



The organisers of WWEM 2012, the Water Wastewater and Environmental Monitoring event, have announced that visitor numbers were up by 22% in comparison with 2010. On behalf of the organisers, Marcus Pattison expressed his delight with this success, adding: "We are extremely pleased with the number of people that took advantage of everything that WWEM 2012 had to offer – visitors came from over 68 different countries and it is very satisfying to receive overwhelmingly positive feedback from both visitors and exhibitors."

“ WWEM 2012 proved a very busy two days for us, with 70% of those visiting the CTG stand being fresh contacts. We have already booked for the next WWEM. ”

WWEM 2012 took place on the 7th and 8th November at the Telford International Centre and provided attendees with a wide choice of activities including a Process Monitoring Conference and a Laboratory Analysis Conference (both CPD approved), a 'Meet the (international) Buyer' event, a meeting on water sector innovation, over 80 Workshops, free training courses on gas detection and safety, and an exhibition featuring over 130 stands representing more than 250 of the world's leading providers of test and monitoring equipment and related services. As a result of the wealth of information available, many visitors found it necessary to attend both days of the event.

Process Conference: '2012 Update on Regulation and Certification'

The opening presentation was given by John Tipping from the Environment Agency (EA) who provided an update on the Industrial Emissions Directive (IED) and outlined its regulatory effects through 2013 and beyond. Expressing his satisfaction with the progress that the WWEM events have made John said "WWEM 2012 looks bigger and better than ever."

John explained how the IED is the first major piece of legislation of its kind for over 10 years so it is important to understand its impacts and the timescales. Setting the scene, he said "It has been estimated that only 50% of sites have IPPC (Integrated Pollution Prevention & Control) permits within the 27 EU member states. The IED has been introduced to improve consistency of regulation across Europe."

Under the IED, all monitoring should employ the Best Available Techniques (BAT) and process operators should refer to the BREF (BAT reference) documents for sector specific guidance – see <http://eippcb.jrc.es>

The IED will be more prescriptive than its predecessors - emission limits and other BREF conditions will be the reference for setting permit conditions and it is anticipated that permits will be revised as new or updated BREFs are adopted. The Directive will be implemented in England and Wales through a revision of the existing Environment Permitting Regulations (EPR). John mentioned some of the likely changes to the EPR and said the revised regulations will be published by January 2013. See the Defra website for details.

Andrew Chappell, also from the EA, continued the European theme by explaining the advantages of coordinating instrument certification procedures and test methods with other countries. Highlighting a few examples of potential sources of error, Andrew described some of the issues associated with power supply, calibration, fouling, settling times, temperature response and drift. However, he explained that the EA's Monitoring Certification Scheme MCERTS has set performance

standards and is helping to improve confidence in data while also encouraging innovation.

Andrew also reported on recent work to develop a CEN standard based on the current MCERTS procedures for the assessment of water instruments. Work has already begun on Pr-EN 16479 - Performance Requirements and Conformity Test procedures for Water Monitoring Equipment, and Part 1 of the standard (Automated Waste Water Sampling Equipment) has already been drafted with parts 2 (on-line analysers) and 3 (portable analysers) expected during 2013.

As MCERTS gains a greater hold in the water sector, Bob Cooper from SIRA reviewed MCERTS' progress explaining how the water monitoring schemes are following a similar path to their air monitoring counterparts, albeit on a later timescale. He also listed a large number of instances in which MCERTS has been specified in international tenders, which demonstrates worldwide recognition of the scheme.

Ultrasonic level sensors are commonly employed to measure open channel flow rates in weirs and flumes. However, research funded by the EA and a group of water companies with help from manufacturers has helped to identify areas of potential error including the effects of solar radiation. Andy Godley from WRc described the research which included the development of an outdoor test rig and involved seven different instruments.

As a result of the research, Andy's team was able to improve product certification tests and to deliver improved guidance for the installation and operation of ultrasonic level sensors including: transducer location and mounting, the use of sunshades and maintenance procedures.

The EA's Rick Gould delivered the final presentation, outlining the development of Operator Monitoring Assessment (OMA), which provides a systematic tool for auditing the monitoring provisions required by an operator's permit and scoring the degree of risk. OMA looks at all of the factors that affect the reliability of data.

OMA began in 2001 - initially for air emissions but it now includes effluent monitoring and Rick explained how OMA examines four facets of monitoring in a systematic way

1. Management System Provisions for Monitoring
2. Periodic Monitoring and Test Laboratories
3. Continuous Monitoring
4. Quality Assurance

Summarising Rick said: "OMA has enabled us to provide guidance and focus attention where it is needed; however, OMA will be continuously improved and updated based on experience and feedback."

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Laboratory Conference: 'Advances in Measurements in Environmental Laboratories'

The opening presentation on the second day was given by Jon Murthy from United Kingdom Accreditation Service (UKAS). Jon set the scene by reminding delegates that accreditation is the procedure by which an authoritative body gives formal recognition that a body or person is competent to carry out specific tasks, and the aim of this accreditation is to reduce risk and deliver confidence to all stakeholders.

Accreditation is the key to ensuring that consumers, suppliers, purchasers and specifiers can have confidence in the quality of the services that laboratories provide and Jon explained how accreditation underpins the work of the EA. There are currently 28 UKAS accredited soil testing laboratories, 33 UKAS accredited air testing labs and 79 UKAS accredited water testing labs.

Referring to a large survey of BMTA members, Jon also demonstrated the financial benefits to be gained from UK accreditation.

In the next presentation, David Galsworthy from the Food and Environment Research Agency (FERA) explained that the organisation of laboratory information and knowledge base is a fundamental requirement of all the relevant Quality Standards. Drawing on 20 years of experience in quality system design and application, his presentation described an innovative approach for organising this data through the use of a web based content management tool.

David has employed this collaborative Wiki approach in a quality system for the world potato genebank in Peru, using a Wiki-confluence site to structure the quality system. He explained that there are many advantages to be gained from this cooperative approach, including transparency, improved communication, effective knowledge acquisition and positive effects on staff. As a result, the system is incremental, organic, easy to use, but precise and comprehensive.

He explained how this tool enables updating by multiple users with features such as blogs, video, photo galleries and Google maps. He also demonstrated how the system automatically records changes and provides an opportunity for remote evaluation by Assessment Bodies.

The confluence quality system that has been developed at FERA is currently employed in applications as diverse as DNA forensic analysis and plant health inspections at ports and airports. However, David explained that the model can be applied to any quality management system.

Continuing with the quality theme, Chris Reeves from South West Water gave a presentation in which he outlined the process by which his company has improved the management of laboratory data.

The process began in 2010 when UKAS highlighted critical deficiencies in data management. For example, the manual plotting of graphs in Excel was time-consuming, potentially inconsistent and prone to human error. It was therefore necessary to find or develop a new software capability with a number of essential features including:

- Communicate with the LIMS system to retrieve live AQC data
- Plot charts displaying the mean, warning limit and action limit
- Calculate relative standard deviation and bias on any dataset at any time
- Highlight rule breaches and associated investigations on the chart
- Flexible high level and daily reporting functions



- Easy to recalculate and update chart limits at any time with full audit facilities

In the afternoon, Hazel Davidson from Derwent Environmental Testing Services explained why a focus on laboratory analysis and quality control is pointless if sampling is not performed correctly. Over the last two years, significant concerns have arisen regarding holding times and deviating samples, and in Hazel's experience, laboratories are expected to advise and support their clients with respect to these issues.

A recent UKAS policy statement was created because of the poor quality of samples arriving at laboratories and Hazel outlined many of the common causes of deviating samples, including:

- No separate VOC or BOD samples
- Headspace in VOC or BOD samples
- No preservatives used
- Incorrect bottles used, e.g. plastic
- Holding times exceeded
- Temperature exceeded

In addition to a description of the common pitfalls, Hazel also provided a detailed explanation of how to produce a good sample and warned delegates that the Chain of Custody documents are the first to be scrutinised when a case goes to court.

In the final presentation on laboratory analysis, Prof. Clive Thompson from ALcontrol provided a humorous and enlightening insight into the subject of Cyanide analysis. He explained that there are a large number of 'official national and international methods' for the analysis of various cyanide parameters for waters, effluents, leachates, soils and wastes, but that it can be difficult to generate reproducible results. In addition, cyanide exists in a number of forms and there are interference effects from a variety of other species, so Prof. Thompson explained that there are a wide variety of factors affecting analytical results. However, he is convening a group to develop an ISO Technical Report "Background Information and Guidance on Environmental Cyanide Analysis" and a 40 page draft document has been prepared. This Technical Standard will provide information on the various ISO and CEN cyanide methods; guidance on how to carry out fit for purpose analysis of various forms of cyanide in environmental samples; the significance of the results; how to minimise interference effects and the preservation of samples.

Workshops

Over 80 workshops took place during the event covering a broad spectrum of environmental monitoring topics. For example, there were presentations on the monitoring of groundwater and on high resolution multi-site monitoring of surface water to inform the development of legislation. Several workshops examined wastewater sampling and monitoring, and others looked at ways to improve energy efficiency in wastewater treatment. There were presentations on laboratory automation and on liquid handling systems, as well as quality assurance in the laboratory and several of the workshops covered subjects such as calibration and the use of traceable reference standards. Almost all of the most common water quality parameters were discussed with specific presentations on TOC, COD, pH, colour, DO, ammonia, toxicity, turbidity, odour, SVOCs and metals. Water level and flow monitoring techniques were also discussed in addition to telemetry and data transmission.

Dave Hammond of MAC Solutions explained the advantages of replacing old-style, dial-up lines, leased lines and radio-modems, with modern, open-standard VPN routers, in order to provide



secure, real-time, remote monitoring and control of critical pumping stations and sewage treatment works, such as that which they provided to Thames Water.

Darren Hanson from newly launched Xylem Analytics outlined the advantages of the company's latest water quality monitoring sondes, the EXO1 and EXO2. He also explained the synergy that has been created between brands such as YSI, SonTek, AANDERAA and WTW, combining the global presence of the Xylem group with the local application driven expertise of each manufacturing company.

A presentation reporting the results of final effluent Ammonium monitoring was given by Jo Cooper of Intellitect Water. She demonstrated the advantages of monitoring without the need for reagent chemicals or frequent maintenance and calibration.

Wastewater Treatment Optimisation Solutions (W.T.O.S) were the subject of John Moroney's presentation. He outlined a number of installations at which HACH LANGE customers are gaining energy and cost savings whilst complying with regulatory requirements.

The Council of Gas Detection and Environmental Monitoring (CoGDEN) helped to organise the gas detection zone, and also ran a popular programme of workshops covering the latest technologies, sampling, calibration, and the benefits to be gained from monitoring toxic, combustible or explosive gases.

International Exhibition

The 2012 exhibition was even larger than its predecessors with around 120 organisations displaying the latest products and services for the environmental testing and monitoring market, including several that had recently received MCERTS.

WWEM 2012 saw the launch of more new products than ever before, with many companies unveiling new monitoring technologies and YSI Hydrodata launched a new company; Xylem Analytics UK Ltd which combines a number of well-known brands including YSI, SONTEK, Aanderaa and WTW.

Envitech launched a new ammonia monitor and controller and OTT Hydrometry unveiled a new groundwater monitor, a new portable flow meter and a new range of dataloggers.

Pollution & Process Monitoring Ltd launched their latest Proam ammonia technology for reliable continuous wastewater analysis and Isodaq Technology demonstrated their new Tadpole GPRS logger for monitoring remote sites in harsh environments.

ProMinent Fluid Controls (UK) Ltd, the chemical fluid handling specialist, launched the new DulcoFlow flow meter and Nitto Kohki presented a full range of air, gas and liquid pumps including the unique 'Bimor' piezoelectric pump with no moving parts and the new DP0410 pump which offers up to 18 l/min air flow and 1.8bar pressure at 12vDC.

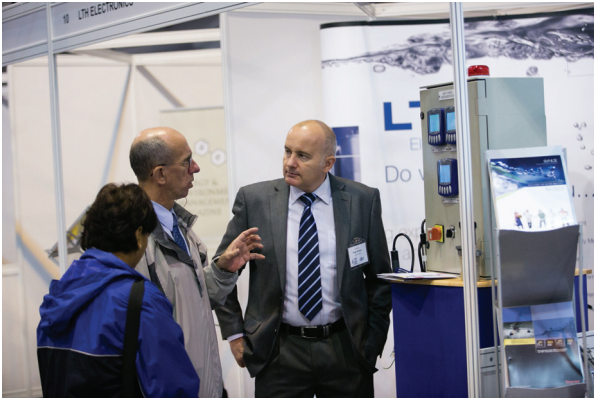
STS Instruments Ltd showcased their novel solution for the identification and quantification of organic pollution using the SMF4, a portable fluorimeter and VEGA exhibited their new non-contact microwave radar level transmitter.

New remote monitoring applications for WWEM 2012 included the SeSys high resolution digital IP cameras which enable utility companies to protect assets and monitor processes, and examples from Ashtead Technology's fleet of rental infrared cameras.

In the gas zone, Gardner Denver Thomas launched the next generation of miniature air sampling pumps including the 1010 reciprocating diaphragm pump and Gas Measurement Instruments showed the new PS200, which they claimed is the most flexible gas detector on the market.

Amongst the exhibitors in the laboratory sector, ESSLAB launched





the new MicroLab 600 liquid handling system for the preparation of samples and standards. HACH LANGE unveiled the new DR3900 spectrophotometer which offers extremely high levels of accuracy, reliability, traceability and quality assurance and Palintest packed their stand with new innovations including a new range of electrochemical instruments and a new Compact Turbimeter.

Following the event, WWEM exhibitors were unanimous in their praise. Craig Harrison, Managing Director at Aquaread Limited said: "WWEM 2012 was again a great exhibition for Aquaread. We picked up 2 new potential distributors in countries where we have no representation and obtained orders which have already returned our investment in the exhibition. From an exhibitor's point of view, the organisers put on a great show which ran like clockwork. The gala dinner was again a night to remember where our guests (suppliers and customers) thoroughly enjoyed themselves. We are now looking forward to WWEM 2014!"

Angus Fosten, Sales and Marketing Director at Partech said: "We had a great show and are very happy with both visitor numbers and the breadth of industries covered. We look forward to celebrating our 50th birthday at WWEM2014."

Similarly, Derek Moore, Product Manager for Siemens said: "WWEM was the ideal event to showcase our new LUT400 Ultrasonic Controller level to the water industry. We were very pleased with

the number of quality enquiries over the two days."

Justin Dunning, from Chelsea Technologies Group Ltd said: "WWEM 2012 proved a very busy two days for us, with 70% of those visiting the CTG stand being fresh contacts. We have already booked for the next WWEM."

Summarising, Lovibond's Elizabeth Wilkinson said: "WWEM always manages to attract a select, experienced audience, knowledgeable in all aspects of water processing and encourages interesting discussions both on the stand and in the networking areas. The Lovibond team is committed to this event and has already signed up to participate again in 2014!"

Visitors were also surveyed in the week after WWEM 2012 and again the feedback was unanimously positive. Almost all visitors commented on the advantages of being able to see the whole monitoring industry in one place. Overseas visitors commented that their trip was definitely worthwhile and many respondents said that their visit enabled them to choose the best monitoring equipment. Another common feature amongst the responses was the friendly networking environment that the WWEM events create, complemented by the free parking, lunch and refreshments.

WWEM 2012 visitors were extremely diverse, including every industry with a wastewater discharge, water companies, regulators, academics, researchers, instrument manufacturers, analytical laboratories and many more.

Gala MCERTS Presentation Dinner

The Environment Agency's Head of Monitoring and Analytical Services, Malcolm Lythgo presented MCERTS certificates following a Gala Dinner during WWEM 2012.

Product conformity MCERTS certificates were presented to:

ABB

BioTector Analytical Systems

GE Sensing

Panametrics

HACH LANGE

Krohne

Nivus

Partech Instruments

Pollution & Process Monitoring

Sirco Controls

Teledyne ISCO

HACH LANGE received four different certificates during the evening and their Matthew Dillon said: "One of our key goals is to ensure that customers are able to generate the highest quality data. We see the MCERTS scheme as an important contributor to that goal and more HACH LANGE products will receive MCERTS in the near future."

In addition, Aaron Hiden and Phil Rose from Critical Flow Systems and Simon Richardson from SIRIS Environmental Flow Surveys were awarded MCERTS certificates for site inspection.

Other events at WWEM 2012

A number of international experts and buyers attended WWEM 2012 as part of a 'Meet the Buyer' event organised by UKTI. Participants commented that they found this to be a very simple and effective method with which to gather market intelligence, to make new contacts, and to meet new customers.

British Water organised an Innovation Exchange, which was also well attended and further similar events have been organised for early in 2013.

The next WWEM event will take place on the 5th and 6th November 2014 and over one third of the WWEM 2014 exhibition stands were re-booked at the 2012 event, so the organisers have warned that the best positions are going fast.

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