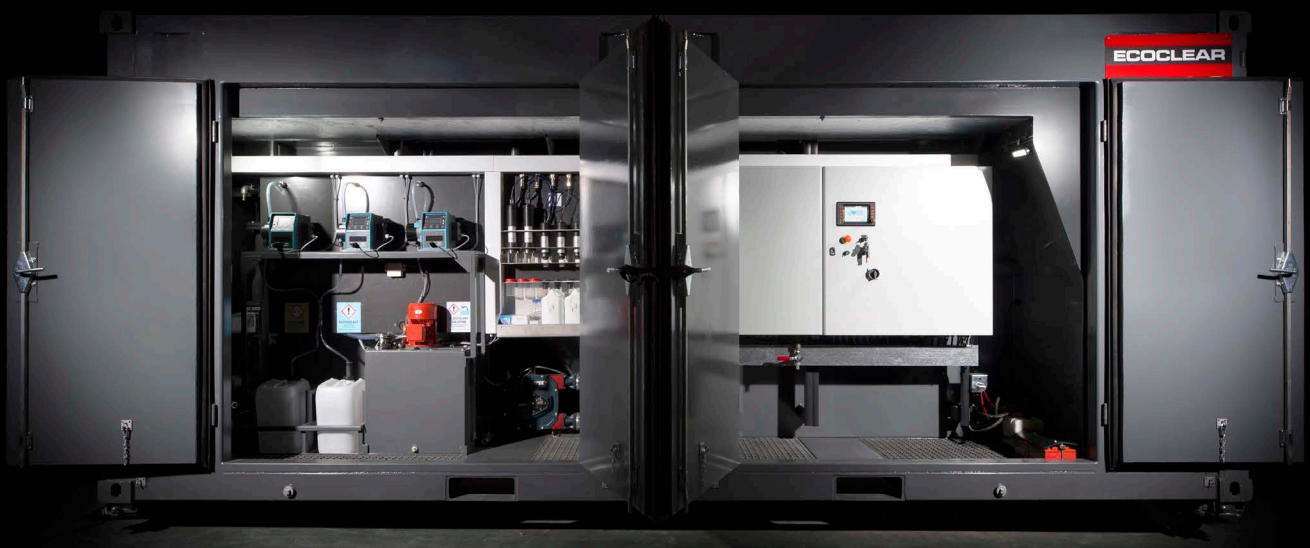
ECOCLEAR
Wastewater treatment system

Clean water – clear conscience



AQUAJET

ECOCLEAR 20 2.0
Water treatment system

Automated water treatment system

It's easy to see why concrete repair contractors are turning more and more to robotic hydrodemolition. The method provides fast, safe and efficient concrete removal. But, as governing bodies and project managers step up environmental regulations to protect communities and ecosystems, one important question remains — "What do you do with the wastewater?"

The Ecoclear water treatment system is a state-of-the-art solution dedicated for filtering hydrodemolition wastewater on a completely new level. Ecoclear enables the operator to safely discharge water back into the environment or recirculate it back to the robot – without the need of an extra water reservoir, without the use of filters of any kind – and without pollution. Perfect for your operation, amazing for the environment.

Green, lean, cleaning machine
In order to make this piece of water wonder work, the Ecoclear uses flocculation technology to remove the maximum amount of sludge from the water. With Ecoclear you can neutralize elevated alkaline pH levels down to pH 6-9 while you have full control of the turbidity levels down to 20-40 mg particles per liter. The treatment unit is operator friendly, allowing you to take care of all particle sizes and weights. The whole process is easily monitored online and with the RECO control system.

All in all, Ecoclear is unique on the water treatment market, and truly state of the art. Imagine being able to present your customers with a print-out showing the quantity and quality of the water discharged into the environment during a contract. Ecoclear makes that a reality.

How the Ecoclear works

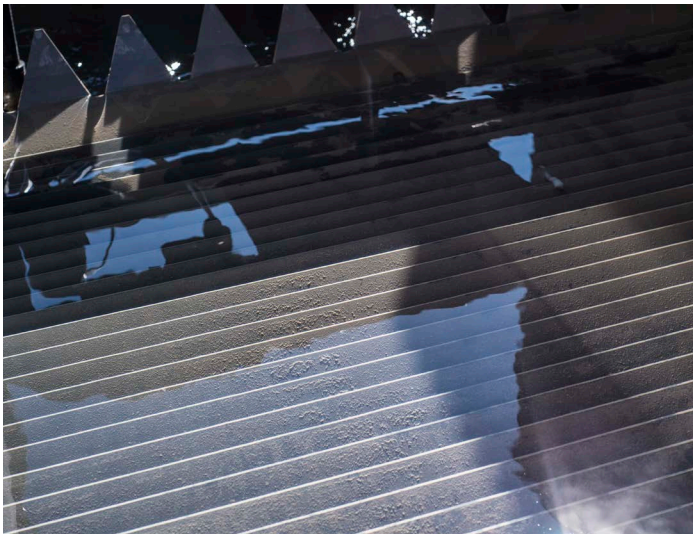
Aquajet's Ecoclear water treatment system solves the problem of what to do with water used in the hydrodemolition process. Treated water can be discharged into the environment or recirculated back to the robot, eliminating the need for a constant fresh water source or a third-party to collect and remove water.

One of the key differences that sets the Ecoclear apart from other OEM and advanced water treatment systems is the use of carbon dioxide, rather than mineral acid, to reduce pH levels. Handling any acid requires special training and PPE. There is also a risk of acidifying water if acid levels are not precisely calculated. CO2, on the other hand, makes it virtually impossible to acidify the water. This method doesn't leave any hazardous byproducts, either.

For bottom-line-conscious contractors, CO2 also has another advantage over other OEM systems. CO2 is four to eight times less expensive than commonly used acids for pH reduction.

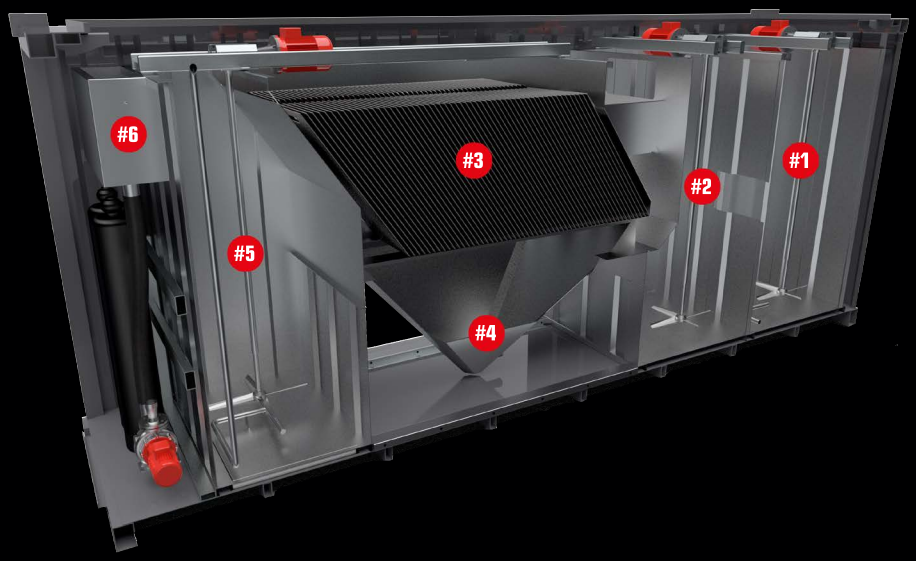
Clear Results
In the end, though, it's not only about what you can do, but what you can prove. Government agencies and project managers require documentation. That's why the Ecoclear provides detailed, real-time data through the RECO control system. This information can be shared with project stakeholders to provide insight to the properties of the discharged water, including pH levels and the amount of water that was treated.

Clear Choice
As hydrodemolition contractors look to remain competitive amid fluctuating environmental regulations, partnering with a cutting-edge manufacturer can provide a compact, cost-effective solution that increases sustainability — with the documentation to back it all up.



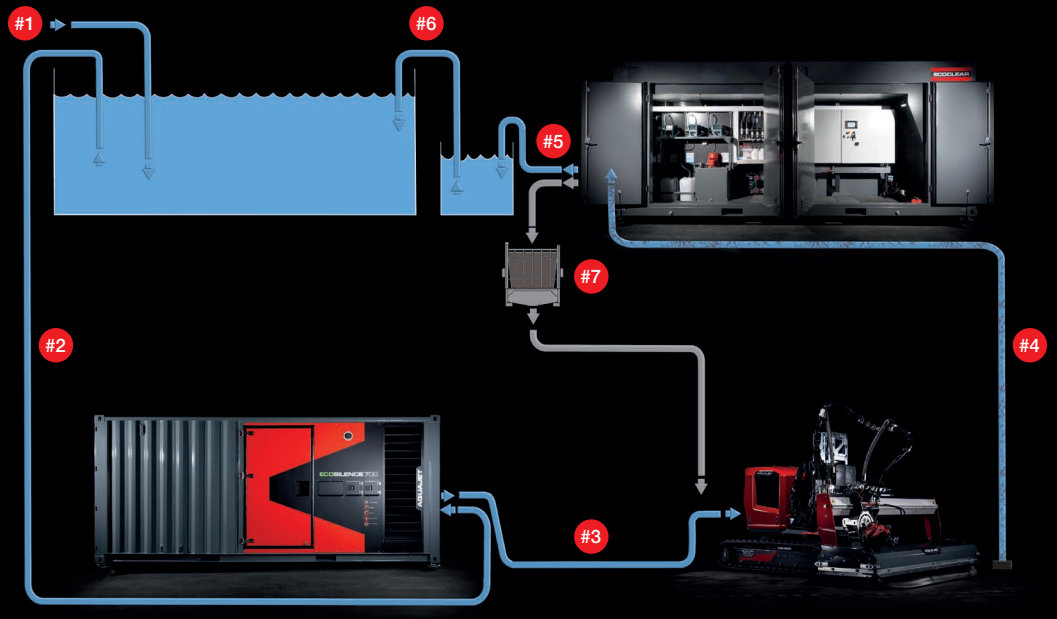
The Ecoclear process

The EcoClear goes to work, pumping collected water into an inlet chamber (#1), where a flocculating agent is automatically added to help clump the particles in the water. The water then flows into a second chamber (#2) that introduces carbon dioxide to neutralize the pH. In the next chamber (#3), the floc, or solid particles, settles into a storage hopper (#4) and is removed by the integrated pump. The water continues to another chamber (#5) for a second pH adjustment. A final monitoring tank (#6) confirms the water pH has returned to the desired set point before it's discharged.



Recirculation of water

The Hydrodemolition process starts with fresh water (#1) pumped into a tank. A drain pump in the tank transfers water (#2) to the Power Pack. From there, a high-pressure hose carries water to the Aqua Cutter robot (#3) that blasts away deteriorated concrete or other material. Dirty water is then collected in an embankment where another drain pump carries it to the EcoClear (#4). Once the water is treated and returned to a neutral pH level, it drains into a catch tank (#5) where it can be pumped back into the fresh-water tank (#6), where the process starts over. Sludge from the water treatment process is pumped out (#7) and can be collected or recirculated back with the wastewater.



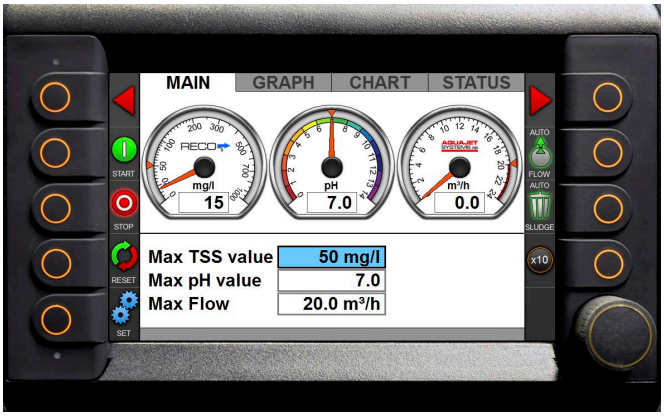
Reco 2.0 control system

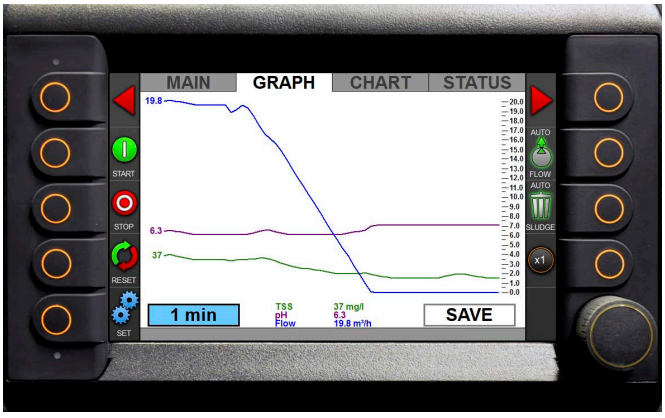
Aquajet's Reco control system handles all monitoring and control of the Ecoclear water treatment system. With just a few settings, it controls and monitors everything and presents it to the operator on a clear and simple display. Basically, you will not have to worry about water treatment, the Reco system will take care about it for you and clear the water day after day, week after week and tell you the result on the display.

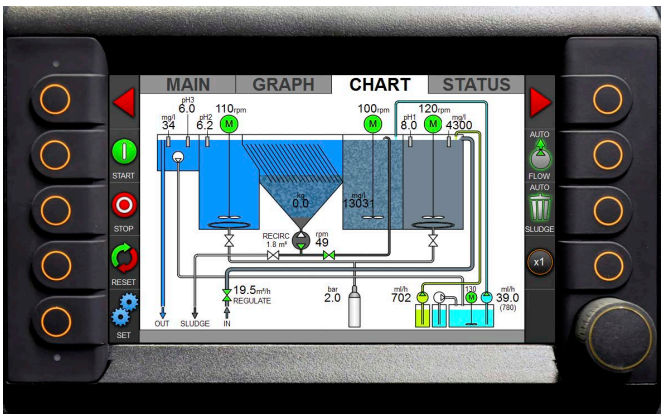
The Reco control system continuously monitors the pH levels and the turbidity levels of both the incoming and the outgoing water, making sure that the water is treated in the most optimal way and that the discharged water fulfills set levels.

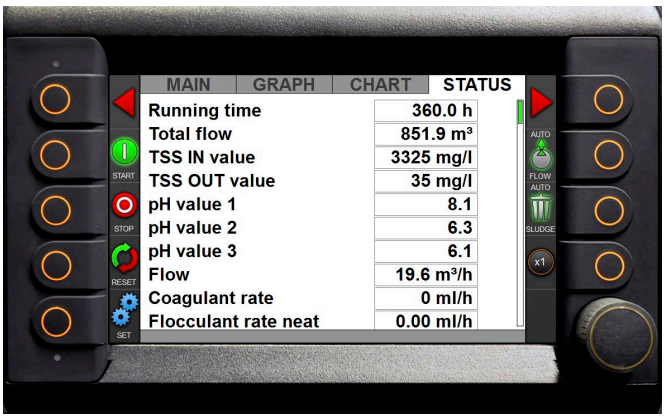
All historical data of the outgoing water is documented and easily forwarded to third parties.

The graphic layout of the display is well known from the Aqua Cutter robots, Ergo and the Power Packs, making it easy to learn and recognize. There are four different menus where each is one step deeper into the system. The Main menu displays the most important information, but if more information is needed you can use Graph, Chart and Status menus.



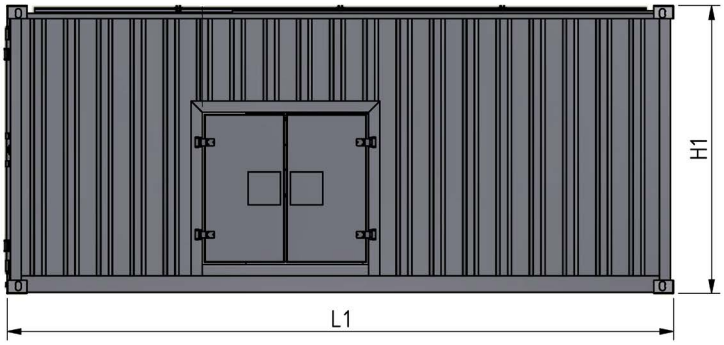






Facts

Capacity	20 m3/h (706 ft³/h)
pH outgoing water	6-9 pH
Turbidity outgoing water	20-40 mg/l
pH adjusters	Carbon dioxide (CO2)
Neat coagulation fluid	10-30 g/m3 (0,01-0,03 oz/ft³)
Neat flocculation fluid	1,5 -3,0 g/m3 (0,0015-0,003 oz/ft³)
Carbon Dioxide CO2	0,2-0,6 kg/m3 (0,2-0,6 oz/ft³)
Length (L1)	6,058 m (ISO 20')
Width (W1)	2,438 m (ISO 8')
Height (H1)	2,591 m (ISO 8,5')
Dry weight	6 ton (13 228 lbs)
Gross weight	18 ton (39 683 lbs)
Approx. dry weight	7500 kg (16 535 lbs)
Approx gross weight	18 000 kg (39 683 lbs)
Process tank volume	12 m3 (3 170 US gal)
Drive source	Electric 3-phase 15kW 400VAC 25A (Other on request)



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