

BIG DATA: A GAME CHANGER FOR ENVIRONMENTAL MANAGERS, ADVOCATES AND REGULATORS?

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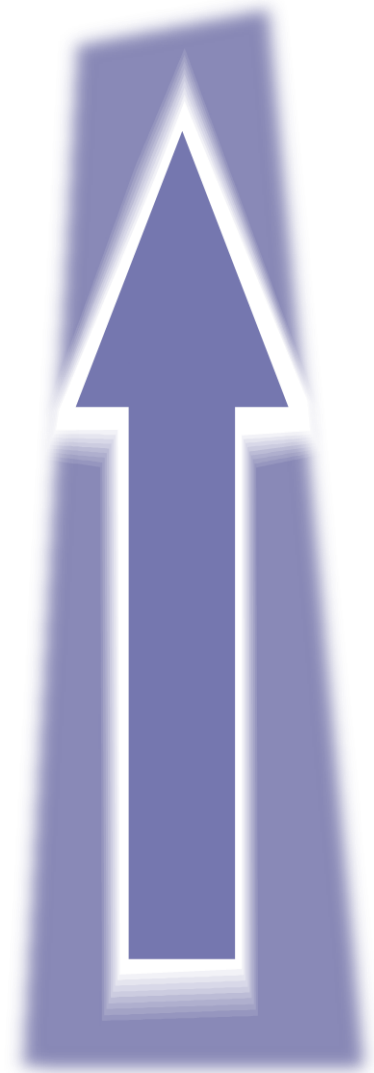
The New York Times

“Records analyzed by The Times indicate that the Clean Water Act has been violated more than 506,000 times since 2004, by more than 23,000 companies and other facilities, according to reports submitted by polluters themselves. Companies sometimes test what they are dumping only once a quarter, so the actual number of days when they broke the law is often far higher. And some companies illegally avoid reporting their emissions, say officials, so infractions go unrecorded.”

What does this mean for water quality?

KEY TO SUCCESS = TIMELY, ACCURATE, COMPLETE DATA

- **Improving data quality/quantity** by creating new web-based data collection tools
- **Increasing data quality/quantity** via tools that leverage the existence of the information in an electronic format
- **Using data** to communicate and manage
- **Identifying performance metrics** to show how the data leads to improved compliance rates, program efficacy, & environmental improvement



DATA FLOW IN THE FIELD

- 58% of respondent states use data-yielding technology as part of the inspection process:
 - Hand-held devices, tablets, GPS, digital cameras, GIS tools, and field computers
 - Monitors and airplane flyovers.
 - Standardized report forms with evaluation areas and a large pick list of common deficiencies
- Improves data collection and transfer
- Promotes consistency between inspectors and a more certain process for facilities
- Increases ability of the state to effectively enforce the CWA as well as do more with limited inspection staff



DATA FLOW FROM THE DESK

- 55% of respondent states utilize an eNOI* tool or other eApplication process
- 73% of respondent states use an eDMR/NetDMR tool



- Automated systems for sending notices for untimely submissions and permit limit violations
- Electronic forms = improvements in timeliness and accuracy of reporting, some resource savings, more informed regulated community
- Compliance assistance via a click

MAKING DATA AVAILABLE TO THE PUBLIC

- 56% of states' DMR data is available on a **public website**
 - E.g., tracking applications, locating active permits, enforcement actions
- 31% of respondent states have a **violations** webpage
- 56% have an electronic citizen complaint system
- 42% report using **GIS** for decision making, and 70% of those respondents make that data directly available to the public



MAKING DATA AVAILABLE TO MANAGERS

- 29% of respondents report prioritizing which facilities to monitor based on **risk**



- 66% of respondent states' permits require experts or third parties to certify data in application for and in renewal of NPDES permits, enhancing efficiency
- Generating data via incentives – participation encouraged via reductions in permit or annual fees; participation in electronic programs a condition of settlements; purchasing computers for the regulated community





- **Resources**
- **Measuring Success**
- **Prioritization**
- **Program Management**
- **Program Oversight**
- **Push vs. Pull**
- **Defining Transparency**
- **Burden Reductions Can Be Found**
- **Approaches to Data – What States & Federal Gov't Need is Different**
- **Big Data and Really Big Data**
 - E.g., DMR monthly reporting
 - E.g., annual CAFO report
 - Historic data? E.g., CSOs, Major Sources