



# NEW VIROTEC TECHNOLOGY REVOLUTIONISES SEWAGE TREATMENT



*“The introduction of our new technology could not be more timely – it comes as burgeoning human numbers put intense pressure on sewage treatment facilities. One benefit of Virotec’s ViroSewage™ Technology is that it is easily and economically integrated into existing sewage treatment facilities...”*



*Various ViroSewage™ Technology plants, all of which have been integrated into existing infrastructure.*

# BREAKTHROUGH VIROSEWAGE™ TECHNOLOGY SETS NEW GLOBAL STANDARDS FOR SEWAGE TREATMENT



**BRIAN SHEERAN**  
*Executive Chairman*

“Increasing urbanisation and industrialisation have resulted in a dramatic increase in the volume of wastewater produced around the world. It has also created significant challenges.

Both sewage sludge disposal and odour pollution are worldwide problems. The capacities of sewage treatment plants are constantly being stretched – and regulators are now striving to protect the environment with more stringent treatment requirements, creating a demand for new technologies which promote better quality treatment at a lower cost.

Virotec set out to see if the company could produce cleaner waste water and superior biosolids, and deliver significant cost savings – and we exceeded all our expectations. New ViroSewage™ Technology is a process that eliminates odour, allows existing plants to increase capacity, removes up to 99.9% of phosphorus, lowers BOD, suspended solids and turbidity.

The end result is water quality to effluent reuse standards and environmentally safe biosolids that can be easily recycled.

With all these benefits, ViroSewage™ Technology unquestionably sets new global standards for sewage treatment...”





*ViroSewage™ Technology is easily integrated into existing treatment facilities – it involves a simple engineering retro-fit and the application of new ViroSewage™ reagents. Furthermore, it delivers cost savings of up to 20% on traditional treatment systems.*



## >>> CLEAN, COST EFFECTIVE SEWAGE TREATMENT

*ViroSewage™ Technology can be applied to Trickle Filter, Biological Nutrient Removal and Activated Sludge Facilities.*

### THE BENEFITS OF VIROSEWAGE™ TECHNOLOGY

Based on our operational experience, treatment plants will benefit from the following:

- > **Odour Elimination:** ViroSewage™ Technology reduces the biological production of organic and inorganic volatile sulphur compounds that cause odour problems. New sewage plants can even be built near existing populations substantially reducing capital outlays for pipes over long distances.
- > **Increased Capacity:** ViroSewage™ Technology eliminates the need for costly flocculants as it stimulates faster particle-fluid separation, resulting in up to a 50% reduction in residence time in the final clarifier and potentially a dramatic increase in capacity.
- > **Phosphorous Removal:** ViroSewage™ Technology removes over 99% of phosphorous from all effluent streams. This also results in considerable improvements in the efficiency and ongoing management of any BNR process allowing it to concentrate exclusively on the removal of nitrogen.
- > **Heavy Metal Immobilisation:** ViroSewage™ Technology extracts toxic metal ions from effluent and also effectively immobilises any heavy metals in the sludge or biosolids ensuring that they cannot leach into the environment and are no longer bioavailable.
- > **Improved Water Quality:** ViroSewage™ Technology substantially improves water quality in regards to BOD, suspended solids, turbidity, and colour whilst maintaining a stable pH.

Parameter	Raw Sewage	After Conventional Treatment	After ViroSewage™ Technology Treatment
Hydraulic Capacity	2000 EP	2000 EP	3000 EP
Hydraulic Throughput	400 kL/day	400 kL/day	600 kL/day
Total Suspended Solids	365 mg/L	20 mg/L	3.3 mg/L
Biochemical Oxygen Demand	411 mg/L	30 mg/L	10.3 mg/L
Total Phosphorus	53 mg/L	14 mg/L	0.05 mg/L
E-Coli	26,000,000 cfu	10,000 cfu	7,000 cfu
Total Nitrogen	66.3 mg/L	13 mg/L	4.0 mg/L
Total Metals	0.6 mg/L	0.6 mg/L	0.2 mg/L
Colour	125 PCU	35 PCU	10 PCU
Turbidity	276 NTU	16 NTU	1.2 NTU
Clarity	20 mm	200 mm	2,200 mm
pH	8.0 - 9.7	6.8 - 7.3	7.0 - 7.2
Odour Level	Extremely High	High	Extremely Low
Bio-solids quality for composting	-	Poor	Very Good



*A ViroSewage™ Technology plant in operation.*



*On discharge, the water treated has over 99% of any phosphorous removed.*



*The ViroSewage™ Technology philosophy behind innovative sewage treatment is that sewage is a resource with nutrients that should be returned to the land and not discharged to waterways. ViroSewage™ Technology is at the forefront of effluent and biosolids reuse.*



## >>> PRODUCING A VALUABLE RESOURCE

*ViroSewage™ Technology delivers a first class soil conditioner as an end product ideal for gardens, lawns, parks and golf courses.*

### BIOSOLIDS DISPOSAL IS A GROWING PROBLEM

Since 1972, communities in the United States of America have doubled the amount of sewage sludge they produce annually. In the EU, sludge is predicted to increase from 6.6 million tonnes in 1992 to at least 9.4 million tonnes by 2005.

Many local authorities are searching for the best way to produce a value-added product from biosolids that meets stringent environmental standards, is saleable in multiple markets, and optimises its reuse.

The EU expects the proportion of sludge used for agriculture and soil conditioning to have increased 73% by 2005. In the USA, by-products from composted biosolids are used on some of the most high-profile lawns and gardens in the country, including the White House.

When the ViroSewage™ Technology system is applied, sewage treatment facilities produce biosolids that result in more efficient composting and superior end products.

### VIROSEWAGE™ TECHNOLOGY BIOSOLIDS ARE A VALUABLE RESOURCE

> **Faster, Cleaner Composting:** Treated ViroSewage™ Technology biosolids generally compost at a temperature of 55°C to 65°C causing the temperature to rise as high as 85°C, eliminating up to 100% of pathogens generally within 24 hours. This results in a 65% reduction in time for composting.

> **Cheaper Composting:** The composting of biosolids requires the addition of a bulking agent such as green mulch, wood chips, shredded bark or sawdust. ViroSewage™ Technology treated biosolids require 40% less bulking agent and this contributes to a large reduction in the size of the composting facility.

> **Phosphate Enriched Compost:** ViroSewage™ Technology treated biosolids are phosphate enriched and unlike normal biosolids they can be used to improve soils whose pH is less than 5.5.

> **Odour Free Compost:** All facilities handling biosolids produce odours and frequently composting facilities are forced to operate at reduced capacity due to objectionable odour issues. ViroSewage™ Technology treated biosolids have no odour thereby eliminating odour at composting facilities.

> **Environmentally Safe Compost:** Composting facilities generally require drainage systems and a “pond” to catch runoff to eliminate non-point source pollution from noxious leachate. ViroSewage™ Technology treated biosolids minimise leachate runoff.

*This test program demonstrated that ViroSewage™ Technology treated biosolids result in superior composting.*



[www.virotec.com](http://www.virotec.com)

For further information about ViroSewage™ Technology please contact:

Virotec International plc  
PO Box 188, Sanctuary Cove, Queensland 4212, Australia  
Telephone: 07 5530 8014 Facsimile: 07 5530 8052  
Email: [mail@virotec.com](mailto:mail@virotec.com) [www.virotec.com](http://www.virotec.com)

