

# FUGRO

## OIL SPILL FORENSIC SERVICES

**Fugro is regarded as one of the market leaders in oil spill forensic services. We offer impartial, specialist support to a wide range of clients, including members of the oil and gas industry, shipping agents and regulatory bodies.**

### **OIL SPILL IDENTIFICATION**

Oil released into the natural environment poses widespread risks to wildlife, public health and the oil and gas industry's reputation. Quick and unequivocal identification of the source of a spill is vital in preventing further release, minimising environmental damage and settling questions of legal liability. Our chemistry laboratory provides fast and accurate information to aid source location. We also review external oil identification reports and offer impartial, expert interpretation of the data generated.

### **INSTRUMENTAL ANALYSIS**

We have extensive experience in oil spill forensics and helped develop the CEN (European Committee for Standardisation) method: CEN/TR 15522-2. This is a modern, widely accepted spill versus source assessment that uses a two-stage chromatographic analysis process:

**Level 1** - Gas chromatography with flame ionisation detection (GC-FID) – this is used to establish an overall profile of the oil type and identify any significant differences or weathering effect

**Level 2** - Gas chromatography with mass spectrometry (GC-MS) – this is operated in selected ion monitoring (SIM) mode to reveal the distribution of key diagnostic and weathering-sensitive compounds



*Oil samples awaiting analysis.*

## DATA INTERPRETATION

Instrumental analysis provides information about the chemical composition of the oil – in particular, aliphatic, aromatic and biomarker compounds. To determine the extent of similarity between the composition of the oil spill and the suspected source samples, the data is assessed visually by skilled analysts and statistically by means of diagnostic ratios and the evaluation of critical differences.

This approach is a widely accepted practice and links the methodologies of CEN/TR 15522-2 with Nordtest (NT TR 498) and ASTM D5739-06.

We also use the computerised oil spill identification (COSI) system, containing the chemical composition data from thousands of oil samples, for fast, reliable comparisons.

## OIL SPILL KITS

Oil spill forensic analysis is only as reliable as the quality of the sample collected, so a robust sampling procedure is essential for confidently identifying the source of an oil spill.

We prepare and ship field-ready oil spill sampling kits that are designed to simplify the collection of high-quality samples.

After receiving the samples for analysis and interpretation, we can replenish the client's kit.

## BONN-OSINET NETWORK

Fugro is an active member of Bonn-OSINet. This is a technical working group that was set up to promote cooperation between laboratories operating under the umbrella of the Bonn Agreement. As part of this network, we coordinated and prepared test materials for the group's oil spill inter-calibration studies.



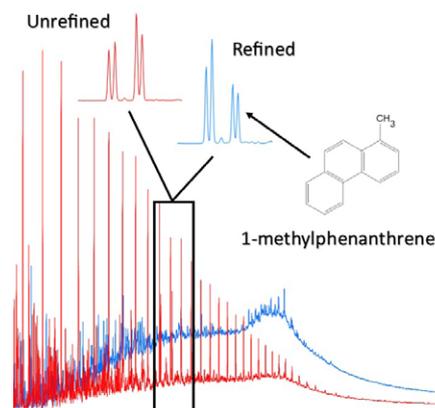
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## QUALITY ASSURANCE

Fugro has a fully integrated quality, health, safety, security and environmental management system certified to the international standards ISO 9001, ISO 14001 and OHSAS 18001. As all our in-house methods are documented and underpin our integrated management system, clients can be confident that the data we produce is accurate, consistent and meaningful. The UK's national accreditation body (UKAS) for testing, inspection and calibration has certified our Edinburgh chemistry laboratory to the international standard ISO/IEC 17025:2005. The laboratory consistently demonstrates good performance in external proficiency schemes, including Aquacheck, CONTEST and QUASIMEME. For details of the laboratory's scope of accreditation visit [www.ukas.com](http://www.ukas.com).



Modern, class-leading instrumentation.



Our skilled analysts assess data visually and statistically.