, the effluent pump will operate and pump out the effluent to the irrigation or disposal system. The effluent pump is controlled by a float switch which is hardwired to the pump. This is held on the side of the pump handle in a special groove designed to hold the float's cable. If the float cable is removed from the groove and left to hang without any support, the float will not turn the pump off due to the float cable being longer than the length of the pump body causing the pump to constantly run dry causing premature failure of the pump. If it is noted that the float has become dislodged from its groove, the pump will need to be removed and the float cable returned to the groove. When installing the cable, ensure that the head of the float hangs vertically before it reaches the bottom of the pump housing to ensure that the pump will turn off before the effluent reaches the bottom of the pump.

Schedule 2: Conditions of Accreditation

1.0 General

- 1.1 Prior to installation the owner/occupier of the premises shall make an application, in accordance with Clause 26 of the *Local Government (General) Regulation 2021*, to the local

authority for approval to install and operate the Ozzi Kleen RP10S AWTS as a Sewage Management Facility in accordance with Section 68, Part C of the *Local Government Act 1993*.

- 1.2 The local authority shall apply those Conditions of Accreditation, appropriate to the owner / occupier, to any approval to operate the Ozzi Kleen RP10S AWTS issued under Clause 45(4), *Local Government (General) Regulation 2021*.
- 1.3 In accordance with Clause 36 of the *Local Government (General) Regulation 2021*, the Ozzi Kleen RP10S AWTS shall have an expected service life of 5 years in the case of mechanical and electrical components and 15 years in the case of other components.
- 1.4 The owner / occupier shall ensure that the Ozzi Kleen RP10S AWTS is installed or constructed:
 - in accordance with the accredited specifications of the type tested unit and in accordance with good trade practice, and
 - to allow ease of access for maintenance, and
 - regarding the health and safety of users, operators and persons maintaining the facility, and
 - must be installed or constructed to make appropriate provision for access to, and removal of, contents in a safe and sanitary manner, and
 - must, if it is intended to be a permanent fixture, be anchored to prevent movement.
- 1.5 The manufacturer / supplier shall ensure that the Ozzi Kleen RP10S AWTS is supplied, constructed and installed in accordance with the design (including the disinfection unit) as submitted and accredited by the NSW Ministry of Health. The Ozzi Kleen RP10S AWTS shall not be modified or altered except that alternate individual mechanical and electrical components such as pumps, PLCs, etc, may be substituted provided that the component meets the accredited design specification.
- 1.6 Any permanent modification or variations to the accredited design of the Ozzi Kleen RP10S AWTS shall not be permitted.
- 1.7 Each Ozzi Kleen RP10S AWTS shall be permanently and legibly marked by the manufacturer in accordance with section 3 of AS1546.3:2017.
- 1.8 The manufacturer shall supply with each Ozzi Kleen RP10S AWTS an owner's manual, which sets out the care, operation, maintenance and on-going management requirements of the system. The owner's manual prepared by the manufacturer shall specifically contain a plan for the on-going management of the Ozzi Kleen RP10S AWTS. The plan shall include details of:
 - the treatment process,
 - procedures to be followed in the event of a system failure,
 - emergency contact numbers,
 - maintenance requirements,
 - inspection and sampling procedures to be followed as part of any on-going monitoring program developed by the local authority.
- 1.9 The manufacturer shall provide the following information to each local authority where it is intended to install an Ozzi Kleen RP10S AWTS in their area once Ministry Accreditation has been obtained:

<ul style="list-style-type: none">• Statement of warranty• Statement of service life• Quality Assurance Certification• Installation Manual• Service Manual• Owner's Manual	<ul style="list-style-type: none">• Manufacturer's Service Report Form• Engineering Drawings• Specifications• A4 Plans• Certificate of Accreditation documentation from NSW Health.
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The manufacturer need not provide the above information to the local council where the information or document is contained on the manufacturer's web site.

2. Installation and Commissioning

- 2.1 The owner / occupier shall have the Ozzi Kleen RP10S AWTS inspected and checked by the manufacturer or the manufacturer's agent. The manufacturer or the agent is to certify that the system has been installed and commissioned in accordance with its design, conditions of accreditation and any additional requirements of the local authority.
- 2.2 The owner / occupier shall ensure that all electrical work is carried out on the Ozzi Kleen RP10S AWTS by a licensed electrician and in accordance with the relevant provisions of AS/NZS 3000.
- 2.3 The owner / occupier shall not commission the Ozzi Kleen RP10S AWTS unless the land application system has been completed.

3. Maintenance

- 3.1 The owner / occupier of the premises shall enter into a minimum 12-month contract or agreement with a service agent and ensure that the Ozzi Kleen RP10S AWTS is serviced:
 - in accordance with the manufacturer's / supplier's service manual and using the manufacturer's / supplier's service sheet; and
 - by a service agent who
 - has completed a course on the servicing and maintenance of STS; and has some supervised servicing experience or extensive un-supervised experience;
 - is employed or authorised by the manufacturer / supplier of the Ozzi Kleen RP10S AWTS;
 - uses replacement parts which meet the minimum specification of the Ozzi Kleen RP10S AWTS;
 - has advised of their name, contact details and credentials to the local authority;
 - submits a completed NSW Health "Local Council Service Report" (template attached) to the local authority immediately after every service;
 - shall report to the local authority any instances where the owner / occupier refuses to authorise repairs, replacement of parts or maintenance; and
 - does not perform electrical work or enter confined spaces unless trained and is suitably qualified to do so.
- 3.2 The owner/occupier shall not service the Ozzi Kleen RP10S AWTS unless they are an authorised agent of the manufacturer.
- 3.3 The Ozzi Kleen RP10S AWTS once installed and commissioned shall be serviced at three (3) monthly intervals. At each service it shall be determined if sludge removal from the sludge tube is needed.
- 3.4 The manufacturer / supplier of the Ozzi Kleen RP10S AWTS shall place on its web site a copy of the service manual, service sheet or form and specifications for the Ozzi Kleen RP10S AWTS to facilitate servicing, maintenance and repairs. Commercial-in-confidence documents may be provided directly to the service agent without uploading to the web site.
- 3.5 Each three-monthly service shall, as a minimum where provided, include a check on all mechanical, electrical and functioning parts of the system including:
 - The chlorinator and replenishment of the disinfectant,
 - Pump and air blower,
 - The alarm system,
 - Slime growth on the filter media,
 - Operation of the sludge return system,
 - The effluent irrigation area,
 - On-site testing for free residual chlorine, pH and dissolved oxygen at the appropriate check points.

4. Verification

4.1 Effluent from the Ozzi Kleen RP10S AWTS taken in any random grab sample shall comply with the following standard:

- BOD⁵ less than 30 mg/L
- TSS less than 45 mg/L
- E. coli less than 100 cfu/100 ml
- Free residual chlorine greater than 0.2 and less than 2.0 mg/L

5. Permitted uses

5.1 The effluent is suitable for re-use for garden purposes by way of any of the forms of irrigation as described in AS/NZS 1547:2012:

- above ground spray irrigation; and/or
- surface drip irrigation covered by mulch; and/or
- sub-surface drip irrigation installed at around 100 mm depth; and or
- any form of sub-soil application.

Each of the forms of irrigation or application is subject to the approval of the local authority.

6. Reduction in nutrient levels

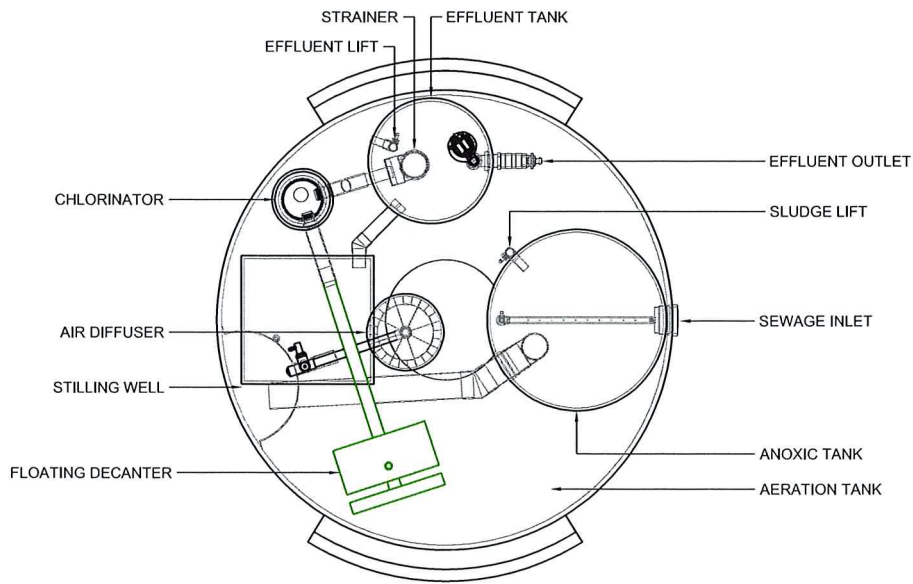
A separate testing program of the Ozzi Kleen RP10S AWTS for total Nitrogen (TN) and total Phosphorus (TP) reduction by the addition of an Alum dosing tank and a modified Programmable Logic Controller (PLC) was conducted.

Testing and analyses reported a TN reduction of 60% and a TP reduction of 60%.

Therefore, the local council shall ensure that the Ozzi Kleen RP10S is installed with an Alum dosing Unit and a modified PLC.

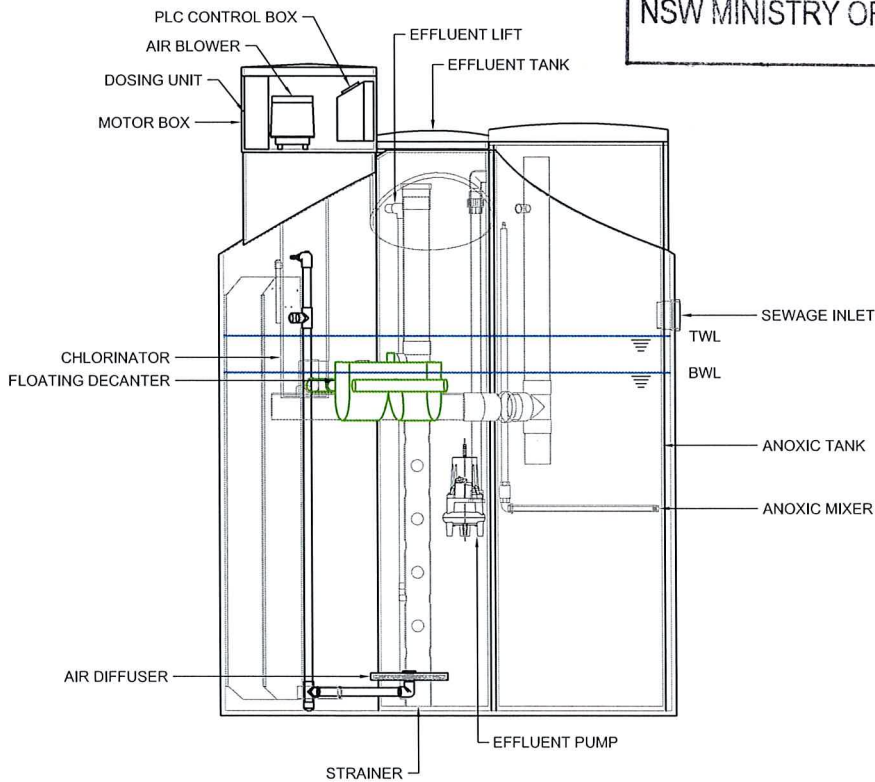
Local Council STS (DGTS) Service Report: February 2018		
Owner's Name:		Local Council:
Installation Address:		
System Brand & Model:	<input type="checkbox"/> Domestic	<input type="checkbox"/> Commercial
Date of this service: / /	Date of last Service: / /	Next service due: / /
Has the STS/DGTS been serviced in accordance with the manufacturer's / supplier's requirements and using the service sheet? <input type="checkbox"/> Yes <input type="checkbox"/> No If "No" why not?		
STS/DGTS functioning correctly? <input type="checkbox"/> Yes <input type="checkbox"/> No If "No" why not?		
According to sludge-judge or other methodology is de-sludging needed? <input type="checkbox"/> Yes <input type="checkbox"/> No If "Yes" what action is recommended?		
Offensive odours? <input type="checkbox"/> Yes <input type="checkbox"/> No If "Yes" what action is recommended?		
Alarms tested and functional? <input type="checkbox"/> Yes <input type="checkbox"/> No If not "functional" what action is recommended?		
Final Effluent Quality Tested? <input type="checkbox"/> Yes <input type="checkbox"/> No Disinfected? <input type="checkbox"/> Yes <input type="checkbox"/> No Chlorine tablets remaining? <input type="checkbox"/> Yes <input type="checkbox"/> No Quality? <input type="checkbox"/> Satisfactory <input type="checkbox"/> Unsatisfactory On what evidence is this judgement made? If "Unsatisfactory" what action was recommended?		
Land Application Area Surface ponding? <input type="checkbox"/> Yes <input type="checkbox"/> No Run off? <input type="checkbox"/> Yes <input type="checkbox"/> No Excess plant growth? <input type="checkbox"/> Yes <input type="checkbox"/> No Effluent leaving premises. <input type="checkbox"/> Yes <input type="checkbox"/> No High risk areas contaminated? * <input type="checkbox"/> Yes <input type="checkbox"/> No * Patio, play areas, BBQ, etc Operating satisfactorily? <input type="checkbox"/> Yes <input type="checkbox"/> No If "Not operating satisfactorily" what action was recommended?		
Overall Condition of STS? <input type="checkbox"/> Excellent <input type="checkbox"/> Good <input type="checkbox"/> Fair <input type="checkbox"/> Poor Comments / Action Recommended / Repairs Needed / Repairs Performed: Has the owner / occupier taken recommended actions? <input type="checkbox"/> Yes <input type="checkbox"/> No		
Service Agent:		Contact Details:
Signature:		Date:

Source: Adapted from "Checklist 4.2: Operational AWTS inspection report for use by service providers and Council inspectors" in *Designing and Installing On-Site Wastewater Systems*, Sydney Catchment Authority, May 2012



PLAN VIEW

ACCREDITED
 11 AUG 2022
 NSW MINISTRY OF HEALTH



ELEVATION

					59 INDUSTRIAL AVE KUNDA PARK QLD 4556 PH +61 7 5459 4900 FAX +61 7 5456 4677 www.ozzikleen.com	CLIENT	GENERAL	DESIGN	MB
						PROJECT	OZZI KLEEN RP10S AWTS	DRAWN	YH
14/05/21	ISSUED	1	YH	Suncoast Waste Water Management		TITLE	SYSTEM DETAILS	DATE	14/05/21
DATE	DESCRIPTION	REV.	BY			DWG NO.	GD-RP10S-H10.B	SCALE	NTS