



CSC

ENVIRONMENTAL DATA ASSESSMENT

SUPPORTING EPA WITH STATE-OF-THE-ART
DATA VALIDATION, VERIFICATION, AND ANALYSIS

An industry leader in developing and implementing environmental data assessment protocols and tools, CSC provides EPA with state-of-the-art support that includes automated data delivery systems for laboratories to report analytical data in a standardized format to enhance data comparability. We provide data validation, verification and analysis solutions to the Office of Solid Waste and Emergency Response, including the Office of Superfund Remediation and Technology Innovation, and the Office of Water, including the Office of Science and Technology and the Office of Ground Water and Drinking Water.

Data of Known and Reliable Quality - Available Rapidly

To help EPA ensure that decisions are based on data that are accurate and applicable for their intended purpose, CSC supports EPA's Office of Solid

Waste and Emergency Response and Office of Water with proven environmental data assessment tools.

Our data validation and statistical analysis solutions support regulatory decision making and cleanup actions. With our expertise, EPA is assured of reliable data that will withstand legal scrutiny and can be used for regulatory and compliance purposes.

Our experienced staff members have validated the vast majority of all Superfund program data from the beginning of the program to today, incorporating automated data review routines resulting in EPA cost savings and increased data integrity. CSC has been equally instrumental in EPA's water programs, validating more than 500,000 data results used by EPA to regulate effluent discharges for industries monitored under EPA's National Pollutant Discharge Elimination System.

Since 1980, CSC has reviewed more than 1 million data results generated by laboratories in EPA's Contract Laboratory Program, relying on data validation processes that we have refined for nearly 30 years. EPA has used these data in making decisions regarding listing hazardous waste sites on the National Priorities List and in planning remedial actions for site cleanup.





Benefits to EPA

- *Helps ensure that critical environmental decisions are based on accurate data*
- *Provides for seamless compliance with policies and standards governing data format and data management*
- *Uses electronic delivery to improve efficiency and standardized formats to enhance data comparability*
- *Enables effective validation of large volumes of data for complex programs*
- *Generates significant cost savings while enhancing data integrity*

Who We Are and What We Do

CSC's data assessment staff members have significant experience in analyzing, reporting and validating data results from different types of analyses in multiple matrices. Notably, 75% of our staff experience has been in direct support of EPA's analytical programs. We value field experience as a key factor in understanding data and its applications, and most of our staff members have bench experience.

CSC scientists apply proven data review techniques to validate the data and create databases that facilitate data analysis and reporting. We have contributed to the design of analysis and reporting requirements for data in areas such as chemistry, radiochemistry, classical microbiology and biochemistry, giving us an in-depth understanding of the data from collection to results and strengthening our data validation approaches.

Drawing on deep expertise in these areas as well as in virology, public health, engineering, research, regulatory analysis, environmental engineering, information technology and database development, our staff members provide a comprehensive set of services to EPA:

- Data reporting requirements development
- Data review protocol development
- Data verification and validation
- Statistical and qualitative analysis of data results
- Narrative and quantitative data review reports
- Database development and management
- Regulation-quality report development

The CSC-EPA Collaboration: What We've Accomplished

Clean Water Act Data Validation and Verification. In 1979, CSC created and implemented the first data review protocols for data collected from analysis of municipal and industrial wastewater samples in EPA's effluent guidelines program. These protocols involve an initial check for data completeness and reviews for compliance with contract

requirements and method specifications, with proper performance of quality control analyses and instrument checks serving as the primary basis for verification of data accuracy. Through the years, CSC has developed customized data review protocols for verification and validation of more than 500,000 data results for effluent guidelines studies across municipal and industrial discharge categories. CSC also develops data reporting requirements and validates data in EPA method development studies, monitoring surveys and frequency and occurrence studies including national dioxin surveys, a nationwide survey of fish tissue contamination and a study of persistent bioaccumulative toxins (PBTs) in fish tissue in U.S. lakes.

Superfund Data Validation and Verification. CSC routinely reviews analytical data received from commercial laboratories under contract to EPA under its Superfund Contract Laboratory Program (CLP). Since 1980, CSC has reviewed and validated more than 1 million CLP data results. All data are processed through automated systems that check for compliance with analytical method specifications and contract requirements, including quality assurance actions and quality control criteria. CSC's Contract Compliance System (CCS) was one of the earliest automated data assessment programs in existence, enabling production processing of high quantities of site data.

Electronic Data eXchange and Evaluation System (EXES). In the late 1990s, CSC developed and implemented a data assessment tool called EXES that we continue to improve. EXES integrates automated software and standardized sample processing procedures to support rapid turnaround data validation and management for large-scale laboratory data generation under EPA's CLP. The flexibility and adaptability of this tool come from its use of the Staged Electronic Data Deliverable (SEDD), an interagency effort to create an XML-based generic format for electronic delivery of environmental analytical data. SEDD offers several stages of data deliverables, representing increasing levels of both data details and data validation steps. Each time EXES is applied to a new program, CSC experts work with the client to identify the appropriate SEDD stage(s) needed to achieve a balance between data submission effort and data validation steps.

Success Story: Saving EPA \$29 Million in Data Validation Costs

In response to EPA's need for rapid turnaround of large-volume data generated in its Superfund program, CSC designed and implemented the EXES automated data assessment software. EXES is used to perform approximately 4,000 Quality Assurance Assurance/Quality Control (QA/QC) and data assessment/review checks on more than 10,000 laboratory analyses results each month. Data assessment results are sent to customers electronically in customized formats *within 24 to 48 hours of data receipt*.

To enhance its value, EXES includes a self-inspection function that allows laboratories to input their data and check for any defects prior to data submission, significantly reducing errors found during data validation.

For More Information

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