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**Merry Christmas & Happy New Year
from the team at Environment Technology**

2018 has seen demand for AES Wastewater Treatment Systems dramatically increase following the publication of the OSET-NTP Trial 12 results. We look forward to working together in 2019 to bring this high performance, eco-friendly system to more New Zealanders, knowing they are getting a quality system that is maintenance-free and has a track record of functioning effectively for decades.

Holiday Hours

We will be closed for our Christmas/New Year break from 5pm Friday December 21st until Monday January 7th. Phones may be answered during the break, or leave a message and we'll respond. Emails will be checked.

New Website URL www.et.nz, Brochure, Videos and Online Training Course



Our website has moved to a domain that is easy to remember, www.et.nz and includes an expanded Resources section with editable pdf technical drawings for Designers. The old domain www.environmenttechnology.co.nz continues but et.nz is now our primary domain.

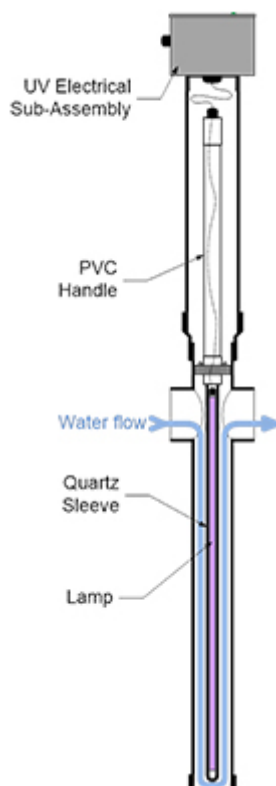
A new brochure is available. Check it out on et.nz or contact us if you'd like to receive one.

Our online training course has been improved as a tool not only to become certified, but for anyone who wishes to understand the AES system. You may wish to watch the videos and do the new course as a refresher. To do so, sign up on et.nz.

Salcor 3G UV Disinfection Unit

Environment Technology supplies this UV unit for wastewater systems where additional pathogen reduction is required. A unit was installed in the AES-38 system at OSET-NTP for Trial 13 where it ran for 6 months using only 1kw of power per day without needing servicing and achieved very safe levels of treatment (results below). Price: \$1720+gst ex depot.

A Salcor 3G UV unit is included [here](#) in the technical drawings for an AES lined recirculation bed.



How it Works

The Salcor 3G disinfection chamber is fixed directly to the treated effluent discharge pipe and is permanently installed below ground. The ultraviolet light source for disinfection is mounted in a sub-assembly which can be inserted or removed through the top of the riser pipe for periodic servicing. The light source is mounted in the centre of an anodized aluminum frame which divides the disinfection chamber in half. The disinfection subassembly causes the wastewater entering one side of the unit to flow vertically downward, make a 180 degree turn, and then flow vertically upward and out the other side of the unit. This gives the fluid proper exposure time and no short circuiting. The ultraviolet light source is surrounded by a clear fused quartz tube to control the lamp surface temperature.

When the disinfection chamber is filled with water, the ultraviolet light source can operate continuously, whether or not water is flowing. Continuous operation with a lamp surface temperature range of

between 40 and 49 degrees Celsius provides optimum ultraviolet light output and long lamp life.

The electrical subassembly is mounted in a junction box located on top of the 10cm riser pipe. The box contains fuses, alarm circuitry, UV lamp ballast, power cable connections, voltage surge protection, and electronic noise filters. The complete unit is about 1m high and the lamp is easily changed by lifting the lid on the junction box at ground level.

For more information, visit [our webpage on the Salcor Unit](#) and [download the Manual](#).

OSET-NTP Trial 13: Nitrogen Reduction and UV Disinfection

The AES system installed at the Rotorua Onsite Effluent Treatment, National Treatment Programme (OSET-NTP) testing facility in September 2016 for Trial 12 remained in Trial 13 (Nov 2017 - August 2018) with adaptations to reduce Total Nitrogen (TN) and Faecal Coliforms and E Coli levels. These adaptations were to recirculate treated effluent back through the carbon-rich and anoxic zone into the base of the septic tank to reduce nitrogen, and a Salcor 3G UV unit was included for the second half of this trial.

The OSET-NTP certificate is available [here](#) and more information on our [website](#).

OSET-NTP Trial 13 Results:

Indicator Parameters	Median	Std Dev	Rating	Rating System				
				A+	A	B	C	D
BOD (mg/L)	<2	0	A+	<5	<10	<20	<30	≥30
TSS (mg/L)	1	1.1	A+	<5	<10	<20	<30	≥30
Total Nitrogen (mg/L)	7.7	1.6	A	<5	<15	<25	<30	≥30
NH ₄ - Nitrogen (mg/L)	0	0	A+	<1	<5	<10	<20	≥20
Total phosphorus (mg/L)	3.5	0.4	B	<1	<2	<5	<7	≥7
E.coli (cfu/100mL) - with UV	2	16	A+	<10	<200	<10,000	<100,000	≥100,000
Energy (kWh/d) (mean) - with UV	1.98	0.09	B	0	<1	<2	<5	≥5

These results are for the AES-38 R/UV system tested in Trial 13 at OSET-NTP, Rotorua

Overall, the plant achieved total nitrification with no NH₄-N throughout, and low levels of TOXN, resulting in low Total Nitrogen of <12mg/L, and a mean of only 7.8mg/L.

Bacteria reduction was also good, with the AES-38 R plant effluent containing 1,900-18,000cfu/100mL faecal coliforms. After the Salcor gravity UV unit was switched on in Week 20, low E.coli results were achieved with a median of 2cfu/100mL and 80% <3cfu/100mL.

The plant's power usage was around 0.9kWh/day in the AES-38 R mode, and 2.0kWh/day in the AES-38 R/UV mode.

The results make it an ideal solution for catchments that require N<15mg/L such as Taupo and Rotorua Lakes as well as other sensitive receiving environments.

Our new depot at Morrinsville in the Central North Island means we can supply AES components north of Cook Strait for an installation faster and more economically than before.

For more information about AES wastewater treatment systems visit the [resources page on our website](#), [watch the introductory videos](#), or call us on 0800 927 834 (0800 waste H2O).



You're receiving this newsletter because you work in a field associated with wastewater systems or are on our mailing list. If you do not wish to receive this in the future please [unsubscribe](#).

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