

## Abstracts

Thursday, May 1

### Session J6: Web and Smart Phone Apps for Collecting and Presenting Data

8:00 – 9:30 am | Room 232

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#### ***Better Public Access and Integration of Point Source Wastewater Pollutant Discharge Information and Receiving Waterbody Quality and Assessment Data***

**Carey Johnston<sup>1</sup>, Wayne Davis<sup>1</sup> and Meghan Camp<sup>2</sup>**

<sup>1</sup>US Environmental Protection Agency, Washington, D.C., <sup>2</sup>Eastern Research Group, Inc., Chantilly, Va.

##### **Abstract**

EPA has developed a new web tool, DMR Pollutant Loading Tool (“Loading Tool” at <http://www.epa.gov/pollutantdischarges>), to provide increased access to wastewater pollutant discharge data and receiving waterbody data, which will allow for better transparency of wastewater pollutant discharges and enhanced utility of these data. Specifically, technical users of the new tool can enhance their development of NPDES permit effluent limits, better identify and target violations of effluent discharge permit limits, improve their watershed pollution budget plans (Total Maximum Daily Loads, or “TMDLs”), and refine their watershed modeling.

The Loading Tool is a significant improvement in making more information about pollutant discharges available to the public. Through the Loading Tool interface, users can easily find who is discharging into their local watershed, and can sort the information by specific pollutants. The Loading Tool calculates facility pollutant discharges based on reported discharge monitoring data. The tool also weights chemicals by their relative toxicity and calculates the toxic-weighted equivalent amount of each chemical released. With this tool users can rank facilities and pollutants by total amount of each pollutant released each year and by the total amount of toxic-weighted pounds released each year.

This tool also links these point source data to water quality data in EPA’s STORET database, state waterbody assessment and impairment data in EPA’s ATTAINS database, and with U.S. Fish and Wildlife data on aquatic species listed by the Endangered Species Act. This integration allows users to examine the potential impacts point source pollution on impaired waterbodies. This presentation will provide an overview of the tool and a demonstration on how to use the tool from a variety of perspectives.

#### ***Recr8OhioRiver: A Water Quality Recreation Management Application to Have a Safe and Enjoyable Time on the Ohio River***

**Laith Alfaqih<sup>1,3</sup>, Sudhir Kshirsagar<sup>2</sup> and MaryLynn Lodor<sup>1</sup>**

<sup>1</sup>Metropolitan Sewer District of Greater Cincinnati, Cincinnati, Oh., <sup>2</sup>Global Quality Corp, Convington, Ky.,

<sup>3</sup>CH2MHILL, Cincinnati, Oh.

##### **Abstract**

The Metropolitan Sewer District of Greater Cincinnati (MSDGC) and its partners, the Ohio River Valley Water Sanitation Commission (ORSANCO), and Sanitation District No. 1 of Northern Kentucky (SD1) developed a recreational management toolset consisting of a mobile application and a website to help recreational users such as boaters, paddlers, swimmers, jet skiers, and fishermen make informed decisions about where and when to recreate on the Ohio River. The coverage area in the Ohio River is mainly between Meldahl and Markland dams in the tri-state area. The name of application is “Recr8OhioRiverand it was developed for smartphone users and desktop users.

The toolset was developed as part of the Recreation Management Program. It focuses on water quality (*E. coli* levels), hydrology and other ambient conditions. The *E. coli* levels are based on a predictive model that was

developed using artificial neural network (ANN) techniques. The river segment between Coney Island (I-275 East) and Lawrenceburg, IN (I-275 West) is has been sampled frequently by all three partners during 2010 and 2011 and that data was utilized in developing the ANN.

The hydrology and ambient conditions include river stage, velocity, current and forecasted weather conditions, Doppler radar, real time marine traffic, fish advisories, locations of marinas, boat ramps and attractions along the river, and emergency alerts/announcements. This information will allow the users to plan their Ohio River recreational activities and make it an enjoyable and safe one.

### ***TestTheWater.org – A Digital Water Data Management Solution***

**Lee Tremblay, Luke Warren, Glen Warren and Helen Fletcher**

*4Marbles Inc., New York, N.Y.*

#### **Abstract**

TestTheWater.org is a water data management solution, which allows water monitoring programs to leverage digital tools to coordinate in-the-field sample/ data collection, data analysis and data submission to CEDEN and thereby to the EPA in a single integrated web-based platform. Quality Assurance and Data Validation are presented in a simplified user interface for the ease of metadata entry. Our MobileLabBook web app is designed to support in-the-field activities, by digitally assisting water sample collection and measurement record keeping. The MobileLabBook is operational on any mobile smart-phone, Pad, or Computer running the Chrome web browser and maintains operations and data integrity, even in the absence of Internet connection. Samples and in-the-field measurements alike can be precisely positioned with GPS coordinates and timestamped offering highly accurate geospatial and time coordinate positioning of samples and data results. After review, digital records are synchronized with the TTW central database. The records can then be accessed by the data owner via the TTW DataCenter. The DataCenter allows you to view, edit, and validate all of the parameters surrounding your data including Quality Assurance fields for equipment and protocol metadata of the digital records. TTW data management system has been designed to integrate seamlessly with CEDEN, California's water monitoring database, and leads users through an easy data validation process prior to data submission. Data submission compliance with the EPA is maintained via TTW data submission to CEDEN. In addition, the TTW Report Tool and website empowers community outreach messages by providing data analysis tools along with the TTW Forum for asking questions, sharing insights, and results. These tools will help you stay connected, making it easy to share your observations and experiences with other members. TTW is a project of 4Marbles Inc. a 501(c)(3) scientific research and education non-profit.

### ***A High Quality Cellphone-Based Portable Microscope for Stream Side Data Collection***

**Steven Steinberg and Betty Fetscher**

*Southern California Coastal Water Research Project, Costa Mesa, Calif.*

#### **Abstract**

Collection of biological samples in the field often presents issues of specimen damage or degradation caused by preservation methods, handling and transport to laboratory facilities for identification. Traditionally, the collection of high quality microscopic images in the field has not been a realistic possibility due to the size, weight and fragility of sufficiently high quality hardware. The Fletcher Lab in the Department of Bioengineering at the University of California Berkeley has developed a mobile microscope called the Cellscope to expand access to basic healthcare in remote regions. In collaboration with the Fletcher lab, the Southern California Coastal Water Research Project (SCCWRP) is modifying and applying this clinical tool for use in microscopic imaging for stream-side data collection. Initial field tests have proven successful. Building on this collaboration we will work to modify and embark on more extensive testing in 2014. Ultimately, imagery collected with the Cellscope will be integrated with other cell-phone based applications and tools under development to provide an easy-to-use, affordable, lightweight, professional quality data collection platform for water quality monitoring.