Approval

1. The WWR-Mark IV ("the system") described in the Specifications and Drawings in the attached Schedule and manufactured by Houston Utility Service Pty Ltd ("the manufacturer") (ABN 44 163 768 652) has been assessed in accordance with the Queensland Plumbing and Wastewater Code (QPW Code) dated 15 January 2013.

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 Act 2002, part 5 and the conditions of approval detailed below.

3. This approval, the conditions of approval and the Schedule comprise the entire Chief Executive 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 Chief Executive Approval.

6. The secondary quality wastewater treatment system may only be used on premises that generate per day:

   (a) a maximum hydraulic loading of 5000L; and
   (b) a maximum organic loading of 1300g BOD₅

7. For the system to meet the requirements of a secondary quality wastewater treatment system, the system must produce the following effluent quality —

   (a) 90% of the samples taken must have a BOD₅ less than or equal 20g/m³ with no sample greater than 30g/m³; and
   (b) 90% of the samples taken must have total suspended solids less than or equal 30g/m³ with no sample greater than 45g/m³; and
   (c) 90% of the samples taken must have thermotolerant coliform count not exceeding 200 organisms per 100 mL with no sample exceeding 1000 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. Each system must be supplied with —
   (a) a copy of this Chief Executive 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.

10. This approval does not extend, apply to, or include the land application system used in conjunction with an approved system installed on premises.

11. At each anniversary of the Chief Executive 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 are believed to be the 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 14 October 2021 unless cancelled earlier in accordance with paragraph 13 above.

Lindsay Walker
Director
Strategic Policy (Plumbing, Drainage, Committees and Special Projects)
Date approved: 14 October 2016

Chief Executive Approval
SCHEDULE

Attachment 1

Specifications for the

WWR-Mark IV
The WWR-Mark IV (waste water recycle unit) has been designed with remote access in mind. The units are a “plug and play” system for mobile accommodation and remote work sites such as the drilling and service sectors in outback Australia. The WWR-Mark IV is engineered up to “CLASS A” treated water. Although modelled (Biowin Modelling) to recycle up to 10,000 litre at class B per day over a 24 hour period, the units are Identification plated for 20 person accommodation and 50 person work site to manage peak loads.

The Unit is processed by aeration, Chlorination, Micron filters and UV lighting. All unprocessed effluent enters the unit through a 50mm hose into a manifold where a number of buildings can be connected. Waste water from the kitchen and laundry has a different inlet to separate oil and grease through the Grease Trap before entering into the sewage inlet balance chamber were all shower and toilet waste initiates process. The unit has the capability to handle peak load when all personnel are showering at the one time as well as laundry loads.

Through a metered line, the effluent then enters the separation chamber where the sediment is separated and clear water spills into the primary aeration chamber through the clear water pick up line. It is in this chamber where the air pump aerates the effluent to break down the particle through a silicone diffuser. This process is continued through a secondary aeration chamber that has a dissolved oxygen metre probe submerged to monitor the oxygen percentage. This follows into the tertiary aeration chamber.

When the clear water flows into the disinfection, the water is treated with an amount of chlorine based on the flow rate of the unit. The flow rate allows enough time for the chlorine to react with the effluent and then the Pump turns on to push the fluid out through the Filter Housing in through the UV. The UV light dilutes the chlorine amounts then the waste water flows through hoses to the sprinklers and out into a designated irrigation area, size depends on soil type classifications.
Viking Grease Trap takes away all the fat from the kitchen before entering the main process.

Chlorinator automatically doses chlorine through flow rate to the required amount.

PLC—Programmable Logic Controller fully automates the unit for easy operation. Audible alarms are in place to manage malfunctions with troubleshooting backup.

Sanisplit macerator for pumping out excess waste water from hoses before moving.

Individual Air Pumps operate in each tank, providing regulated air through the Dissolved Oxygen Metre. The Oxygen metre is heat compensated.
Filter Housing Assembly carries a 50 micron filter bag that is easily changed out when necessary.

One of these NOV Mono pumps pressurize final waste through the filter and onto the UV filter before irrigating onto the ground while the other returns sludge back into the system to allow another process step.

UV light distinguishes chlorine from final output.
SCHEDULE

Attachment 2

Drawings for the

WWR-Mark IV