



# CASE STUDY | Philadelphia Water Department

## Online Water Quality Project

### ABOUT KISTERS

KISTERS is a global software solutions and technology firm dedicated to effective long-term management of water resources. Our environmental experts help clients achieve organizational goals through the deployment of powerful and flexible software.

#### Technologies:

WISKI\* Platform  
WISKI BIBER\*  
WISKI SKED  
WISKI MAP\*  
WISKI KiWQM\*  
WISKI KiECO\*  
WISKI ALARM MANAGER  
WISKI WEB PRO/PUBLIC  
WISKI KiWIS\*  
WISKI SODA\*  
WISKI iReD\*

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## Philadelphia Water Department (Online Water Quality Monitoring (OWQM) Project

The Philadelphia Water Department (PWD) and Water Revenue Bureau serve the Greater Philadelphia region by providing integrated water, wastewater, and storm water services. The utility's primary mission is to plan for, operate and maintain both the infrastructure and the organization necessary to supply high quality drinking water, to provide an adequate and reliable water supply for all household, commercial and community needs; and to sustain and enhance the region's watersheds and quality of life by managing wastewater and storm water effectively. Visit <http://www.phila.gov/water>

### The Challenge

- Acquire and store water quality sensor measurement and sensor state data (calibration/maintenance status) at two minute intervals.
- Perform automated data validation based on sensor state status.
- Perform validation based on client and industry business rules to determine whether the data are appropriate for assessing water quality.
- Analyze data to assess water quality and sensor states.
- Generate and terminate alarms based on sensor states and water quality thresholds.
- Achieve 99.9% availability.
- Alarm announcements via SMS and email notifications.
- Escalate alarm notifications to appropriate personnel and groups of personnel
- Generate standard and user-configured reports with qualitative data.
- Control access to all data, results, and reports through user administration roles and rights.
- Securely store while allowing users to easily retrieve data.
- Integrate data management with third-party applications to meet OWQM System requirements.





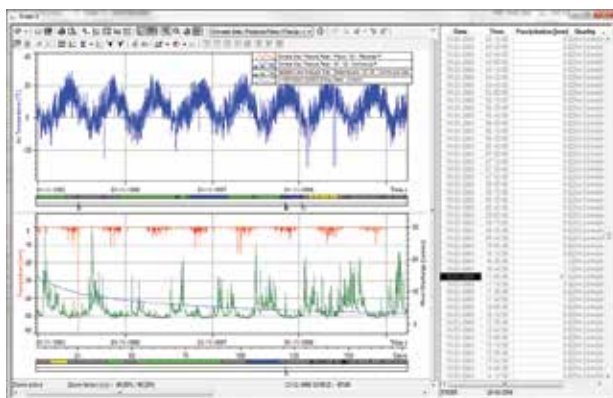
## The Solution

PWD selected WISKI (**W**ater **I**nformation **S**ystems **K**ISTERS) to be implemented as their OWQM data management system to manage:

- Import approximately 3,200 values every two minutes.
- Data validation, computation and aggregation requiring an additional 24 time series per imported value to support the data demand of OWQM.
- Configuration of Alarm Manager enabling Philadelphia Water Department to receive email and text messages based on events generated from both WISKI data evaluation and third party alarm messages.
- Configuration of Distributed Service Manager enabling the automation of data imports from all sources.
- Providing secure access to WISKI API allowing for the integration of third-party applications.

## Results

PWD's WISKI implementation has been configured to fully automate their data management processing. Two minute interval data is imported from their SCADA system populating approximately 3,200 parameters. All data is validated in real-time for reporting and serving data to third-party applications. Prior to using WISKI, PWD was challenged with solutions claiming to be able to manage all of the data management requirements for this project. Switching to WISKI, PWD workers are now able to focus their attention on their operational functions while WISKI performs their data management notifying them by SMS or email of any analysis scenarios requiring further attention.



WISKI multi-parameter monitoring (precipitation, river discharge and air temperature)

## TECHNOLOGY DEPLOYED

WISKI\* (Water Information Systems KISTERS) represents the culmination of more than 25 years of experience developing software solutions for the water industry. WISKI is a proven data management platform that integrates numerous application modules with powerful statistical, data analysis, modeling and visualization features.

- WISKI is a N-Tier solution, Presentation Layer, Business Logic Layer and Data layer.
- All calculations are managed by the business logic layer (Time Series Manager) to provide a thin client and optimize the time for data processing.
- WISKI has the ability to store any time series data type with resolution down to a one second data raster.
- The PWD WISKI implementation allows for all sensors to provide operational and communication status as time series data. This information can then be used in conjunction with the water quality values to determine overall data quality for event alarming while maintaining data integrity and security through all applications to the PWD OWQM System.

**WISKI** | Water Resources  
Data Management



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