

## **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).

Although this reporting tool has served wastewater services very well over the years, it has grown to become cumbersome and complicated 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 rendered inoperable 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](mailto:dennis.mutti@eramosa.com)



**David Chamberlain P.Eng. BDS** is General Manager and Vice-President of Eramosa Engineering. David has been a key member of Eramosa since 1999 and has been providing technical solutions to the water and wastewater sector during this time. David has extensive field experience and has designed, installed, and commissioned many SCADA, electrical, and control system projects, requiring an in-depth understanding of the water and wastewater processes, to ensure sites are tested and commissioned with a high degree of confidence for the client. David is currently heading up Eramosa's project delivery and quality assurance program as part of his initiatives emphasizing customer service, integrity, and quality solutions on all Eramosa projects. Contact: [david.chamberlain@eramosa.com](mailto:david.chamberlain@eramosa.com)



**Jason Low, B.Sc.** is a database developer with Eramosa Engineering. He has been developing database applications for over 15 years, and has a background in detailed electronics design. Jason has a B.Sc. in electronics from the DeVry Institute of Technology.



**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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