

# EQUIS Training

## EQUIS Workflow and EQUIS Professional

APRIL 26, 2016



Janet Magurn, President  
Tinna Chan, Systems Engineer

# Introductions

- What is your background?
  - RPMs?
  - Hydros?
  - Risk Assessors?
  - Other?
- Have you ever used EQuIS?
  - EQuIS Professional?
  - EQuIS Enterprise?
  - EQuIS Data Processor (EDP)?
- What software do you use?
- What would you like to get out of this class?

# Introduction to EQUIS

# Agenda

- Introduction to EQuIS Products and Workflows
- EarthSoft Resources
- Basic EQuIS Concepts and Terminology
- EQuIS Professional
  - Navigation
  - Crosstab Reports
  - Graphs and Charts
- EQuIS for ArcGIS
- EQuIS Data Processor (EDP) Discussion

# Objectives

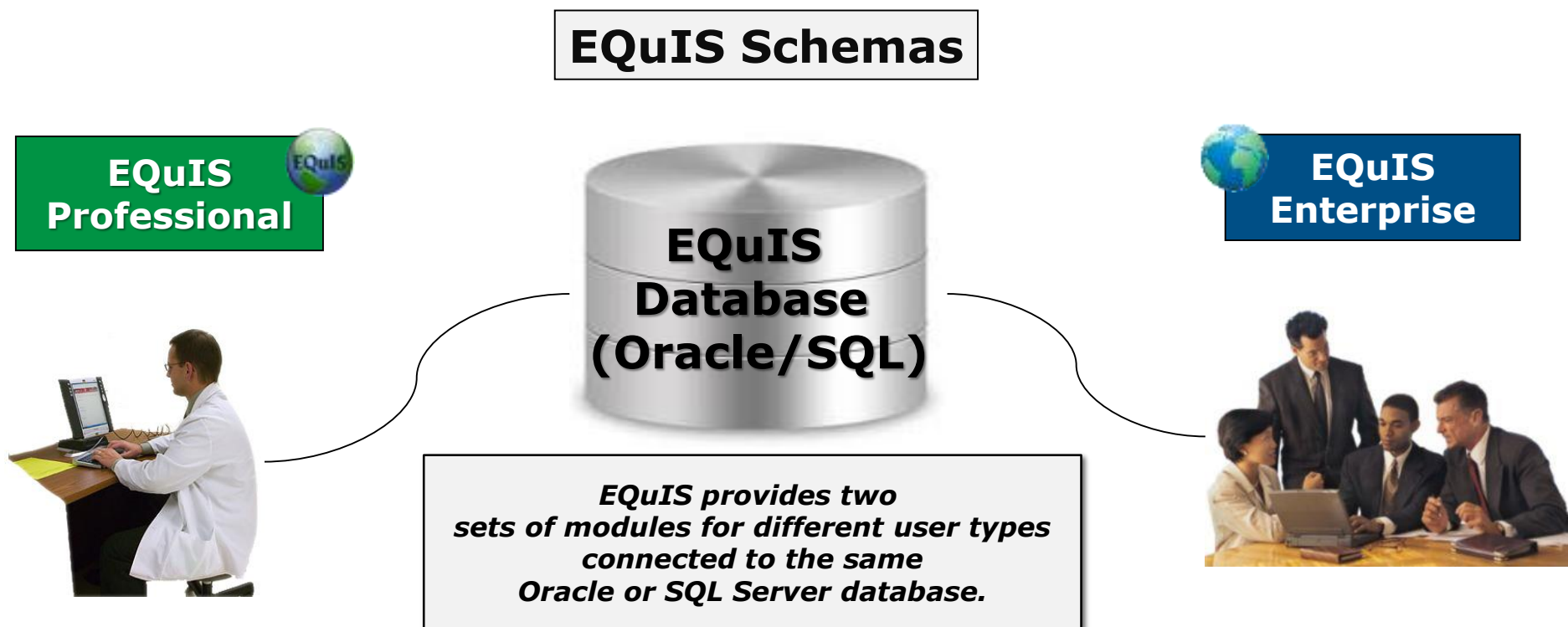
- Understand the difference between EQuIS Professional and EQuIS Enterprise
- Explore EQuIS Workflows
- Review available resources provided by EarthSoft
- Learn how data is organized in the EQuIS database
- Review EQuIS-specific terminology

# What is EQuIS?

**Environmental  
Quality  
Information  
Systems**

**EQuIS™** is the most widely used environmental data management workflow in the world and helps thousands of organizations manage *environmental, geotechnical, limnological* and “other” sample data.

# One Database, Two User Interfaces

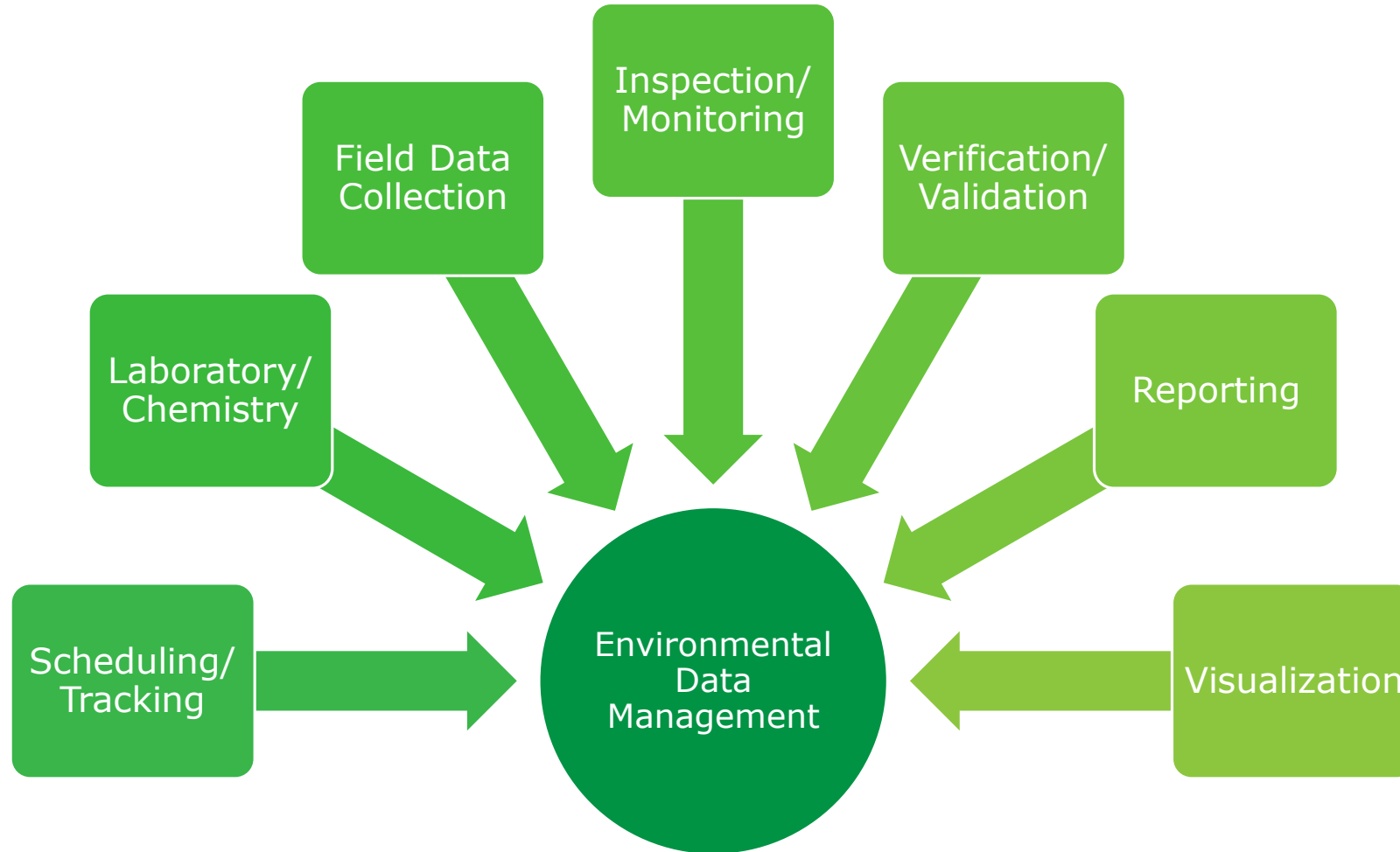


- **Data managers, Scientists**
- **Desktop application (installation)**
- **Data importing, editing**
- **Advanced analysis, modeling\***
- **Ultimate power and flexibility**

- **Managers, Auditors, Executives**
- **Web application (no installation)**
- **Same database, same data**
- **Simple, quick, easy to use**
- **Workflow Automation**

\* May require additional third-party software

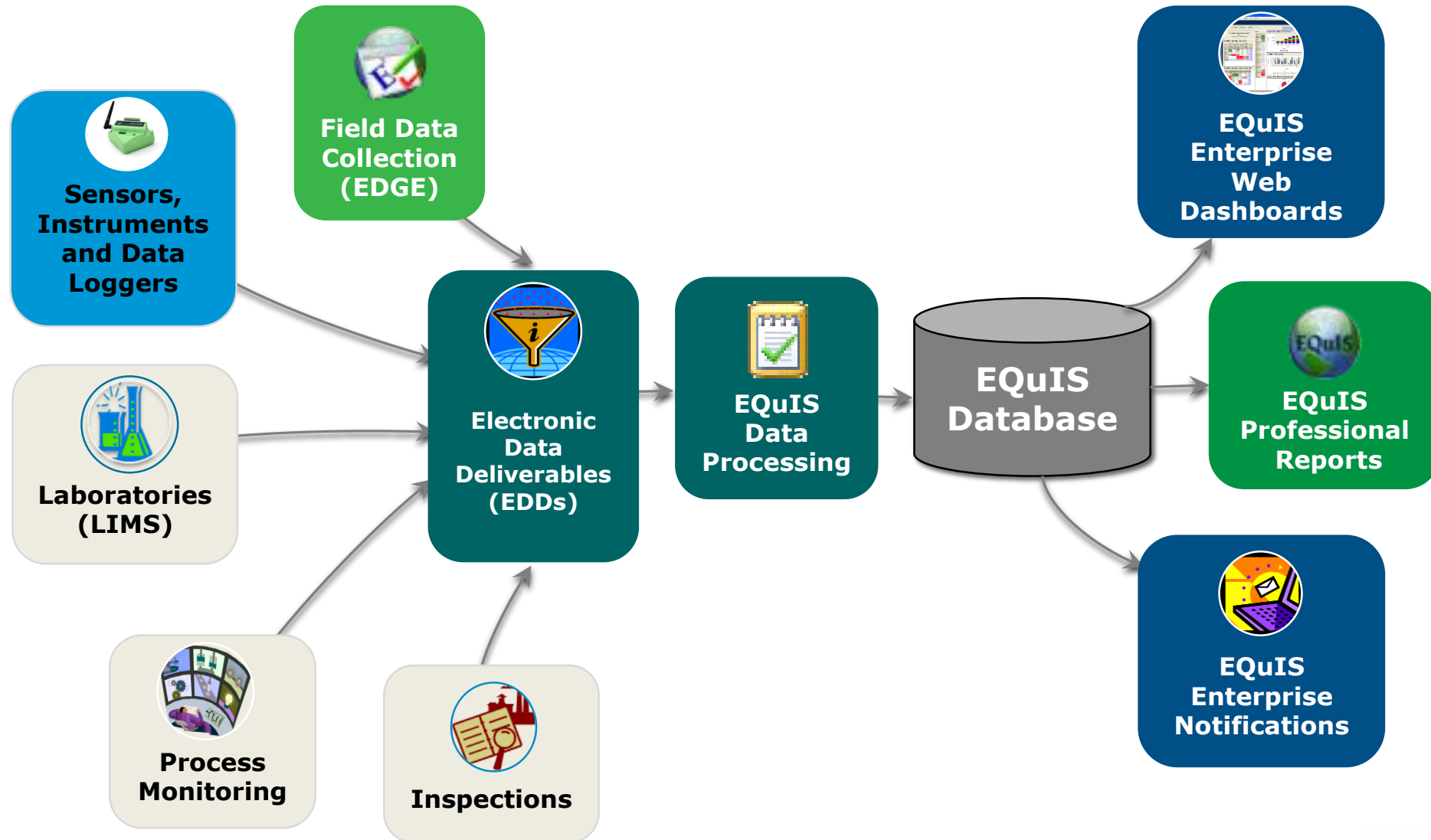
# EQuIS Products and Workflows



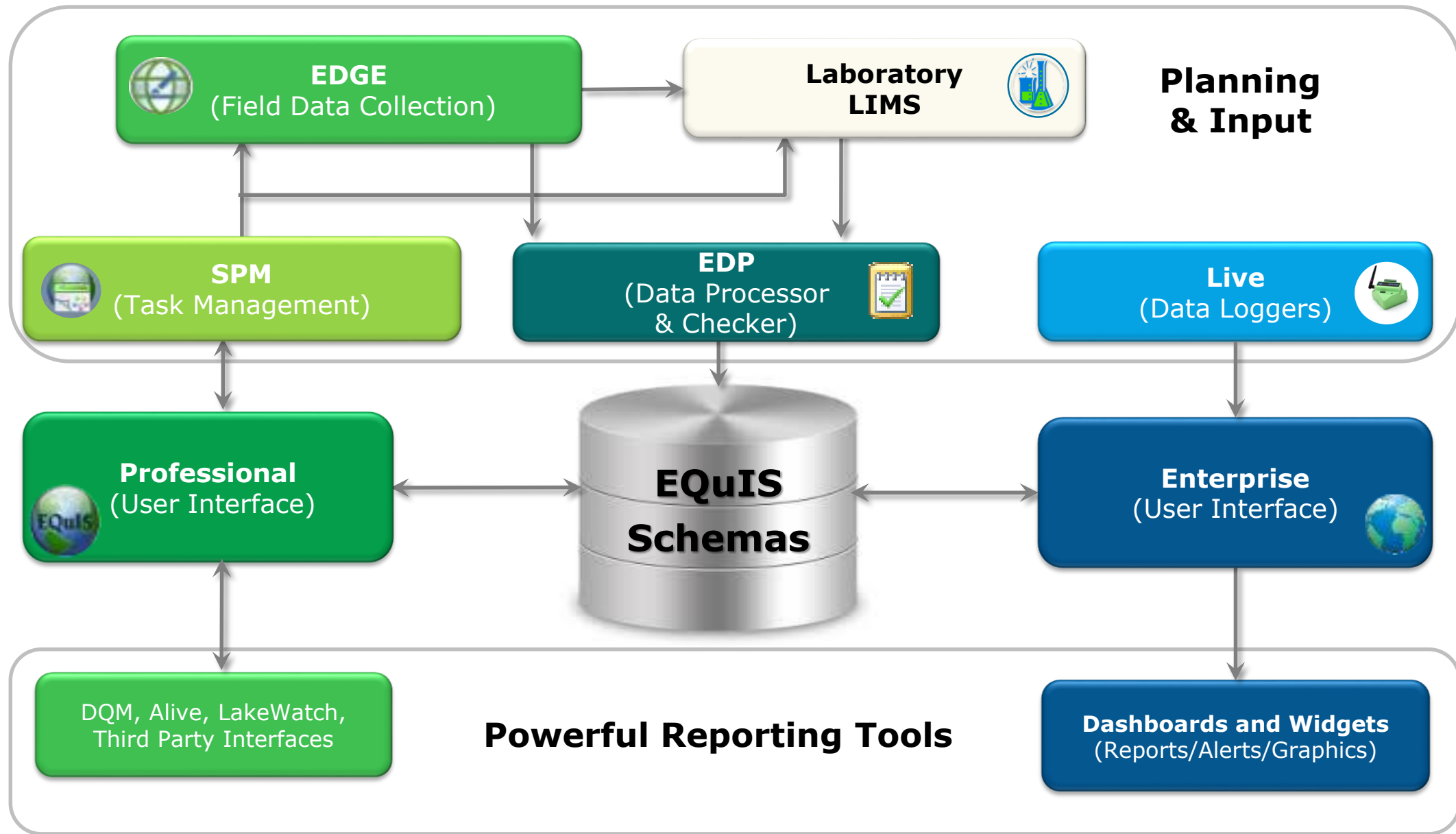
**Own the workflow, make better decisions**



# EQuIS Workflow View

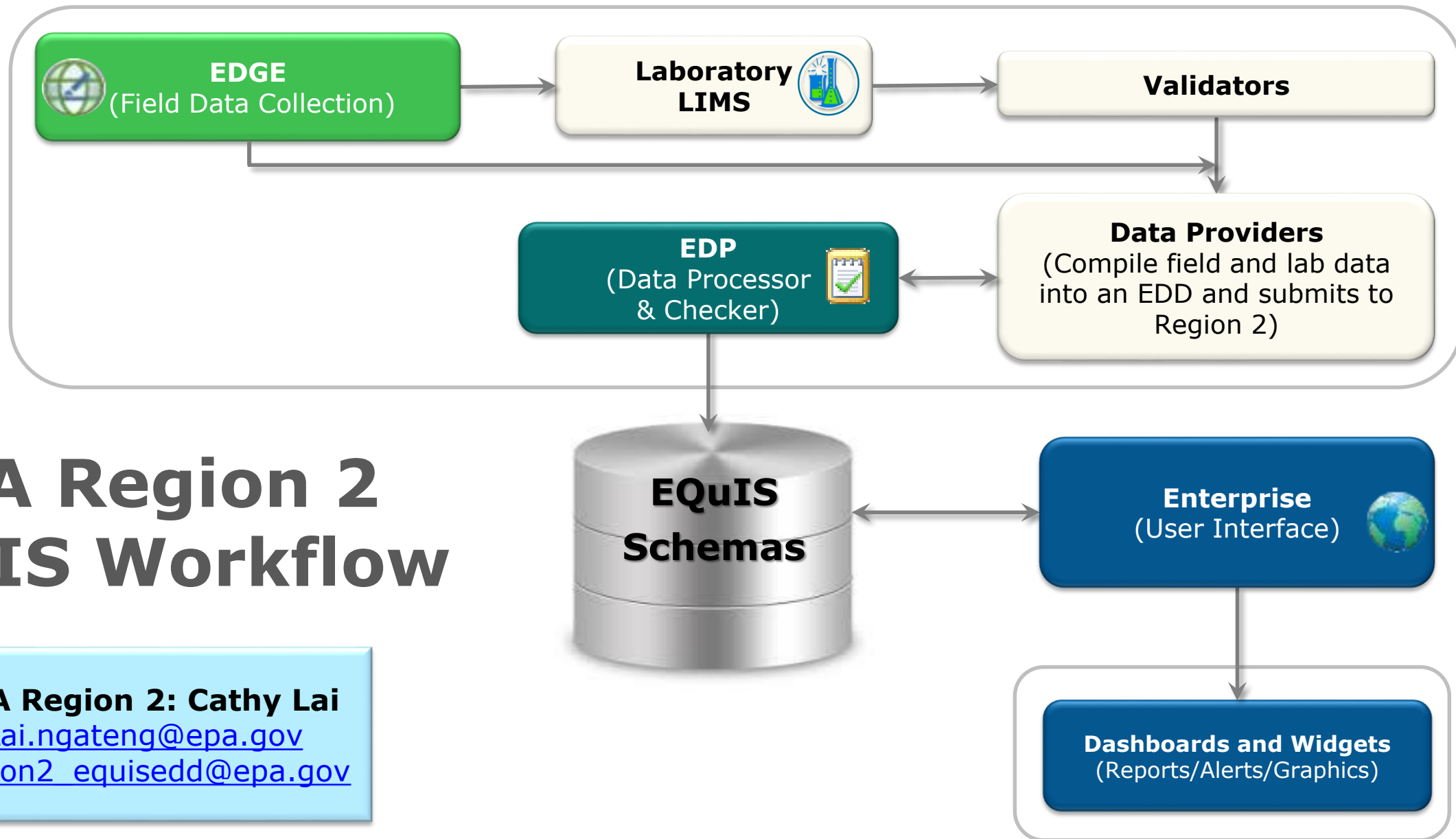


# EQiS Schematic View

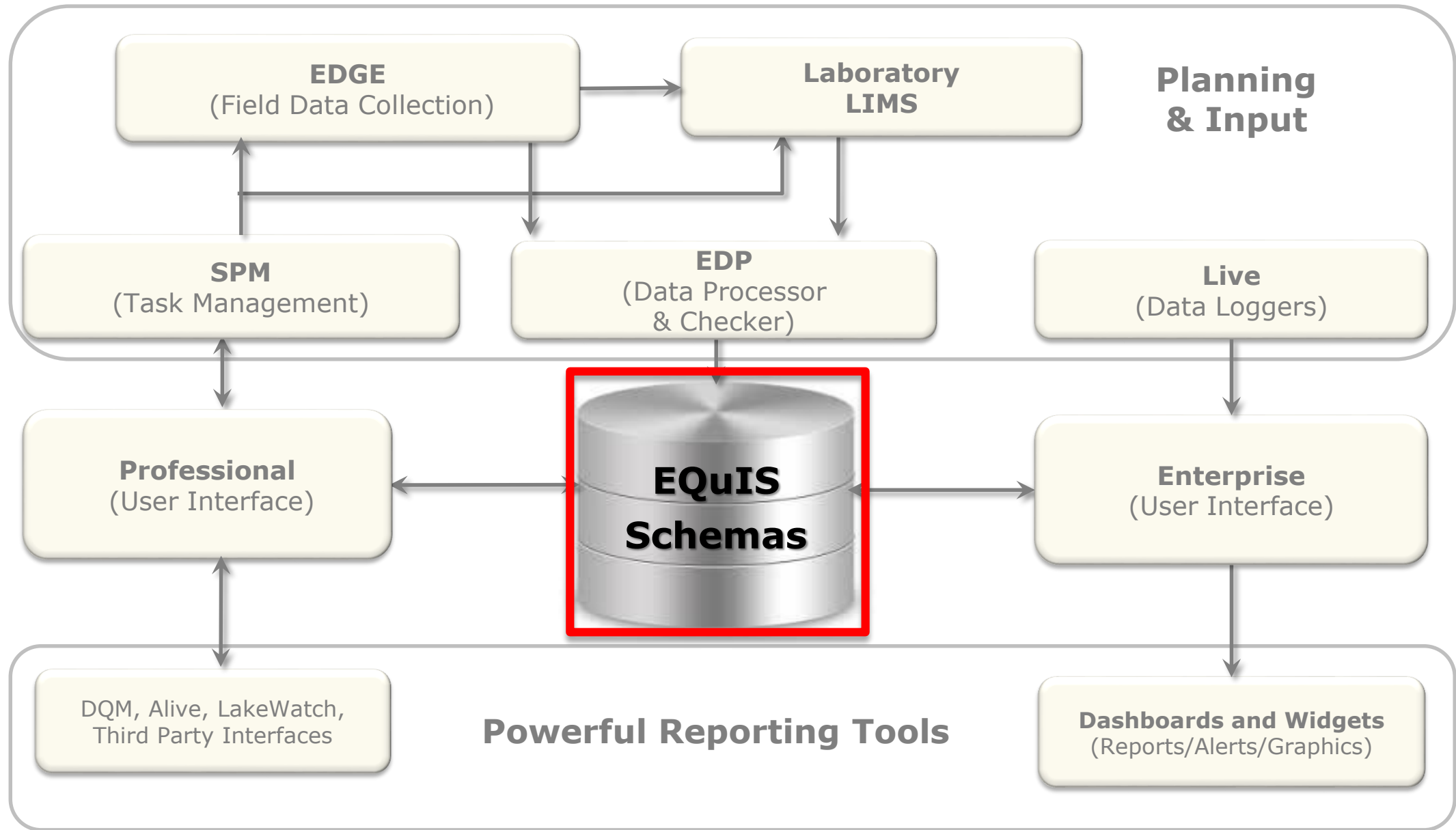


# EPA Region 2 EQuIS Workflow

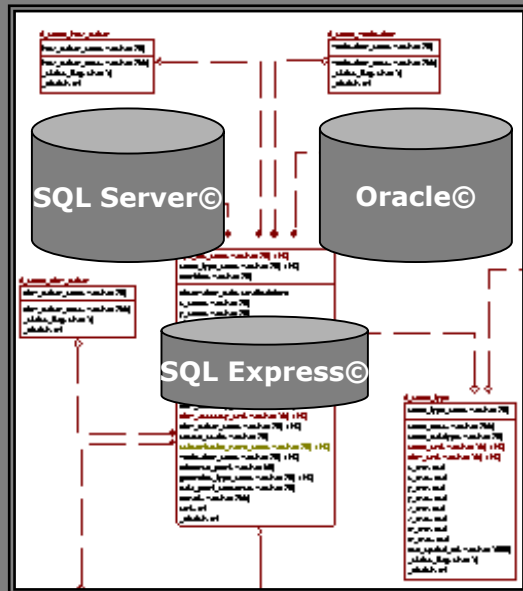
**EPA Region 2: Cathy Lai**  
[Lai.ngateng@epa.gov](mailto:Lai.ngateng@epa.gov)  
[Region2\\_equsedd@epa.gov](mailto:Region2_equsedd@epa.gov)



# EQiS Database



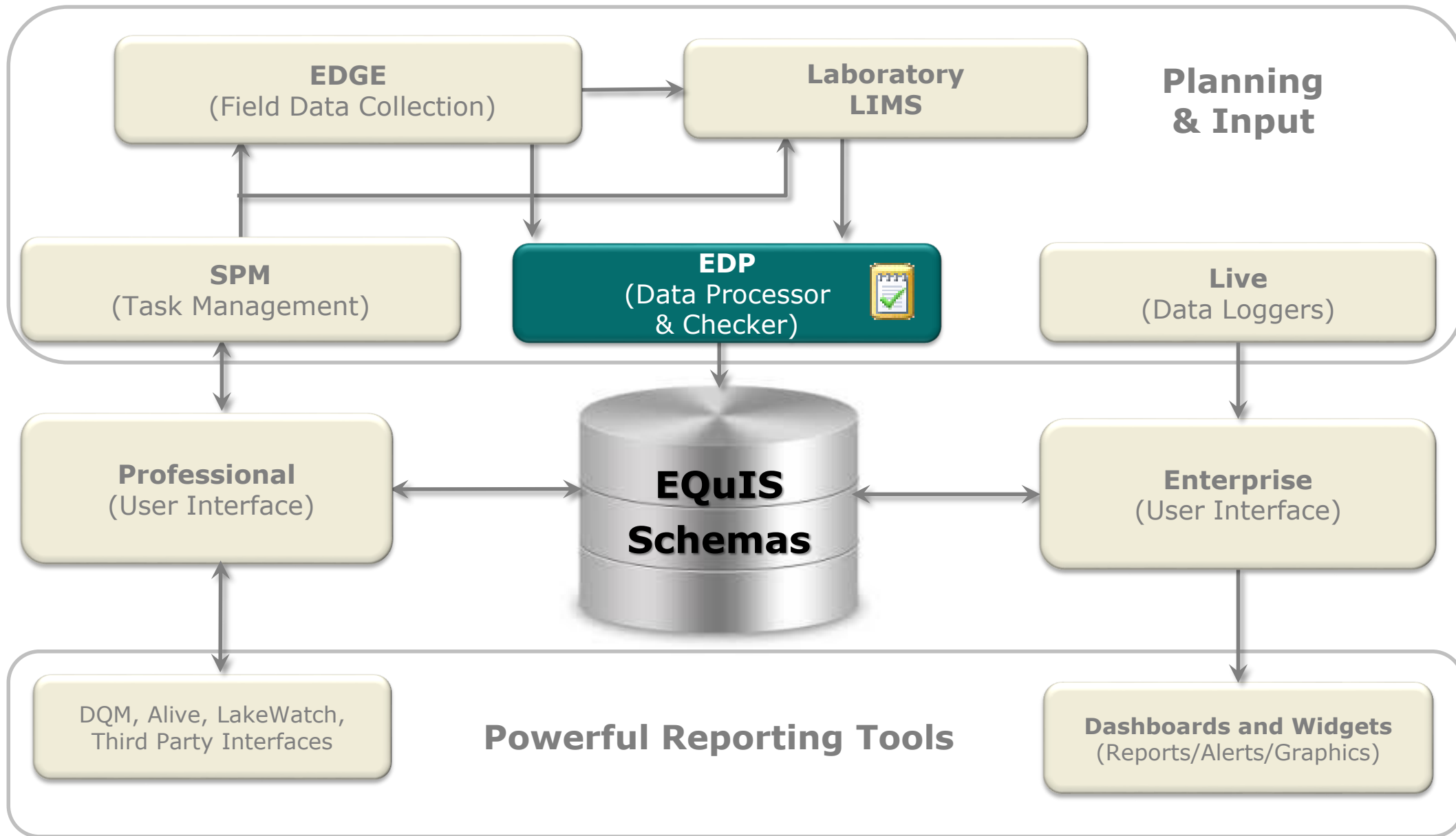
# EQuIS Database



- Schemas for environmental data management
- Oracle, Microsoft Azure, Microsoft SQL Server, SQL Server Express
- One project to thousands of projects within in single database



# EDP





# Standalone EDP and Professional EDP

## EDP Purpose

- ❑ Check Electronic Data Deliverables, (**EDDs**) for formatting, logic
- ❑ Find, view, and **CORRECT** errors
- ❑ Easily find the “needle in the haystack”

The screenshot shows the EQiS Data Processor interface with a data table. A green box labeled "Errors highlighted" points to the top of the table. A green box labeled "Highlights EDD sections with errors" points to the left-hand pane where several rows are highlighted in red. A green box labeled "Missing required field, make correction" points to a red error message in row 3: "Missing required field: sample\_matrix\_code". A green box labeled "Reference value not found, select correct value from pull down menu" points to a dropdown menu for the "sample\_type\_code" field in row 9, which shows "FD" selected and a list of other options (MS, MSD, N, TB).

| Line | sys_sample_code    | sample_name | sample_matrix_code | sample_type_code | sample_source | parent_sample_code | sample_delivery_group | sample_date |
|------|--------------------|-------------|--------------------|------------------|---------------|--------------------|-----------------------|-------------|
| 1    | #SYS_SAMPLE_CODE   | sample_name | sample_matrix_code | sample_type_code | sample_source | parent_sample_code | sample_delivery_group | sample_date |
| 2    | #TEXT [40]         | Text [30]   | Text [10]          | Text [20]        | Text [10]     | Text [40]          | Text [10]             | Date        |
| 3    |                    | WG          |                    | N                | Field         |                    |                       | 3/25/2000   |
| 4    | B-31_20000325      | WG          |                    | N                | Field         |                    |                       | 3/25/2000   |
| 5    | B-33_20000325      | WG          |                    | N                | Field         |                    |                       | 3/25/2000   |
| 6    | B-38_20000325      | WG          |                    | N                | Field         |                    |                       | 3/25/2000   |
| 7    | B-45_20000325      | WG          |                    | N                | Field         |                    |                       | 3/25/2000   |
| 8    | TRIPBLANK_20000325 | WQ          |                    | TB               | Field         |                    |                       | 3/25/2000   |
| 9    | B-30_20000325_FD   | WQ          |                    | FD               | Field         | B-30_20000325      |                       | 3/25/2000   |
| 10   | B-45_20000325_M5   | WG          |                    | MS FR            | Lab           | B-45_20000325      |                       | 3/25/2000   |
| 11   | B-45_20000325_M5D  | WG          |                    | MS LB            | Lab           | B-45_20000325_M5   |                       | 3/25/2000   |



# Enterprise EDP

## EDP *Purpose*

- Automated Workflow receives (via ftp, email, or web) and processes EDDs.
- Acceptance and/or rejection notifications are automatically sent.

The screenshot displays the Enterprise EDP interface with three overlapping windows:

- EDD Upload:** A window with a table of EDD formats and their status. The table has columns: Format, Reference Values (\*.rvf), Blank EDD Template, and EDD Description. The rows are: EFWEDD, EDGE, and EQEDD. Below the table, there is a dropdown menu for Format (set to EFWEDD), a 'Choose File' button, and an 'Upload' button. The upload limit is 10 Mb.
- EDD Status:** A window showing a table of uploaded EDDs. The table has columns: Status, File Name, Date, and Facility. The data is as follows:

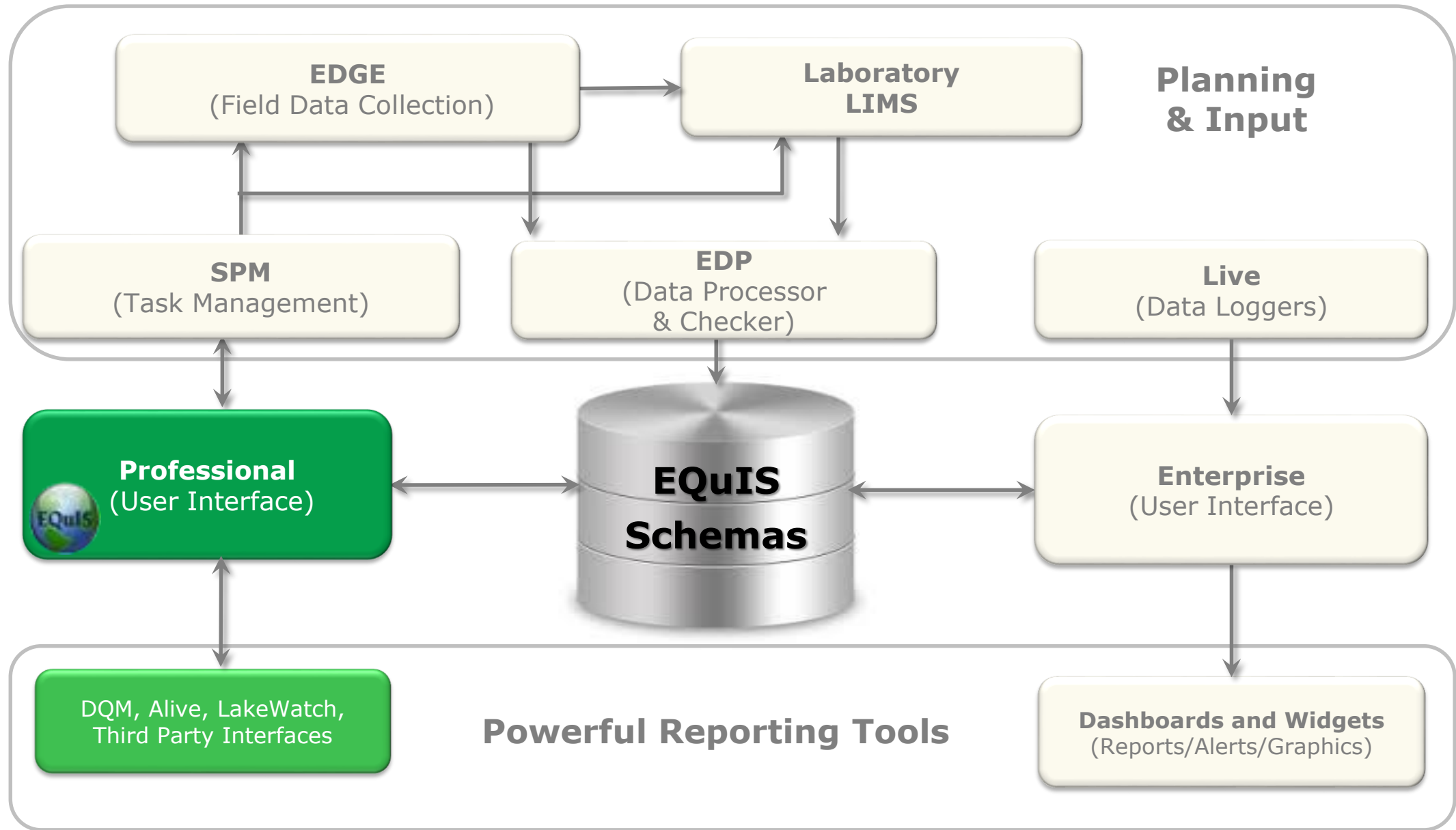
| Status | File Name                       | Date                  | Facility    |
|--------|---------------------------------|-----------------------|-------------|
| ●●     | 20130916.Springfield.EFWEDD.zip | 9/18/2013 8:35:00 AM  | Springfield |
| ●●     | NCA1.Springfield.EFWEDD.zip     | 7/12/2013 12:34:00 PM |             |
| ●●     | E6test.Springfield.EQEDD.zip    | 7/12/2013 12:33:00 PM |             |
| ●●     | E6test.1.EQEDD.zip              | 7/10/2013 5:52:00 PM  |             |
- Sign and Submit:** A window for user authentication. It contains fields for User Name (emulford), Password (masked with asterisks), and Operator (facility) (001). There are 'Save' and 'Submit' buttons, and a 'Save Password' checkbox.

Below the EDD Status window, there is an email notification window titled "Successfully loaded EDD (Lab A Jan 11 2010 Correct B.SPRINGFIELD.EFWEDD.zip)". The email is from enterprise@earthsoft.com, sent on Mon 1/11/2010 8:08 AM, to agray@earthsoft.com. The message content states: "Data from 'Lab A Jan 11 2010 Correct B.SPRINGFIELD.EFWEDD.zip' has been successfully loaded into the database."

## Successful EDD Submission Notifications



# Professional





# EQuIS Professional Reports

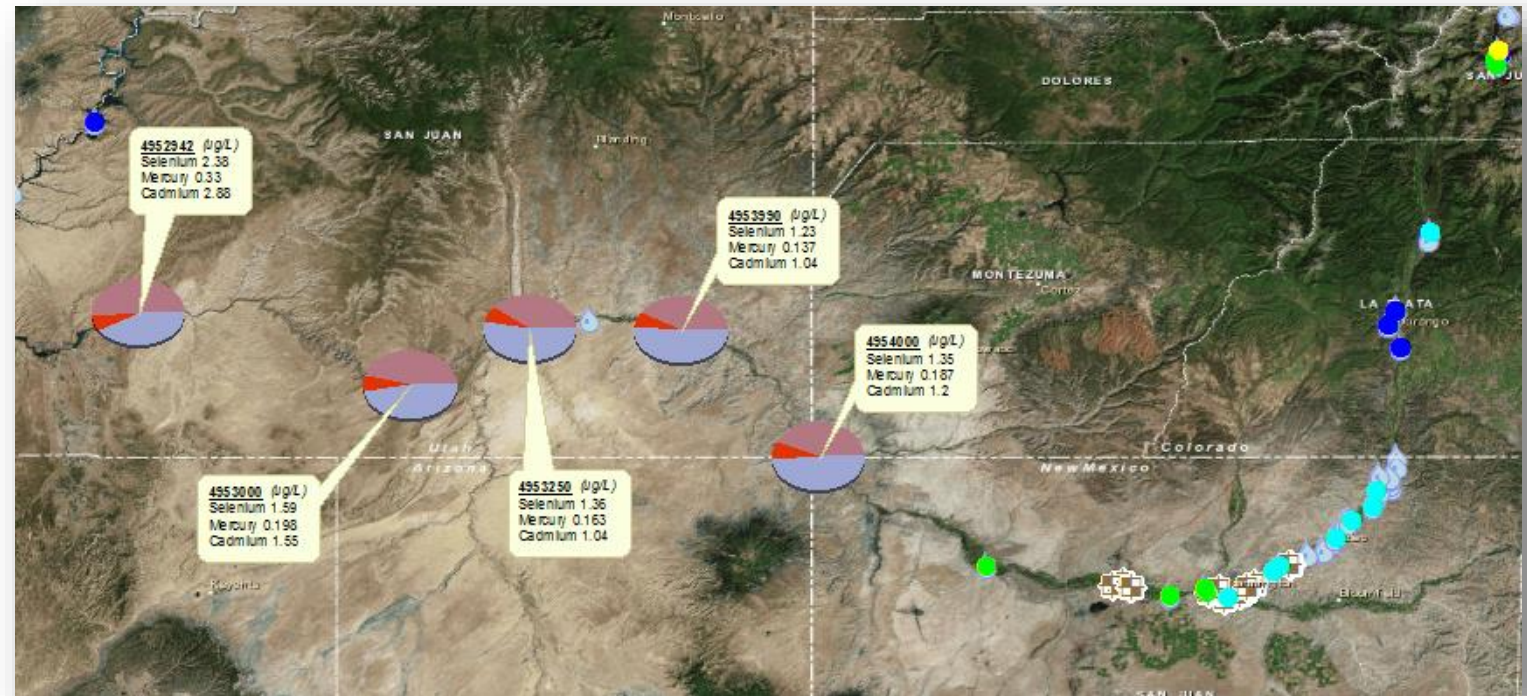
- Contamination plumes
- Groundwater gradients
- Graphs, tabular and crosstab reports,
- Advanced, formatted print-ready reports

Rapports de consultation : WaterLevels - 01 Wells

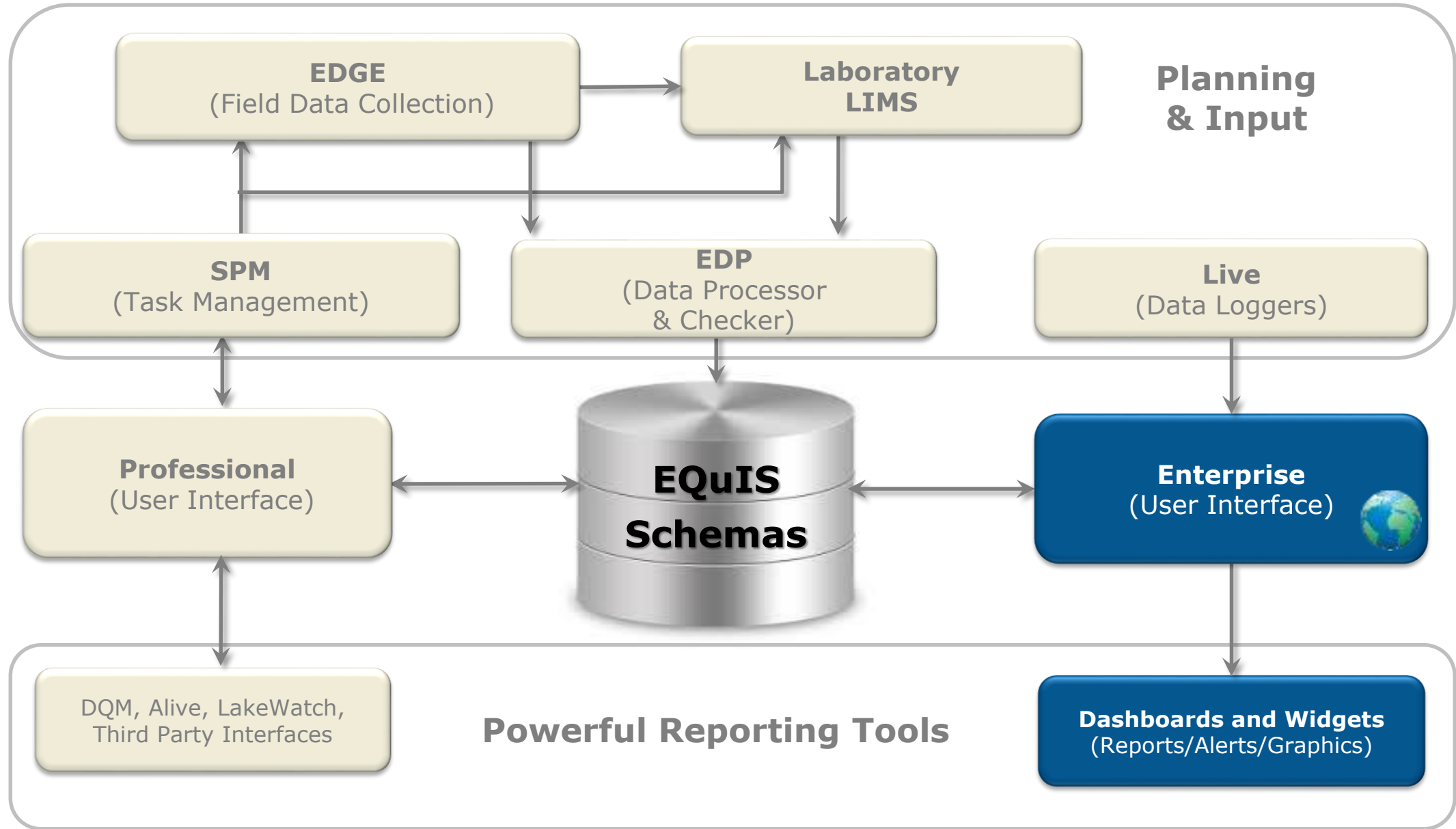
| facility_id | facility_code | sys_loc_code | loc_name | loc_group | loc_report_order | measurement_date    | reference_elev | water_level |
|-------------|---------------|--------------|----------|-----------|------------------|---------------------|----------------|-------------|
| 1           | McClean       | 01-01A       | 01-01A   |           |                  | 07/06/2002 12:00:00 | 445,445        | 437,125     |
| 1           | McClean       | 01-01A       | 01-01A   |           |                  | 20/07/2002 12:00:00 | 445,445        | 437,410     |
| 1           | McClean       | 01-01A       | 01-01A   |           |                  | 07/08/2002 12:00:00 | 445,445        | 437,744     |
| 1           | McClean       | 01-01A       | 01-01A   |           |                  | 18/09/2002 12:00:00 | 445,445        | 437,850     |
| 1           | McClean       | 01-01A       | 01-01A   |           |                  | 13/10/2002 00:00:00 | 445,445        | 437,838     |
| 1           | McClean       | 01-01A       | 01-01A   |           |                  | 24/11/2002 12:00:00 | 445,445        | 437,467     |
| 1           | McClean       | 01-01A       | 01-01A   |           |                  | 19/12/2002 12:00:00 | 445,445        | 437,501     |
| 1           | McClean       | 01-01A       | 01-01A   |           |                  | 08/01/2003 12:00:00 | 445,445        | 437,135     |
| 1           | McClean       | 01-01A       | 01-01A   |           |                  | 06/02/2003 12:00:00 | 445,445        | 437,138     |
| 1           | McClean       | 01-01A       | 01-01A   |           |                  | 15/03/2003 12:00:00 | 445,445        | 436,922     |
| 1           | McClean       | 01-01A       | 01-01A   |           |                  | 16/04/2003 12:00:00 | 445,445        | 436,779     |
| 1           | McClean       | 01-01A       | 01-01A   |           |                  | 07/05/2003 12:00:00 | 445,445        | 437,340     |
| 1           | McClean       | 01-01A       | 01-01A   |           |                  | 11/06/2003 12:00:00 | 445,445        | 437,919     |
| 1           | McClean       | 01-01A       | 01-01A   |           |                  | 04/07/2003 12:00:00 | 445,445        | 437,867     |
| 1           | McClean       | 01-01A       | 01-01A   |           |                  | 17/08/2003 12:00:00 | 445,445        | 437,739     |
| 1           | McClean       | 01-01A       | 01-01A   |           |                  | 22/10/2003 12:00:00 | 445,445        | 437,652     |
| 1           | McClean       | 01-01A       | 01-01A   |           |                  | 27/12/2003 12:00:00 | 445,445        | 437,385     |
| 1           | McClean       | 01-01A       | 01-01A   |           |                  | 10/02/2004 12:00:00 | 445,445        | 437,124     |
| 1           | McClean       | 01-01A       | 01-01A   |           |                  | 21/04/2004 12:00:00 | 445,445        | 436,975     |
| 1           | McClean       | 01-01A       | 01-01A   |           |                  | 01/06/2004 12:00:00 | 445,445        | 437,727     |
| 1           | McClean       | 01-01A       | 01-01A   |           |                  | 03/08/2004 12:00:00 | 445,445        | 437,561     |
| 1           | McClean       | 01-01A       | 01-01A   |           |                  | 23/10/2004 12:00:00 | 445,445        | 437,561     |
| 1           | McClean       | 01-01A       | 01-01A   |           |                  | 12/12/2004 12:00:00 | 445,445        | 437,018     |

# EQuIS for ArcGIS *Purpose*

- ❑ Access EQuIS data directly within ArcGIS Desktop
- ❑ Add EQuIS layers to an ArcGIS Map
- ❑ Link to industry-leading third party applications



# EQuIS Enterprise

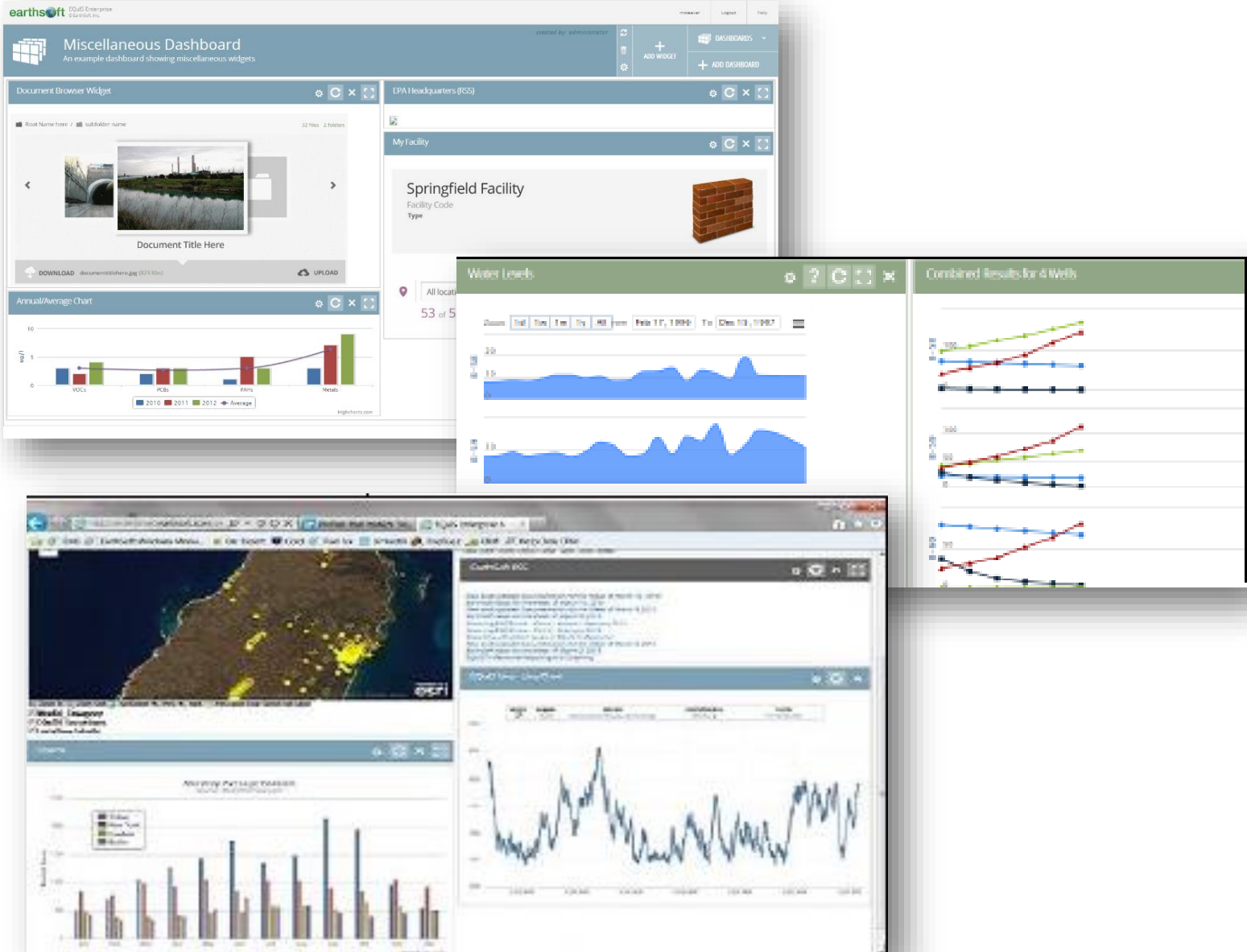


# Dashboards and Widgets



# Enterprise

Highly configurable dashboards and project-specific widgets for endless flexibility.

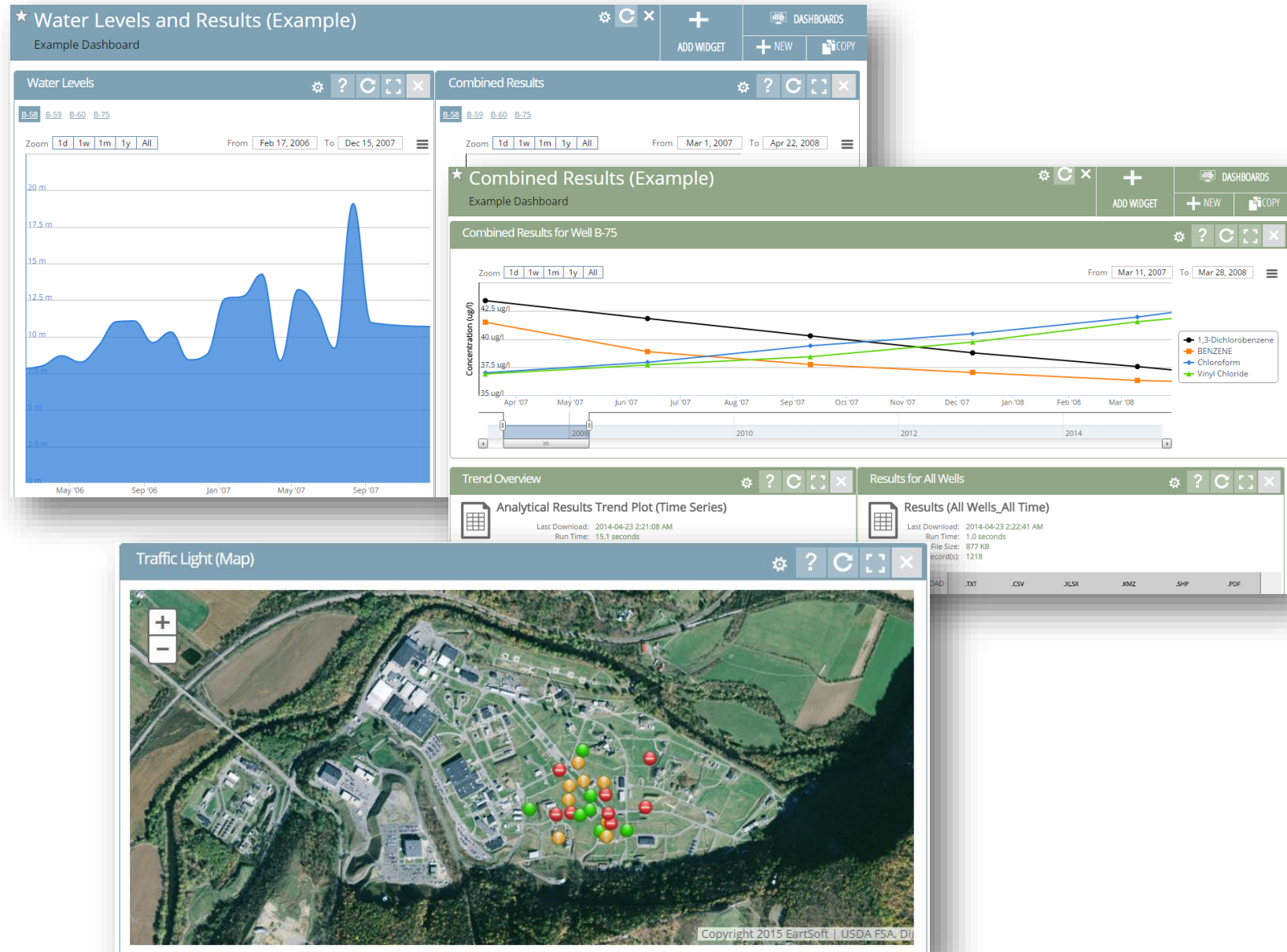


# Reports



## Enterprise

- Export to Google Earth, Excel, GIS and other popular formats.
- Map directly in EQuIS Enterprise with the Map Widget and ArcGIS Online



# EIA Workflow Automation



## Enterprise

EQuIS Information Agents (EIAs) automatically send reports when

- New data arrives
- Exceedances occur
- Based on a scheduled event...

The screenshot displays the EZView software interface. The main window shows 'Analytical Results (Training\_ELM)' with a large 'E' logo and a 'DOWNLOAD' button. Below the logo, there are options for file formats: '.TXT', '.CSV', and '.XLSX'. An email notification window is overlaid on the interface, titled 'EDD ACCEPTED: WAP\_20030209.zip - Message (Plain Text)'. The email is from Mathew Weaver [mweaver@earthsoft.com] and is dated Thu 4/1/2004 10:14 PM. The subject is 'EDD ACCEPTED: WAP\_20030209.zip' and it includes an attachment 'FW Error with EDP.txt (1 KB)'. The body of the email states: 'This is an automated notification to let you know that the EDD you submitted: WAP\_20030209.zip ... fully processed without any errors.'

Below the email window, there is a configuration window for the EIA agent. It has tabs for 'Data' and 'EIA'. The 'EIA' tab is active, showing the following settings:

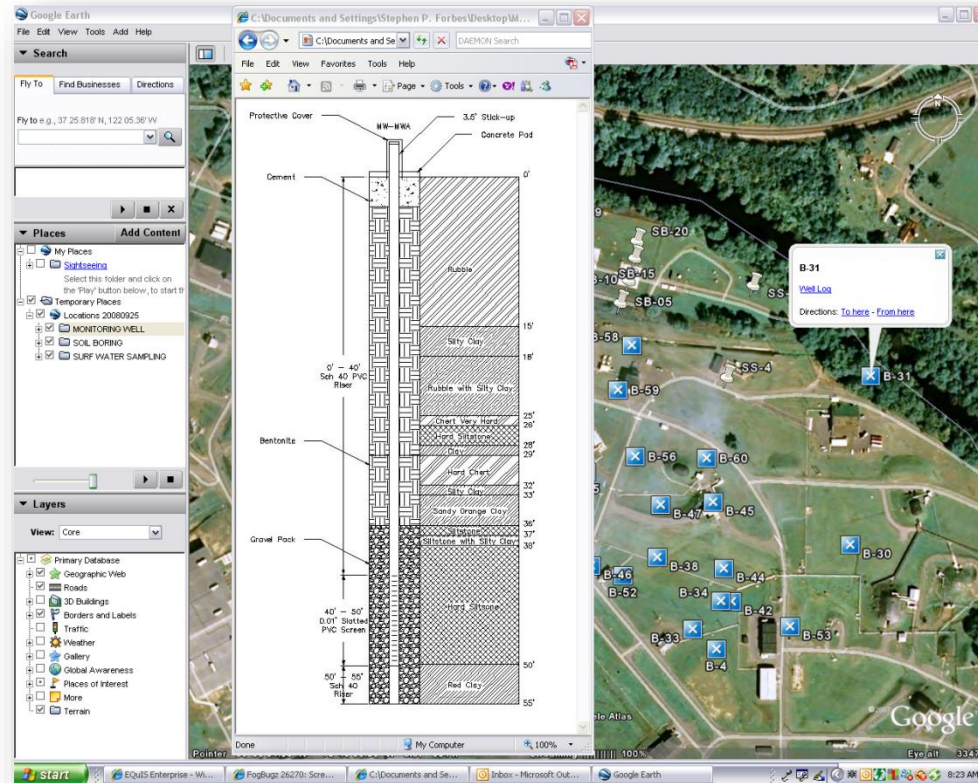
- Enable Agent (EIA) for this report
- Event Info
- New Data (EDD)
- Once
- Daily Schedule
- Weekly Schedule
- Monthly Schedule
- Monthly Schedule
- Months:  Jan  Feb  Mar  Apr  May  Jun  Jul  Aug  Sep  Oct  Nov  Dec
- On week of Month
- On the following days:  Sun  Mon  Tue  Wed  Thu  Fri  Sat
- On calendar day

# Document Management



## Enterprise

Use the Explorer widget in EQuIS Enterprise, to take drawings, graphs, photos, etc. and associate them to a location.



**File Info**

Code:

Name:

Type:

Title:

Author:

Confidential:  No  Yes

Remark:

File:  EQuIS\_Enter...ation.docx



# Available EarthSoft Resources

# EQuIS Resources

- **EarthSoft Community Center-** <http://community.earthsoft.com>
  - Online Data Dictionary
  - Online Documentation
  - EQuIS Academy Recordings and other Downloads
  - Discussion Forum
- **EarthSoft Website-** <http://www.earthsoft.com>
  - Upcoming Training Schedule
  - Additional Product Information and Corporate Overview
  - Upcoming Office Hours and Previous Office Hour Videos
  - Lists of available EDD Formats
- **For support, the designated Point of Contact (POC) may contact**  
[support@earthsoft.com](mailto:support@earthsoft.com)

# EQuIS Webpages

- **EPA Region 2 Format Download Page-**  
<http://earthsoft.com/products/edp/edp-format-for-epar2/>



## US EPA Region 2 EDP Format

[Learn More](#)

| EPA Region 2 EDP Download                      |          |      |                    |
|--|----------|------|--------------------|
| Name   | Size     | Type | Modified           |
| EDP Version 6.4<br>32 bit (x86)   64 bit (x64) | 35.2 MB  | .zip | August 07, 2015    |
| EPA Region 2 Format File                       | 741.5 KB | .zip | September 15, 2015 |
| EPA Region 2 Format Reference Values           | 226 KB   | .zip | April 4, 2016      |

For guidance and inquiries regarding the EPA Region 2 Format, Reference values, or EDD submittals, please go to: [EPA Region 2 Superfund EDD Information..](#)

### Quicklinks

- \* [support@earthsoft.com](mailto:support@earthsoft.com)
- [Corporate Overview](#)
- [EarthSoft Community Center](#)
- [Evaluate EQuIS](#)
- [Maintenance Renewal](#)
- [News and Information](#)
- [Register Software](#)



# EQuIS Webpages

- **EPA Region 2 Format Download Page-**  
<http://earthsoft.com/products/edp/edp-format-for-epar2/>
- **EPA Region 2 Superfund Electronic Data Submission Guidance**  
<https://www.epa.gov/superfund/region-2-superfund-electronic-data-submission>
- **For technical EQuIS support, EPA Region 2 EQuIS users may contact:**  
  
**Cathy Lai**  
  
[Lai.Ngateng@epa.gov](mailto:Lai.Ngateng@epa.gov)  
  
[Region2\\_EQUISedd@epa.gov](mailto:Region2_EQUISedd@epa.gov)

# Basic Concepts and Terminology

# What are we going to talk about?

## **General Database Terms**

- Relational Databases
- One-to-Many Relationships
- Parent-Child Relationships
- Primary Keys
- Referential Integrity

## **EQuIS-specific Terms**

- Data Tables
- Reference Tables
- Facilities
- Locations
- Location Groups

- Location Groups
- Analytes
- Analyte Groups
- Action Levels
- Crosstab Reports

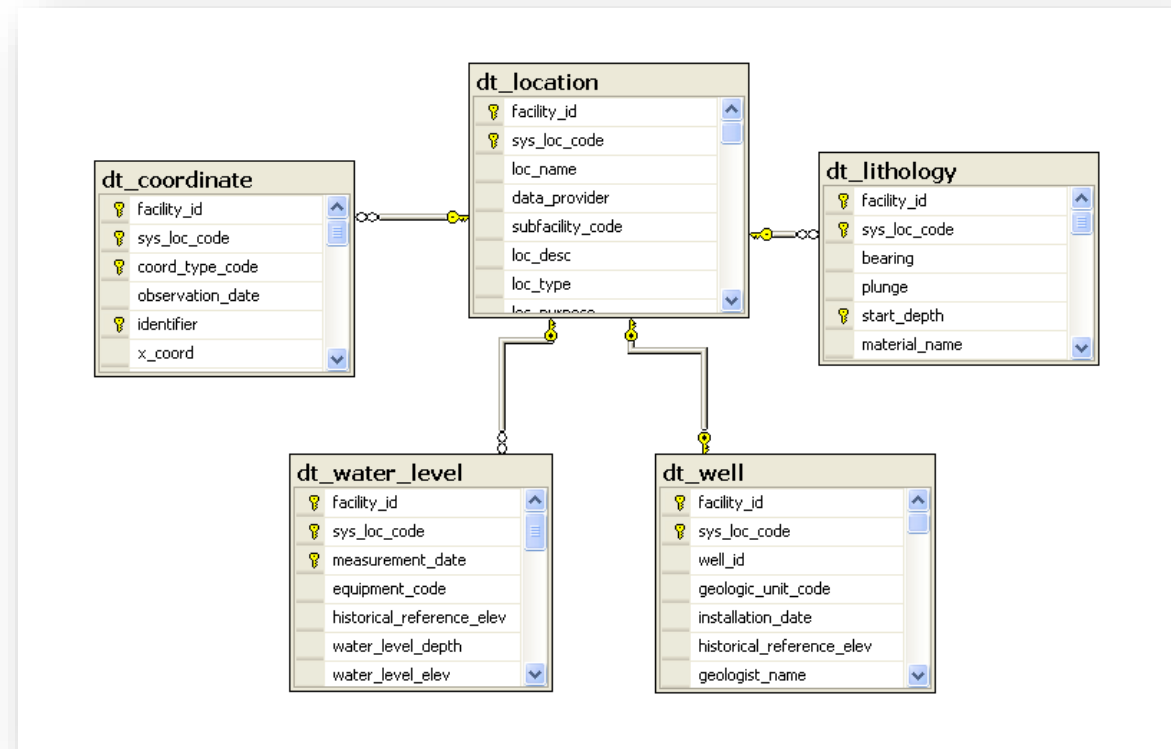
## **Environmental Sampling Terms**

- CAS RNs
- Sample Types
- Matrices
- EDDs
- E-Data

# General Database Terms

# Relational Databases

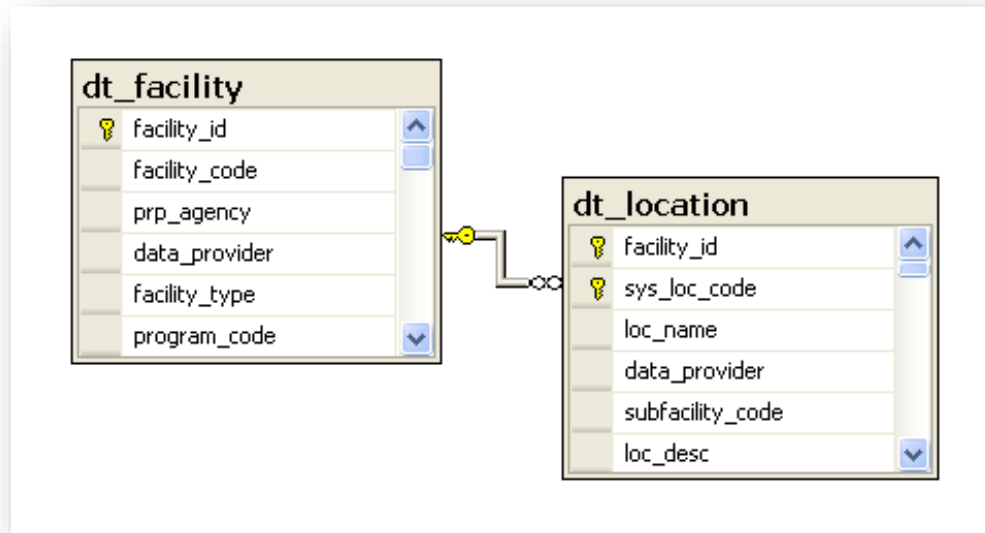
Relational databases stores their data in tables and can enforce restrictions on the data by a set of rules called relationships.





# One-to-Many Relationships

**One-to-many relationships are relationships in which a record in one table can be related to many records in another table.**



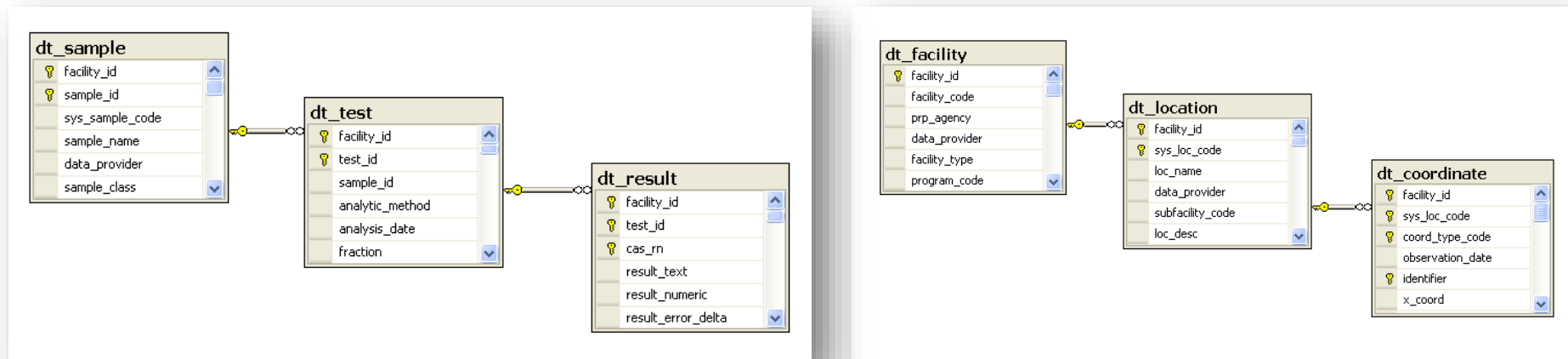
**There can be many sampling points within a single project site.**

**For example, "Gas Station X" may contain 8 different monitoring wells.**

# Parent-Child Relationships

**Parent-child relationships are rules that enforce organization in a database by requiring a record in a child table to have a corresponding record in a parent table.**

**The structure allows repeating information using parent-child relationships: each parent can have many children but each child only has one parent.**



# Primary Keys

A **Primary key** is a field or a set of fields in a table that constitute a unique record within that table.

| <u>cas_rn</u> | chemical_name           | sort_order | <u>facility_id</u> | <u>sys_loc_code</u> | <u>coord_type_code</u> | <u>identifier</u> |
|---------------|-------------------------|------------|--------------------|---------------------|------------------------|-------------------|
| 7440-66-6     | Zinc                    |            | 1                  | B-30                | LAT LONG               | 1                 |
| 75-35-4       | Vinylidene Chloride     |            | 1                  | B-30                | STATE PLANE            | 1                 |
| 75-01-4       | Vinyl Chloride          |            | 1                  | B-30                | UTM_17N                | HISTORICAL        |
| 108-05-4      | Vinyl Acetate           |            | 1                  | B-30                | UTM_17N                | PRIMARY           |
| 7440-62-2     | Vanadium (Fume Or Dust) |            | 1                  | B-31                | LAT LONG               | 1                 |
| 75-69-4       | Trichlorofluoromethane  |            | 1                  | B-31                | STATE PLANE            | 1                 |

One primary key field in this table allows for each chemical to be listed only once.

A set of primary key fields this table allows for storage of multiple coordinate systems per sampling point.

**Primary keys must be:**

- 1) populated (not null)
- 2) unique

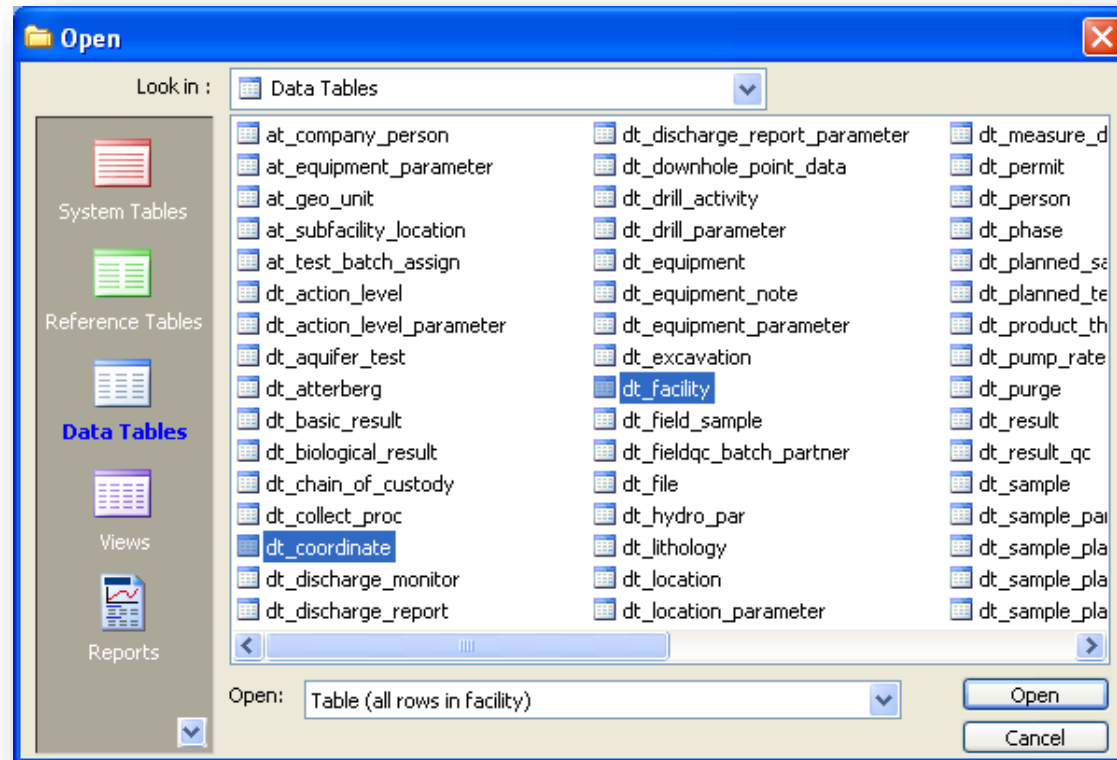
# Referential Integrity

**Referential integrity is the collective set of rules that ensures consistent data within the database, including**

- **Primary Keys**
- **One-to-Many Relationships**
- **Parent-Child Relationships**

# EFMD EQUIS-specific Terms

# Data Tables



**Data tables contain information acquired from, derived from, or describing some part of a specific project.**

**Data tables are designated by the prefix DT\_, as in DT\_SAMPLE.**

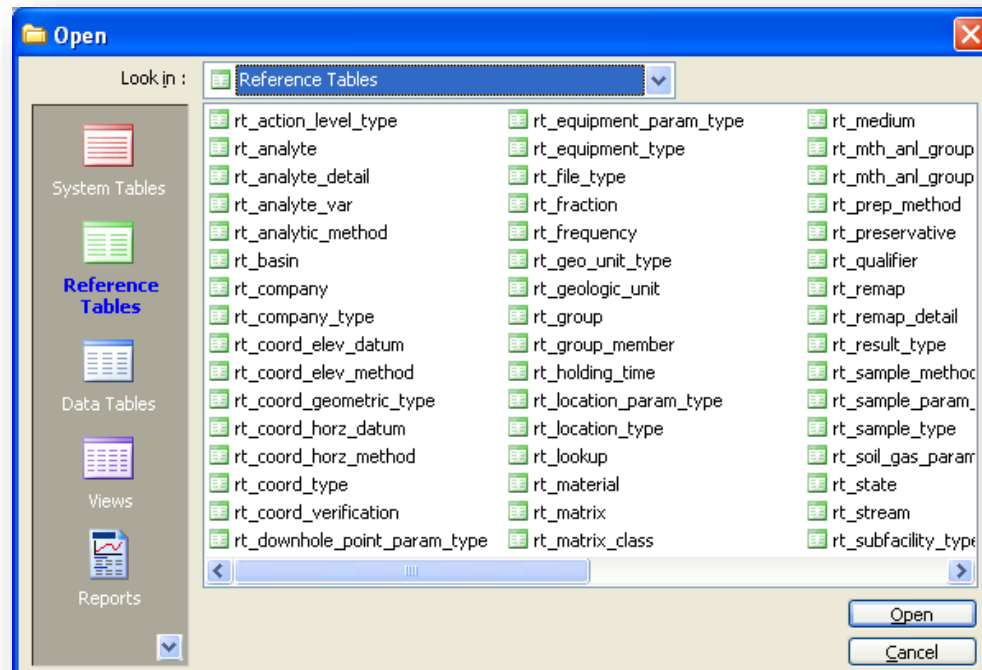
# Reference Tables

Reference tables contain lists of reference values, valid values or look-up values.

Reference tables are designated by the prefix **RT\_**, as in **RT\_ANALYTE**.

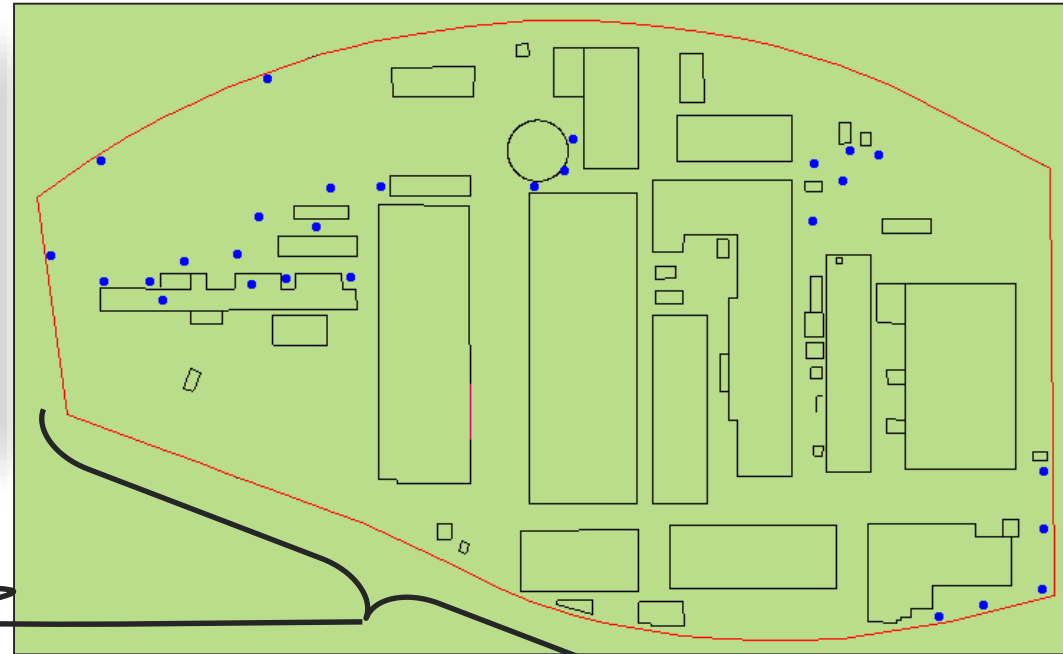
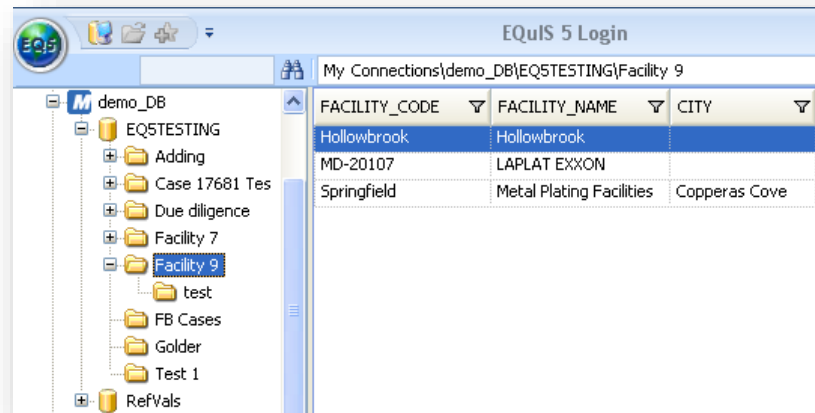
rt\_analyte...

| <u>Cas rn</u> | <u>Chemical Name</u> |
|---------------|----------------------|
| 000056-55-3   | Benz(a)anthracene    |
| 000065-85-0   | Benzoic Acid         |
| 000067-64-1   | Acetone              |
| 000071-43-2   | Benzene              |
| 000074-83-9   | Bromomethane         |
| 000074-87-3   | Chloromethane        |
| 000075-01-4   | Vinyl chloride       |
| ...           | ...                  |



# Facilities

**Facilities are the physical (site) or logical (project) extent of data that is made available for reporting or modeling.**



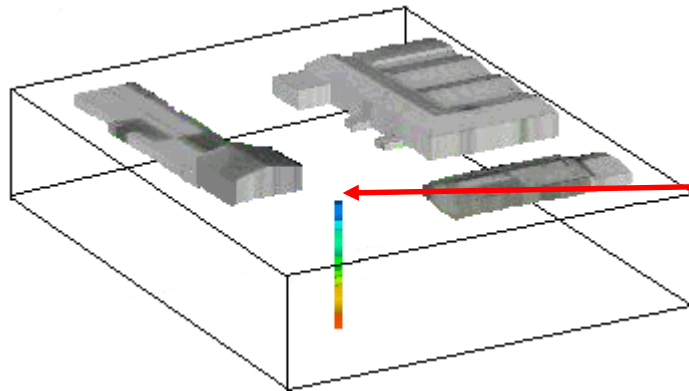
**Facility**



# Locations

**Locations are uniquely designated sampling points, typically on the ground surface, that can be identified spatially by x, y, and z coordinates.**

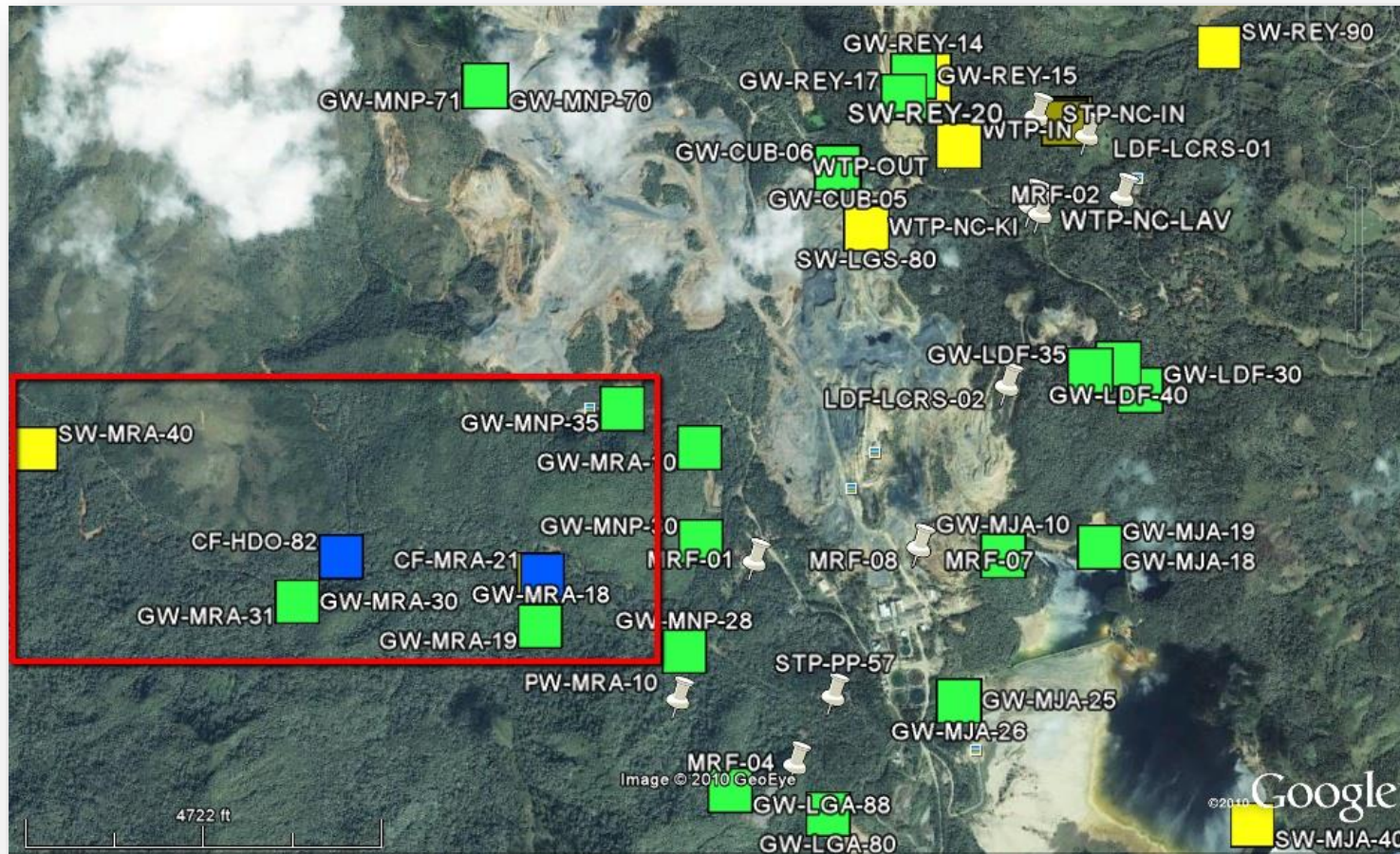
**Stored in EQuIS in DT\_LOCATION as a "SYS\_LOC\_CODE".**



**X coordinate**  
**Y coordinate**  
**Total depth**  
**Surface elevation**  
**Driller**  
**Start date**  
**...others**

# Location Groups

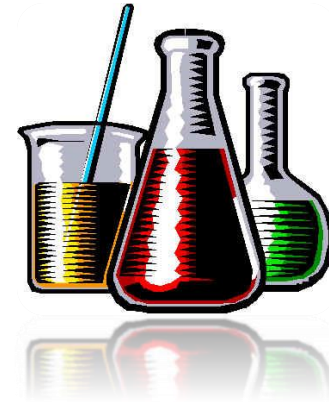
Location Groups are collection of locations for reporting and graphing.



# Analytes

**'Analytes' are defined as the substance you analyze or quantify by an analytical procedure.**

**Many different names can be used to mean the same thing: analyte, chemical, compound, constituent, contaminant, determinant...**



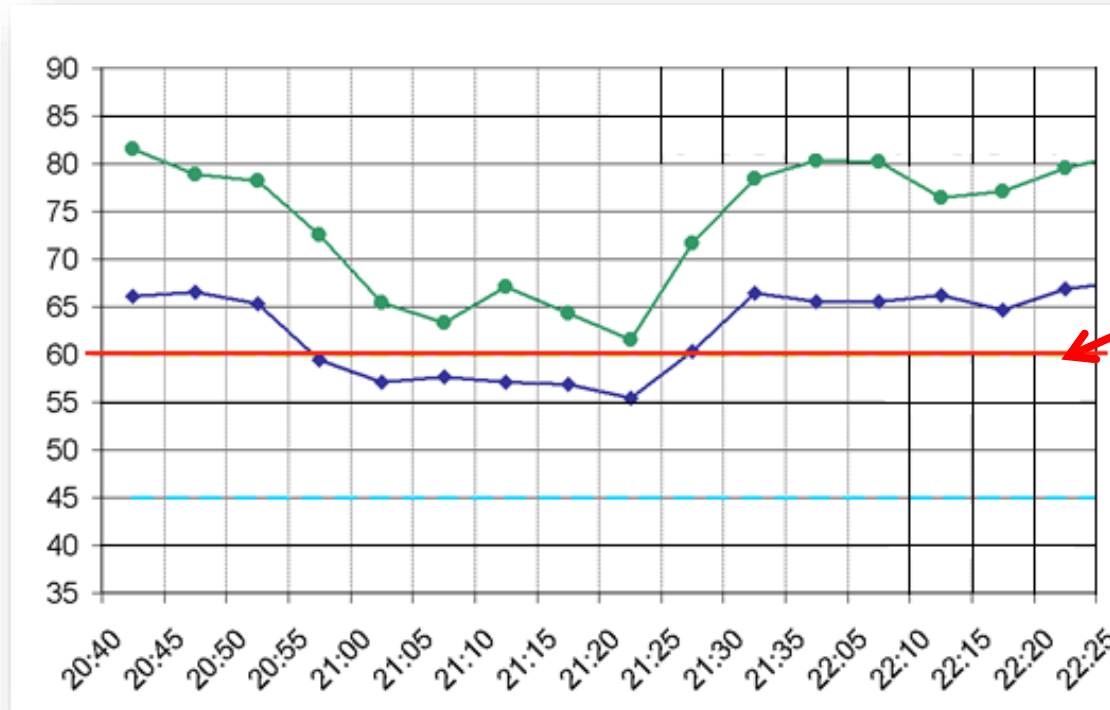
# Analyte Groups

**Analyte Groups are collections of analytes for reporting and graphing.**



# Action Levels

**Action levels are values against which results or parameter measurements are compared to. Action Levels may also be referred to as standards, comparison criteria, or other names.**



**Action Level**

# Crosstab Reports

Data as contained in a database:

| facility_id | facility_code | sys_loc_code | loc_group  | loc_report_order | sys_sample_code | sample_name   | sample_date |
|-------------|---------------|--------------|------------|------------------|-----------------|---------------|-------------|
| 1           | Springfield   | B-30         | MONITWELLS | 1                | B-30_19970315   | B-30_19970315 | 3/15/1997   |
| 1           | Springfield   | B-30         | MONITWELLS | 1                | B-30_19970613   | B-30_19970613 | 6/13/1997   |
| 1           | Springfield   | B-30         | MONITWELLS | 1                | B-30_19970911   | B-30_19970911 | 9/11/1997   |
| 1           | Springfield   | B-30         | MONITWELLS | 1                | B-30_19971210   | B-30_19971210 | 12/10/1997  |
| 1           | Springfield   | B-30         | MONITWELLS | 1                | B-30_19980310   | B-30_19980310 | 3/10/1998   |
| 1           | Springfield   | B-30         | MONITWELLS | 1                | B-30_19980608   | B-30_19980608 | 6/8/1998    |
| 1           | Springfield   | B-31         | MONITWELLS | 2                | B-31_19970315   | B-31_19970315 | 3/15/1997   |
| 1           | Springfield   | B-31         | MONITWELLS | 2                | B-31_19970613   | B-31_19970613 | 6/13/1997   |
| 1           | Springfield   | B-31         | MONITWELLS | 2                | B-31_19970911   | B-31_19970911 | 9/11/1997   |

Cross Tabbed data:

**TABLE 4**  
Project: Springfield  
Groundwater Analytical Results

|                             | Sample ID              | B-30_19970315           | B-30_19970613 | B-30_19970911 | B-30_19971210 | B-30_19980310 | B-30_19980608 | B-31_19970315 |
|-----------------------------|------------------------|-------------------------|---------------|---------------|---------------|---------------|---------------|---------------|
|                             |                        |                         |               |               |               |               |               |               |
|                             | Sampling Date          | Units                   |               | ug/l          |               | ug/l          |               | ug/l          |
|                             | Units                  | ug/l                    |               | ug/l          |               | ug/l          |               | ug/l          |
|                             | 2009 Commercial Levels | 2009 Residential Levels |               |               |               |               |               |               |
| <b>NASTY VOCs</b>           |                        |                         |               |               |               |               |               |               |
| BENZENE                     | 3.7                    | 1.2                     | 57.82         | 37.37         | 23.67         |               |               |               |
| Methyl T-Butyl Ether (MTBE) | 15                     | 15                      | 35.62         | 45.39         | 60.6          |               |               |               |
| Vinyl Chloride              | 0.28                   | 0.030                   | < 0.005       | < 0.005       | < 0.005       |               |               |               |
| <b>PRIORITY METALS</b>      |                        |                         |               |               |               |               |               |               |
| Copper                      | 1000                   | 630                     | NA            | NA            | NA            |               |               |               |
| Lead                        | 15                     | 15                      | NA            | NA            | NA            |               |               |               |
| <b>TOTAL BTEX</b>           |                        |                         |               |               |               |               |               |               |
| BENZENE                     | 3.7                    | 1.2                     | 57.82         | 37.37         | 23.67         |               |               |               |

|   |      | Chemical Name: | Cis-1,2-Dichloroet | Trichloroethylene | Vinyl Chloride |
|---|------|----------------|--------------------|-------------------|----------------|
|   |      | Location       | Sample             |                   |                |
| ▶ | B-30 | B-30_19970315  | < 0.005 ug/l       | < 0.005 ug/l      | < 0.005 ug/l   |
|   | B-30 | B-30_19970613  | < 0.005 ug/l       | < 0.005 ug/l      | < 0.005 ug/l   |
|   | B-30 | B-30_19970911  | < 0.005 ug/l       | < 0.005 ug/l      | < 0.005 ug/l   |
|   | B-30 | B-30_19971210  | < 0.005 ug/l       | < 0.005 ug/l      | < 0.005 ug/l   |
|   | B-30 | B-30_19980310  | < 0.005 ug/l       | < 0.005 ug/l      | < 0.005 ug/l   |
|   | B-30 | B-30_19980608  | < 0.005 ug/l       | < 0.005 ug/l      | < 0.005 ug/l   |
|   | B-31 | B-31_19970315  | < 0.005 ug/l       | < 0.005 ug/l      | < 0.005 ug/l   |

Crossed tabbed data is much easier to read and understand.

# Environmental Sampling Terms

## CAS RNs

**CAS RNs are abbreviations for Chemical Abstracts Service Registry Numbers. The CAS RN, often referred to as “CAS number,” is a unique numeric identifier which refers to a chemical substance.**

**For example, 58-08-2 is the CAS Registry Number for caffeine.**

**Compare to chemical name synonyms:**

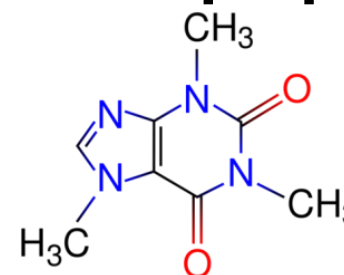
**661-97-2 ...1,2-Dichloro-1,1,2,3,3,3-hexafluoropropane**

**also 1,1,1,2,3, 3-Hexafluoro-2,3-dichloropropane**

**CFC-216 vs. Freon 216**

**To find CAS numbers, visit**

- <http://www.cas.org>
- <http://www.chemfinder.com>





# Sample Types

“Sample types” refer to the classification of samples based on the sampling purpose and procedure.

Sample types are stored in RT\_SAMPLE\_TYPE and may include:

- **N**        **Normal Environmental Sample**
- **FB**       **Field Blank**
- **BS**       **Blank Spike**
- **BD**       **Blank Spike Duplicate**
- **TB**       **Trip Blank**
- **RB**       **Material Rinse Blank**
- **MS**       **Lab Matrix Spike**
- .....

# Matrices

**Matrix describes the media from which the sample was taken.**

**Matrices are stored in RT\_MATRIX and may include:**

- **Groundwater**
- **Soil**
- **Air**
- **Fish Tissue**
- **.....**

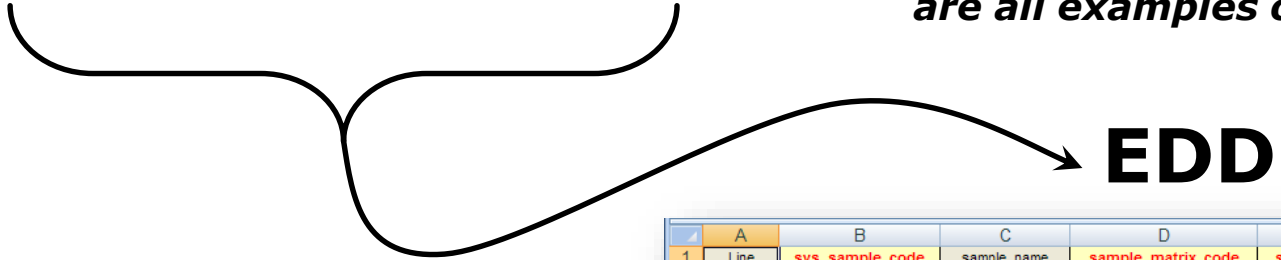


# EDDs

**EDDs, or Electronic Data Deliverables, are electronic tabular formats for sharing, manipulating, and using data.**



*An Access database, an Excel spreadsheet, a tab delimited text file, and even zipped files are all examples of EDDs.*

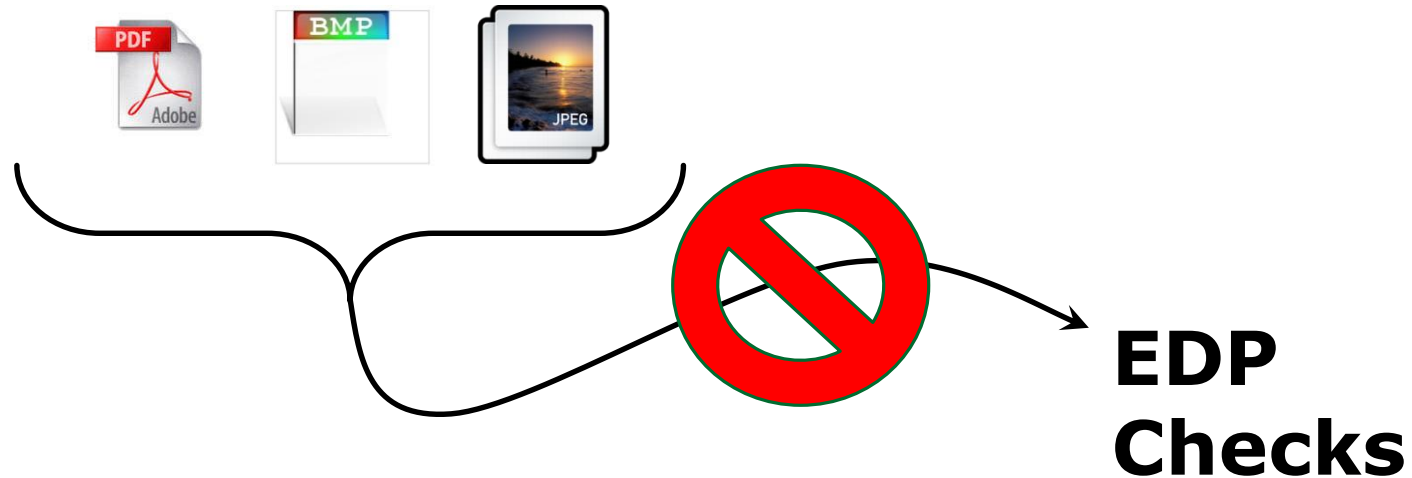


**EFWEDD or  
4-File  
Format**

|    | A    | B                  | C           | D                  | E                | F             | G                  |
|----|------|--------------------|-------------|--------------------|------------------|---------------|--------------------|
| 1  | Line | sys_sample_code    | sample_name | sample_matrix_code | sample_type_code | sample_source | parent_sample_code |
| 2  | 1    | #SYS_SAMPLE_CODE   | sample_name | sample_matrix_code | sample_type_code | sample_source | parent_sample_code |
| 3  | 2    | #TEXT [40]         | Text [30]   | Text [10]          | Text [20]        | Text [10]     | Text [40]          |
| 4  | 3    | B-30_20000325      |             | WG                 | N                | Field         |                    |
| 5  | 4    | B-31_20000325      |             | WG                 | N                | Field         |                    |
| 6  | 5    | B-33_20000325      |             | WG                 | N                | Field         |                    |
| 7  | 6    | B-38_20000325      |             | WG                 | N                | Field         |                    |
| 8  | 7    | B-45_20000325      |             | WG                 | N                | Field         |                    |
| 9  | 8    | TRIPBLANK_20000325 |             | WQ                 | TB               | Field         |                    |
| 10 | 9    | B-30_20000325_FD   |             | WQ                 | FD               | Field         | B-30_20000325      |
| 11 | 10   | B-45_20000325_MS   |             | WG                 | MS               | Lab           | B-45_20000325      |
| 12 | 11   | B-45_20000325_MSD  |             | WG                 | MSD              | Lab           | B-45_20000325_MS   |

# E-Data

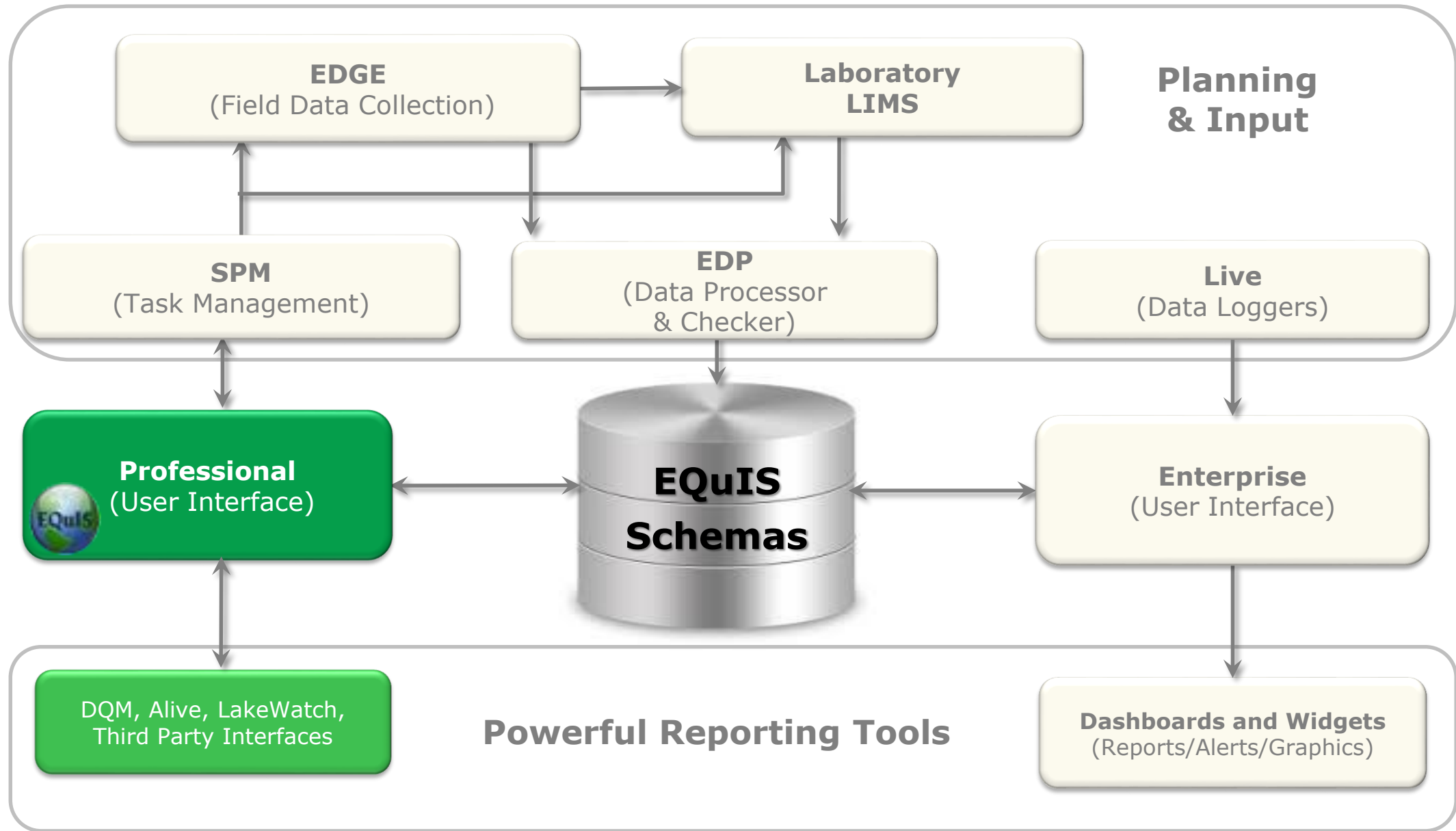
**E-Data refers to data that are available in a usable electronic format.**



**Unlike EDDs, E-Data is NOT directly checked by the EQUIS Data Processor**

# **EQuIS Professional**

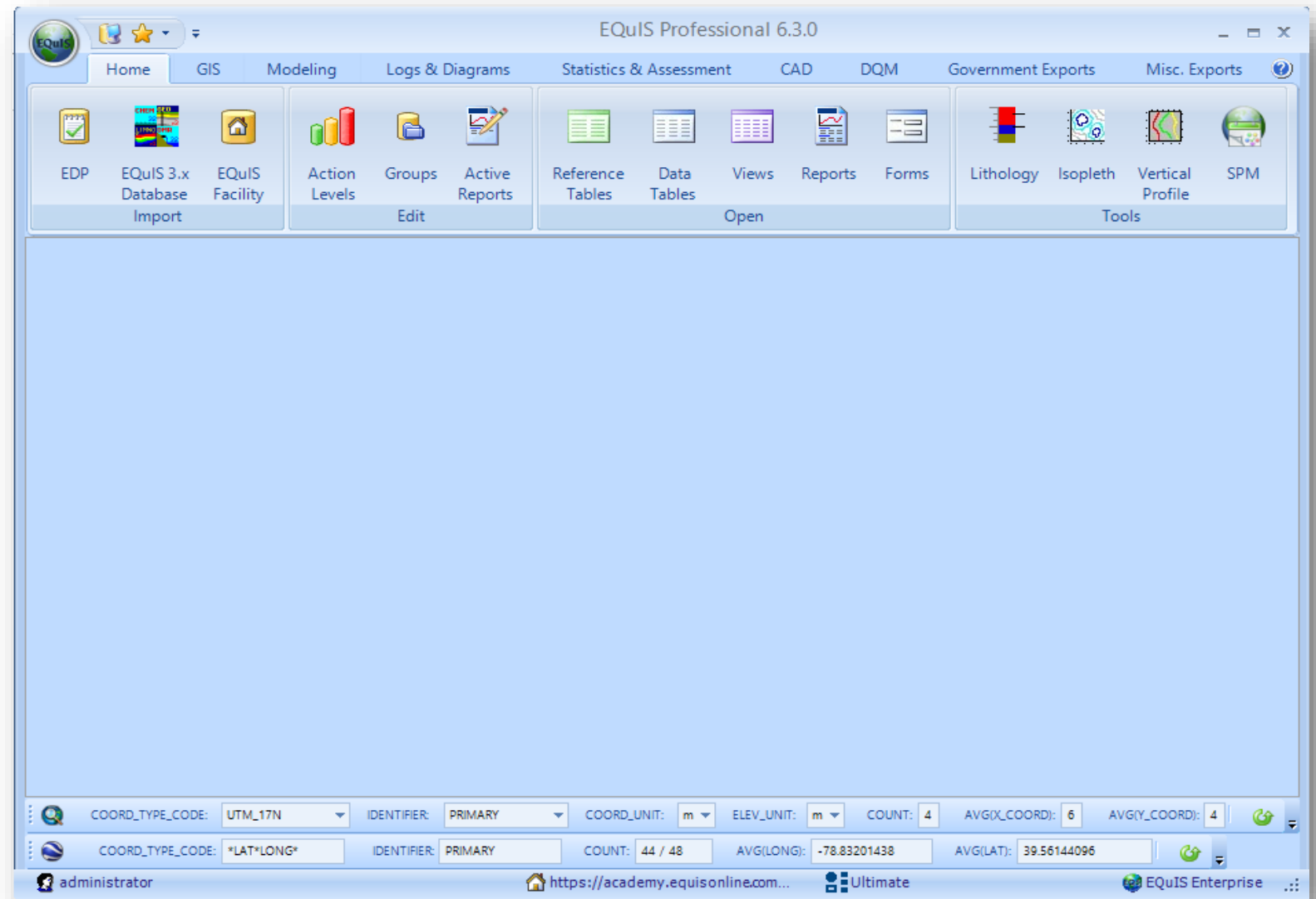
# Professional





# EQUS Professional *Purpose:*

- Part of an Environmental Data Management Workflow and is used to check, edit, and load data.
- Report, graph, and export the data to a variety of templates and applications.



# EQuIS Professional Navigation

## Available Tools



**In every Table and Tabular Report in EQuIS Professional**



**Filter**



**Pin Columns**



**Column Chooser**



**Find and  
Replace**

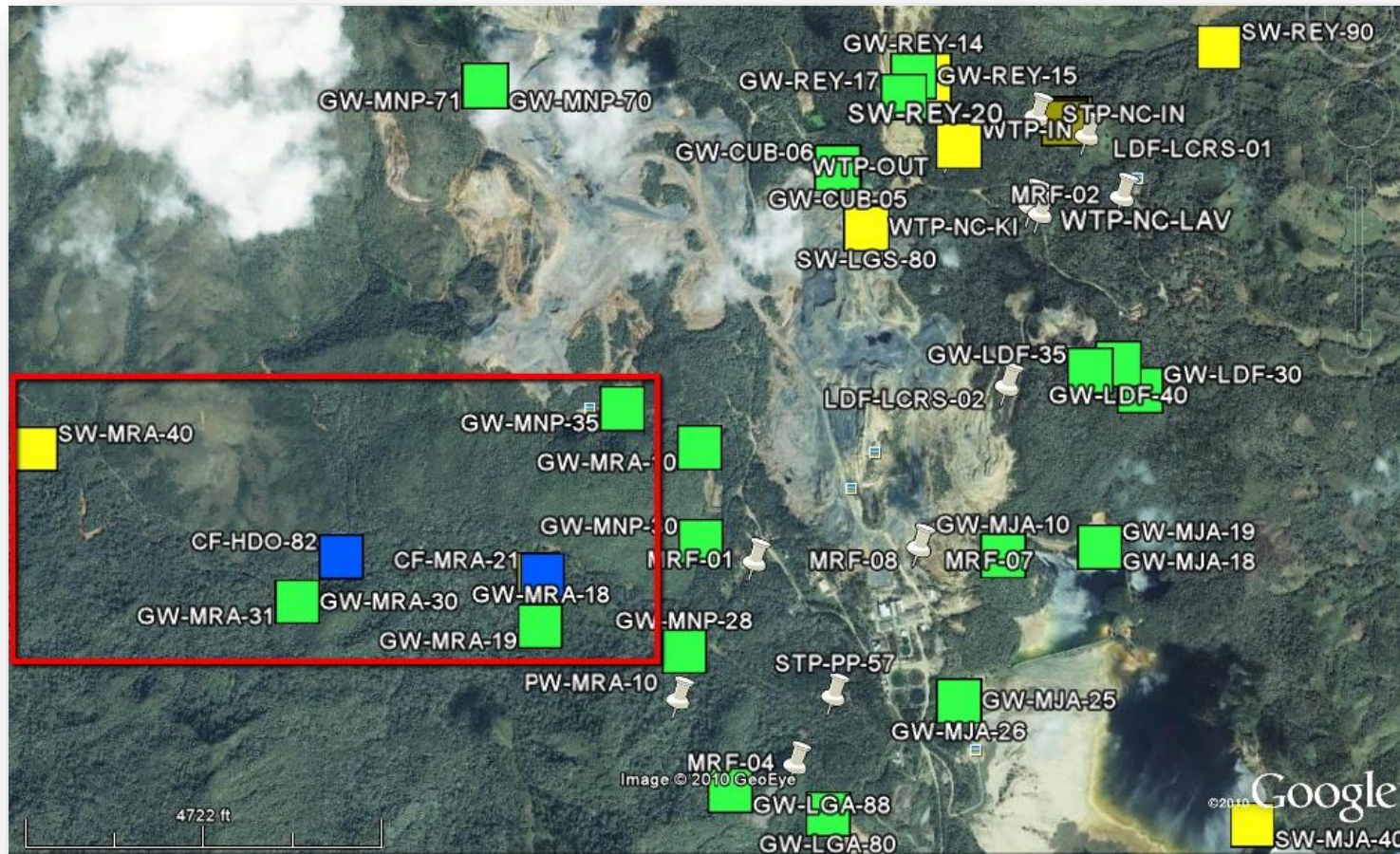


**Refresh**



# Location Groups

**Location Groups are collection of locations for reporting and graphing.**



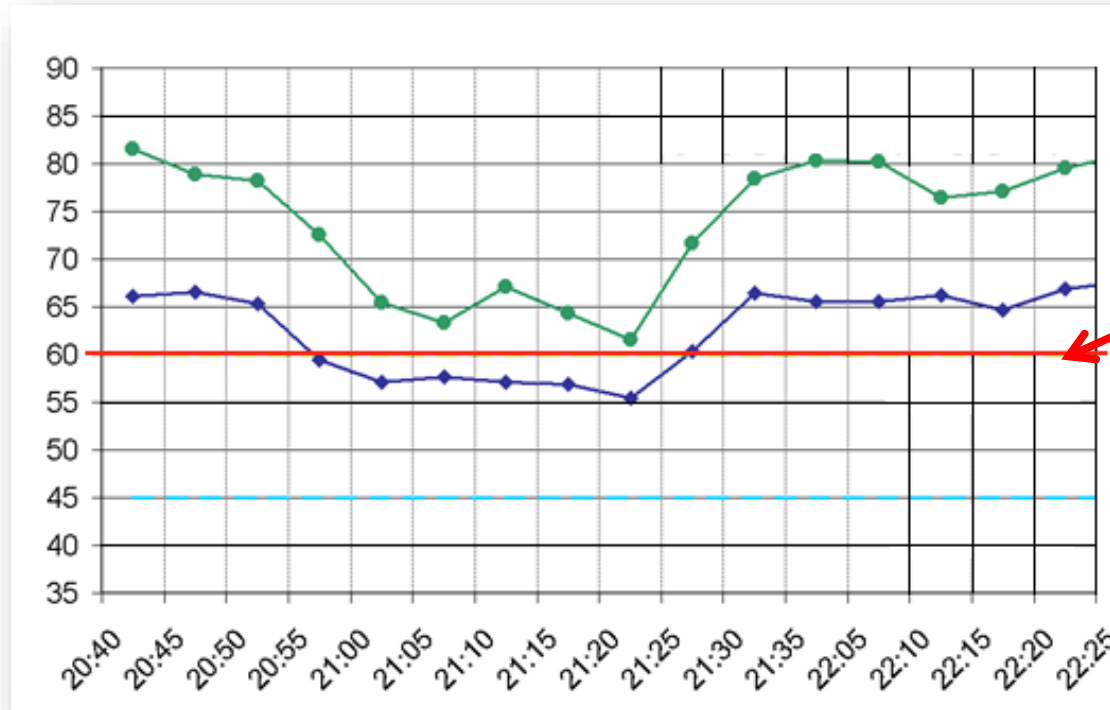
# Analyte Groups

**Analyte Groups are collections of analytes for reporting and graphing.**



# Action Levels

**Action levels are values against which results or parameter measurements are compared to. Action Levels may also be referred to as standards, comparison criteria, or other names.**



**Action Level**

# EFMD EQUIS Reports

# The Purpose of EQulS Reports

EQulS Professional offers many different types of reports. Reports may be used to build simple queries or create highly formatted output. There are several types of reports available:

- Tabular Reports
- Crosstab Reports
- Time Series Charts
- XYZ Plots (Contours, Surface Plots)

# Tabular Reports

- ❑ Query data from multiple tables with one report
- ❑ Easy to select parameters and save Pick Reports for future use
- ❑ Can filter data further and use other tools within tabular reports

Rangées: 887 récupéré, 887 visibles, 0 sélectionnés

| facility_id | facility_code | sys_loc_code | loc_name | loc_group | loc_report_order | measurement_date    | reference_elev | water_level |    |
|-------------|---------------|--------------|----------|-----------|------------------|---------------------|----------------|-------------|----|
| 1           | McClean       | 01-01A       | 01-01A   |           |                  | 07/04/2002 12:00:00 | 445,445        | 437,125     | <1 |
| 1           | McClean       | 01-01A       | 01-01A   |           |                  | 20/07/2002 12:00:00 | 445,445        | 437,810     | <1 |
| 1           | McClean       | 01-01A       | 01-01A   |           |                  | 07/08/2002 12:00:00 | 445,445        | 437,744     | <1 |
| 1           | McClean       | 01-01A       | 01-01A   |           |                  | 18/09/2002 12:00:00 | 445,445        | 437,830     | <1 |
| 1           | McClean       | 01-01A       | 01-01A   |           |                  | 13/10/2002 00:00:00 | 445,445        | 437,838     | <1 |
| 1           | McClean       | 01-01A       | 01-01A   |           |                  | 26/11/2002 12:00:00 | 445,445        | 437,467     | <1 |
| 1           | McClean       | 01-01A       | 01-01A   |           |                  | 19/12/2002 12:00:00 | 445,445        | 437,301     | <1 |
| 1           | McClean       | 01-01A       | 01-01A   |           |                  | 09/01/2003 12:00:00 | 445,445        | 437,135     | <1 |
| 1           | McClean       | 01-01A       | 01-01A   |           |                  | 06/02/2003 12:00:00 | 445,445        | 437,138     | <1 |
| 1           | McClean       | 01-01A       | 01-01A   |           |                  | 13/03/2003 12:00:00 | 445,445        | 436,922     | <1 |
| 1           | McClean       | 01-01A       | 01-01A   |           |                  | 16/04/2003 12:00:00 | 445,445        | 436,779     | <1 |
| 1           | McClean       | 01-01A       | 01-01A   |           |                  | 07/05/2003 12:00:00 | 445,445        | 437,345     | <1 |
| 1           | McClean       | 01-01A       | 01-01A   |           |                  | 11/06/2003 12:00:00 | 445,445        | 437,919     | <1 |
| 1           | McClean       | 01-01A       | 01-01A   |           |                  | 04/07/2003 12:00:00 | 445,445        | 437,867     | <1 |
| 1           | McClean       | 01-01A       | 01-01A   |           |                  | 17/08/2003 12:00:00 | 445,445        | 437,739     | <1 |
| 1           | McClean       | 01-01A       | 01-01A   |           |                  | 22/10/2003 12:00:00 | 445,445        | 437,652     | <1 |
| 1           | McClean       | 01-01A       | 01-01A   |           |                  | 27/12/2003 12:00:00 | 445,445        | 437,385     | <1 |
| 1           | McClean       | 01-01A       | 01-01A   |           |                  | 10/02/2004 12:00:00 | 445,445        | 437,124     | <1 |
| 1           | McClean       | 01-01A       | 01-01A   |           |                  | 21/04/2004 12:00:00 | 445,445        | 436,975     | <1 |
| 1           | McClean       | 01-01A       | 01-01A   |           |                  | 01/06/2004 12:00:00 | 445,445        | 437,737     | <1 |
| 1           | McClean       | 01-01A       | 01-01A   |           |                  | 03/08/2004 12:00:00 | 445,445        | 437,561     | <1 |
| 1           | McClean       | 01-01A       | 01-01A   |           |                  | 23/10/2004 12:00:00 | 445,445        | 437,561     | <1 |
| 1           | McClean       | 01-01A       | 01-01A   |           |                  | 12/12/2004 12:00:00 | 445,445        | 437,016     | <1 |



# Crosstab Reports

- Build Crosstab Reports with tabular queries to better understand data
- Apply Microsoft Excel templates and publish designs to the database
- Publish Crosstab designs to make them visible to all users

|          |               | Chemical Name: | Cis-1,2-Dichloroet | Trichloroethylene | Vinyl Chloride |
|----------|---------------|----------------|--------------------|-------------------|----------------|
| Location | Sample        |                |                    |                   |                |
| ▶ B-30   | B-30_19970315 |                | < 0.005 ug/l       | < 0.005 ug/l      | < 0.005 ug/l   |
| B-30     | B-30_19970613 |                | < 0.005 ug/l       | < 0.005 ug/l      | < 0.005 ug/l   |
| B-30     | B-30_19970911 |                | < 0.005 ug/l       | < 0.005 ug/l      | < 0.005 ug/l   |
| B-30     | B-30_19971210 |                | < 0.005 ug/l       | < 0.005 ug/l      | < 0.005 ug/l   |
| B-30     | B-30_19980310 |                | < 0.005 ug/l       | < 0.005 ug/l      | < 0.005 ug/l   |
| B-30     | B-30_19980608 |                | < 0.005 ug/l       | < 0.005 ug/l      | < 0.005 ug/l   |
| B-31     | B-31_19970315 |                | < 0.005 ug/l       | < 0.005 ug/l      | < 0.005 ug/l   |

TABLE 4  
Project: Springfield  
Groundwater Analytical Results

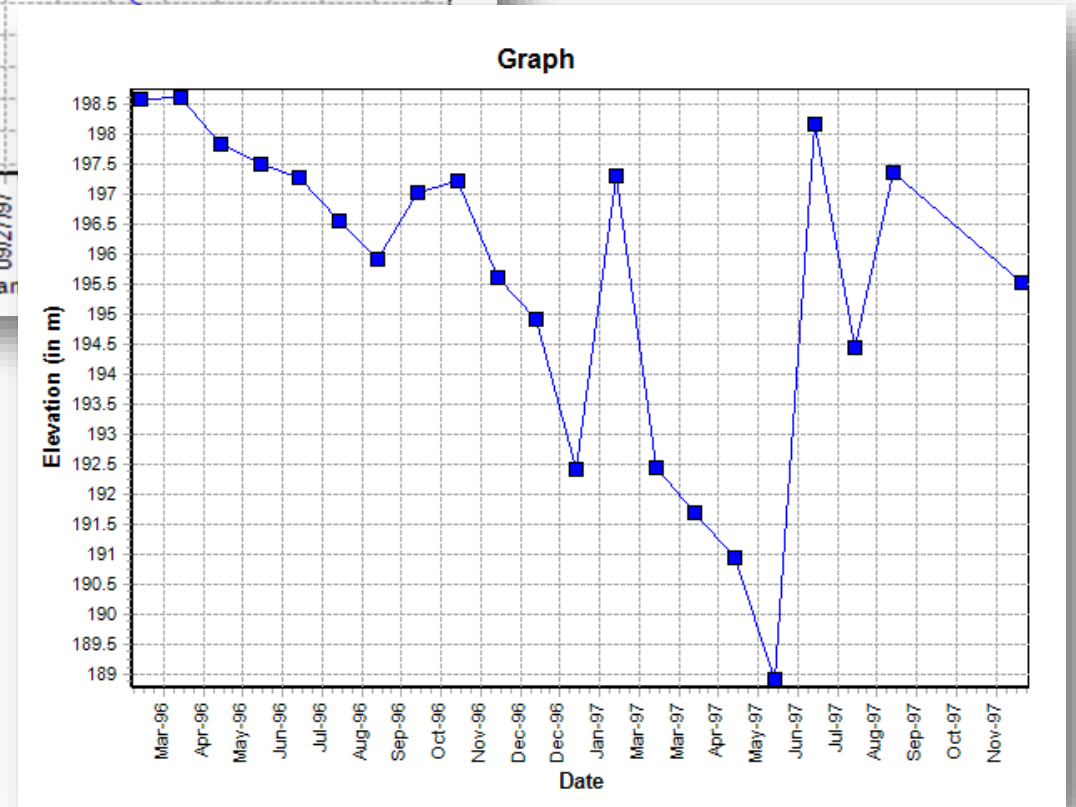
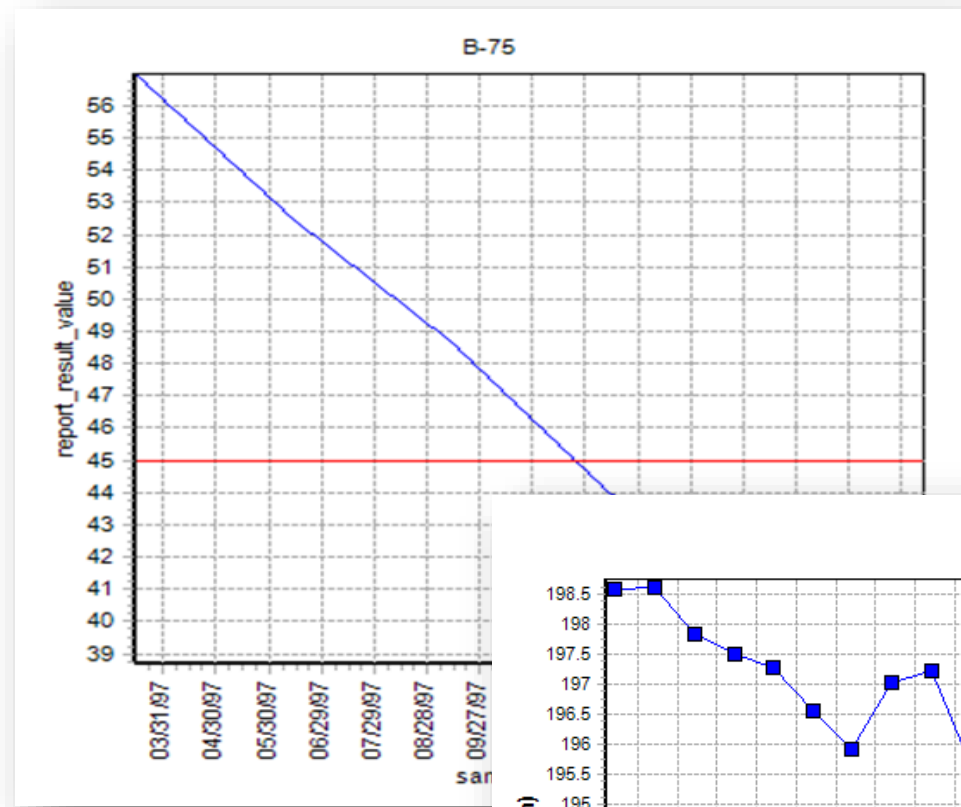
|                                    | Sample ID | B-30_19970315          | B-30_19970613           | B-30_19970911     |
|------------------------------------|-----------|------------------------|-------------------------|-------------------|
|                                    |           | 3/15/1997              | 6/13/1997               | 9/11/1997         |
|                                    |           | ug/l                   | ug/l                    | ug/l              |
|                                    |           | 2009 Commerical Levels | 2009 Residential Levels |                   |
| <b>NASTY VOCS</b>                  |           |                        |                         |                   |
| <b>BENZENE</b>                     |           | <b>3.7</b>             | <b>1.2</b>              | <b>57.82</b>      |
| <b>Methyl T-Butyl Ether (MTBE)</b> |           | <b>15</b>              | <b>15</b>               | <b>35.62</b>      |
| <b>Vinyl Chloride</b>              |           | <b>0.28</b>            | <b>0.030</b>            | <b>&lt; 0.005</b> |
| <b>PRIORITY METALS</b>             |           |                        |                         |                   |
| <b>Copper</b>                      |           | <b>1000</b>            | <b>630</b>              | <b>NA</b>         |
| <b>Lead</b>                        |           | <b>15</b>              | <b>15</b>               | <b>NA</b>         |
| <b>TOTAL BTEX</b>                  |           |                        |                         |                   |
| <b>BENZENE</b>                     |           | <b>3.7</b>             | <b>1.2</b>              | <b>57.82</b>      |

**Qualifiers**  
 J- The concentration is an approximate value.  
 U- The compound was not detected.  
 NA- Not analyzed  
 Bold- Conc. exceeds Res.  
 Bold and Shaded- Conc. exceeds Res. and Comm.



# Time Series Charts

Create Time Series Charts with tabular queries

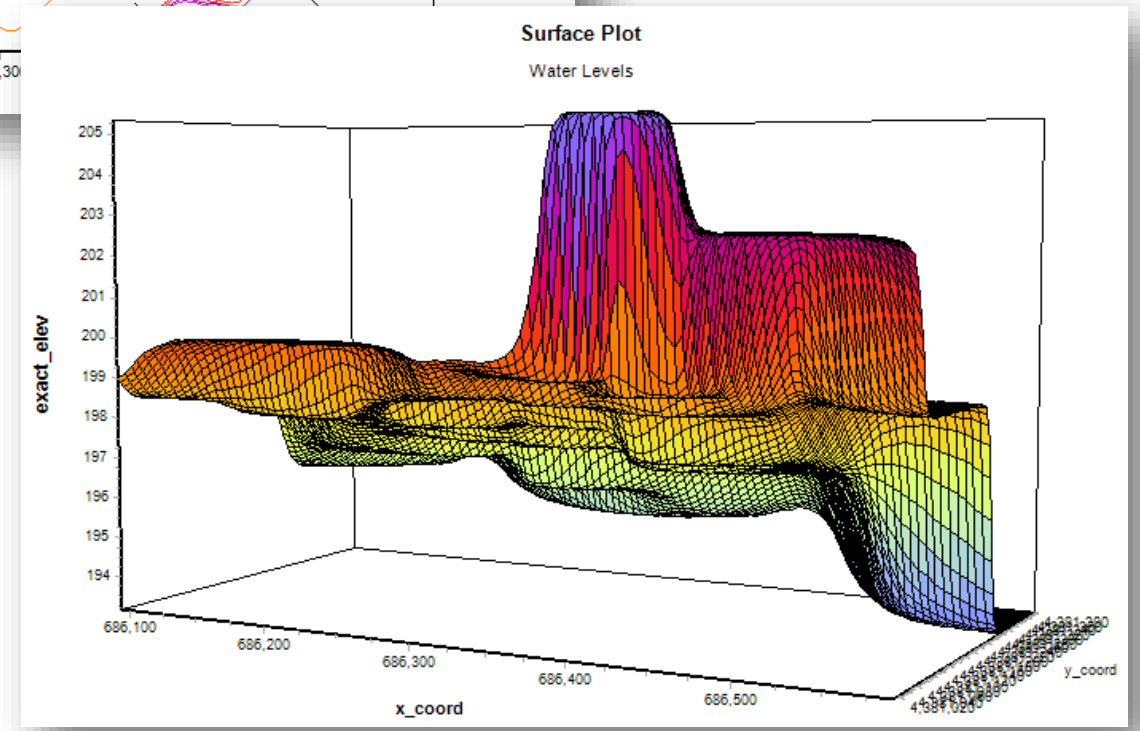
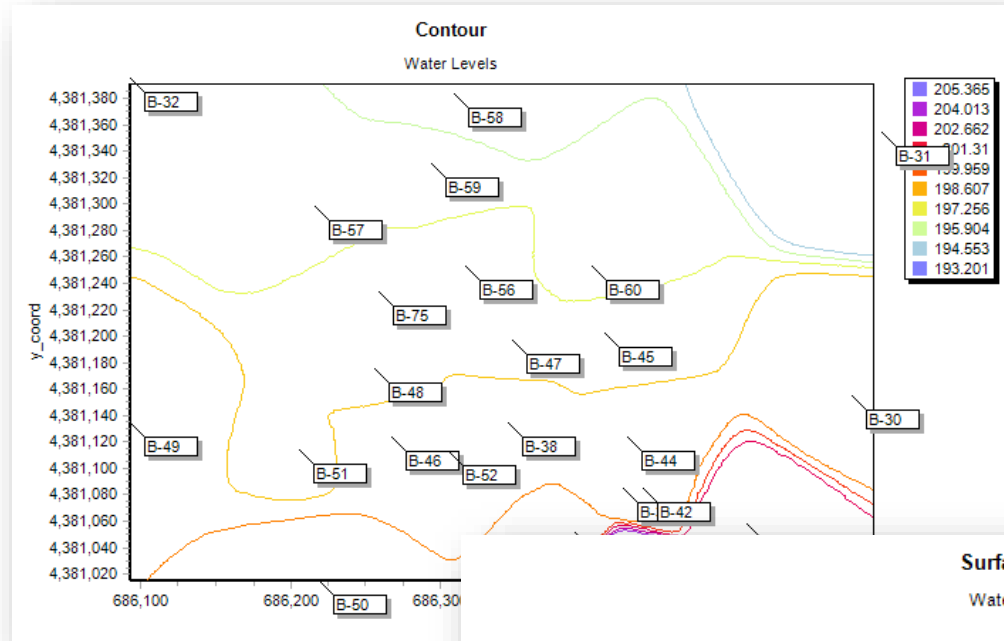






# XYZ Charts

Create XYZ Charts with tabular queries



# Access EQUIS Professional

1. Login to *EQuIS Professional* from Start > All Programs > EarthSoft > EQUIS Professional.
2. Select the Facility into which data will be viewed or reported.

# **EQuIS for ArcGIS**

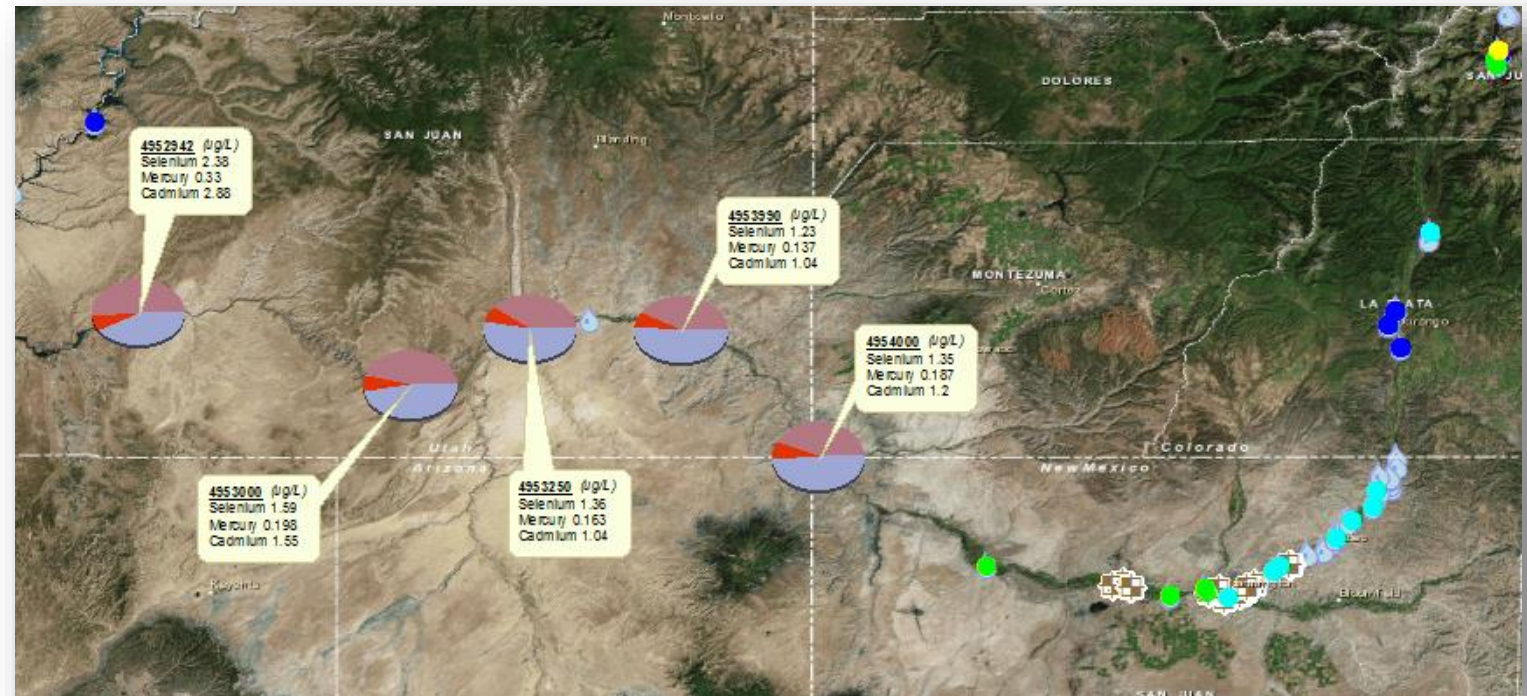
# Required Permissions and Software

## *EQuIS for ArcGIS*

- EQuIS Professional v6.0 or higher must be installed and registered on the workstation
- .NET Framework v4.0 or higher must be installed
- ArcGIS 10.0 or higher must be installed
- Read permissions are required for the desired facilities for EQuIS for ArcGIS Connection and Layer Building
- Read/write permissions are required for the desired facilities for Adding or Modifying Locations and Location Groups

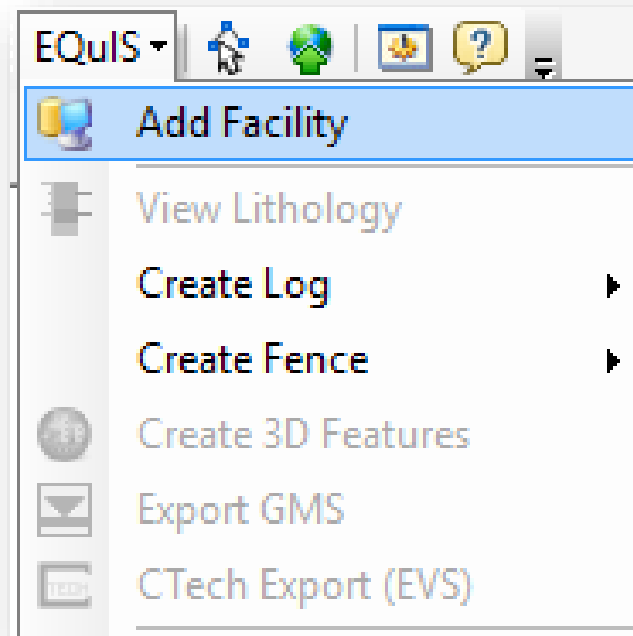
# EQuIS for ArcGIS *Purpose*

- ❑ Access EQuIS data directly within ArcGIS Desktop
- ❑ Add EQuIS layers to an ArcGIS Map
- ❑ Link to industry-leading third party applications



# Access EQuIS for ArcGIS

1. Launch ArcMap from Start> All Programs> ArcGIS> ArcMap 10.x.
2. From the EQuIS for ArcGIS toolbar, select **Add Facility** and login to the desired facility.



# Thank you for attending!

Questions? Comments? Suggestions?

Contact us:

EarthSoft Trainings, [training@earthsoft.com](mailto:training@earthsoft.com)

Janet Magurn, President, [jmagurn@earthsoft.com](mailto:jmagurn@earthsoft.com)

Tinna Chan, Systems Engineer, [tinna.chan@earthsoft.com](mailto:tinna.chan@earthsoft.com)