Dr Sheila Marshman

Qualifications	PhD Chemistry, Royal Holloway, University of London Thesis: Investigation of Sediment Formation in Modern Fuel and Lubricant Systems MSc Analytical Chemistry, CNAA, Kingston Polytechnic BSc (Hons) Applied Chemistry, CNAA, Kingston Polytechnic Chartered Chemist
Afflilations	Chartered Chemist and Fellow of the Royal Society of Chemistry
Nationality	British
Contact	cwa@cwa.uk.com http://www.cwa.international +44 (0) 20 7242 8444

Current Position at CWA

Principal Chemist External Consultant with CWA Oil & Chemical Department. Highly-experienced petroleum chemist; extensive experience of oil contamination incidents and quality disputes.

Provides expert technical advice on crude oil, petroleum products, petrochemicals, allied products including edible oils and fine chemicals. Provides technical advice on analysis and undertakes specialist investigative analysis.

Specific Expertise and Experience

- Over 45 years' experience in fuels and lubricants analysis, testing and research.
- Experience over 40 years of bulk storage tank inspections on board both commercial and Naval vessels and shore installations.
- Analytical chemistry expertise including vegetable oils, fire debris, petroleum product and petrochemical analysis.

Summary of Employment

2014-present **SMS Analytical Ltd**

Technical Director

Undertakes investigative chemical analysis using GC-MS, HPLC, FTIR and other techniques.

2004- present

External Consultant with CWA Oil & Chemical Department

2002-2003 **Intertek Testing Services**

Senior Technical Consultant – Fuels and Lubricants

Provided high level consultancy and technical support to customers in a wide range of industries including marine engine fuel and lubricant analysis and consultancy, biofuels processing and analysis, process plant problem solving.

Designed and ran training courses on fuels and lubricants analysis both as internal training and for third party clients.

Reviewed, audited and improved methodology of standard methods used in laboratories, rewrote procedures and undertook problem solving and staff training.

1997-2002 **QinetiQ Ltd**

Technical Consultant (Chemistry)

- Technical Leader Special Products providing technical support to the MOD and to non-MOD customers on a wide range of products, including engine coolants, aircraft and runway de-icing materials, turbine engine cleaning fluids, detergents, solvents and general chemicals.

- Technical Leader/technical consultant for teams researching middle distillate fuel chemistry. Tasks included further work on the chemistry of middle distillate storage stability and also investigation of liquid/vapour composition of fuels at low temperatures.

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United Kingdom

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Singapore 068914

- Technical Leader of teams investigating lubricant chemistry. Projects included analysis of thermal breakdown products of aviation lubricants, assessment of the impact of turbine lubricants on aircraft cabin air quality, investigation of causes of sudden oil filter blockage in aviation lubricants, and developing an analysis programme to fully characterise automotive lubricants. Ship attendances to measure engine emissions and fuel storage.

- Planned, costed and co-coordinated work programmes, developed or adapted equipment to meet experimental requirements, interpreted and reported results.

1994-1997 Ministry of Defence

Project Manager and Technical Head of Special Products Section giving technical support on a wide range of speciality and general chemicals, responsible for costing planning and delivering work programmes. Developed new tests to evaluate runway de-icer performance and to assess the performance of alternative solvents.

1990-1994 Ministry of Defence

Technical leader for research into chemistry leading to the instability of middle distillate fuels. Duties included technical supervision of 2 Extra Mural Research contracts and international technical liaison with chemists from Australia, Canada and USA; also undertaking defect analysis on fuels.

Development of analytical methods and equipment for monitoring required chemical species; techniques include electrochemical methods, chromatography and spectroscopic methods

2 patents filed: Development of prototype test kit to measure storage stability. Assessment of novel additives to improve storage stability.

1976-1990 Ministry of Defence

Marine Oils Laboratory

Laboratory manager for analytical instrumentation including spectrometric and chromatographic techniques. Analysis of fuels, lubricants and pollution samples, using analytical techniques as required. Studies into chemistry and tribology fo marine engine monitoring.

Inspection of bulk fuel and lubricant storage on board both commercial and Naval ships and at shore installations.

Research into chemistry leading to the instability of middle distillate fuels.

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1975-1976 **Eli Lilly plc**

Graduate Chemist

Undertook large scale synthesis of novel compounds for pharmaceutical testing and intermediates. TLC, HPLC and GC analysis of these compounds.

1971-1975 **BP Research, Sunbury on Thames Research Centre**

Technical Apprentice

'Thin' sandwich course; 6-month placements in various petroleum based projects including chemical and physical testing of a variety of products and some chemical engineering.

Publications

Marshman, SJ., Proceedings of 3rd International Conference on Stability and Handling of Liquid Fuels, 1988, 581-595
Marshman, SJ., David, P., Preprints Am Chem Soc Divn Fuel Chem, 1990, 35 (4), 1108-1116
Marshman, SJ., Fuel, 1990, 69, 1558-1560
Marshman, SJ., Proceedings of 4th International Conference on Stability and Handling of Liquid Fuels, 1991, 489-502
Marshman, SJ., Pedley, JF Proceedings of 4th International Conference on Stability and Handling of Liquid Fuels, 1991, 331-339
Marshman, SJ., Proceedings of 4th International Conference on Stability and Handling of Liquid Fuels, 1991, 594-604
Marshman, SJ., Fuel, 1991, 70, 967-970
Marshman, SJ., Proceedings of 5th International Conference on Stability and Handling of Liquid Fuels, 1994, 377-390
Marshman, SJ., Proceedings of SAE International Conference on Lubricating Tomorrow's Aircraft, 1999

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