



## Caltex Carnarvon PCN 10 Installation

EcowaterWA along with Carnarvon Plumbing have provided a Fujiclean PCN 10 system for the Caltex Carnarvon Roadhouse.

This is the first Fujiclean PCN system installation in WA and the second in Australia.

The PCN system will replace a failing existing treatment plant and will provide a robust reliable solution.



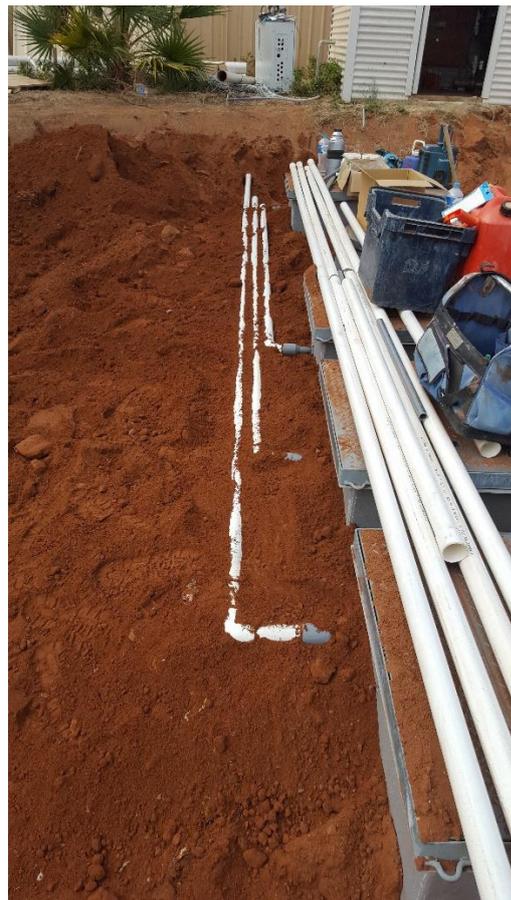
The system is installed on a concrete Pad and packers are used to provide a level base under the feet.



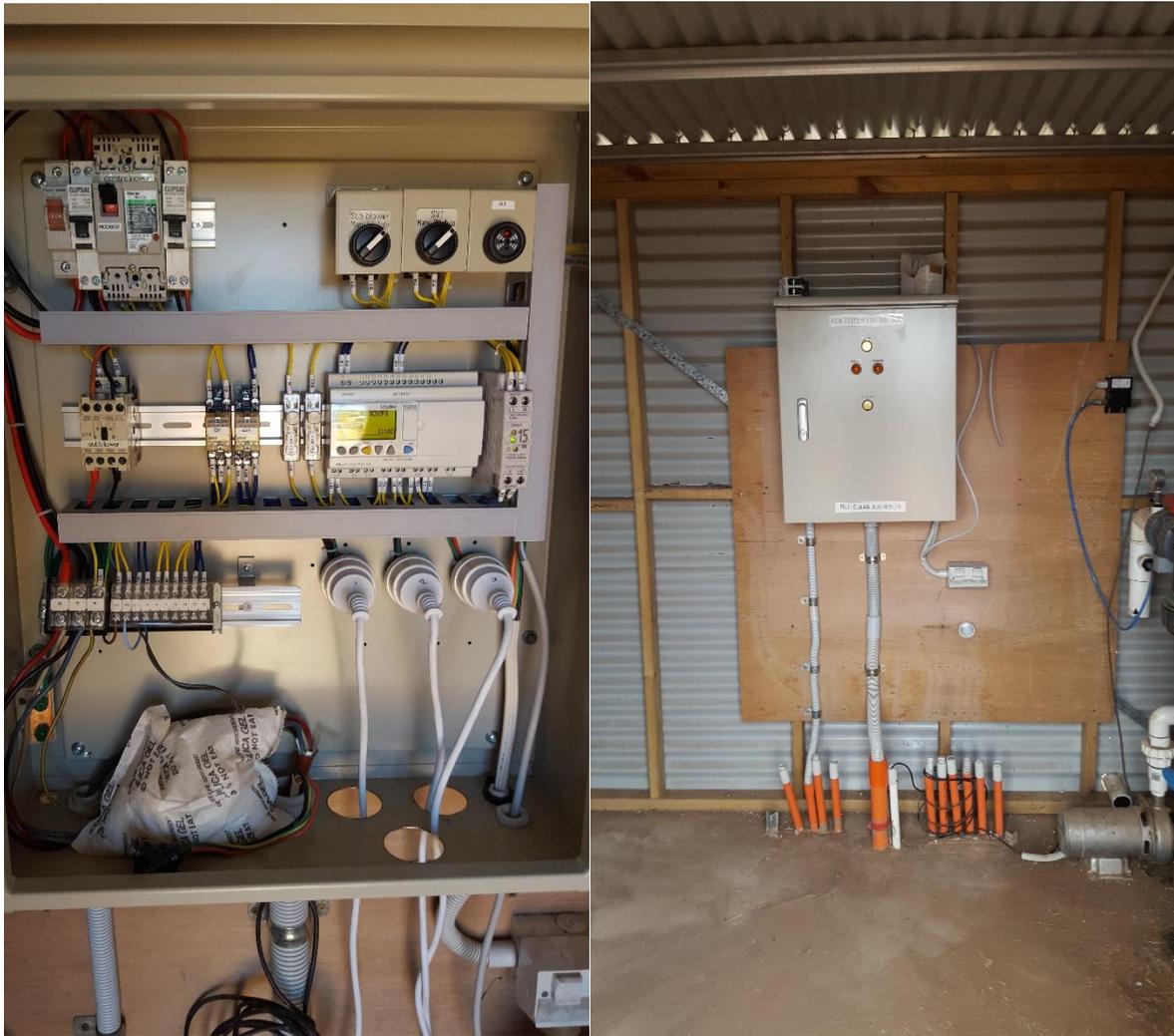
The system is tied down using galvanised straps secured to reo bar embedded in the Concrete slab.



The system is filled with water to working level and then backfilled using clean fill and compaction.



Once the backfill is at required level all inlet, outlet and blower pipework is installed.



The system control panel is installed and for this installation it was in a 3x3 Galvanised shed.



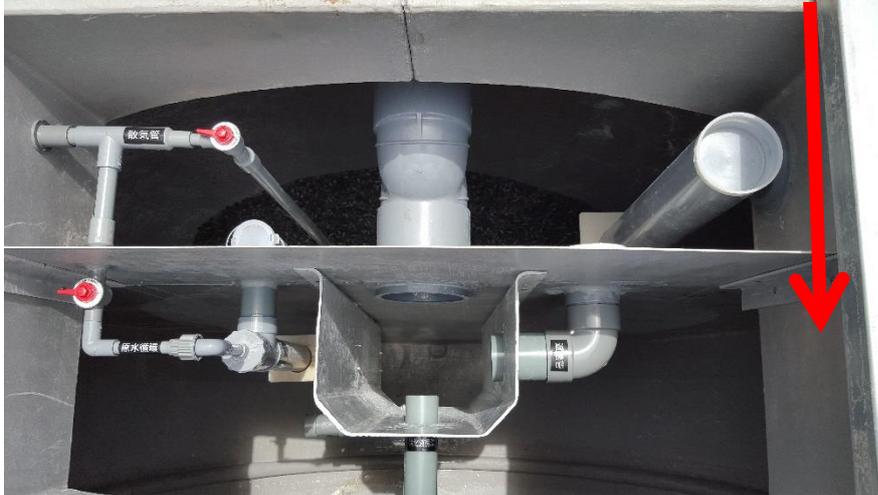
The blowers and blower pipework are installed underneath the control panel inside the shed.



Once all pipework and components have been installed the backfill around the system is completed and then the system is commissioned.

For the commissioning each chamber is inspected to ensure it is functioning correctly.

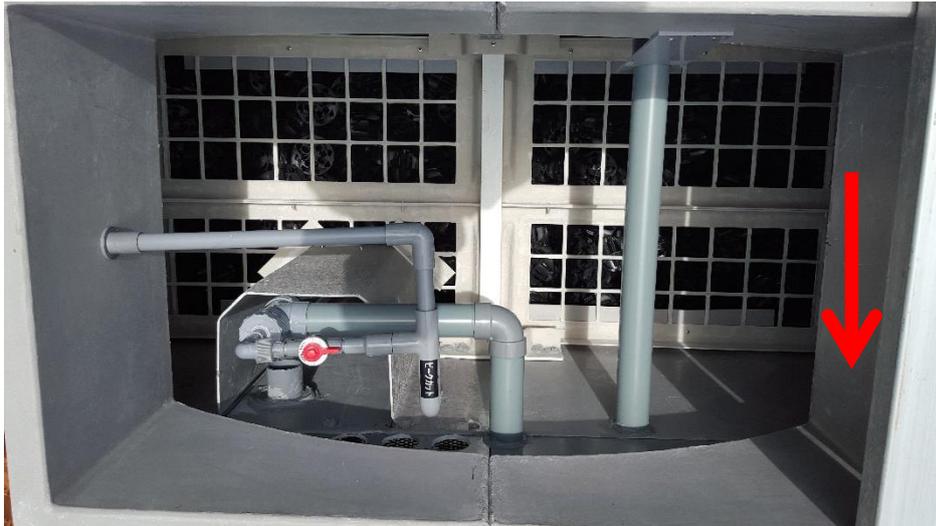
Flow direction



This is the first Fluidised media Chamber (= Forward Fluidized Media Chamber) where the influent from the 2<sup>nd</sup> sedimentation chamber (= Sedimentation Chamber) is recirculated through the aerated fluidised media and then returned back to the sedimentation chamber.



This is the sedimentation chamber where all of the influent from the facility is directed into through the system inlet. This chamber separates the solids and scum and the cleaner influent is recirculated through the first Fluidised media chamber and then transferred through to the 1<sup>st</sup> Anaerobic chamber which contains the suspended spherical-skeleton media bed.



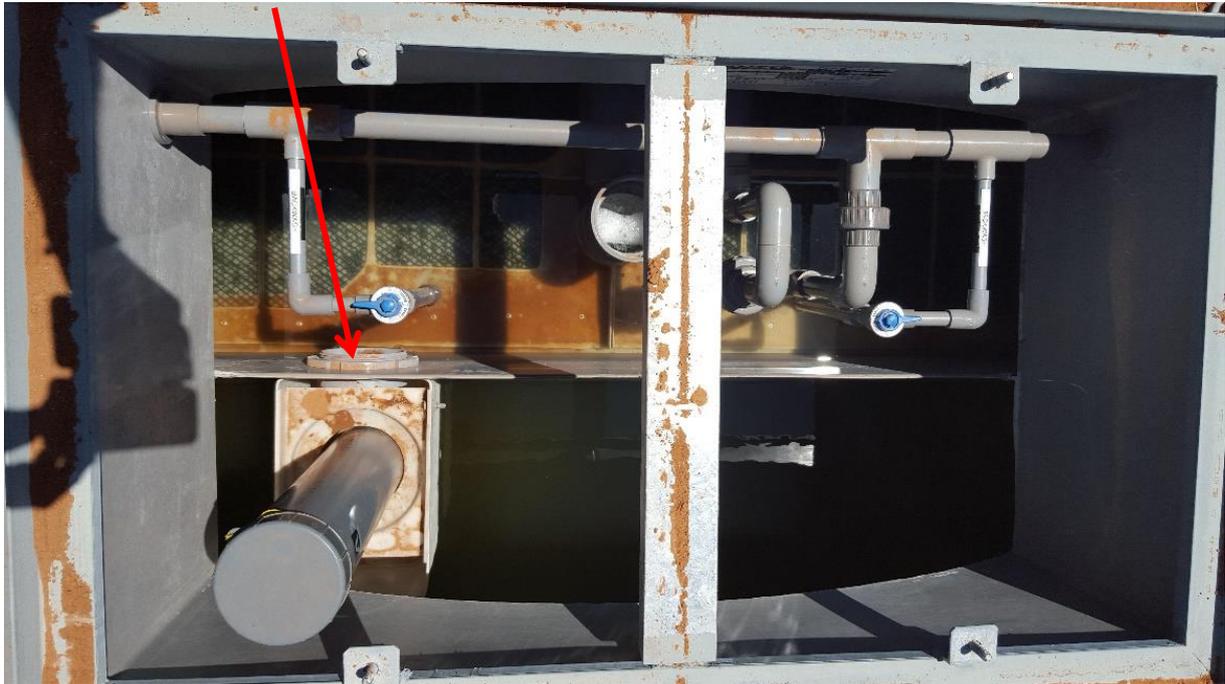
The water is transferred upwards through the first anaerobic bed and transferred over a partition a baffle and then downwards through the second anaerobic chamber media bed. This is designed to filter out solids and to denitrify the wastewater.



Nitrified Water Recirculation Valve (Adjusting the recirculation rate)

This is the 5<sup>th</sup> Fluidised media chamber and it contains the cylindrical foam media which is fluidised by aeration. Organic matter is decomposed and the ammonium nitrogen is oxidised by micro-organism/bacteria on the media surface. The treated water is then transferred to the Recirculation and filtration chamber

Treated water flows through to disinfection chamber via the chlorinator.



This is the recirculation and filtration chamber which captures suspended solids from the Fluidised media chamber and then returns it back to the Fluidised media chamber for further solids removal.

(SK) the treated water before passing through Recirculation and Filtration Chamber is recirculated through to Sedimentation Chamber. With the blue valve in Fluidized Media Chamber (see the previous picture) the recirculation rate can be adjusted (Nitrified Water Recirculation).

(SK) Recirculation and Filtration Chamber will be automatic-backwashed every midnight at 2am and return captured Suspended Solid to Sedimentation Chamber.

The treated effluent is then transferred through to the disinfection chamber where it is disinfected with chlorine and transferred to the irrigation tank.

The Fujiclean PCN Systems will provide a robust reliable system using tried tested and proven wastewater treatment processes ensuring minimal problems and system efficiency.