



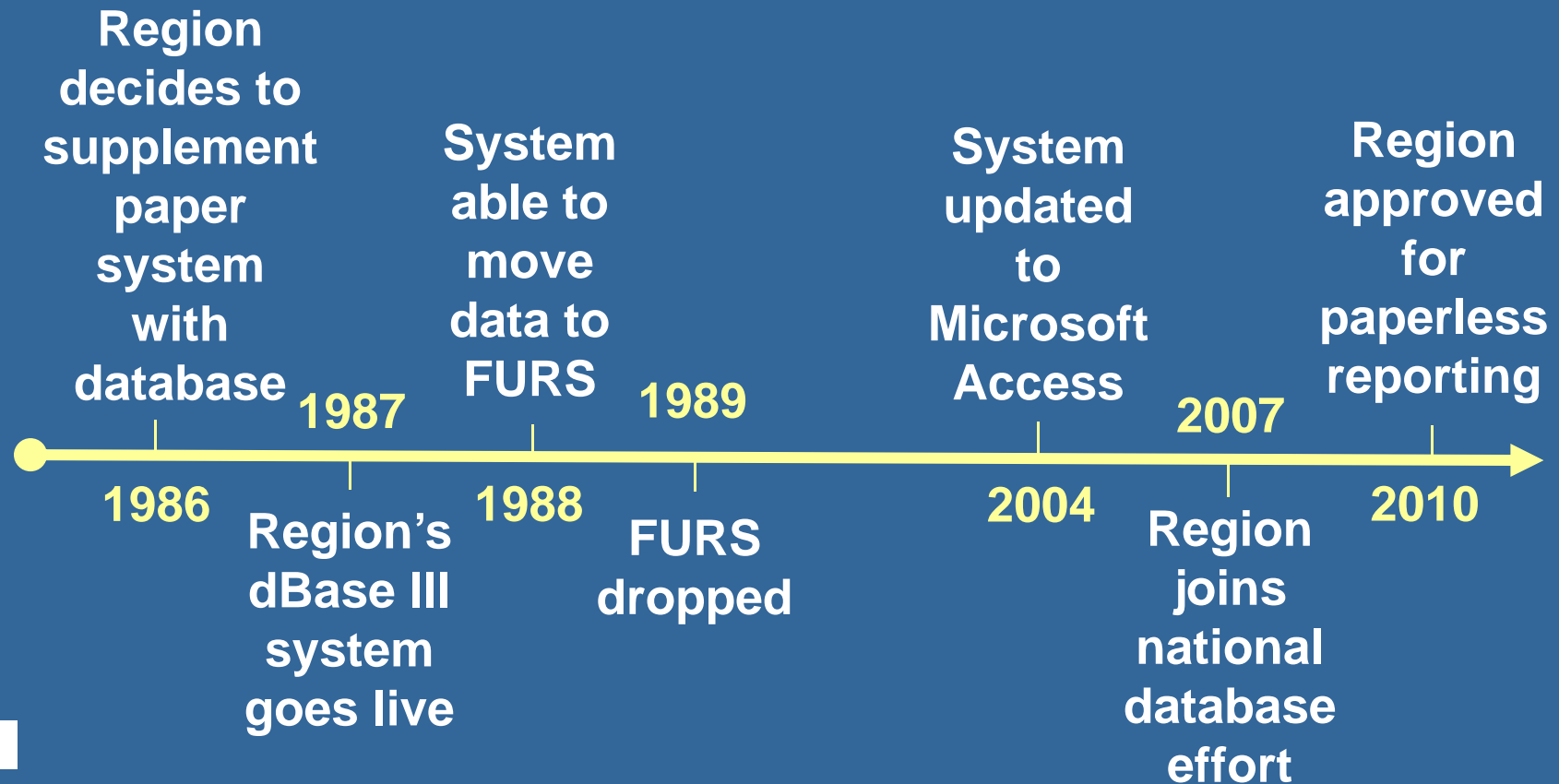
Region 7's Experience with the Underground Injection Control Program's National Database

Kurt Hildebrandt, Environmental Scientist

EPA Region 7

September 15, 2009

Region 7 Database Timeline



Issues Facing the R7 UIC Direct Implementation Program

- Small program
 - 3 staff
 - ~1,400 wells (primarily Class 5)
- Lack of funding
 - ~\$70,000 in funding
- Need to better manage well information
- Additional reporting burdens
- Opportunity for assistance from Headquarters

Summary of Old Database

- Only tracks owner/operator and basic well information
- Does not track:
 - Inspection data
 - Permitting information
 - Enforcement information
- Limited data polling and reporting functionality:
 - No 7520 reporting
 - No PAMs reporting

Expectations of New Database

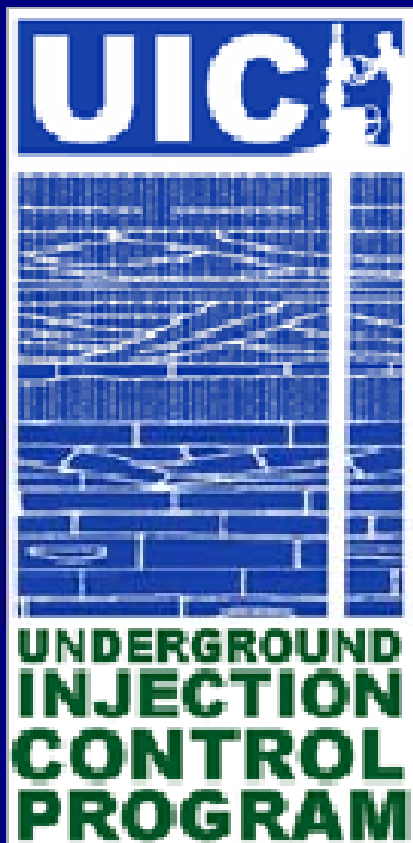
- A system that would assist the region in tracking:
 - Inventory information
 - Inspection data
 - Permitting information
 - Some enforcement information
- Offered ability to poll data and generate electronic and printed reports
- Would meet the EPA UIC data model needs
- Could transfer data easily over to the national database
- Relieve region of reporting burden

Planning for the New Database

- Decided if we were doing this in-house or hiring it out
- Developed a data dictionary for existing database
- Compared data dictionary for old system to the one for national system
- Mapped out the two and determined gaps
- Determined if we needed additional data that neither system tracked
- Determined new data structure
- Planned out how to move the data over from the old system to the new one

New Region 7 Database Features

- Networked
- Automatically generates facility ID number
- Tracks:
 - Inventory information
 - Inspection data
 - Permitting information
 - Some enforcement information
- Ability to poll data and generate electronic and printed reports
- Uses the national database structure
- Conforms to the national database's business rules
- Three step process to transfer data into the national database



EPA - R7 UIC Database



- View/Enter UIC Data
- Geology Reference Data
- Staff Reference Data

- Transfer Data to HQ UIC Access Database

- UIC Data Query Builder Tool

R7 UIC Facility/Owner/Permit Information

New Facility **Delete Facility** **Facility/Owner/Permit Information**

Filter Options Facility Name Permit Number County

Facility Information

Facility Name **Ankeny City Well # 6 (ASR Well)**

Street 1 **3700 NE Otter Creek Drive**

Street 2

City **Ankeny**

State **Iowa**

Zip Code **50023**

Contact **Jim McKenna**

Phone **(515)963-3524**

Type **Non-Commercial**

NAICS Code

SIC Code **4941**

Petition Status **Not Applicable**

Owner/Contact Information Copy Data

Company Name **City of Ankeny**

Street 1 **220 West First Street**

Street 2

City **Ankeny**

State **Iowa**

Zip Code **50023**

Contact **Jim McKenna**

Phone **(515)963-3524**

Type Ownership **Other- in general (not fit any "**

Form Menu

Well Records

Geology Reference Data

Facility Inspections

Facility Violations and Enforcement

Facility Data Rpt

Permit Information

Permit Number **IAS153210003**

Authorized Status **Individual Permit**

Expiration Date:

AOR Wells w/ Corrective Action

Permit Activity

Type (Required)	Date (Required)
Application for Permit Issuance	8/24/2007
Application Determined to be Incomplete Date	10/24/2007
Application for Permit Issuance	11/20/2008
Permit Issued	4/1/2009

Record: 945 of 1065 Unfiltered AS153210003

R7 UIC
Well Information

Filter Options Well Facility
 County

Facility **Ankeny City Well # 6 (ASR Well 2)** Well Program ID **IAS153210003001** Well Name **001**

Facility Data
 Name **Ankeny City Well # 6 (ASR Well 2)** Permit Number **IAS153210003** Type **Non-Commercial**
 Owner **City of Ankeny** Contact **Jim McKenna** Phone **(515)963-3524**

General Well
Well Type/Status (Req)
Well MIT/Inspections
Well Engineering
Geology

Well Site Name (Class III, IV, V) **Ankeny City Wel** Aquifer Exemption **No**
 State/Tribe Postal Code **Iowa** High Priority (Class V) **Yes** Total Depth
 Source Water Area **Well is NOT in the ground water based source water area for CWS**

Location

County	Polk	Latitude	Accuracy Value
Quarter Section	SW	Longitude	Description
Section	06		Horizontal Datum
Township	T80N		Collection Method
Range	R23W		Source Scale
			Point-Line-Area

Record: Search

R7 UIC
Facility/Owner/Permit Information
Well Information

New Well
Copy Well
Delete Well
Well Information
Validation Reports
+

Filter Options Well Facility
 County

Facility Ankeny City Well # 6 (ASR Well 2) Well Program ID IAS153210003001 Well Name 001

Facility Data
 Name Ankeny City Well # 6 (ASR Well 2) Permit Number IAS153210003 Type Non-Commercial
 Owner City of Ankeny Contact Jim McKenna Phone (515)963-3524

Waste and Constituent
Enter/Edit Well Inspections
Violations and Enforcement

General Well
Well Type/Status (Req)
Well MIT/Inspections
Well Engineering
Geology

Well Type

Well Type	Date
Aquifer storage and recovery	8/24/2007
*	

Record: 1 of 1 No Filter Search

Well Status

Operating Status	Date
Proposed Well (associated with permit application only)	8/24/2007
Active	4/1/2009
* Active	

Record: 1 of 1 Filtered Search

R7 UIC Facility/Owner/Permit Information Well Information

Well Information

Filter Options Well Facility
 County

Facility Ankeny City Well # 6 (ASR Well 2) Well Program ID IAS153210003001 Well Name 001

Facility Data
 Name Ankeny City Well # 6 (ASR Well 2) Permit Number IAS153210003 Type Non-Commercial
 Owner City of Ankeny Contact Jim McKenna Phone [515]963-3524

General Well Well Type/Status (Req) Well MIT/Inspections Well Engineering Geology

MIT Tests

Test Date 3/5/2008 Remedial Action Date
 Test Result Pass Remedial Action Type
 Test Type Casing | Tubing Pressu

Record:

Existing Inspections Review

Type	Date	Inspector	Assistance	Deficiency	ICIS Reason	ICIS Type	IC
Mechanical Integrity	3/5/2008	Kurt Hildebran	(1) General onl	No Deficiency	Core Program	On-Site Visi	Cc
*							

Record:

R7 UIC | Facility/Owner/Permit Information | **Well Information**

New Well | Copy Well | Delete Well | **Well Information** | Validation Reports

Filter Options Well: [] Facility: []
 County: []

Facility: **Ankeny City Well # 6 (ASR Well 2)** | Well Program ID: **IAS153210003001** | Well Name: **001**

Facility Data
 Name: **Ankeny City Well # 6 (ASR Well 2)** | Permit Number: **IAS153210003** | Type: **Non-Commercial**
 Owner: **City of Ankeny** | Contact: **Jim McKenna** | Phone: **(515)963-3524**

Waste and Constituent | Enter/Edit Well Inspections | Violations and Enforcement

General Well | Well Type/Status (Req) | Well MIT/Inspections | Well Engineering | **Geology**

Geology Add Geology Data





ZoneType	FormationName	FormationTop	FormationBottom	InjectionTop	InjectionBottom
Confining Zone-Upper	Prairie du Chien Group	1991	2141		
Injection Zone	Jordan Aquifer System	2141	2476	2141	2476
USDW	Jordan Aquifer System	2141	2476	2141	2476
Confining Zone-Other	St. Lawrence Formation	2476	2541		
Confining Zone-Lower	Lone Rock Formation	2541	2676		
*					

Record: 1 of 5 | No Filter | Search


Note: Records of Zone Type equal to "Confining Zone-Upper", "Injection Zone" and "USDW" will be filtered out of the Non-USDW Data.

Record: 1 of 1 | Filtered | Search

R7 UIC UIC - Query Builder

Custom User Queries



Select a query from the list:

Name	Modified
Facility List	12/22/2008 9:58:44 AM
Inspection List	2/9/2009 11:19:51 AM
Permit History	2/9/2009 11:21:13 AM
Permit History - Last Activity	4/6/2009 5:29:30 PM
Permit List	4/6/2009 5:40:30 PM
Permit List - With County	4/7/2009 9:36:56 AM
Update Records	2/13/2009 2:53:22 PM
Update Well Site Name	2/13/2009 10:51:01 AM
Well Listing	4/7/2009 9:43:30 AM

Query Name: Well Listing

Query Description:

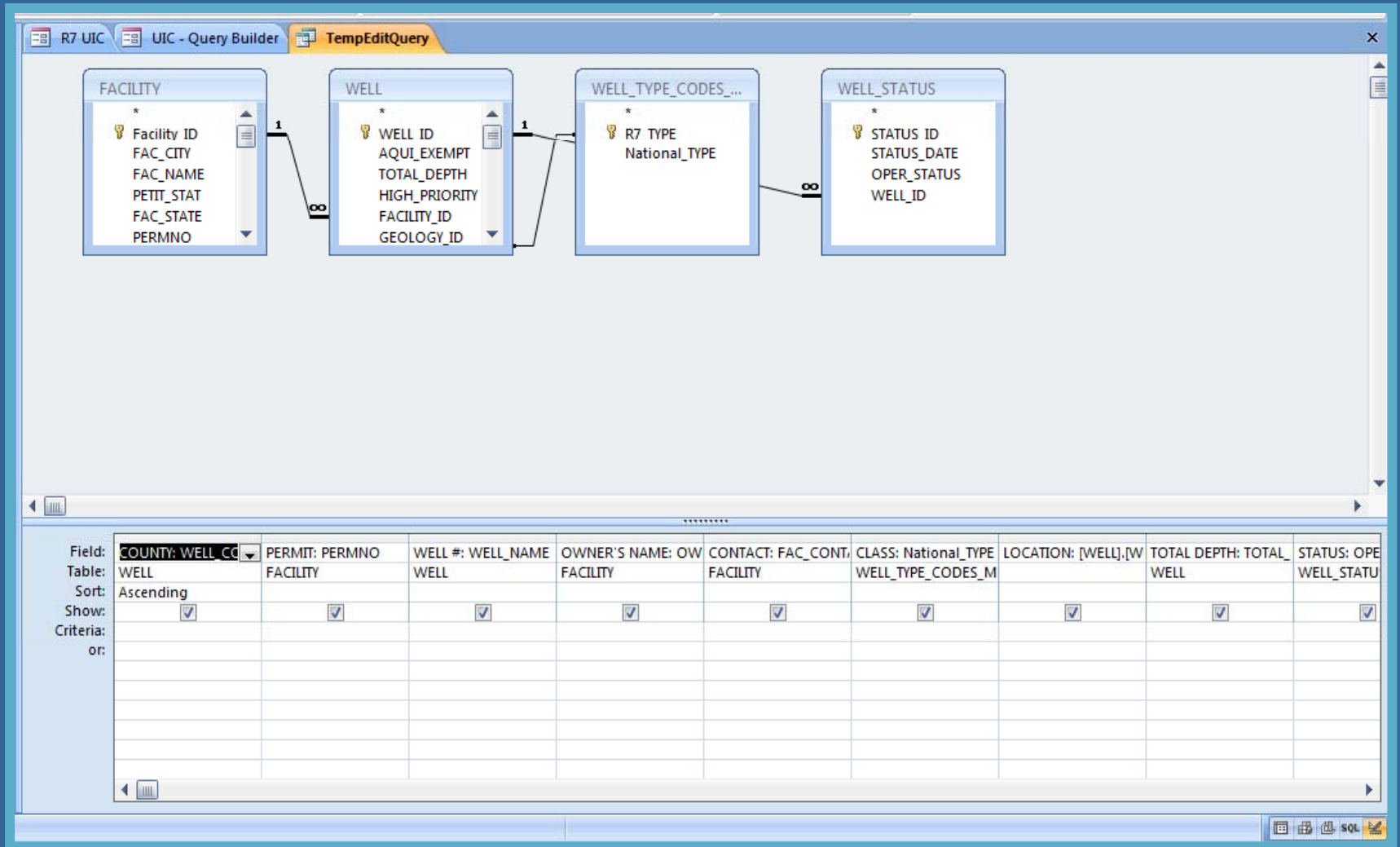
This returns a listings of wells.

Select a query (left) and enter/view the description (above)
 NOTE: Query descriptions are limited to 255 characters

SQL Statement:

```

SELECT WELL.WELL_COUNTY AS COUNTY, FACILITY.PERMNO AS PERMIT,
WELL.WELL_NAME AS [WELL #], FACILITY.OWNER_COMPANY AS [OWNER'S
NAME], FACILITY.FAC_CONTACT AS CONTACT,
WELL_TYPE_CODES_MAPPING.National_TYPE AS CLASS,
[WELL].[WELL_TOWNSHIP] & ", " & [WELL].[WELL_RANGE] & ", Sec" &
[WELL].[WELL_SECTION] & ", " & [WELL].[WELL_QTRSEC] & ", " &
[Well].[WELL_Long] & ", " & [well].[well_long] AS LOCATION,
WELL.TOTAL_DEPTH AS [TOTAL DEPTH], WELL_STATUS.OPER_STATUS AS
STATUS
          
```



So You've Got a Shiny New Database, Now What?

- Groom the data:
 - Make things consistent (case, abbreviations, etc.)
 - Find gaps in the existing information
 - Determine what is in the database now that you hadn't tracked before
 - Figure out what to do with historical data
- Test the transfer system to the national database
- See if the outputs from your database match the 7520's and other reporting from previous years
- Go through the QA/QC process with Headquarters

Benefits to the Process

- Ensures initial data quality (accurate/complete)
- QA/QC of data quality continues and will be conducted after each data submission
- Process helps Headquarters better understand what the data reflects and highlights areas where tweaking may be needed in the database definitions
- Use of the database definitions should help the program be more consistent nationally in reporting
- National data consistency will impact data use and stewardship

Downside to the Process

- The numbers reported are no longer summary
- Data inconsistencies become more apparent
- Definitions used by the national database may not be what your program has been using
- Improves Headquarters'/Region's understanding of the DI/State program
- Makes oversight easier

Transition to Electronic Reporting




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

March 19, 2009

OFFICE OF
WATER

MEMORANDUM

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

FROM: 
Stephen F. Heare, Director
Drinking Water Protection Division
Office of Ground Water and Drinking Water

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

Transition Process

- Discuss the transition process with Headquarters
- Demonstrate that the information you've placed in the national database can replicate existing reporting
- Both parties agree that the program is ready to transition to the database
- Determine data coverage and exchange frequency
- Develop Trading Partner Agreement (TPA)
- Get agreement from management to move to electronic reporting

Transition out of Paper Reporting



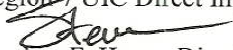
UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460


JUL 28 2009

OFFICE OF
WATER

MEMORANDUM

SUBJECT: Region 7 UIC Direct Implementation Program – Transition to E-Reporting

FROM: 
Stephen F. Heare, Director
Drinking Water Protection Division
Office of Ground Water and Drinking Water

TO: 
William A. Spratlin, Director
Water, Wetlands, and Pesticide Division
EPA Region 7

Congratulations! It is with great enthusiasm that I announce that Region 7's UIC Direct Implementation (DI) program is the first program to successfully transition from existing reporting mechanisms to the UIC Database (UIC DB). The UIC DB will now be the single source of data to meet EPA's reporting obligations. You have met the three major criteria required under our March 19, 2009 data policy memorandum to phase out of existing reporting.

Room for Improvement

- Expand the reporting tool's base queries to include those in the Headquarters UIC Reporting Services tool (eg. 7520's and PAM's)
- Develop a multi-well creation tool
- Develop a multi-well inspection tool
- Develop a compliance module

Share the Wealth

- The system developed for Region 7's UIC program is available for other regional and state UIC programs to use with only a moderate amount of tweaking needed



Questions?

EPA REGION 7 - Water, Wetlands and Pesticides Division
Drinking Water and Groundwater Management Branch
UIC Program (WWPD/DRWM)
901 North 5th Street
Kansas City, Kansas 66101
Attention: Kurt Hildebrandt

Voice: (913) 551-7413

Fax: (913) 551-9413

e-mail: hildebrandt.kurt@epa.gov