

Underground Injection Control (UIC) Flow Implementation Guide

The UIC data flow facilitates the collection, storage and retrieval of data related to underground injection of materials that may impact sources of drinking water. The UIC program regulates over 800,000 wells, including waste by-products from oil and gas exploration, waste classified as hazardous under RCRA, and any injection to wells that are deeper than they are wide. In the future it may be used to report on carbon sequestration.

BENEFITS

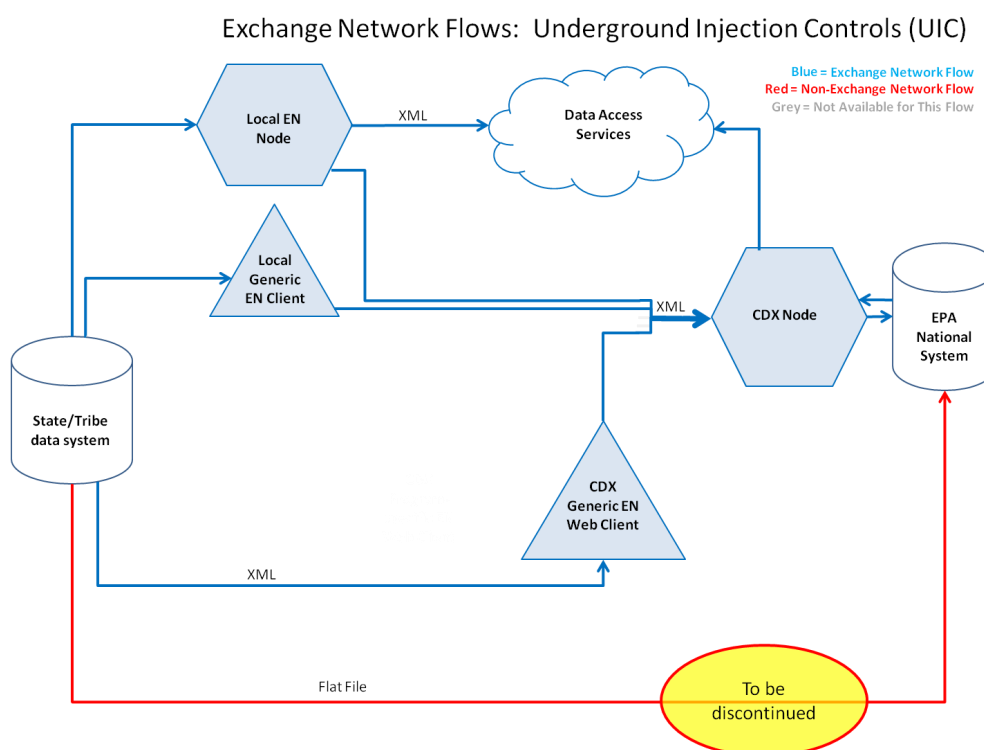
Automated data submission of UIC data will save partners time and money.

Practical Implementation Advice

- Flowing data to EPA from the current State UIC programs through the exchange network is a priority objective and has already been implemented in 25 of the 69 UIC programs." Partners with EN nodes that are not already flowing UIC data via the Exchange Network are encouraged to implement the flow.
- Agencies with responsibility for submitting UIC data that do not have an EN node should consider partnering with agencies or other organizations that do have a node—or they can implement currently available free node technology themselves.

UIC Data Flow Options

The graphic below shows the current options for flowing data. Exchange Network (EN) flow options are shown in blue and non-EN options are shown in red. (Terms are explained in Attachment I).



EXCHANGE NETWORK (EN) OPTIONS:

- Submit XML data via a local EN Node, local EN Client, or via the CDX Generic EN Web Client

NON-EXCHANGE NETWORK OPTIONS:

- Some States and tribes send data to EPA via flat files, paper, spreadsheets, or other formats. This approach will be discontinued.

Summary of Current Practice

The UIC version 2.0 schema has been stabilized, and robust submission tools have been implemented. The UIC program published version 2.0 of the UIC XML schema and announced it in the Exchange Network web site (<http://exchangenetwork.net/>) on July 6, 2010, with many key supporting documents.

Many of the entities reporting data are not EN partners—rather, they are State oil and gas commissions, etc. It is common practice for these non-EN partners to submit data to EPA Regions (via a variety of means), and then the Regions submit data to CDX.

Programs not flowing via the EN submit their data in paper, spreadsheet or other non-electronic form (i.e. no other legacy electronic submission systems exist). UIC has stated its intention to eventually receive all submissions via the established EN UIC data flow.

UIC Flow Status and Milestones

To transition users from manual submissions to the Exchange Network, OW is focusing on outreach and recruitment of remaining non-EN submitters with a Q4, 2013 target for full implementation. EN staff will make UIC implementation a special EN grant priority in FY 2011 to help the program meet this target.

Criteria:	Status	Actions	Primary Responsibility	Completion Period
Automation-ready flows	Done			
Solutions for all partners	Done			
Access to transaction status	Done			
Accessible and stable flow documentation	Done			
Specifications for Data Access Services	Attention Required	I. Develop, document, and demonstrate standard specifications for data access services	NOB with OGWDW input	Q4 2012
Clear path to eliminate alternatives	N/A			

Attachment 1: Terms

Node: A partner's point of presence on the EN consisting of a server (hardware and software) enabled with web services that allow partners to automatically provide and receive information via the Network and to publish data for use by other EN partners.

EN Client: A stand-alone application (i.e., software code) that lets partners submit data, request data, and receive results from an EN request. Clients differ from nodes in that they cannot respond to queries from other nodes and so cannot publish data. Clients also need more manual (vs. automated) steps, for example, to extract data and generate and review reports before submission.

CDX: EPA's Central Data Exchange. It serves as EPA's centralized electronic report receiving system. It receives data from partners and directs the data to EPA's program-specific National Systems (e.g., AQS, WQX, etc.).

CDX Node: CDX Node is EPA's node on the EN, allowing EPA to receive, send, and provide information via the Network. CDX Node can also publish EPA data for use by other EN partners.

CDX EN Web Clients:

- **Generic:** A client at CDX which receives XML-based data via standard web browsers for many different flows using Exchange Network protocols.
- **Program-Specific:** A client customized for a single National System with an intuitive user interface specific to the business process. Implemented at CDX, the client receives program-specific data in XML format via standard web browsers using Exchange Network protocols (e.g., for authorization and authentication, etc.)

CDX Web (non-EN) Application: A legacy CDX application that receives data (flat file or XML format) via standard web browsers. CDX Web applications are not consistent with EN protocols (e.g., they have a separate authentication and authorization service from the EN) and typically involve more manual steps than a node-to-node exchange of data.

Data Access Services: Using web services to make data available to Network users by querying nodes and returning environmental data in the form of XML documents. Published data can be accessed using a node or clients. Published data can be used in a number of ways, such as populating Web pages, synchronizing data between sites, viewing data in a Web service client, or building new sources of data into an integrated application.

Direct User: A partner entering data directly into a National Data System through a system-specific interface (manual entry).

EPA National Data System: Program-specific data systems at EPA that can receive and publish data via CDX.

Local Data System: A partner's database or series of databases in which environmental data is stored, managed, and manipulated.

XML: eXtensible Markup Language is a flexible language for creating common information formats and sharing both the format and content of data over the Internet and elsewhere. The electronic language that expresses and transports data standards and transaction sets. XML uses an extensible set of tags to describe the meaning of data.

Attachment 2: National System Flow “Ready to Use” Criteria

A focus of Exchange Network (EN) governance has been developing the National System Flows to help partners take advantage of the Network’s business value. Governance has identified six criteria for each flow to meet to make these flows “ready to use” by partners:

- Automation-ready flows. Support fully automated node-to-node flows.
- Access to transaction status. Support a fully automated process for reporting transaction status, processing results, and QA results from receipt by CDX through final processing in the National System.
- Accessible and stable flow documentation. Develop and make accessible stable documentation that describes all flow requirements. This includes a complete Flow Configuration Document (FCD) that is in compliance with EN procedures for version management.
- Solutions for all partners. Provide appropriately scaled EN solutions for partners of all sizes, needs, and capabilities. Some partners such as tribes and local clean air authorities may not need a fully functional node. A customized EN client or EN web client should be available to these users.
- Publishing interface. Provide a national standard set of query/solicit services defined in the FCD whether or not data are currently published. Implement a publishing interface where published data are critical to partner business processes (such as NPDES permit information for NetDMR).
- Clear path to eliminate alternatives. Have a clear path to eliminate legacy system alternatives to EN exchanges, including transition support for partners.