ABSTRACT for the 2013 ISA WWAC Symposium

Migrating Guelph Wastewater's Data Monitoring Program To A Web-Based Reporting System

Turning Data into Meaningful Information

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FORMAT

6-12 page paper plus 30-minute presentation

KEYWORDS

Wastewater, Optimization, Reporting, Web-Based Reporting, Mobile Computing

ABSTRACT

Guelph Wastewater Services operates a tertiary WWTP in order to meet stringent discharge requirements mandated by the Ontario Ministry of the Environment (MOE). The facility discharges into the Speed River which has very limited assimilative capacity. The operations and management team has developed an advanced operational methodology over the last 5 years focused on a continuous improvement program (CIP), which relies on a process performance reporting tool to convert data into information and knowledge used to optimize performance. This tool is a series of Excel workbooks and associated visual basic (VBA) macros which mine, manipulate, and store data from:

- The SCADA system.
- Manually entered liquid and solid process train laboratory data.
- Manually entered liquid and solid process settings and set-points.
- Imported data from the laboratory information management system (LIMS)

This reporting tool has served wastewater services very well over the years, however, it has become cumbersome to update and maintain:

- There are a limited number of staff in wastewater services with the specialized programming skills required to be able to make changes to, or troubleshoot the existing system.
- The hierarchy of the multiple Excel files required to interact to make the reporting tool function is complex and can be upset if a file is inadvertently moved or renamed.

Accordingly, Guelph Wastewater Services has been reviewing existing reporting system and develop a plan to migrate the system to a web-based reporting platform. Features that that city looked at included:

- Mobile computing.
- Easily configured and shared reports. No advanced programming skills are required and trainees become trainers.
- Alarm and Event reporting. Explore alarm and event information sorted by site or priority to eliminate nuisance alarms and report on compliance alarms.

- Participation in a User Group which enables the sharing of reporting ideas amongst all Users.
- Configurable user rights with the ability to define distribution and report sharing groups and control access to configuration of critical compliance reporting.
- Compliance reporting features including report commenting, audit trail, and electronic report sign-off.

This paper provides a case study of how the city's reporting needs were identified, and how an open source web-based reporting solution was developed in order to meet those needs. The paper will also include a discussion of various additional features that a typical water or wastewater utility may want to consider when deploying a web-based reporting solution.

About the Authors:

Dennis Mutti, M.A.Sc., P.Eng, has over 20 years of progressive experience in the municipal water and wastewater industry. He has led projects and programs through all phases of delivery, from conceptualization and planning through design and construction, to start-up, commissioning and optimization. This experience has allowed Dennis to develop a thorough understanding of the needs and requirements of the unique groups and departments working together within an organization, to deliver effective and efficient water and wastewater services. Dennis is a senior project manager at Eramosa Engineering Inc. Contact: dennis.mutti@eramosa.com

Tom DeLaura, PE is an active member of AWWA and WEF at the national and local levels, currently serving as Chair of the WEF Automation & Information Technology Committee. With 38 years of experience, he has extensive experience with water utilities, and has worked in all facets of automation associated with water/wastewater systems, from pipe and plant to the boardroom. He has written and presented on numerous topics of interest to the water and wastewater industry, been involved in industry research projects, and has received awards from the industry for his dedication and service. Tom is vice president of Eramosa's US operations. Contact: tom.delaura@eramosa.com

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Tim Robertson is the Operations Manager for Wastewater Services at the City of Guelph. He has over 15 years of experience in working in the wastewater sector. He holds a Class IV Ontario wastewater operator license.

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