



enva

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TO ENQUIRE ABOUT
OUR PRODUCTS
& SERVICES



Nationwide Wastewater Treatment Process Design & Optimisation Services

Process, Compliance & Aquatic Toxicity Testing Services from
our INAB accredited Reg. Scope 185T Laboratory in Co. Cork

Water Treatment Services



Our laboratory is **accredited by INAB to ISO 17025** under Reg. Scope 185T, ensuring **accuracy, reliability, and confidence** in every result.



INAB accredited Reg. Scope 185T Laboratory in Co. Cork

At our dedicated wastewater focused laboratory in Ringaskiddy, Cork, Enva provides comprehensive analytical services covering both process and compliance testing for industrial and municipal wastewater.

Our expertise includes:

- > Process optimisation for wastewater treatment plants (WWTPs)
- > Sequencing Batch Reactor (SBR) cycle optimisation
- > Chemical addition optimisation
- > Biological process optimisation
- > Sludge dewatering and management optimisation
- > Nutrient removal optimisation
- > Recalcitrant COD removal
- > API (Active Pharmaceutical Ingredient) & Micropollutant removal
- > Odour identification and mitigation
- > Groundwater remediation
- > Construction site dewatering
- > PFAS removal
- > Water recovery solutions.

Wastewater Treatment Process Design and Optimisation



**Industry leading
biological and
physicochemical
wastewater treatment
solutions.**



With extensive experience in all aspects of wastewater treatment, Enva collaborates closely with customers to understand their challenges, identify the root causes of performance issues, and provide tailored chemical and biological solutions that help their plants operate more efficiently.

Our team assesses existing operations and advises on:

- > Opportunities to optimise current treatment infrastructure
- > Designing and developing treatment processes and monitoring programmes to meet customer KPIs.

A Collaborative Approach

We begin by defining the issue and necessary deliverables, agreeing on the scope of the feasibility assessment, project outputs, timelines, and a schedule of progress updates. Feasibility assessments are then carried out, reporting laboratory-validated optimisation results.

Throughout each stage of the test work process, we share data, refine approaches, and maintain open communication. This partnership-driven model, combined with our team's troubleshooting ability, ensures solutions are continually adapted and optimised to meet each customer's specific requirements.

Process Optimisation



Continuous investment
in **advanced analytical**
tools and **upgraded**
laboratory facilities.

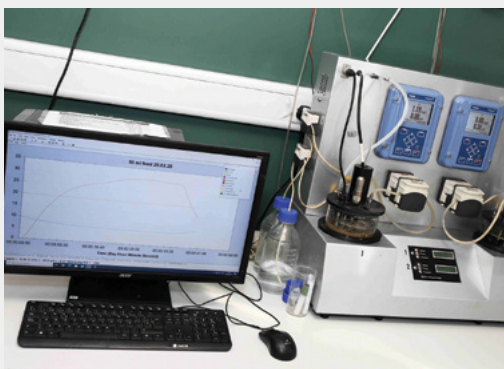
Enva offers a full range of analytical services, including:

- > A wide range of accredited compliance-related parameters
- > Toxicity assessment of trade effluent for defined trophic-level species
- > Measurement of kinetic parameters of activated sludge to support WWTP design
- > Respirometry assessments to determine inhibition impacts on biological wastewater treatment
- > RNA identification of bacterial populations, including heterotrophic and autotrophic (nitrifying) species
- > Microscopic examination and Gram staining
- > Biological 10-litre pilot plant reactors with automated control of temperature, dissolved oxygen, and feed for extended aeration trials
- > Performance assessment of adsorption media such as Zeolites, Granular Activated Carbon (GAC) and Ion Exchange (IX) media
- > Jar testing to determine the optimum coagulation and flocculation conditions for sludge settlement and dewatering
- > Jar testing for optimisation of chemical dosing in potable water
- > Selection of antifoam products suitable for applications including distillation, anaerobic digestion, Nocardia foaming, and detergent-related foaming
- > Odour assessment, including the identification, reduction, and elimination of hydrogen sulphide and mercaptans.

Respirometry Assessment



A **valuable tool** for assessing whether trade effluent is appropriate as a feedstock for biological treatment processes.



Respirometry assessment involves measuring and interpreting the oxygen consumption of bacteria within activated sludge. This assessment is a valuable tool for assessing whether trade effluent is suitable as a feedstock for biological treatment processes. Enva utilises respirometry assessment techniques to evaluate heterotrophic (COD/BOD), autotrophic (nitrifying bacteria), and overall bacterial performance in activated sludge wastewater treatment systems.

Using this method, Enva can establish:

- > EC50 and toxic units of process wastewater
- > The inhibition potential and threshold in a wastewater matrix
- > COD fractionation, outlining the proportions of readily biodegradable, slowly biodegradable, and non-biodegradable components within the water matrix.

Insights generated from respirometry assessments inform the operator of the volume of process wastewater that can be safely introduced into a biological activated sludge system without negatively impacting bacterial performance which could lead to a breach of compliance.

This assessment can be used in conjunction with other analytical tools to evaluate the overall suitability of sludge treatment processes.

Aquatic Toxicity Testing



Toxicity assessments deliver vital information regarding the potential harmful impacts of wastewater, chemicals, and other substances on organisms and the environment. They assist in risk identification, **ensure regulatory compliance**, and **inform suitable treatment choices**.

Enva provides both marine and freshwater toxicity testing across a range of trophic levels, including bacteria, algae, invertebrates and vertebrates. Enva also offers the **Rototoxkit**, a specialised tool used specifically for activated sludge assessments.

Applications include:

- > Effluent compliance testing required for IPPC licences, waste licences and Local Authority licences
- > Testing individual process effluent streams within industrial operations to identify the root cause of issues in biological activated sludge treatment plants
- > Chemical toxicity testing required for REACH compliant Safety Data Sheets (SDS)
- > Hazardous waste classification
- > Supporting the identification of the most effective treatment options
- > Compliance testing for specific trophic level species as required under IPPC licence conditions.

Trophic Level	Receiving Water	Name
Bacteria	All	Vibrio Fischeri
Crustacean or Invertebrate	Fresh Water	Daphnia Magna
Crustacean or Invertebrate	Salt Water	Brachionus Plicatilis
Algae	Fresh Water	Pseudokirchneriella Subcapitata
Algae	Salt water	Skeletonema Costatum
Algae	Salt Water	Phaeodactylum Tricornutum
Fish	All	Danio Rerio
Duckweed	Wastewater	Lemna Minor

Analytical Services



We take the time to **understand data trends**, **helping our customers** spot possible underlying issues or new compliance risks early on.



Our approach is more than just sharing numbers; we take the time to understand data trends, helping our customers identify possible underlying issues or emerging compliance risks. Applying this approach, the operator can make well informed, proactive decisions with confidence.

We recognise that fast, reliable reporting is crucial in operational environments. To assist with this, we provide early morning sample collection, enabling same-day reporting for critical analytical parameters when necessary. When treatment performance issues occur, our team examines available data to identify root causes and offers clear, actionable recommendations to address them.

We collaborate closely with clients to optimise existing treatment processes or adopt the best available technology (BAT) solutions to comply with tightening regulatory requirements and control rising trade effluent discharge costs.

Our business



42 facilities



2000 employees



£400m turnover

For further information please contact

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