Queensland Government

TREATMENT PLANT APPROVAL 19/2021

Plumbing and Drainage Act 2018

Approval

1. The **FujiClean ACE 1200 (8EP/1200L)** ("the system") described in the Specifications and Drawings in the attached Schedule and manufactured by **FujiClean Australia Pty Ltd** ("the manufacturer") (ABN 74 129 181 317) has been assessed in accordance with the Queensland Plumbing and Wastewater Code (QPW Code) dated 26 March 2019.

2. Approval is granted for the advanced 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 system when tested by a certification accreditation body in accordance with AS1546.3:2017 was found to comply with the advanced secondary 8EP/1200L level without nutrient reduction effluent criteria and must continue to meet the following requirements:

TABLE 2.1 (AS1546.3:2017)

EFFLUENT COMPLIANCE CRITERIA FOR AN STS WITH NO NUTRIENT REDUCTION FACILITIES

Parameter	Secondary effluent		Advanced secondary effluent	
	90% of samples	Maximum	90% of samples	Maximum
BOD_5	≤20 mg/L	30 mg/L	≤10 mg/L	20 mg/L
TSS	≤30 mg/L	45 mg/L	≤10 mg/L	20 mg/L
*E. coli**	≤10 cfu/100 mL	30 cfu/100 mL	≤10 cfu/100 mL	30 cfu/100 mL
FAC	Minimum 0.5 mg/L†	N/A	Minimum 0.5 mg/L†	N/A
Turbidity	N/A	N/A	N/A	5 NTU

* Where disinfection is required.

† Minimum level, not 90% of samples.

Treatment Plant Approval
Approved by: Stacey McInnes
Delegated Authority
Department of Energy & Public Works

Queensland Government

Queensland Government

7. Each system must be serviced in accordance with the accreditation certificate by Global Certification Pty Ltd on 16 March 2019, and details supplied in the owner's operation and maintenance manual.

8. 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.

9. 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^5 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^5 for influent and effluent; and
   (e) TSS for influent and effluent.

10. 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.

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

12. This approval expires on 15 April 2026 unless cancelled earlier in accordance with paragraph 10 above.

Treatment Plant Approval
Approved by: Stacey McInnes
Delegated Authority
Department of Energy & Public Works

Queensland Government

Stacey McInnes
A/Director
Plumbing, Drainage and Special Projects
Building Legislation and Policy
Date approved: 16 April 2021

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

Queensland Government

TREATMENT PLANT APPROVAL No. 19/2021
Plumbing and Drainage Act 2018

SCHEDULE

Attachment 1

Drawings and Specifications for the

FujiClean ACE 1200

Treatment Plant Approval
Approved by: Stacey McInnes
Delegated Authority
Department of Energy & Public Works

Queensland Government

PRODUCT CERTIFICATE OF REGISTRATION

Global Certification Pty Ltd
Number 476

Product Performance Testing

AS 1546.3:2017
Advanced Secondary 8EP Level

Issued to

FujiClean Australia Pty Ltd
Unit 3, 16 Waterway Drive, Coomera, Qld 4209

Certification Date:- 16th March 2019 Expiry Date:- 15th March 2024

Product Certified:

Model	Disinfection	Average Results over the test period	Servicing Frequency	Discharge	Manufactured and Assembled	
FujiClean ACE 8EP Advanced Secondary System AWTS	Yes	TSS 2.9mg/l BOD_5 <2mg/l Total Nitrogen 14.79mg/l Phosphorus 10.33mg/l Turbidity 3.63NTU E coli <1 CFU/100ml	3 monthly Sedimentation pump out 5yearly or when required	Pumped via disinfection/ pump chamber with chlorine dispenser	Unit 3 16 Waterway Drive, Coomera, Qld 4209	
Description	**Total size**	**Sedimentation Chamber**	**Anaerobic Filtration Chamber**	**Aerobic Contact Filtration Chamber**	**Clarification Chamber**	**Disinfection/ Pump Chamber**
Working capacity	**3,265 L**	**1,114 L**	**982L**	**580L**	**281L**	**308L**
Total capacity				**4,369 L**		
Emergency storage capacity				**1,104 L**		

NACE CODES: 2221, 2829

This Certificate of Conformance to the Product Certificate Scheme for "Domestic Wastewater Treatment Units (Septic Tanks) and Rainwater Tanks" remains the property of Global Certification Pty. Ltd. and is granted subject to the terms and conditions of the Contract Application, in respect of the Product certified on this page and the attached schedule to the Certification of Conformance, bearing the same number as this certificate.

Date of Issue: 16th March 2019 **Bruce Smith Director**

Signed for and on behalf of Global Certification Pty Ltd

PO Box 195, Morayfield QLD 4506

www.jas-anz.com.au/register

Treatment Plant Approval
Approved by: Stacey McInnes
Delegated Authority
Department of Energy & Public Works

Queensland Government

Monday, 8 June 2020

Overview:

Name of Model of STS: FujiClean ACE 1200

Effluent Quality; Advanced Secondary

Description: The FujiClean ACE 1200 (The system) is an all waste system contained in a single, cylindrical horizontal axis fibreglass reinforced plastic tank, with a design capacity of 3265 litres. The system is comprises of the following.

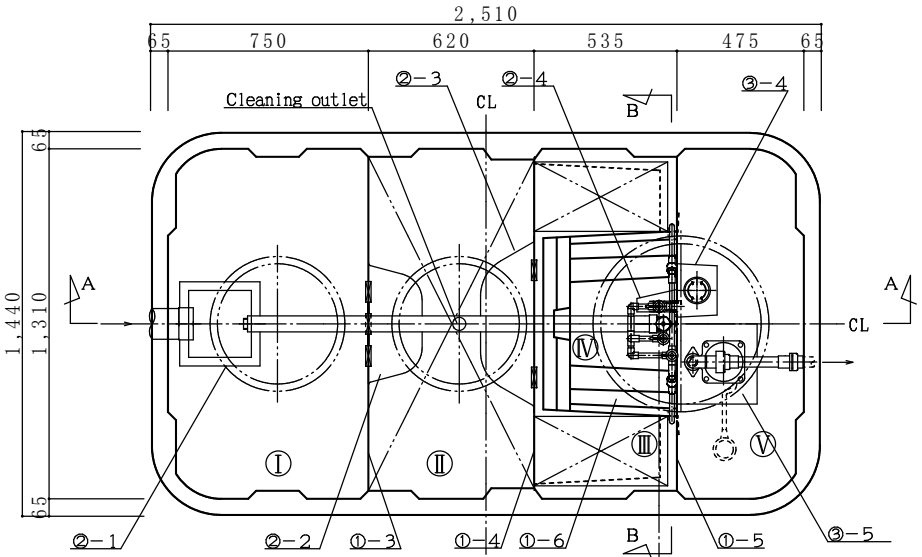
Chamber	Capacity
Primary treatment / Sedimentation	1114 Litres
Anaerobic Filtration	982 Litres
Aerobic Filtration	580 Litres
Clarifier	281 Litres
Irrigation/disinfection Chamber	308 Litres
Operating Total	3265 Litres
Emergency Storage	1104 Litres

The emergency storage capacity is achieved by the height of the last baffle (internal top of the treatment plant) being 335mm above the operating level of the treatment plant This allows for a minimum of 1104 Litres of hydraulic loading as emergency storage inside the treatment plant In most scenarios the ORG drain for the dwelling would overflow before the treatment plant allows for cross contamination.

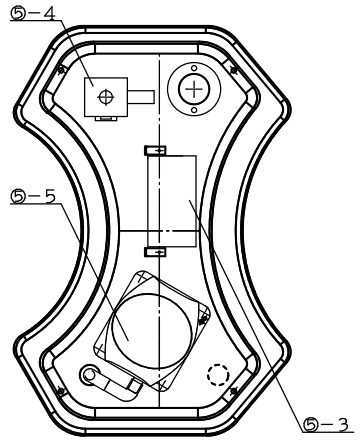
The FujiClean ACE 1200 has the following components: • Sedimentation chamber: All wastewater from the dwelling flows into the sedimentation chamber where physical separation of organic waste and foreign material such as fats, oil, and grease commence. Sludge and scum form and allow for a reduction in BOD and TSS concentrations. • Anaerobic Filtration Chamber: Wastewater from the sedimentation chamber gravity feeds into the anaerobic filtration chamber. This chamber is also a part of primary treatment chamber, with the addition of a contact media filtration bed which increases the surface area for the growth of bacteria. Scum and sludge also form in this chamber through biological separation. • Aerobic Contact Filtration chamber: Primary treated wastewater from the anaerobic filtration chamber gravity feeds into this chamber. This chamber is a contact media filtration chamber. Air is pumped in continuously to assist nitrification of the ammonium nitrogen in the wastewater. The media in the chamber provides a surface area for the growth of bacteria to allow for the bio-degradation of organic material in the wastewater. • Clarification Chamber: Treated wastewater is transferred into the clarification chamber allowing for

the removal of settled solids. The solids are transferred to the primary treatment tank by way of an airlift device. • Disinfection/Pump Chamber: A chlorine disinfection unit is installed on the outlet of the disinfection/pump chamber. • Filtration: The treated and disinfected effluent is filtered through an external irrigation filter of no less than 130 micron if subsurface drip line is used as the disposal type. • Air Supply: Air is supplied to the aerobic contact filtration chamber by a FujiMac 100 LPM/68 watt air blower or equivalent, producing an airflow of a nominal 100 litres/minute at 1.8 m water depth. The air is distributed via a manifold to aeration leg diffusers located near the base of the aeration chamber and the airlift device located in the aerobic zone and in the clarification chamber. The airlift device continually returns partially treated wastewater and settled solids to the inlet of the sedimentation chamber. • Irrigation Pump: A FujiSub model FS756 submersible irrigation pump or equivalent is installed in the disinfection/pump chamber.

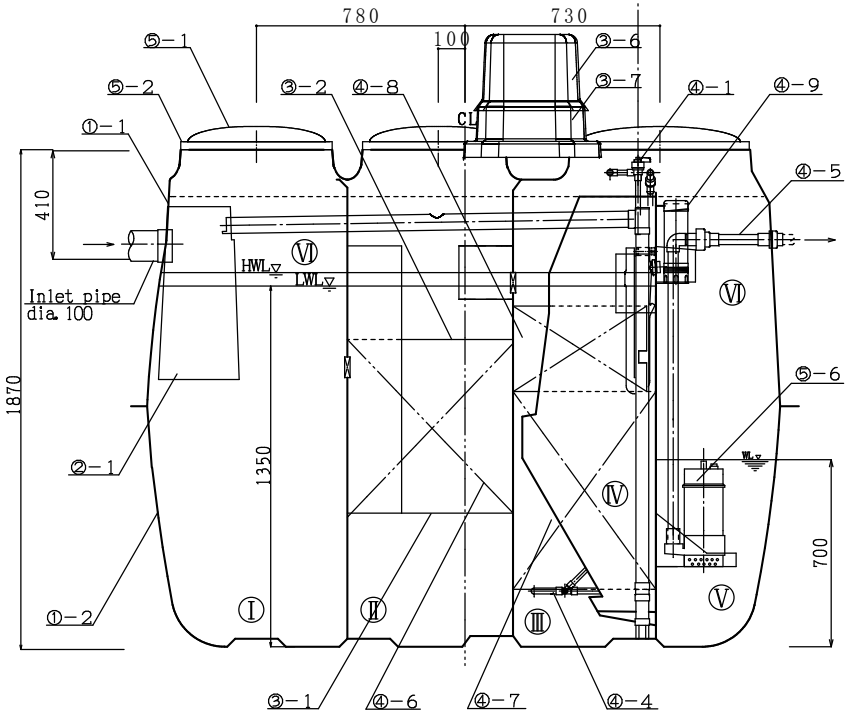
•Alarm system: L.E.D lighting alarms at the treatment plant monitor include: High water (pump fault). Air fault: (Air blower failure): The power light is continuous and ceases to illuminate on power outage. Remote alarm plate: L.E.D lighting and audible alarming also trigger on the above faults.



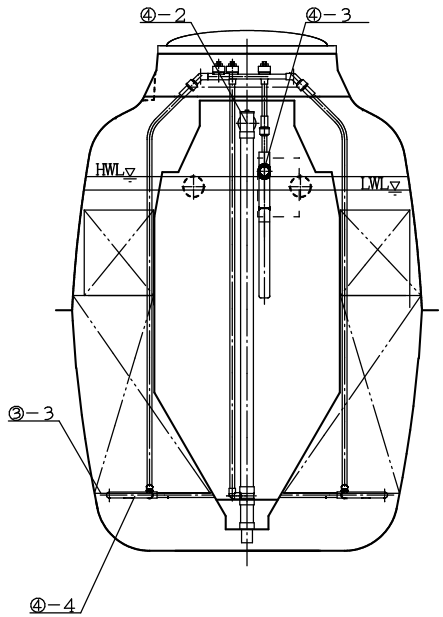
Top View



Blower Box Top View



A−A Section View



B−B Section View

①− 1	Upper Shell
①− 2	Lower Shell
①− 3	Partition A
①− 4	Partition B
①− 5	Partition C
①− 6	Clarification Chamber Unit
②− 1	Inflow Baffle
②− 2	Outflow Baffle
②− 3	Scum Baffle A
②− 4	Scum Baffle B
③− 1	Anaerobic Chamber Support Frame
③− 2	Anaerobic Chamber Suppress Frame
③− 3	Aerobic Chamber Support Frame
③− 4	Chlorinate Clylinder Stand
③− 5	Pump Stand
③− 6	Blower Box Cover
③− 7	Blower Box Stand B
④− 1	Air Supply Pipe Kit
④− 2	Recirculation Air-lift Pump
④− 3	Effluent Air-lift Pump
④− 4	Aeration Pipe
④− 5	Pipe Kit for Pump
④− 6	Spherical-skeleton Meidia
④− 7	Net-hollow-cylindrical Media
④− 8	Net-block Media
④− 9	Chlorinate Cylinder
⑤− 1	RISP Domed Lid
⑤− 2	Riser to Tank Adaptor
⑤− 3	Alarm Panel and Connector Box
⑤− 4	Power Box
⑤− 5	Blower
⑤− 6	Pump

Treatment Plant Approval
Approved by: Stacey McInnes
Delegated Authority
Department of Energy & Public Works

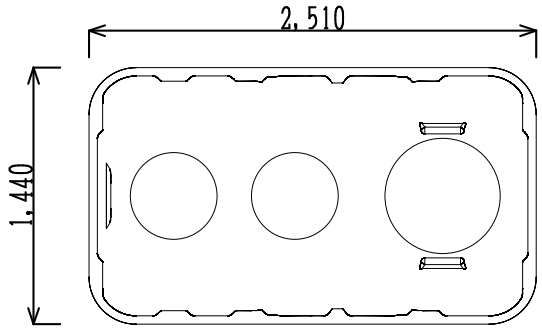
Queensland Government

Ⅰ	Sedimentation Chamber	1.114m³
Ⅱ	Anaerobic Filtration Chamber	0.982m³
Ⅲ	Aerobic Contact Filtration Chamber	0.580m³
Ⅳ	Clarification Chamber	0.281m³
Ⅴ	Disinfection/Pump Chamber	0.308m³
Ⅵ	Emergency Storage capacity	1.104m³

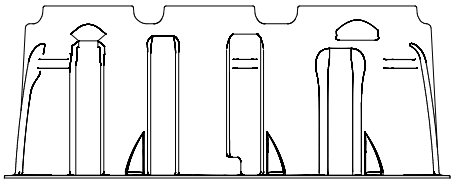
Name	FujiClean ACE Overall view			
Designed date	Design	Check	Number	Scale
Nov ·2018	H. Saito	H. Igara		

Fuji Clean Co., Ltd.

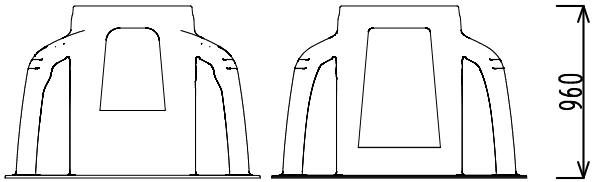
No	Date	Change



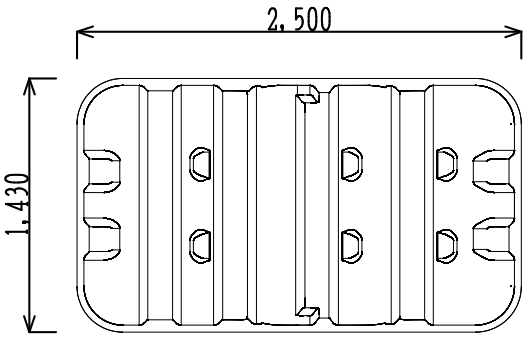
< Top View >



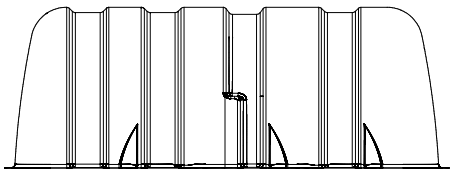
< Side View (long side) >



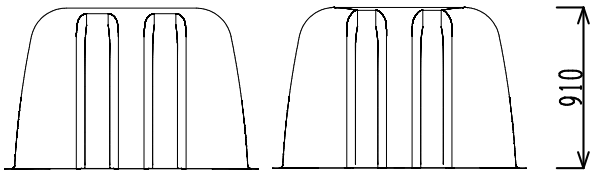
< Side View (short side) >



< Top View >



< Side View (long side) >



< Side View (short side) >

Treatment Plant Approval
Approved by: Stacey McInnes
Delegated Authority
Department of Energy & Public Works

Queensland Government

FujiClean ACE - Shell	Page No. B1000			検印	作成
Fuji Clean Co., Ltd.	Scale				