

## TREATMENT PLANT APPROVAL 11/2020

*Plumbing and Drainage Act 2018*

### Approval

1. The **Aqua-Nova model 10100** ("the system") described in the Specifications and Drawings in the attached Schedule and manufactured by **Everhard Industries Pty Ltd** (ABN 41 009 690 859) ("the manufacturer") has been assessed in accordance with the Queensland Plumbing and Wastewater Code (QPW Code) dated 26 October 2017.
2. Approval is granted for the secondary quality wastewater treatment system, subject to compliance by the manufacturer with the requirements of the *Plumbing and Drainage Regulation 2018*, and the conditions of approval detailed below.
3. This approval, the conditions of approval and the Schedule comprise the entire Treatment Plant Approval document.
4. Any modification by the manufacturer to the design, drawings or specifications scheduled to this approval must be approved by the Chief Executive.

### Conditions of approval

5. The manufacture, installation, operation, service and maintenance of the systems must be in conformity with the conditions of this Treatment Plant Approval.
6. The secondary quality wastewater treatment system, which is an example of the approved systems, may only be used on premises that generate per day:
  - (a) a maximum hydraulic loading of 2,000 litres; and
  - (b) a maximum organic loading of 700grams BOD<sup>5</sup>
7. The system must continue to meet the requirements of secondary quality wastewater treatment system, producing the following effluent quality:
  - (a) 90% of the samples taken must have a BOD<sup>5</sup> less than or equal to 20 g/m<sup>3</sup> with no sample greater than 30g/m<sup>3</sup>.
  - (b) 90% of the samples taken must have total suspended solids less than or equal to 30g/m<sup>3</sup> with no sample greater than 45g/m<sup>3</sup>.
  - (c) 90% of the samples taken must have a thermotolerant coliform count not exceeding 200 organisms per 100 mL with no sample exceeding 1000 organisms per 100 mL.
  - (d) Total chlorine concentration must be between 0.5g/m<sup>3</sup> and 2.0 g/m<sup>3</sup> in four out of five samples taken.
8. Each system must be serviced in accordance with the details supplied in the owner's operation and maintenance manual.
9. This approval does not extend, apply to, or include the land application system used in conjunction with an approved system installed on premises.

#### Treatment Plant Approval

Approved by: Lindsay Walker

Delegated Authority

Department of Housing & Public Works

10. Each system must be supplied with —

- (a) a copy of this Treatment Plant Approval document;
- (b) details of the system;
- (c) instructions for authorised persons for its installation;
- (d) a copy of the owner's manual to be given to the owner at the time of installation; and
- (e) detailed instructions for authorised service personal for its operation and maintenance.

11. At each anniversary of the Treatment Plant Approval date, the supplier must submit to the Chief Executive a list of all systems installed in Queensland during the previous 12 months. Where the Chief Executive is notified of any system failures the Chief Executive may randomly select a number of installed systems for audit. The Chief Executive will notify the supplier's nominated NATA accredited laboratory which systems are to be audited for BOD<sup>5</sup> and TSS. The sampling and testing of the selected systems, if required, is to be done at the supplier's expense. The following results must be reported to the Chief Executive;

- a) Address of premises;
- b) Date inspected and sampled;
- c) Sample identification number;
- d) BOD<sup>5</sup> for influent and effluent; and
- e) TSS for influent and effluent.

12. The Chief Executive may, by written notice, cancel this approval if the manufacturer/supplier fails —

- a) to comply with one or more of the conditions of approval; or
- b) within 30 days, to remedy a breach, for which a written notice been given by the Chief Executive.

13. This approval may only be assigned with the prior written consent of the Chief Executive.

14. This approval expires on 01 January 2024 unless cancelled earlier in accordance with paragraph 12 above.

**Treatment Plant Approval**

Approved by: Lindsay Walker  
Delegated Authority  
Department of Housing & Public Works

Lindsay Walker

**Director**  
**Plumbing, Drainage and Special Projects**  
**Building Legislation and Policy**

Date approved: 19 June 2020

Level 7,  
63 George Street Brisbane  
GPO Box 2457, Brisbane Qld 4001  
**Telephone** +61 7 3008 2557  
**Facsimile** +61 7 3237 1248  
**Website** [www.hpw.qld.gov.au](http://www.hpw.qld.gov.au)

ABN 61 331 950 314

**TREATMENT PLANT APPROVAL No. 11/2020**  
*Plumbing and Drainage Act 2018*

**SCHEDULE**

**Attachment 1**

Drawings and Specifications for the

**Aqua-Nova model 10100**

**Treatment Plant Approval**

Approved by: Lindsay Walker

Delegated Authority

Department of Housing & Public Works

## **Schedule 1: Specification**

### **Aqua-Nova (10100 & 10100A) Aerated Wastewater Treatment System**

The Aqua-Nova (10100A) Aerated Wastewater Treatment System (AWTS) is designed to treat the wastewater from a residential dwelling occupied by a maximum of 10 persons (2000L/day) to a Secondary Standard

BOD <sub>5</sub>	<	20g/m <sup>3</sup>
TSS	<	30g/m <sup>3</sup>
Thermotolerant Coliforms	<	200cfu/100mL
Total Chlorine Concentration greater or equal to 0.5g/m <sup>3</sup> less than 2.0g/m <sup>3</sup>		

The Aqua-Nova 10100 and Aquanova 10100A are contained in 3000L and 3900L (respectively) Concrete Septic Tanks and collection wells each with design capacities as set out below.

#### **Operation**

The Aqua-nova treatment plant is a two tank system.

Wastewater flows into the first tank (Primary Tank). This tank acts as a septic tank removing most solids and fats/oils. Solids retained in this tank are digested anaerobically.

Water from this tank flows to a second tank. This tank is aerated and fitted with submerged media. Aerobic bacteria grow on the media to biodegrade the remaining contaminants in the wastewater. Bacteria occasionally slough off the media and become suspended in the water.

Aeration is continuous.

Water then flows to a clarifier where the solids are allowed to settle. These solids are pumped back to the start of the treatment plant.

Clarified wastewater is chlorinated

#### **Treatment Plant Approval**

Approved by: Lindsay Walker  
Delegated Authority  
Department of Housing & Public Works



## Configuration

The Aqua-Nova AWTS is assembled in the following configuration:

Design capacities	Concrete 2 x 3000L	Concrete 2 x 3900L
primary sedimentation	3000L	3350L
secondary treatment <ul style="list-style-type: none"><li>aeration chamber</li><li>sedimentation</li><li>irrigation</li></ul>	2253L 430L 393L	2443L 430L 393L
emergency storage	1095L	1040L
operational water level <ul style="list-style-type: none"><li>primary</li><li>secondary</li></ul>	(mm) 1510 1350	(mm) 1510 1350

- A chlorine disinfection unit is installed on the outlet of the clarifying chamber.
- Air is supplied to the contact aeration chamber by a Nitto LA80 air blower or equivalent, producing an airflow of a nominal 100 litres/minute at 1.3 m water depth.
- A Davey model D-25A submersible irrigation pump or equivalent is installed in the irrigation chamber for standard above ground irrigation. Type of pump may vary if subsurface irrigation is employed or the disposal area is significantly above the location of the sewage treatment plant.
- Label will be located on the Control Box of the system and have the following information provided
  - System Name
  - Model No.
  - Approval Number
  - Design Hydraulic Capacity
  - Date of Manufacture
  - Top Load Limitations
  - Weight of Tank
  - Lifting/Transport Instructions
  - The name and telephone number of an appropriate service representative to be contacted in the event that a problem with the plant occurs.
  - The website from which the documentation can be downloaded during the design life.

### Treatment Plant Approval

Approved by: Lindsay Walker

Delegated Authority

Department of Housing & Public Works

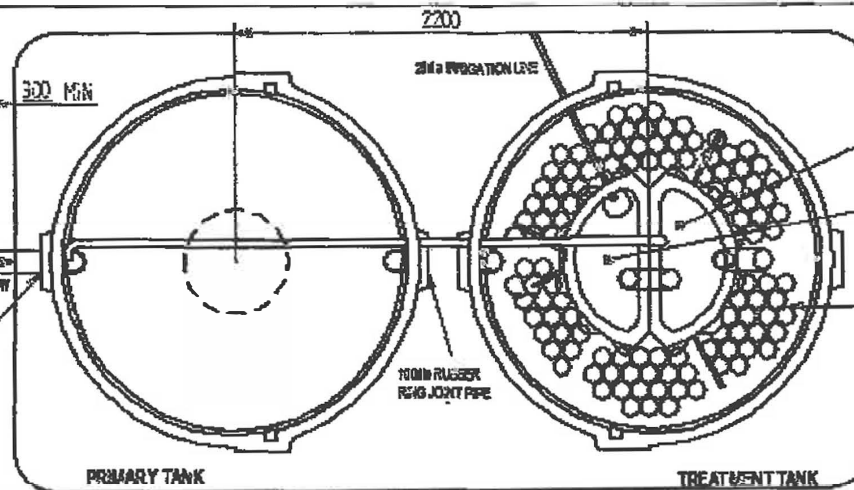


TANK INSTALLATION AND  
PLUMBING TO BE IN  
ACCORDANCE WITH  
PLUMBING INSTRUCTIONS  
PROVIDED WITH SYSTEM

THIS DUCT PIPE  
METHOD NOT TO  
BE USED UNLESS  
PIPE IS SUPPORTED

100 DIA PVC RUBBER  
RING JOINT

COCKING WASTE FLOW



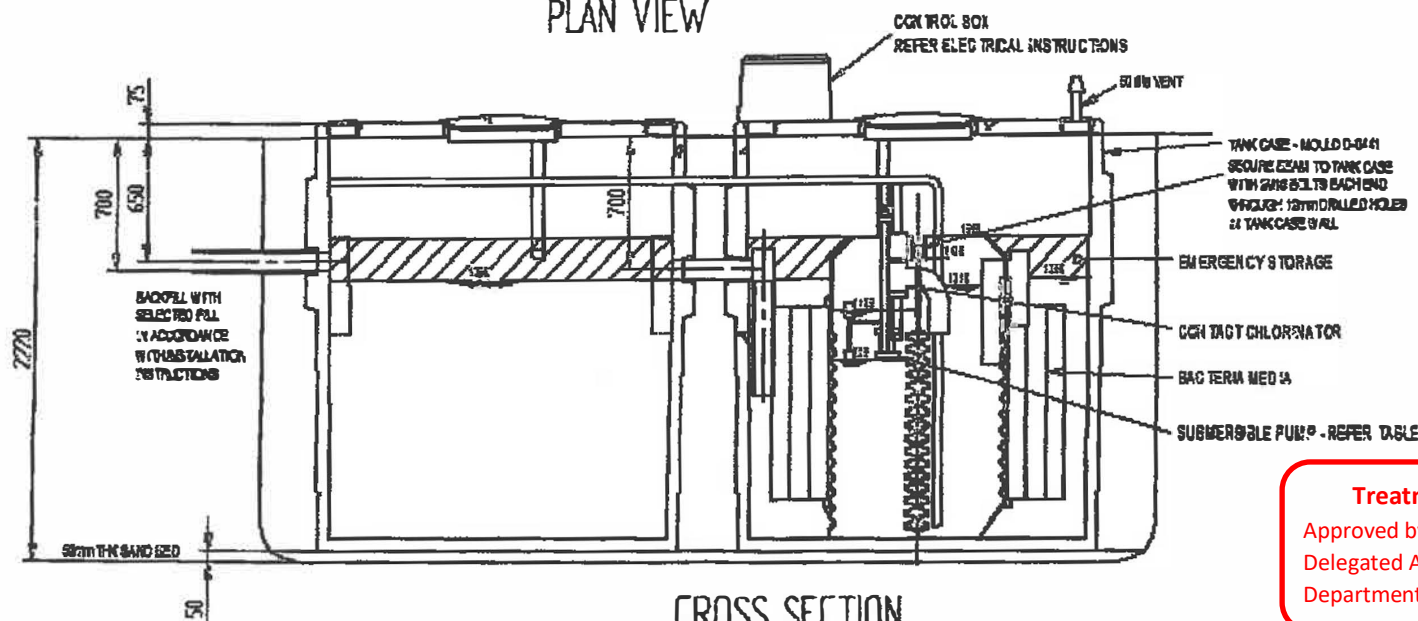
SEDIMENTATION CHAMBER

DISINFECTION & PUMPOUT CHAMBER  
EFFLUENT APPLICATION TREATMENT SYSTEM  
TO BE AS PER INSTRUCTIONS OR DESIGN  
PROVIDED WITH EACH ADDITIONAL SYSTEM

AERATION CHAMBER with 120 ft² of media

EXCAVATION LINE  
4.5m x 2.4m x 1.2m DEEP

PLAN VIEW



CGR FOL BOX  
REFER ELECTRICAL INSTRUCTIONS

50 mm VENT

TANK CASE - MOULD D-04-1  
SECURE CASE TO TANK CASE  
WITH 12mm BOLTS EACH END  
WHICH ARE 12mm DRILLED HOLES  
IN TANK CASE WALL

EMERGENCY STORAGE

CGR TACT CHLORINATOR

BAG TERM MEDIA

SUBMERSIBLE PUMP - REFER TABLE

CROSS SECTION

Treatment Plant Approval

Approved by: Lindsay Walker

Delegated Authority

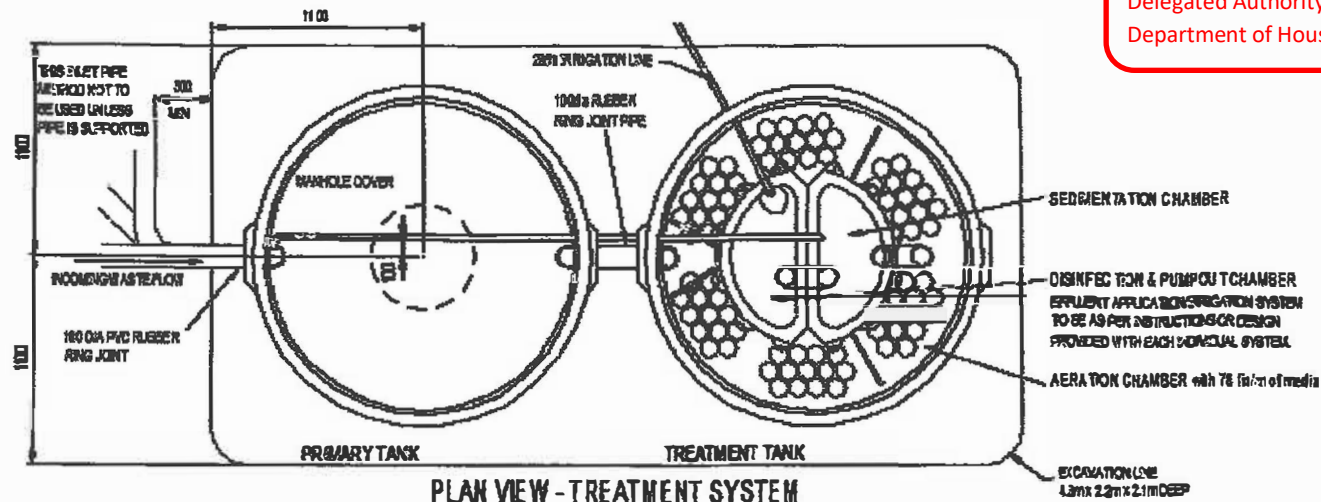
Department of Housing & Public Works



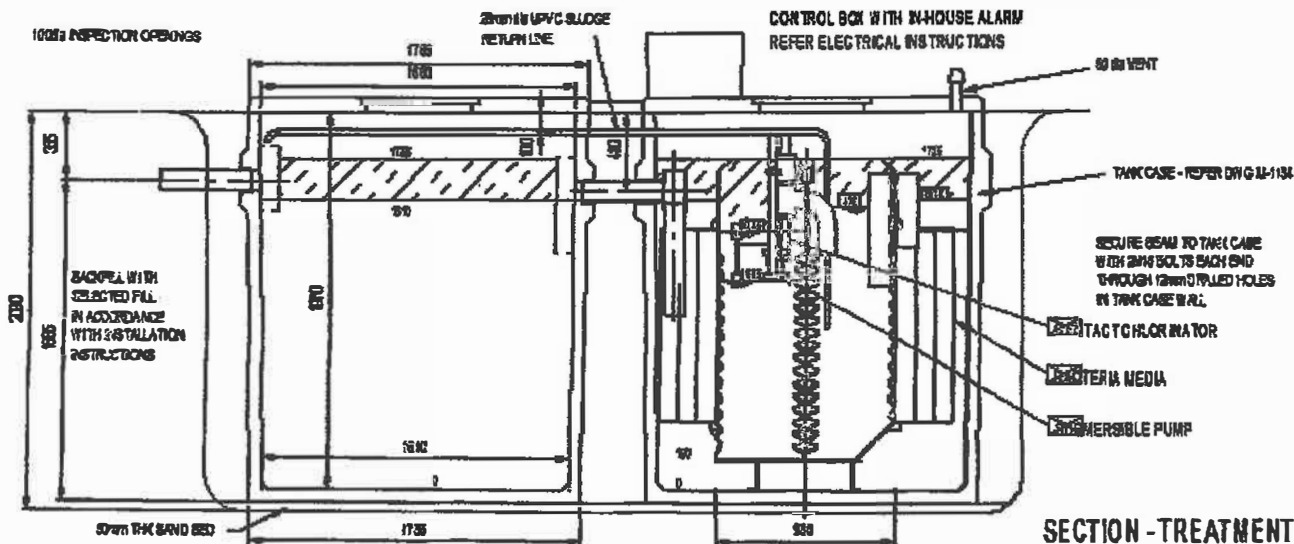
PRODUCT CODE No	DETAILS / DESCRIPTION	GENERAL NOTES	DATE	APPROVED FOR PLANT WORK	PLANT CODE	PRICE	SIZE	UNIT	QTY
10101A	DAVEY 25 R.P.F. FITTED	GENERAL NOTES	14-4-2014		32 MPa C.D.C.		125 L/M	155 m³	
10101B	CLAYTONS BLUE OILER 30 PUMP FITTED	GENERAL NOTES							
10101C	DAVEY 42 R.P.F. FITTED	GENERAL NOTES							
PROPOSED DEEP INVERT CONCRETE AQUANOVA TREATMENT SYSTEM IN 3900 CONCRETE TANKS			EVERHARD INDUSTRIES PTY LTD		MP - 767				



TANK INSTALLATION AND  
FLUISING TO BE IN  
ACCORDANCE WITH  
ALL RELEVANT INSTRUCTIONS  
PROVIDED WITH SYSTEM



PLAN VIEW - TREATMENT SYSTEM



SECTION - TREATMENT SYSTEM

PRODUCT CODE No.	DETAILS / DESCRIPTION
000	Davey 25 Pump fitted
000C	Claytons Blue Diver 30 Pump fitted
000	Davey 42 Pump fitted

APPENDIX 4	17-4-2015	PARTIALS USED - NOT RELEVANT	DATE	VALUE	SCALE	PRICE
6.2	10-9-2007	APPROVED FOR CONSTRUCTION	10-9-2007	1:25	10/03	
THE	ADJANOVIA CONCRETE TANK PARTS	EVERHARD INDUSTRIES PTY LTD	400 STATION ROAD, BUNNINGS QLD 4285	PH: 1300 733744	PAK: 1300 733744	
TREATMENT SYSTEM - QLD	2 x 3000 LT TANKS - EPD	DAVID J. JONES	M - 586	4	17/4/15	

### Treatment Plant Approval

Approved by: Lindsay Walker

Delegated Authority

Department of Housing & Public Works

