



Brancote STW—Severn Trent Water ODOUR CONTROL SYSTEM



What was the problem?

Brancote Sewage Treatment Works was operating as a strategic sludge centre with one digester. However, after a sludge strategy alignment process assessment was carried out by Severn Trent Water this resulted in the re-classification of the Brancote site to a “rural works” changing its operations to a dewatering facility treating indigenous sludges and imports from the surrounding area.



How did OSIL approach the challenge?

OSIL had not previously had a design and build contract with Severn Trent Water, so the challenge was for us to be involved with the initial design concept to improve our prospect of being invited to tender. This was further supported with focussed and targeted marketing efforts. In addition to this OSIL have successfully completed various projects with the main contractor NMCN.

Once we received the tender enquiry documents for the odour control plant, we used the flow and technical data to design a suitable odour control package.

We submitted a formal offer based on this design, this was accepted and we were awarded the sub-contract order.



Basis of the design

Airflow through the LavaRok® Biofilter & CuCarb® Carbon Filter = 2,048m³/hr.



The following table summarises the flows and odour concentrations used for the sizing of the OCU.

	Air Changes Per hour	Actual Volume m ³	Extracted Volume Nm ³ /hr	Estimated H ₂ S concentration ppm	
				Average	Peak
Sludge Blending/Buffer Tank	1	600	600	30	250
Picket Fence Thickener	1	248	248	30	100
Centrate Pumping Station	10	4	40	30	250
Centrate Buffer/ Holding Tank	1	400	250	30	250
Centrifuge 1	1		110	30	250
Centrifuge 2	1		110	30	250
Imported Sludge Well	1	70	90	50	200
Strain Press (x2)	No information provided in table				
Waste Skip	Covered but not connected to OCU				
Cake Silo	6	100	600	30	250
Total			2,048		



The weighted averages for H₂S are: 30.896ppm average and 229.233 ppm maximum.

Performance Requirements

The following performance requirements of the new Odour Control System is ≤ 1,000 ou_E/m³ at the outlet stack.



Delivering the Solution

The overall site installation plan including civils, electrical works and other mechanical plant had various delays, which resulted in our site start date being delayed. However, we worked closely with the main contractor (NMCN) and agreed a revised site plan and successfully installed our odour control plant in time to meet the required standards.

One challenging aspect of the installation was a field ducting connection on a tank of 18 metres high which was further complicated by other installed plant at low level making access difficult. This difficult tank connection was achieved with the use of an articulated boom and an agreed specific site lifting plan produced locally on site by the OSIL site team.

We also successfully introduced for the first time a new type of field ducting support post arrangement using "FRAMO" equipment from a new supplier. The ducting access road bridge also used this "FRAMO" equipment making a lattice type structure.



Before Image:

Site Under Construction



After Images:

Odour Control plant on slab



Field duct bridge support



How did the Client win?

Our site team consisted of no more than 3 Engineers to install all the slab odour control plant and an extensive run of field ductwork including 10 equipment connections.

Severn Trent Water now have a facility capable of operating as planned, including our odour system which contains and processes the gases preventing odours escaping to the local area.

The newly installed Biofilter systems are all DW154 compliant and the LavaRok® media installed within the systems are guaranteed for a minimum of 25 years when maintained to OSIL's operating standards.





Testimonial

“It’s really satisfying to be part of an experienced and dedicated team at OSIL and successfully deliver a new odour control system that has a long-life expectancy with low maintenance requirements to ensure the asset operates as designed.”

The new odour control system is guaranteed to perform and achieve 1,000ou/m³ at the stack, meeting Severn Trent Water specification, which helps to build trust and business relationships for potential other future works. This also improves our reputation within the Water Industry which will increase our opportunities for similar future projects.

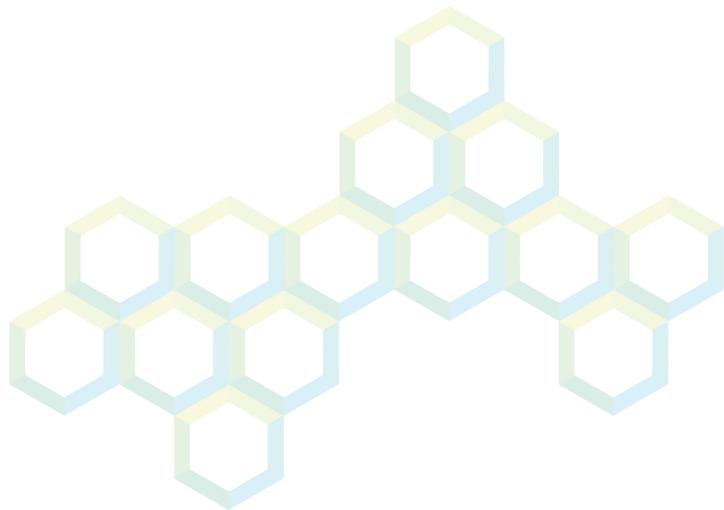


Downloadable content

[OSIL Brochure](#)

[Service & Maintenance Brochure](#)

[LavaRok Media Data Sheet](#)



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