



# Environmental Data Management



## Efficient Data Management

Environmental studies often generate a tremendous volume of diverse data, sometimes over multiple years and often produced by different parties. Since those data and the conclusion they support are the culmination of a sizeable investment, it is imperative that efficient methods for data storage, manipulation and reporting are employed to protect and maximize the value of that investment. **Database Management Solutions** can have a significant impact on how easily the results from studies may be interpreted, communicated and used in support of decisions that may have significant regulatory and financial consequences.

Premier has extensive experience in the design and implementation of data management solutions for large and small projects. A comprehensive data management approach allows site managers and decision-makers to effectively evaluate and rely upon site data. Additionally, Premier's data management staff includes experienced scientists and engineers who review data objectively to ensure that clients do not suffer from "garbage in, garbage out" problems. Therefore, as part of our data management services, Premier performs a cursory review of the data in order to make a reasonable determination concerning data quality.

Premier's **Data Quality Assurance Services**, where we help our clients ensure that their sampling designs, sampling protocols and analytical methods will produce valid data consistent with data quality objectives, are a natural partner for our **Database Management Services**.

## Environmental Monitoring Data

The volume of data generated during field studies can be cumbersome without a well-planned data management system. Through the development of field data sheets, electronic spreadsheet templates, and specialized database structures, Premier has streamlined the collection, storage, and analysis of monitoring

data. Such data management techniques have improved efficiency in data analysis, report generation, and electronic reporting to regulatory agencies. Data management systems can be tailored to field programs in soil and groundwater studies, fisheries, benthos, surface water and sediment quality investigations, and toxicological assessments.

## Multi-Stake Holder Databases

To synthesize and analyze data from a number of separate studies, data can be converted from a variety of formats and compiled in a standard database structure. Premier has developed databases for the purpose of integrating disparate data sets for analysis. Projects of this nature have included criteria development and assessment, data summary analysis, and historical data compilation.



## Geographic Information Systems

Environmental data interpretation can be enhanced with the use of geographic information systems (GIS). The ability to visualize and compare different types of data (e.g., land use, water quality, fisheries) allows environmental managers to "see" the extent of environmental impact or potential resource use conflicts. A standard tool in the forestry and planning sectors, GIS technology is gaining popularity for the management and analysis of environmental data.

## Compliance Management Systems

In order to facilitate our clients' ability to remain in compliance with regulatory agencies, Premier has developed a web-based compliance management portal that allows users to efficiently enter and maintain air, water, and waste compliance records. In addition, the system can also calculate emission rates, and inform users when compliance issues might emerge. Calendar and task management tools can also be provided allowing users to manage workflow for all potential compliance related tasks.

## Representative Staff Profiles:

### Corinne Severn, Senior Environmental Scientist

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**Expertise:** database development and programming; Geographic Information Systems (GIS); site characterization; CERCLA, and NRDA.

Ms Severn has extensive experience in providing a complete range of data-related services including database design; assembly of diverse data formats into standardized database structures; writing database programs in Visual FoxPro or Microsoft Access® to automate data translation or analysis tasks; and developing "user-friendly" interfaces for non-database users to manipulate or analyze environmental databases.

### Thomas Redd, PE, CFO

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**Expertise:** Information management and presentation; business opportunity analysis of economically and environmentally impaired properties; conceptual evaluation of remedial alternatives; regulatory negotiations.

Mr. Redd has extensive experience scoping and leading the development of Web based data management tools, including usability studies, best practice evaluations, requirements definition, and technology selection. Mr. Redd has led the development of applications for numerous large, private clients, including international forest products companies, chemical manufacturers, telecommunications firms, and utilities.

**To learn more about Premier or one of its sister companies please contact any of our staff members or visit one of our websites at:**

[www.premiercorp-usa.com](http://www.premiercorp-usa.com)

[www.premoteam.com](http://www.premoteam.com)

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# Project Descriptions



## NOAA / US EPA National Sediment Inventory Database Management Support

### Situation

The U.S. Environmental Protection Agency (EPA) is required to update Congress regularly on the status of contaminated sediments associated with U.S. waterways. For a recent report, EPA staff needed to gather a thorough set of recent data within a limited time frame. They then needed to analyze the data, write a report, and prepare the data for distribution to the public. The EPA approached National Oceanic and Atmospheric Administration (NOAA) Coastal Protection and Restoration Division (CPRD) staff who had developed several watershed-based databases and requested that the agencies work cooperatively to share data and technology solutions. Since much of the NOAA data resided in database management systems separated geographically, the data needed to be merged into a single database management system.

### Solution

Premier staff who had worked with NOAA CPRD to develop many of the watershed databases prepared a single database management system with all available NOAA data sets. The new data set eliminated potential duplication that could arise from combining multiple sets together and the chemical and biological test coding systems were standardized. The final database was tested to ensure all database relations worked as designed. Once EPA had completed the development of the database using data acquired from NOAA and multiple additional sources, Premier reviewed and updated the final EPA database to ensure that all data were consistent in their coding. The database structures were then refined to work with the NOAA Query Manager™ data analysis system.

### Results

Based on the work completed by Premier in cooperation with NOAA, the EPA will be able to distribute their final sediment database, containing over 30,000 sediment samples, to the public via the internet. Interested individuals, agencies, and corporations will not only be able to acquire data of interest, but will also have that data in a format that will work with existing data analysis and mapping tools.

## Environmental Compliance Management System – Forest Products Manufacturer

### Situation

A regional forest products manufacturer was in the process of purchasing an existing wood laminate manufacturing facility. The facility was in a region with significant environmental regulatory oversight, including strict air, water, and waste compliance management requirements. The new owner did not have extensive experience in environmental compliance, and the competitive market they were operating in did not allow them to expend extensive resources on non-manufacturing costs.

### Solution

Working with the client, the new facility staff, and the local regulatory agencies, Premier developed a Web based compliance management portal that allowed the client to efficiently enter and maintain air, water, and waste compliance records. The Web based system allowed remote management staff to track the compliance status of the facility without leaving their desks. In addition to the entry and maintenance of compliance data, the system also automatically calculated emission rates, and informed staff when compliance issues might emerge. The system also provided calendar and task management tools that allowed staff to manage workflow for all the compliance related tasks.

### Result

The client has successfully remained in compliance at the facility. In addition, they were also able to reduce the staff devoted to environmental compliance related activities from three full-time staff members to one part-time staff member.

