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EPA

The Minimum Set Of Data Elements For Ground Water Quality

Fact Sheet On Implementation For States, Local Governments, Tribes, Federal Agencies, Grantees, Associations And The Regulated Community

Why a Minimum Set of Data Elements for Ground Water Quality?

As a part of the Environmental Protection Agency's (EPA) continuing commitment to protect the Nation's ground water resources, the Agency has identified a critical need to improve the management of ground water information.

To meet this need, EPA's Office of Ground Water and Drinking Water, with the help of numerous State and Federal officials, has established a Minimum Set of Data Elements for Ground Water Quality (MSDE).

What is the MSDE?

The MSDE is "the minimum number of elements necessary to use ground water quality data . . . across related programs." It is a set of 21 ground water quality-related data elements that contain geographic, well and sample descriptors.

These data elements form a standard data set that EPA and States can use to improve their ability to store and manipulate ground water data in order to support better environmental decision-making and promote the integration of related environmental programs. The MSDE will also allow EPA, other Federal agencies and States to share data across programs to accurately identify environmental risks associated with ground water contamination and to measure progress in efforts to protect ground water.

Although EPA requires that only EPA and EPA contractors use the MSDE, EPA strongly encourages all organizations that collect ground water quality data to adopt and use the MSDE. Such organizations include State and local governments, EPA grantees, other Federal agencies, the regulated community, associations and other members of the ground water community.

What are the benefits of incorporating the MSDE into ground water-related activities?

Use of the MSDE will support better environmental decision-making and promote the integration of related environmental programs. MSDE standardizes the collection and storage of ground water data to allow efficient sharing of these data.

Such sharing will facilitate effective and efficient information exchange and program coordination within and between Federal, State and local programs, including Wellhead Protection (WHP) Programs and Comprehensive State Ground Water Protection Programs (CSGWPP).

The MSDE will also help organizations that need additional ground water data but lack the funds to collect it themselves. The MSDE can help State or local agencies access other data bases to find information before spending often scarce resources to implement expensive ground water monitoring programs.

With widespread use of the MSDE, an agency can turn to numerous sources for data, such as:

- EPA's Federal Reporting Data System (FRDS), which contains data on public water supplies;

- EPA's Storage and Retrieval (STORET) system, which contains information on ambient, intensive survey, effluent and biological water quality monitoring information;

- The U.S. Geological Survey's National Water Information System (NWIS II), which contains hydrologic and other information on the Nation's water resources;

- Information gathered by RCRA and CERCLA site managers; and

- Local or State health and environmental departments.

As part of current modernization programs, the MSDE is being incorporated into the FRDS, STORET and NWIS systems.

The MSDE can also enhance use of geographic information systems (GIS), which rely on data from several sources. The strength of a GIS lies in its ability to overlay numerous layers of location-related information. Because data capture is the most time-consuming component of GIS work, efforts to standardize data, by using

the MSDE, can enhance the use of a GIS.

The MSDE

The Minimum Set of Data Elements are subdivided into four categories:

1.	General Descriptor	#1
2.	Geographic Descriptors	#2-10
3.	Well Descriptors	#11-15
4.	Sample Descriptors	#16-21

The Minimum Set of Data Elements consists of the following elements:

1. Data Sources
2. Latitude
3. Longitude
4. Method Used to Determine Latitude and Longitude
5. Description of Entity
6. Accuracy of Latitude and Longitude Measurement
7. Altitude
8. Method Used to Determine Altitude
9. State FIPS Code
10. County FIPS Code
11. Well Identifier
12. Well Use
13. Type of Log
14. Depth of Well at Completion
15. Screened/Open Interval
16. Sample Identifier
17. Depth to Water
18. Constituent or Parameter Measured
19. Concentration/Value
20. Analytical Results Qualifier
21. Quality Assurance Indicator

How can the MSDE help States with the development and implementation of CSGWPPs?

Incorporating the MSDE will assist States in achieving formal endorsements of their Core CSGWPPs from EPA. As stated below, use of the MSDE is one of EPA's adequacy criteria for Core CSGWPP endorsement:

> *The State has defined a set of data elements to facilitate efficient data sharing and cross media analyses and to provide users with consistent and comparable data.*

In addition to facilitating endorsement of a State's Core CSGWPP, incorporating the MSDE improves the efficiency and effectiveness of a CSGWPP. By allowing States to more easily evaluate hydrogeologic features, contamination threats and ground water quality data, the MSDE can help States develop a CSGWPP that reflects the unique ground water protection priorities of each State. Once the CSGWPP is in effect, the MSDE helps States efficiently measure progress in and document the success of the CSGWPP approach at the State level and will help States reevaluate their CSGWPP priorities and identify new ground water protection needs.

MSDE use can also help States develop WHP Programs. By making ground water data procurement and evaluation less difficult, the MSDE can help States to meet two criteria for WHP Programs:

- Determining appropriate WHP delineation methods, thresholds and criteria; and

- Identifying and prioritizing sources of ground water contaminants.

Are other States incorporating the MSDE into their ground water protection activities?

A number of States are working towards incorporating the MSDE into their ground water programs. For example, various programs within the Minnesota Pollution Control Agency (MPCA) stored ground water data collected in a variety of data bases and formats that made it difficult to compare data. MPCA then developed a data base called the Integrated Ground Water Information System (IGWIS). As the MSDE developed, MPCA added MSDE elements not already included in IGWIS.

MPCA recognized the benefits of including these minimum data elements in any comprehensive data bases. Establishing these data collection standards has helped MPCA collect, access, share and utilize ground water data among multiple program areas.

In Idaho, the Department of Health and Welfare is completing a modification of their Drinking Water Information Management System (DWIMS), which will include drinking water, surface water and ground water data. DWIMS is designed to incorporate the MSDE. Including the MSDE will help Idaho report public water supply

data to EPA and enhance Idaho's ability to interact with other State and Federal data bases.

Where Can I Get More Information?

More information can be found in:

Definitions for The Minimum Set of Data Elements for Ground Water Quality, EPA 813/B-92-002, July 1992 (guidance document).

Minimum Set of Data Elements for Ground Water Quality - Brochure

Copies may be obtained by calling:

U.S. EPA
Safe Drinking Water Hotline
1-800-426-4791

or writing:

U.S. EPA
Office of Ground Water and Drinking Water Resource Center
401 M Street, S.W., RC-4100
Washington, D.C. 20460

For more information on the State projects contact:

- In Minnesota, Susan Schreifels at (612) 296-8581 or Shelly Street at (612) 296-7318; and

- In Idaho, Steve Dempsey at (208) 334-0414 or Derek Thomas at (208) 334-0484.