



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

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OFFICE OF
WATER

MEMORANDUM

SUBJECT: Transition from Existing Reporting Mechanisms to Electronic Submittal into the New National UIC Database

FROM: 
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TO: UIC Branch Chiefs, Regions I - X
UIC Data Management Steering Committee
State UIC Program Directors

As recommended by the Underground Injection Control (UIC) Data Management Steering Committee (DMSC), this memorandum describes benefits of submitting data to the UIC national database and steps to transition from existing UIC summary reporting to the electronic submission of well specific UIC program data.

BENEFITS OF ELECTRONIC SUBMITTAL TO THE NATIONAL UIC DATABASE

The electronic submittal of well specific UIC program data to the national UIC database is the most efficient means of collecting information necessary for EPA's tracking, management and evaluation of the UIC Program.

There are also benefits to the state and regional Direct Implementation (DI) programs. First, data quality will be measurably improved through more consistent definitions and system validation checks.

Second, the UIC database will reduce state and regional reporting burden and cost. The federal 7520 forms, the on-line inventory, and the Program Activity Measures (PAMs) will be generated from the UIC database. In addition, once the UIC database is fully populated, all UIC data will be submitted to EPA through one central database (i.e., "one-stop shop"), eliminating the need to make UIC-related submissions to multiple databases.

Third, having national well specific electronic data will improve the ability to communicate key information about the importance of the UIC program in protecting underground sources of drinking water. The inclusion of latitude/longitude information for wells in the national UIC database will facilitate integration with geospatial data layers from other programs, allowing states and regions to analyze a geographic area when reviewing activities in programs such as the Resource Conservation and Recovery Act program, the Source Water

Protection program, and the Underground Storage Tank program. In addition, regional data submitters currently reporting inspections using Inspection Conclusion Data Sheets (ICDSs) will only have to report this information to the UIC database. And, EPA expects the database to enable more efficient siting, tracking and management of new wells such as future Carbon Dioxide Geologic Sequestration wells, Aquifer Storage and Recovery wells, and the growing number of Class III wells related to uranium solution mining.

PROPOSED STEPS TO IMPLEMENT TRANSITION TO ELECTRONIC SUBMITTAL TO THE NATIONAL UIC DATABASE

EPA's long term objective is to meet all UIC reporting obligations with data electronically submitted to a single national database. Since the database launch, four state and seven regional programs have submitted data in an attempt to duplicate their current summary data submittals (e.g., 7520 forms, PAMs, and inventory). They then performed intensive "quality assurance" reviews to identify and resolve data quality issues and to ensure that electronic data submitted to the national UIC database will reflect these current summary data submittals. As of the end of FY 2008, five of the eleven programs (two states and three Regional DI) have finished this review step and are poised to complete the transition process.

EPA, along with participating states, have identified three major steps, described in the *Reporting Transition Table (Attachment 1)*, that must be completed before phasing out existing reporting mechanisms.

As appropriate, a state or regional program may choose initially to phase out the submission of some, but not all, existing EPA summary reporting. (See *Data Elements for UIC Reporting at Attachment 2* for the minimum data elements to be reported in the inventory, the PAMs and 7520 reports). Once the states and EPA determine that the electronic data submittal to the UIC database is working, EPA will ask the state or regional Program to officially transition from reporting for the 7520 forms, PAMs, and the on-line inventory. EPA will release standard operating procedures for these actions following this request.

CONTINUED SUPPORT & TECHNICAL ASSISTANCE FOR IMPLEMENTING TRANSITION PROCESS

Over time, UIC database will house the data of record for the national UIC program and will become the sole means of reporting the well specific data to EPA. The importance of paying close attention to the quality of the data at each step in the process, and ensuring that information in the database is presented clearly and judiciously cannot be overemphasized. Data submitters will need to commit to ensuring timely, accurate, and complete reporting for the long-term. Simultaneously, EPA will commit to working with states and regions to determine how data will be protected, accessed and communicated to best meet program needs.

EPA, as a member of the DMSC, will continue to encourage and work with the Committee's members, Integrated Project Team (IPT) members, and the Regional Data Management Coordinators to implement the proposed transition process. Our objective is to enable states and

DI programs to submit data electronically so that the benefits of the national database may be fully realized.

We look forward to assisting UIC programs in this transition process. States can direct questions regarding this memorandum to the Regional Data Management Coordinators and Regions can contact Trang Le (202)564-1572, Carl Reeverts (202)564-4632 or Robert Smith (202)564-3895 of EPA's Drinking Water Protection Division.

Attachments

ATTACHMENT 1 -- REPORTING TRANSITION TABLE

Steps for Transitioning to Electronic Submittal to National UIC Database

Details

1. *Getting Ready (i.e., follow 5 step mapping process)*

- Agree on data to be submitted, when and who is responsible for what. Trading Partner Agreement¹ facilitates discussion.
- Complete logical mapping of data elements from state and regional databases to the new UIC database structure.
- Complete physical mapping of data by converting state data and creating an XML document using EPA's schema.
- Submit data for validation – data must conform with set of UIC program business rules.
- Submit data to the national database.

2. *Assure that data flowing to EPA's database meet specified QA/QC requirements*

- Compare submitted data to data otherwise reported (e.g., inventory, PAMs, 7520s, ICDS), to identify and resolve data gaps, quality, and consistency.
- Meet with EPA to agree on data quality issues and plan and schedule for resolution.
- Resolve issues and demonstrate through resubmission of data.
- Agree on quality assurance and move state and regional data file on EPA's data base from pre-production status to production status.
- Repeat submission process in accordance with EPA's SOP on qtrly basis.

3. *Demonstrate that submission process can be consistently repeated on a quarterly basis*

- Repeat successful submission process no less than two consecutive quarters
- Document process to effectively reuse (rather than re-create) mapping tools and techniques each subsequent quarter
- Ensure high data quality and integrity in the process of flowing data account for staffing changes, use of data, etc.

Transition complete for: Inventory reporting; Program Activity Measures, 7520 forms once formal EPA approval is sent to the Region or the State or Tribe.

¹ States may choose not to sign a TPA as it is voluntary, however there must be an acceptable equivalent such as a good faith agreement on how and when to share data.

ATTACHMENT 2-- Data Elements for UIC Reporting (version 1 - 1/12/2009)

Data Element	Required Level *	Required Reason *	Inventory Report	Program Activity Measure Report (PAM)	7520s	Other Inventory Information *	Comment
1. Facility	1						
Facility ID	1	system					Primary Key
Facility City	2					other*	
Facility Name	1	program (core)					
Facility Petition Status	2C					class I	Required for facilities with Class I Hazardous wells
Facility State	2					other	
Facility State ID	1	program (core)					
Facility Street Address	1	program (core)					
Facility Type	2C					class I	Required for facilities with Class I wells
NAICS Code	2					other	
SIC Code	2					other	
Facility Zip Code	1	program (core)					
2. Contact	1						
Contact ID	1	system					Primary Key
Contact Phone	2				7520-4		
Contact Name	1	program (core)			7520-4		
Contact City	2				7520-4		
Contact State	2				7520-4		
Contact Street	1	program (core)			7520-4		
Contact Zip	1	program (core)			7520-4		
3. Permit	1						
Permit ID	1	system					Primary Key
Number of AOR Wells	2C				7520-1		Required for Class I and II wells
Authorized Status	1	program (core)	Invent. report	PAM	7520-1		
Ownership Type	2					other	Needed to report for OMB
Permit/Rule Authorized ID Assigned	1	program (core)					
4. Permit Activity	1C						
Activity ID	1	system					Primary Key
Permit Action Type	1	program (core)	Invent. report	PAM	7520-1		
Permit Action Date	1	program (core)	Invent. report	PAM	7520-1		
Permit ID	1	system					Foreign Key
5. Well	1						
Well ID	1	system	Invent. report	PAM	all 7520s		Primary Key
Aquifer Exemption	2C					other	Required for Non-Class IV Wells Only

Data Element	Required Level *	Required Reason *	Inventory Report	Program Activity Measure Report (PAM)	7520s	Other Inventory Information *	Comment
Total Depth	2C					class I and deep well	
High Priority	2C			PAM (class V)			Required for Class V Wells Only
Contact ID	1	system					Foreign Key
Facility ID	1	system					Foreign Key
Geology ID	2C or 1	system (class I & deep well)					Foreign Key; Required for Class I and Deep Wells Only.
Well Site	2C		Invent. report				Required for Class III, IV, and V storm water drainage wells only
Permit ID	1	system					Foreign Key
Well State ID	1	program (core)		PAM			
State/Tribe	1	program (core)	Invent. report (DI only)	PAM	all 7520s		Required of DI programs only
Well in Source Water Area	2			PAM		other	
Well Name	2					other	
6. Well Status	1						
Status ID	1	system					Primary Key
Well Status Date	1	program (core)	Invent. report	PAM			
Well Operating Status	1	program (core)	Invent. report	PAM			
Well ID	1	system					Foreign Key
7. Well Type	1						
Well Type ID	1	system					Foreign Key
Well Type	1	program (core)	Invent. report	PAM	7520-4		
Well Type Date	1C	program (core)	Invent. report	PAM	7520-4		Required when well type changes
Well ID	1	system					Foreign Key
8. Location	1						
Location ID	1	system					Primary Key
County	2C					other	Required if well NOT on tribal land.
Accuracy Value & Unit	2					other	
Description Category	2					other	
Horizontal Datum	2C					other	
Method of Collection	2C					other	
Point Line Area	2C					other	
Source Scale	2C					other	
Well ID	1	system					Foreign Key
Well Latitude	2					other	
Well Longitude	2					other	Needed to pinpoint a well position
9. Violation			Not applicable if no violation				
Violation ID	1	system					Primary Key
Contamination	2				7520-2A		
Endangering	2				7520-2B		

Data Element	Required Level *	Required Reason *	Inventory Report	Program Activity Measure Report (PAM)	7520s	Other Inventory Information *	Comment
Violation Return to Compliance Date	2			PAM	7520-2A, 7520-2B		
Violation Significant (SNC)	2C			PAM	7520-2B		
Violation Date	1			PAM	7520-2A, 7520-2B, 7520-4		
Violation Type	1			PAM	7520-2A, 7520-2B, 7520-4		
Well ID	1C	system		PAM			Foreign Key; required if Facility ID is blank
Facility ID	1C	system					Foreign Key; required if Well ID is blank
10. Response*	1C	Not applicable if no enforcement action					
Enforcement Action ID	1	system					Composite Primary Key/Foreign Key
Violation ID	1	system					Composite Primary Key/Foreign Key
11. Enforcement		Not applicable if no enforcement action					
Enforcement Action ID	1	system					Primary Key
Enforcement Action Date	1C			PAM	7520-2A, 7520-2B, 7520-4		
Enforcement Action Type	1			PAM	7520-2A, 7520-2B, 7520-4		
12. Inspection		Not applicable if no inspection					
Inspection ID	1	system					Primary Key
Assistance	2C						Required of DI programs only
Deficiency	2C						
Inspection Date	1			PAM	7520-3		
ICIS Compliance Monitoring Action Reason	2C						Required of DI programs only
ICIS Compliance Monitoring Type	2C						
ICIS Compliance Activity	2C						
ICIS MOA Priorities	2C						
ICIS Regional Priorities	2C						
Inspection Type	1			PAM	7520-3		
Well ID	1C	system		PAM			Foreign Key; required if Facility ID is blank
Facility ID	1C	system (no well only)					Foreign Key; required if Well ID is blank
13. Correction		Not applicable if no corrective action					
Correction ID	1	system					Primary Key
Corrective Action Type	2						Required if a well is "deficiency"
Comments	2C						Required if Corrective Action Type is "Other"
Inspection ID	1	system					Foreign Key

Data Element	Required Level *	Required Reason *	Inventory Report	Program Activity Measure Report (PAM)	7520s	Other Inventory Information *	Comment
14. Mechanical Integrity Test		Not applicable if no MI Test					
MIT ID	1	system					Primary Key
MIT Date	1			PAM	7520-3		
MIT Result	1			PAM	7520-3		
MIT Type	1				7520-3		
Remedial Action Date	1C				7520-3		Required if Remedial Action Type exists.
Remedial Action Type	2C				7520-3		Required if MIT Result is "F"
Well ID	1	system					Foreign Key
15. Engineering		Class I and deep well only; not applicable if engineering information is not reported					
Engineering ID	1	system					Primary Key
Max Flow Rate	2C						
Onsite Injection	2C					class I and deep well	
Offsite Injection	2C						
Well ID	1	system					Foreign Key
16. Geology	2C	Class I and deep well only; not applicable if geology information is not reported					
Geology ID	1	system					Primary Key
Name of Confining Zone	2C						
Top of Confining Zone	2C						
Bottom of Confining Zone / Top of Injection Zone	2C						
Lithology of Confining Zone	2C						
Name of Injection Zone	2C						
Bottom of Injection Zone	2C						
Lithology of Injection Zone	2C						
Top of Injection Interval	2C						
Bottom of Injection Interval	2C						
Injection Zone Permeability	2C						
Injection Zone Porosity	2C						
USDW Depth	2C						
17. Waste		Class I only; not applicable if waste information is not reported					
Waste ID	1	system					Primary Key
Waste Code	2C					class I	
Waste Stream	2C						
Well ID	1	system					Foreign Key

Data Element	Required Level *	Required Reason *	Inventory Report	Program Activity Measure Report (PAMI)	7520s	Other Inventory Information *	Comment
18. Constituent	2C	Class I only; not applicable if constituent information is not reported					
Constituent ID	1	system					Primary Key
Concentration Value	2C						Required if constituent name is not blank
Concentration Unit	2C						Required if concentration value exists
Constituent Name	2C						
Waste ID	1	system					Foreign Key

Notes:

1. Require Level: -- 1 or 1C means data element is **mandatory** for the submission
-- 2 or 2C means data element is **expected** but not mandatory for the submission
2. Required Reason: -- "system" means technical data element required for database referential integrity
-- "program" means core data element required for electronic UIC data transfer
3. Other Inventory Information -- "other" means integration to other EPA data system or frequently responses to Congress/GAO/Public
4. Required for the submission: -- Table
-- Field (Data element):
5. Table not required but expected:
6. Data element required only if the table exists
7. Required elements for an individual report: