

MCERTS for Water

In order to improve the quality and reliability of environmental emissions monitoring delivered by operators of regulated processes, the Environment Agency of England and Wales (EA) has developed a monitoring certification scheme known as MCERTS. The scheme is based upon the premise that quality data is dependent upon the proper use of methods, standards, services and equipment, trained and qualified personnel, effective planning, quality assurance and quality control.

MCERTS is well established in the air emissions monitoring sector and is extending to the water sector and beyond. Instrumentation specialist Quantitech supplies air monitoring equipment and commenting on his experience, Managing Director Keith Golding says, "The MCERTS scheme is so well established in the monitoring of emissions to air that it is now virtually impossible to compete in the instrumentation market unless your instruments are MCERTS approved. At Quantitech

we distribute some of the market's leading instruments, including the Horiba PG250, the Bernath 3006 FID and the Gasmeter multiparameter FTIR systems - none of these products would have achieved and maintained market dominance without MCERTS accreditation."

Commenting on MCERTS, EA Director of Operations, Dr Paul Leinster says, "The Environment Agency is committed to protecting and improving the environment in England and Wales and our Monitoring Certification Scheme, MCERTS, helps us to achieve this by giving us confidence in monitoring data provided by operators. It makes clear what we expect, whether monitoring emissions to air, discharges to water or analysing soils. MCERTS covers monitoring equipment, laboratories carrying out testing, and effluent flow monitoring arrangements. MCERTS is already mandatory as a condition in many of the permits we issue and will be extended to others in the future as part of our commitment to modernising regulation."

The scheme plays an important role in the Agency's move to self monitoring, and their Paul Wiggins says, "I am pleased with the progress that MCERTS has made in the water monitoring sector as existing schemes evolve and new schemes are introduced."

This article will provide an update on MCERTS in the water sector.

Self monitoring of effluent flow

MCERTS sets a target of +/- 8% uncertainty for the total daily volume of effluent discharged. The scheme has already been successfully applied to the ten Water Utilities where over 2500 MCERTS site conformity inspection certificates have been issued. MCERTS is now being extended to include industrial installations with effluent flow monitoring limits included in their PPC permits. By December 2008 all such installations must have completed:

1. an inspection of the flow monitoring arrangements by an MCERTS Inspector
2. an audit of the QMS relating to the flow monitoring arrangements by an approved QMS auditor.

The next progression for MCERTS: self monitoring of effluent flow is to consider other dischargers of effluent such as:

- non Water Utility sites regulated under the Water Resources Act
- sites regulated under the Radio Active Substances Act
- PPC "waste" sites

Continuous water monitoring equipment (CWME)

MCERTS sets out the EA's performance requirements and test procedures for three types of equipment. Testing includes both laboratory and field trials to provide evidence that the performance requirements can be achieved. This evidence can be provided by data from new testing or in certain circumstances by using existing traceable and verifiable data. An audit of the manufacturing process is also a requirement. For more details on certification contact Sira, who operate the scheme on the Environment Agency's behalf at www.sira.co.uk

The following manufacturers have MCERTS certified equipment:

Automatic samplers:

(Aquamatic Ltd, Endress and Hauser Ltd, HACH LANGE GmbH, Sirco Controls Ltd, Teledyne Isco Ltd.)

HACH LANGE manufactures MCERTS approved samplers and Marketing Manager Sarah Blayds says, "As a market leader in water testing, sampling and monitoring instrumentation our customers can expect to produce reliable accurate results from well maintained equipment. However, MCERTS accreditation provides extra assurance that the product 'does exactly what it says on the tin'. With many thousands of customers all over the world, we have a reputation for high quality instruments and we are fully in favour of any scheme that helps to improve the quality of environmental monitoring."



HACH LANGE

MCERTS-approved wastewater sampling equipment from Aquamatic is on its way to Gibraltar, where it will be used to sample discharge from the effluent treatment plant (prior to release to the sea) at the new Slop Oil Reception and Treatment Plant.

Mark Hooper, Operations Manager at Slop Oil, said: "We offer a new, state-of-the-art wastewater treatment plant at the Port of Gibraltar, producing a water discharge that meets or exceeds IMO requirements, so we required a wastewater sampler that was in



Aquamatic

keeping with our very high standards."

He added: "As well as reliability and service, we noted that Aquamatic had championed the Environment Agency's drive towards stringent performance criteria and certification by becoming the first UK company to gain MCERTS for its entire range of Wastewater Samplers."

Aquamatic's Managing Director, Jeremy Smith, added: "We are very pleased to be working with Slop Oil and are greatly encouraged by the clearly far-reaching effects and reputation of MCERTS."



On-line analysers:

(Partech Instruments; Pollution and Process Monitoring Ltd and Rosemount Analytical Ltd.)

Determinands included in the on-line analyser standard are: Turbidity; pH; ammonia; COD; TOC; dissolved oxygen; total phosphorus; nitrates; total oxidised nitrogen.

PPM's Steve Tuck says, "Entering various product(s) for independent testing is a costly and time consuming exercise, however, MCERTS underpins the sale of our TOC instrument since it has been deemed fit for purpose by independent third party evaluation."

PPM was one of the first instrument companies to apply for MCERTS approval on a water quality test instrument. The certification for the Protoc 300 TOC analyser was formally awarded at WWEM 2006.

Commenting on behalf of Partech Instruments, Angus Fosten says,



Pollution & Process Monitoring

"We are serious about the role our instruments play in the clean water environment and the association with MCERTS validates our commitment to the manufacture of water quality instruments to the highest of standards.

Any water plant manager with a responsibility for final discharge consents can rest assured that the MCERTS accreditation process for Turbidity required both thorough and vigorous testing.

MCERTS has raised the awareness of the Water Plant Manager, which in turn has raised the profile of Partech Instruments. Since achieving the MCERTS accreditation, we have received more enquiries from potential customers."

The on-line analyser standard is currently being updated to include saline environments. The newly formed Water Monitoring Association (WMA) www.w-m-a.org has recently reviewed the current on-line analyser standard. Their feedback is now being considered and relevant modifications will be included in the latest version of the standard to be published in Spring 2008. Additional determinands will be included in future versions of the standard if there is a demand.



Water flow meters:

(GE Sensing EMEA and Siemens Ultrasonics Process Instruments Inc.)

Rather than having a single item of equipment MCERTS certified, many of the above manufacturers have a range of their equipment certified to cover differing applications.

A number of manufacturers, for example YSI, have equipment in the process of MCERTS certification. Other manufacturers such as SonTek are starting the MCERTS certification process.

Commenting on his company's participation in the MCERTS scheme, YSI Regional Director Darren Hanson says, "Above all, MCERTS provides third party verification of instrument performance/quality and as a major supplier to the Environment Agency it is natural for us to support the scheme. We have a number of products currently in evaluation, both for water quality and flow measurement, and we are hopeful that MCERTS will provide an extra level of confidence in our products in markets all over the world."

The above lists of manufacturers with MCERTS certified products will be significantly extended during 2008 and beyond.

Portable water monitoring equipment

MCERTS sets out the Environment Agency's performance requirements and test procedures. The following determinands are currently covered – temperature; pH; conductivity; dissolved oxygen; turbidity; ammonia; nitrate; nitrite and chlorophyll a.



Testing includes both laboratory and field trials to provide evidence that the performance requirements can be achieved. This evidence can be provided by data from new testing or in certain circumstances by using existing traceable and verifiable data. An audit of the manufacturing process is also a requirement. For more details of the certification process contact Sira at www.sira.co.uk

Feedback from manufacturers led to a review of the standard with two key changes being incorporated into the latest version which will be published in Spring 2008:

- 1.inclusion of additional determinands - total oxidised nitrogen; total phosphorus; COD; chlorine and cyanide
- 2.inclusion of test kits with direct electronic readouts

The Environment Agency is working with BSI to link the MCERTS standard to the re-write of BS1472: Guide to field and on site test methods for the analysis of waters. The WMA (The Water Monitoring Association www.w-m-a.org) and others, for example SWIG www.swig.org.uk are reviewing the draft. Their feedback will be considered and modifications will be incorporated into the latest version of the standard to be published in early 2008. Additional determinands will also be included in future versions of the standard if there is a demand.

Direct toxicity assessment of effluents

Seven laboratories have now gained approval by following EA published test methods, having an appropriate quality management scheme and participating in an EA DTA proficiency testing scheme. The scheme has been granted accreditation by UKAS for provision of the proficiency testing scheme and the third annual round has been distributed. The results from the proficiency testing scheme will be reported in February 2008.

Sampling and analysis

An MCERTS performance standard is being developed to cover sampling and analysis of waste and environmental waters. Initially it will target the self-monitoring of sewage effluents, but will be extended to cover other water matrices such as industrial effluents. A steering committee has been set up and the first meeting was held in October 2007. It is intended to publish the MCERTS performance standard by Autumn 2008. UKAS will then schedule laboratory visits and assess the validation data prior to accreditation.

WWEM 2008

The organisers of WWEM 2008 (Water, Wastewater & Environmental Monitoring) claim that it will be the world's largest event of its kind and with a high level Conference, a Gala MCERTS Presentation Dinner, 70 workshops and over 100 exhibitors all focusing on the testing and monitoring of water, the claim would appear to be well founded.



Marcus Pattison, one of the WWEM organisers says, "WWEM has become a focal point for everyone with an interest in water monitoring. The Conference covers major monitoring and regulatory themes, whilst a wide variety of Workshops enables attendees to tailor their visit to best meet their individual needs.

The WWEM exhibition includes almost all of the world's major instrumentation manufacturers, so visitors are able to see the latest technologies and discuss their applications with industry experts. Basically, whether you are responsible for process control, wastewater treatment, effluent flow or quality, either online, manually or in the laboratory, WWEM will be an important event for you to attend."

Heavily supported by the Environment Agency, the main Conference will cover themes such as:

- The Environment Agency and the modernisation of regulation
- MCERTS flow inspection- benefits for process operators
- Cost effective self monitoring – use of instrumentation and test kits
- A new MCERTS scheme for laboratory water analysis
- MCERTS soils schemes and the importance of sampling
- Open channel flow - views of the Flow Club
- Effluent monitoring in line with MCERTS
- Process optimisation
- The cost of getting it wrong

Conveniently located at the Telford International Centre, just North of Birmingham with good motorway, rail and air links, WWEM will take place on the 5th and 6th November 2008.

Entry to WWEM 2008 will be free to all Pre-Registered visitors (saving a daily admission fee of £20). Pre-Registered visitors will be entitled to free onsite parking, free lunches and refreshments on both days of the event, and complimentary entry to all workshops.

Visitors to WWEM include staff at every level within regulators, water companies, industrial manufacturers, consultants, education, researchers, process engineers and laboratory analysts.

The proportion of overseas visitors is growing rapidly because a trip to WWEM provides the opportunity to see the whole water monitoring industry in one place, to meet like-minded people, to learn about the latest technologies and to hear about the latest regulatory developments.

Registration is now available at www.wwem.uk.com

MCERTS standards

MCERTS is underpinned by the production of standards that are updated as necessary. It is important that industry and manufacturers keep up to date with the latest developments. All MCERTS standards plus associated guidance are published at: www.mcerts.net

CONTACTS FOR SCHEME OPERATORS AND TECHNICAL SUPPORT FOR THE MCERTS SCHEMES

MCERTS water schemes for;

- Continuous water monitoring equipment
- Portable water monitoring equipment
- Self-Monitoring of effluent flow

Scheme operator;

SIRA Environmental Ltd

www.sira.co.uk
Tel +44 (0) 1322 520500

Technical support

WRC

www.wrcplc.co.uk
Tel +44 (0) 1793 865000

MCERTS - Chemical testing of soils

Scheme operator

UKAS

<http://www.ukas.com/>
Tel +44 (0) 20 89178400

WWEM 2008

www.wwem.uk.com
Tel +44 (0) 1727 858840

For general information visit www.mcerts.net

AUTHOR DETAILS

**Graham Meller
Buttonwood Marketing Limited**

Buttonwood House
Main Road, Shutlanger
Northants NN12 7RU
England
Tel. +44 (0)1604 879 861
gmeller@
buttonwoodmarketing.com
www.buttonwoodmarketing.com