

TREATMENT PLANT APPROVAL 09/2020

Plumbing and Drainage Act 2018

Approval

1. The **Aqua-Nova model NR** (“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 advanced secondary with nutrient reduction 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 advanced secondary with nutrient reduction 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 1,200 litres; and
 - (b) a maximum organic loading of 560 grams BOD⁵
7. The system must continue to meet the requirements of advanced secondary with nutrient reduction quality wastewater treatment system, producing the following effluent quality:
 - (a) 90% of the samples taken must have a BOD⁵ less than or equal to 10 g/m³ with no sample greater than 20g/m³.
 - (b) 90% of the samples taken must have total suspended solids less than or equal to 10g/m³ with no sample greater than 20g/m³.
 - (c) 90% of the samples taken must have a thermotolerant coliform count not exceeding 10 organisms per 100 mL with no sample exceeding 200 organisms per 100 mL.
 - (d) Total chlorine concentration must be greater than or equal to 0.5g/m³ and less than or equal to 2.0 g/m³ in four out of five samples taken.
 - (e) The manufacturer has included nitrogen and phosphorus reduction in the treatment process, the effluent compliance criteria must continue to meet, in addition to the above, the following nutrient criteria:
 - a. 90% of the samples taken, with 95% confidence limits shall have a total nitrogen concentration less than or equal to 25 mg/L; and

Treatment Plant Approval

Approved by: Lindsay Walker

Delegated Authority

Department of Housing & Public Works

- b. 90% of the samples taken, with 95% confidence limits shall have a total phosphorus concentration less than or equal to 5mg/L.
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.
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 BOD⁵ 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)BOD⁵ 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.

Lindsay Walker
Director
Plumbing, Drainage and Special Projects
Building Legislation and Policy
Date approved: 09 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

ABN 61 331 950 314

Treatment Plant Approval

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

TREATMENT PLANT APPROVAL No. 09/2020
Plumbing and Drainage Act 2018

SCHEDULE

Attachment 1

Drawings and Specifications for the

Aqua-Nova model NR

Treatment Plant Approval

Approved by: Lindsay Walker

Delegated Authority

Department of Housing & Public Works

Schedule 1: Specification

Aqua-NovaNR (10100N) Aerated Wastewater Treatment System

The Aqua-NovaNR (10100N & 80100N) Aerated Wastewater Treatment System (AWTS) is designed to treat the wastewater from a residential dwelling occupied by a maximum of 8 persons (1600L/day) to a Secondary Standard

BOD ₅	<	10g/m ³
TSS	<	10g/m ³
Thermotolerant Coliforms	<	10cfu/100mL
Total Nitrogen	<	25mg/L
Total Phosphorus	<	5mg/L
Total Chlorine Concentration greater or equal to 0.5g/m ³ less than 2.0g/m ³		

Systems are contained in 3000L Septic Tanks 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	Polymer 2 x 3000L (80100N)	Concrete 2 x 3000L (10100N)
primary sedimentation	3000L	3000L
secondary treatment		
• aeration chamber	3000L 1985L	2253L 430L
• sedimentation	430L	393L
• irrigation	393L	1095L
emergency storage	1000L	
operational water level	(mm)	(mm)
• primary	1385mm	1510
• secondary	1350mm	1350

- A chlorine disinfection unit is installed on the outlet of the clarifying chamber. Disinfected Wastewater is filtered through a zeolite filter
- 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.

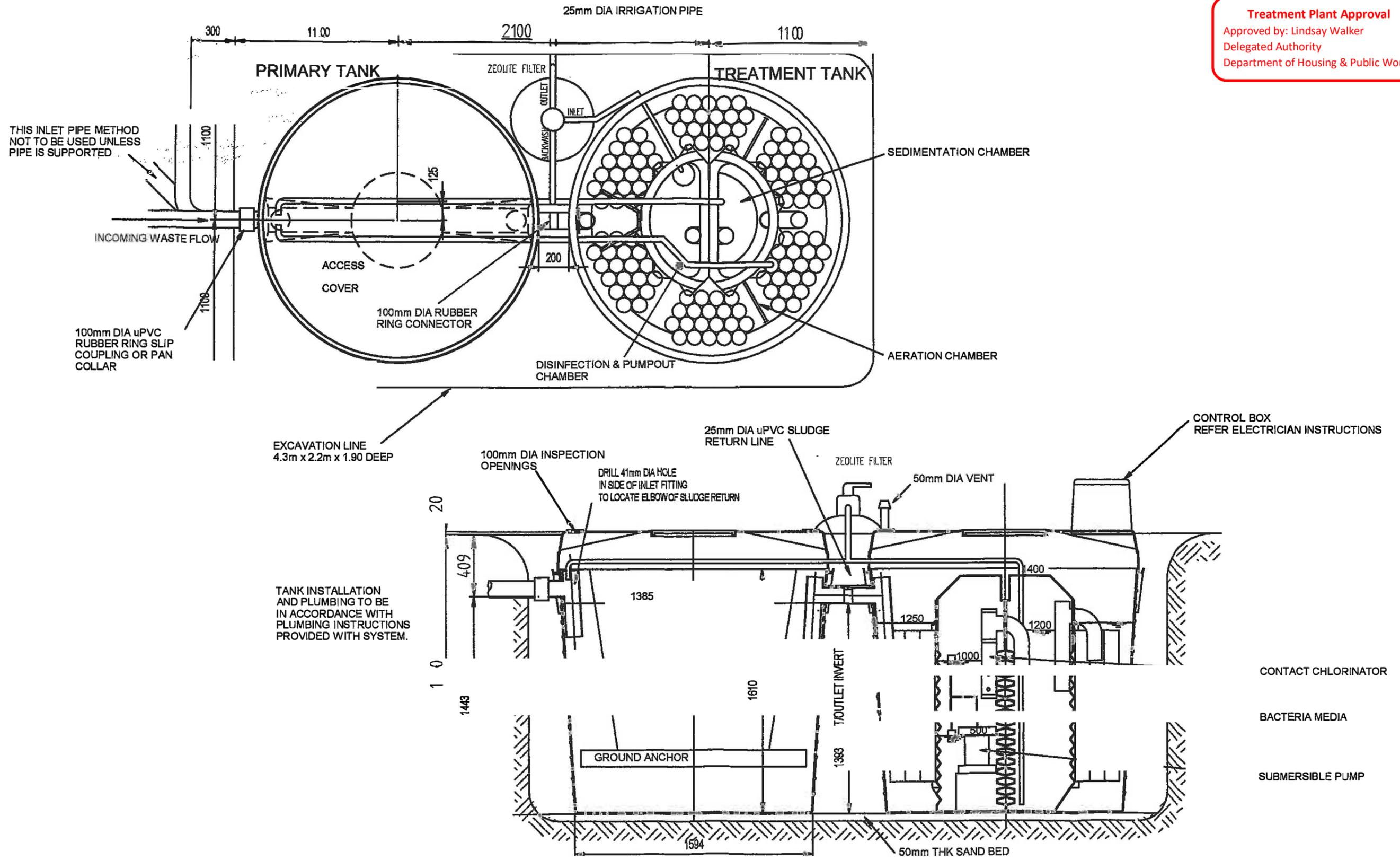
Treatment Plant Approval

Approved by: Lindsay Walker

Delegated Authority

Department of Housing & Public Works

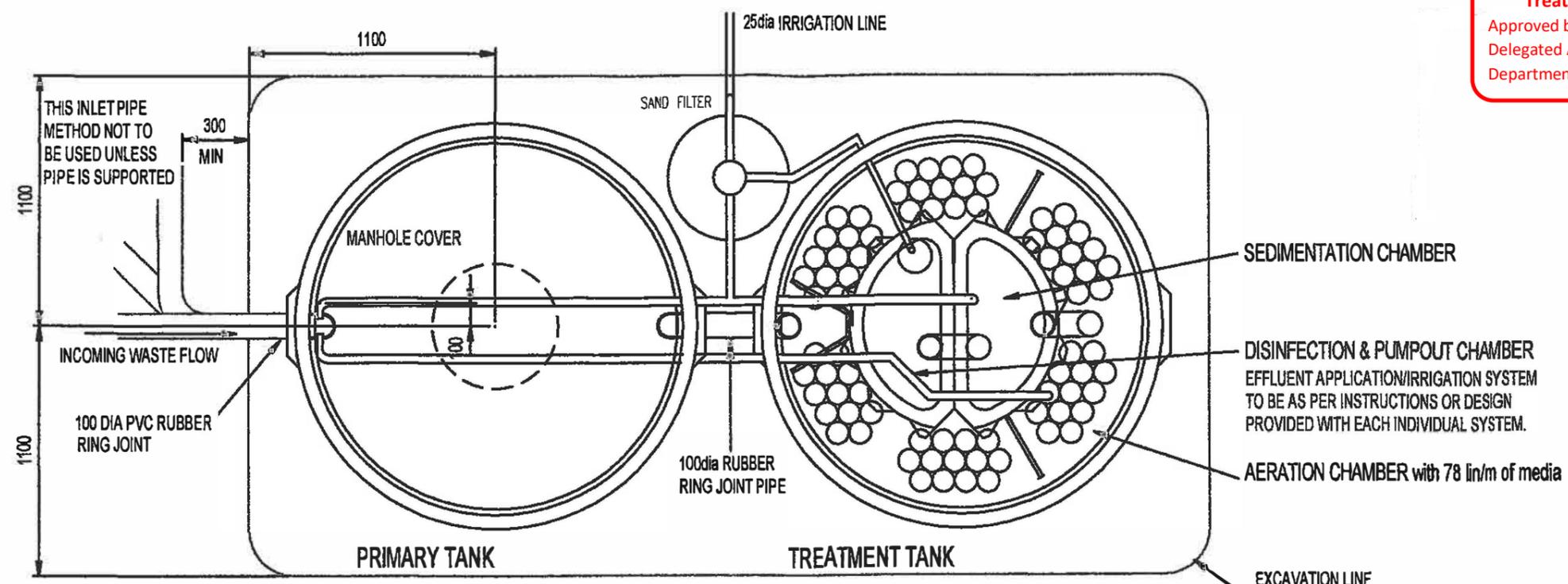




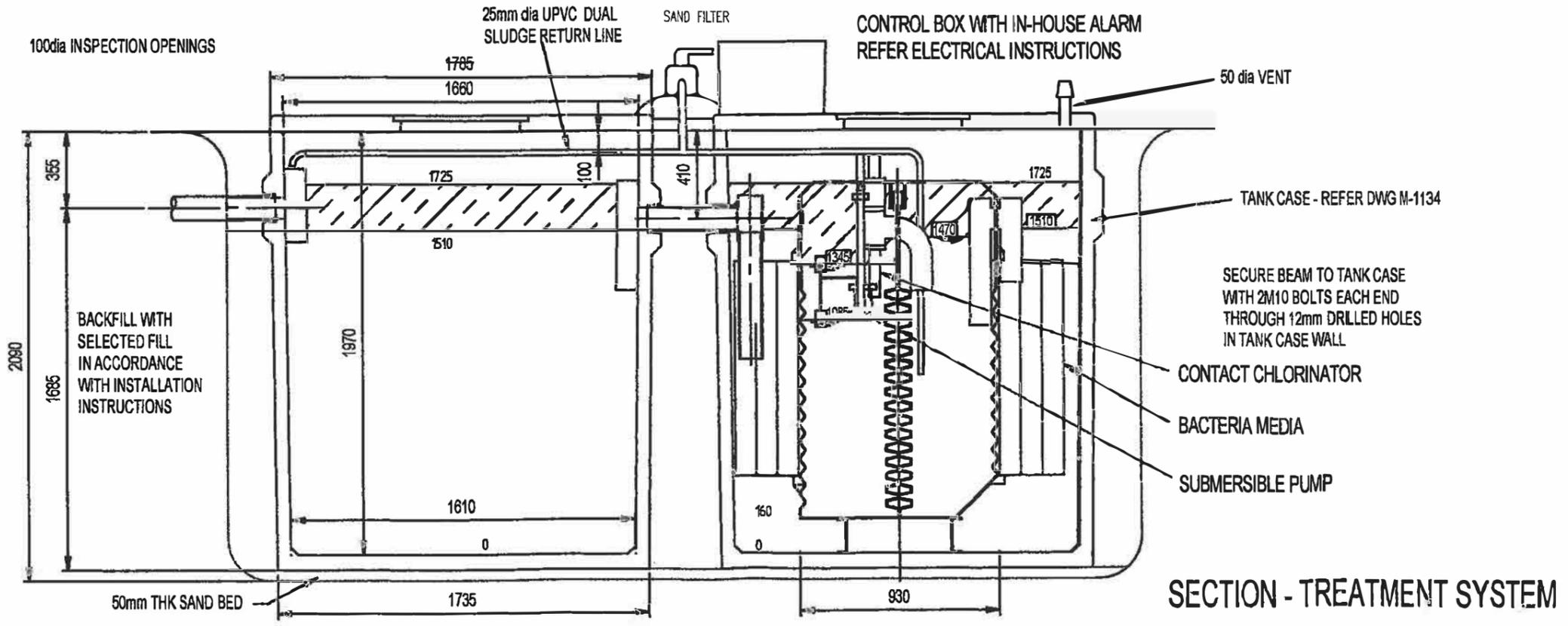
PRODUCT CODE No.	DETAILS / DESCRIPTION
80100N	DAVEY 25 PUMP FITTED
80100NI	CLAYTEC BLUE DIVER 30 PUMP FITTED
80100ND	DAVEY D42 PUMP FITTED

DRAWN	DATE	APPROVED FOR MANUFACTURE	MATERIAL	MASS	SCALE	PROD. No.
B.J.D	30-1-13				1:25	80100N
TITLE			EVERHARD INDUSTRIES PTY LTD		405 NEWMAN ROAD, GEEBUNG, QLD, 4034	
AQUANOVA QLD NR SYSTEM			DRAWING NUMBER		PH : 1 07 1 3637 6444	
2 x 3000 Ltr POLYMER TANK SYSTEM			MP - 7112		FAX : 1 07 1 3265 2111	
DUAL SLUDGE RETURN & ZEOLITE FILTER					REVISION DATE	
					ORIG 30/1/13	

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



PLAN VIEW - TREATMENT SYSTEM



SECTION - TREATMENT SYSTEM

PRODUCT CODE No.	DETAILS / DESCRIPTION
10100N	Davey 25 Pump fitted
10100CN	Claytons Blue Diver 30 Pump fitted
10100DN	Davey 42 Pump fitted

AMMENDMENT 1		24-3-2014	INNER TANKS ON PLINTH			BJD
DRAWN	DATE	APPROVED FOR MANUFACTURE	MATERIAL	MASS	SCALE	PROD. No.
BJD	10-9-2007				1:25	
TITLE			EVERHARD INDUSTRIES PTY LTD		405 NEWMAN ROAD, GEEBUNG, QLD, 4034 PH: (07) 3637 6444 FAX: (07) 32668111	
AQUANOVA 2 x 3000 LT CONCRETE TANKS AWTS N.R. SYSTEM WITH PLASTIC INNER TANKS (QLD ONLY)			DRAWING NUMBER	REVISI ON	DATE	
			M - 6628	1	24/3/14	