

TREATMENT PLANT APPROVAL 08/2021
Plumbing and Drainage Act 2018

Approval

1. The **BioCell ADGF01** (“the system”) described in the Specifications and Drawings in the attached Schedule and manufactured by **Greywater Solutions Pty Ltd** (“the manufacturer”) (ABN 38 522 491 905) has been assessed in accordance with the Queensland Plumbing and Wastewater Code (QPW Code) dated 26 October 2017.
2. Approval is granted for an advanced secondary greywater treatment system, subject to compliance by the manufacturer with the requirements of the *Plumbing and Drainage Regulation 2019* 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 greywater treatment system may only be used on premises that generate per day:
 - (a) a maximum hydraulic loading of 800L; and
 - (b) a maximum organic loading of 700g BOD₅
7. For the system to meet the requirements of an advanced secondary quality greywater treatment system, the system must produce the following effluent quality —
 - (a) 90% of the samples taken must have a BOD₅ less than or equal 10g/m³ with no sample greater than 20g/m³; and
 - (b) 90% of the samples taken must have total suspended solids less than or equal 10g/m³ with no sample greater than 20g/m³; and
 - (c) 90% of the samples taken must have thermotolerant coliform count not exceeding 10 organisms per 100 mL with no sample exceeding 200 organisms per 100mL.
 - (d) The total chlorine concentration shall be greater than or equal to 0.5gm³ and less than 2.0g/m³ in four out of five samples taken.
8. Each system must be serviced in accordance with the manufacturers details supplied in the owner’s service and maintenance manuals.
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 and ancillary equipment;
 - (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 manufacturer must submit to the Chief Executive a list of all systems installed in Queensland that they have received an installation and commissioning certificate for during the previous 12 months.
12. Where the Chief Executive is notified of any system failures that they believe are a result of poor design or faulty manufacture, the Chief Executive may randomly select a number of installed systems for audit. The Chief Executive will notify the National Association of Testing Agencies (NATA) accredited laboratory nominated by the manufacturer, which systems are to be audited for Biochemical Oxygen Demand (BOD₅) and Total Suspended Solids (TSS). The sampling and testing of the selected systems, if required, is to be done at the manufacturer'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) Biochemical Oxygen Demand (BOD₅).
 - (e) Total Suspended Solids (TSS).
13. The Chief Executive may, by written notice, cancel this approval if the manufacturer fails — to comply with one or more of the conditions of approval; or within 30 days, to remedy a breach, for which a written notice been given by the Chief Executive.
14. This approval may only be assigned with the prior written consent of the Chief Executive.
15. This approval expires on 01 January 2024 unless cancelled earlier in accordance with paragraph 13 above.

Director
Plumbing, Drainage and Special Projects
Building Legislation and Policy
Date approved: 04 February 2021

Treatment Plant Approval

Approved by: Lindsay Walker

Delegated Authority

Department of Housing & Public Works

TREATMENT PLANT APPROVAL No. 08/2021
Plumbing and Drainage Act 2018

SCHEDULE

Attachment 1

Specifications for the

BioCell ADGF01

Treatment Plant Approval

Approved by: Lindsay Walker

Delegated Authority

Department of Housing & Public Works



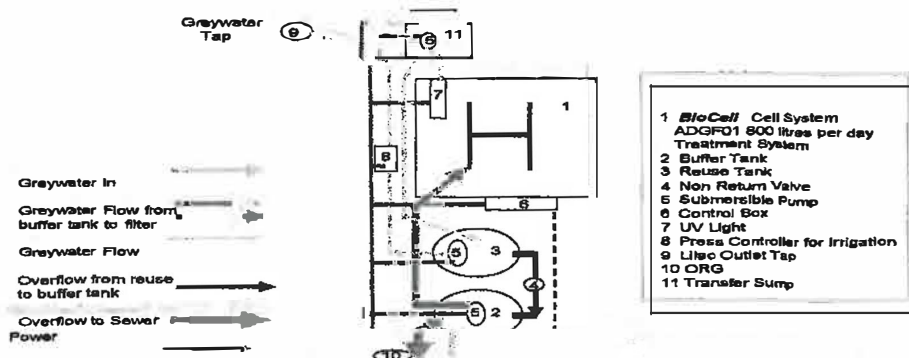
Schedule 1: Specification *BioCell* Domestic Greywater Treatment System

General Description

The *BioCell* System is designed to treat the greywater from showers, baths, laundry, handbasins and kitchens from a residential dwelling occupied by a maximum of 10 persons.

The *BioCell* system comprises of the following major components:

- **Buffer Tank:** This tank receives the greywater from the household and absorbs the hydraulic load from impacting on the filter beds located in the series of cells. The submersible pump located in the buffer tank delivers 25 litres of wastewater to the filter beds every 45 minutes. The pump is fitted with a high level alarm float switch to indicate a pump failure. The buffer tank is fitted with an overflow pipe connected to the sewerage system.
- **Process Rack:** The process rack comprises 4 identical process columns, which share the wastewater delivered from the buffer tank. Each column consists of a stack of 4 process cells and a storage cell stacked onto each other enabling the wastewater to feed through the column by gravitation. Each cell is a matrix of filter cloths, peat, and earthworms, which slows the wastewater flow down to enable the living ecosystem to consume the organic matter in the wastewater. The whole treatment process within the cells takes about 15 hours. The treated effluent is collected in the base storage cell and after passing through the UV disinfection unit is directed to the reuse storage tank.
- **Reuse Storage Tank:** This tank receives the treated effluent for reuse for toilet flushing, cold water supply to the washing machine, garden irrigation or hosing pathways. The submersible pump is fitted with high and low level alarm float switches to indicate filter blockages, pump failure or lack of reuse water flow. The reuse storage tank is fitted with an overflow pipe and backflow valve back to the buffer tank.



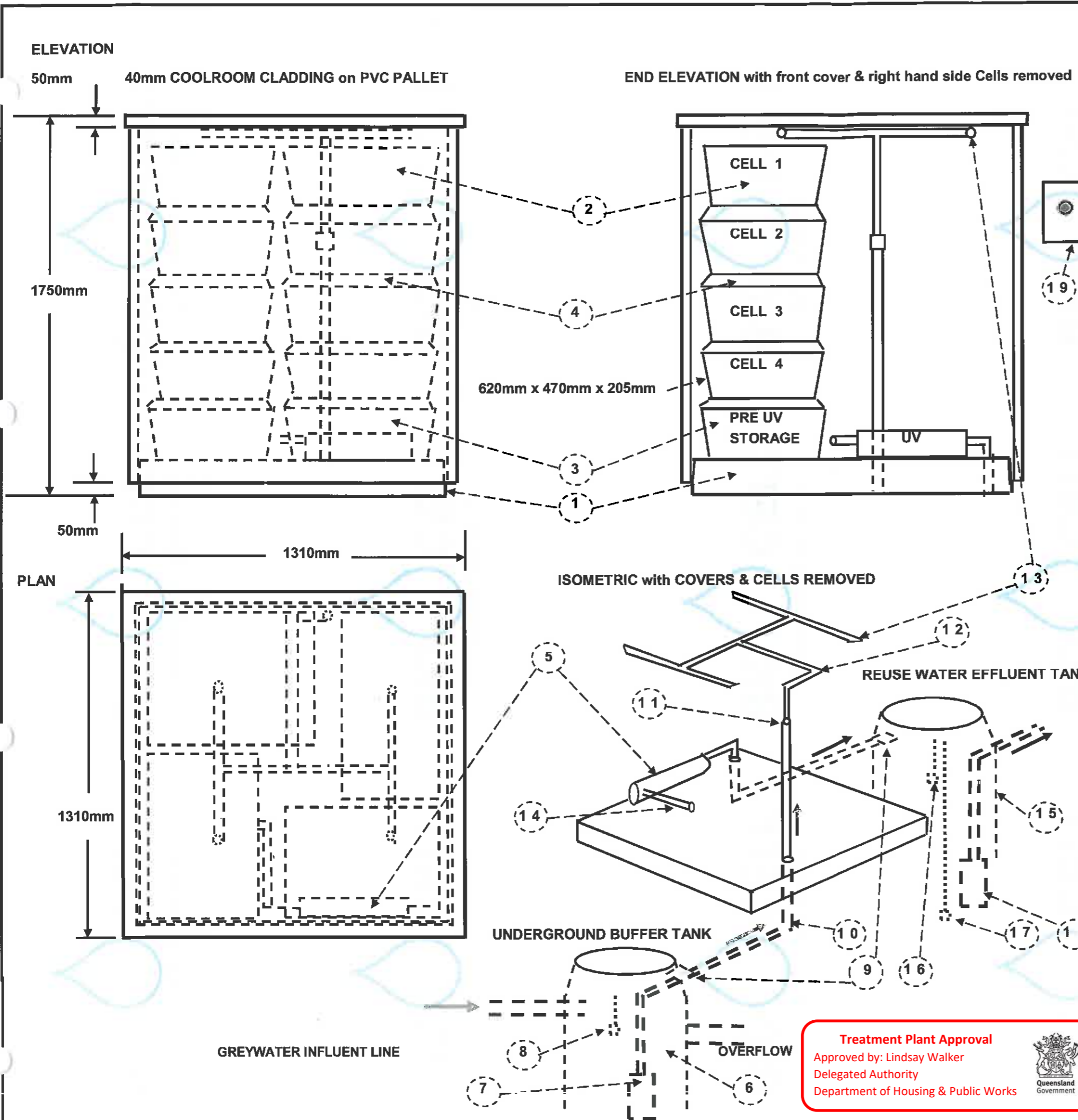
Treatment Plant Approval

Approved by: Lindsay Walker

Delegated Authority

Department of Housing & Public Works





BILL OF MATERIALS

No.	Description	Type	Manufacturer	Notes
1	PVC PALLET	Standard	WARRINGAH PL	1,170sq
2	PROCESS CELLS	P O L Y	AquaReuse	16 off
3	PRE UV STORAGE	P O L Y	AquaReuse	4 off
4	CELL LIDS	P O L Y	AquaReuse	12 off
5	UV STERILIZER		MATALA	1 8 Watt
6	BUFFER TANK	U/G	S. E. POLYTECH	1,000L
7	SUBMERSIBLE PUMP	D15V	DAVEY PUMPS	0.94Kw
8	HI LEVEL ALARM	FLOAT	GEMS	24VDC
9	INLET PIPING	UPVC	VINEDEX	40mm
10	TANK COULPING	UPVC	VINEDEX	40mm
11	REDUCING UNION	UPVC	VINEDEX	40/20mm
12	INFLUENT PIPE	UPVC	VINEDEX	20mm
13	CELL FEED PIPE	UPVC	VINEDEX	20mm
14	CELL OUTLET	UPVC	VINEDEX	25mm
15	REUSE TANK	U/G	S.E. POLYTECH	1,000L
16	HI LEVEL ALARM	FLOAT	GEMS	24VDC
17	LO LEVEL ALARM	FLOAT	GEMS	24VDC
18	REUSE PUMP	VOTEX	DAVEY PUMPS	D42A/B
19	CONTROLLER	PLC	SPIDER	AQR

- INPUTS - ALARMS -LOCAL INDICATOR LAMP OR REMOTE**
- 1. BUFFER PUMP FAIL
 - 2. UV FAIL
 - 3. REUSE PUMP FAIL
 - 4. HI LEVEL BUFFER
 - 5. LO OR HI LEVEL REUSE
 - 6. HI TEMPERATURE FILTER
 - 7. POWER LOSS
 - 8. SPARE

Revision Date	1st August 2011
Drawing Update No.	Update No: 3 By J.C.C
SCALE	50:1 Sheet 1 of 1

GREYWATER TREATMENT SYSTEM
 800 Litre per day
 General Arrangement
 MODEL : ADGF01

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



Manufactured by
GREYWATER SOLUTIONS
 ABN. 38 522 491 905
 1 Fortuna Place, Parkwood 4214 QLD.
 greywater@onthenet.com.au