

A person is swimming in a pond, surrounded by tall green reeds. The water is dark and reflects the surrounding environment. The scene is peaceful and natural.

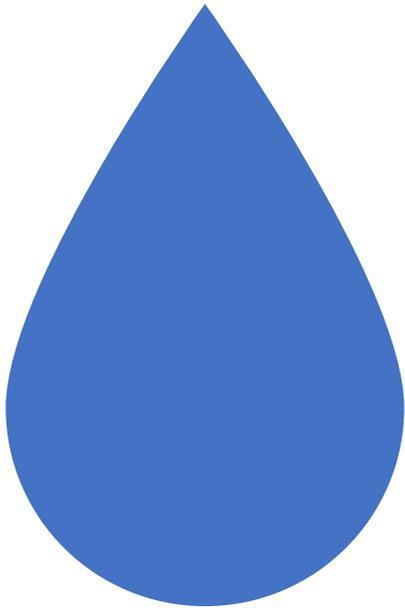
Get Your Data Flowing with the Water Quality eXchange

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Water Data Integration Branch

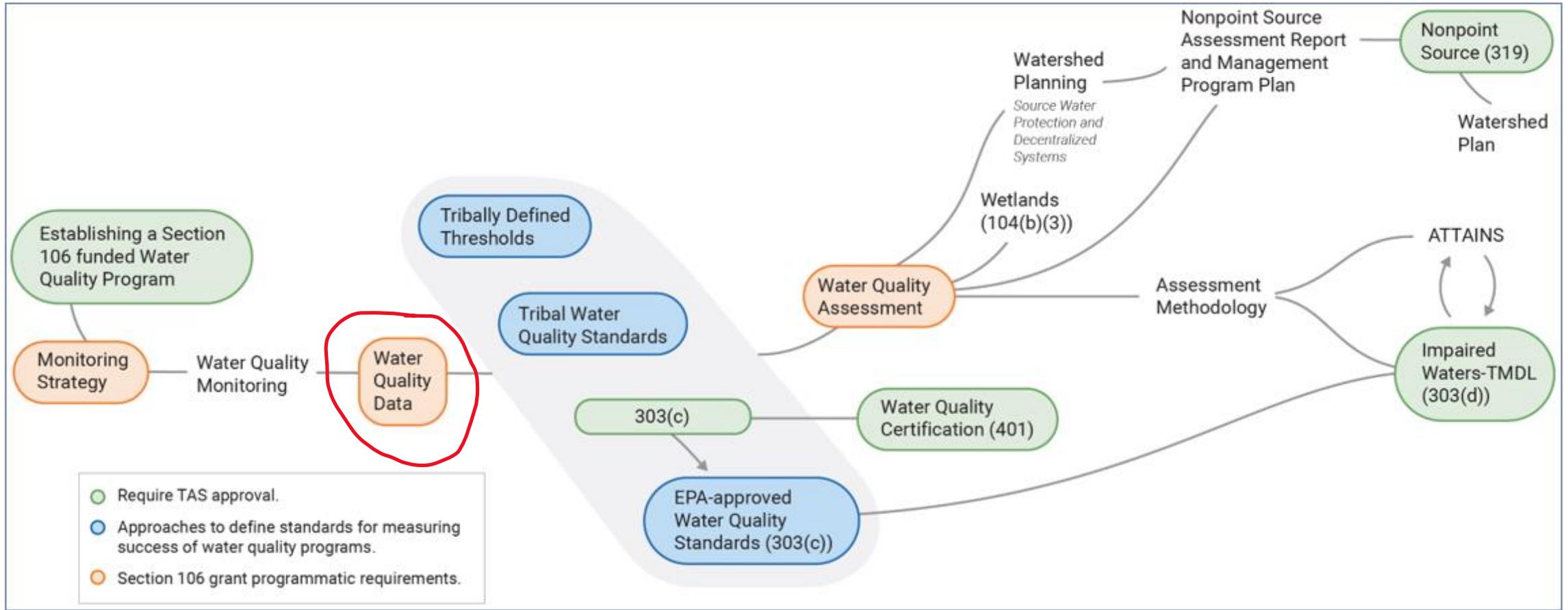
2024 Southwest Tribal CWA Training



What we'll cover today

- 106 Grant Data Reporting Requirements
- Managing your Water Quality Data
- What is WQX today?
- How to choose the best path to WQX for your program or dataset
- WQX Basics
 - Preparing data for submissions
 - WQX Web Templates
 - Import Configurations (Teach WQX to read your dataset as-is)
- How to use your data

Clean Water Act – Tribal Program Roadmap



Data Sovereignty

The Section 106 Program is committed to respecting tribal Indigenous Knowledge sovereignty practices. Indigenous Knowledge informs many aspects of tribal water quality programs and the information shared by Indigenous Knowledge holders is owned by them.

Tribes that use Section 106 funds to collect Indigenous Knowledge will not be required to report that shared knowledge as part of their grant requirements. Tribes are expected to meet the three reporting requirements (Monitoring Strategy, water quality data submitted through WQX, and Water Quality Assessment, as described in Chapter 6) but are not expected to share the underlying Indigenous Knowledge used to inform water quality objectives and management practices.

Section 106 Reporting Requirements - FAQs

Q1: When will Tribes be required comply with the WQX requirement?

A1: The WQX requirement will be implemented through a term and condition on a Tribe's grant. The FY 2024 Funding Recommendation (FY 2024 FR) will include the WQX T&C and waiver provision. For Tribes that are not currently providing data directly to WQX, funds awarded using the FY 2024 FR will either include the T&C or attach the waiver request.

Section 106 Reporting Requirements - FAQs

Q2: What if Tribes have sensitive data they are concerned about making publicly available?

A2: There may be site-specific situations where a Tribe has culturally sensitive data that they don't want to be made public. The Tribe should discuss with their Project Officer how best to report this data to WQX.

As a first step, the Tribe should communicate what aspect of the data is sensitive such as the location the sample was collected or the cultural use of the waterbody. Based on the specific aspect of sensitivity, the following options can be considered:

- Modify Location Data: Obscure the precise location by submitting generalized coordinate information
- Remove Cultural Use Information: No Cultural Use info or IK should be shared to WQX at any time
- Mark Sampling Data as Preliminary: Allows EPA staff to see the data, but it is not released to the public (WQP)
- Don't use 106/319 funds to collect the data (Data not shared to EPA):

Data Management

- Consider putting together a simple Data Management Plan
- Identify your raw data formats – lab reports, logger files, field forms, etc.
- Do you need to marry these datasets so they can work together?
- Data formats
- Metadata
- Data management technologies
- Data analysis/use

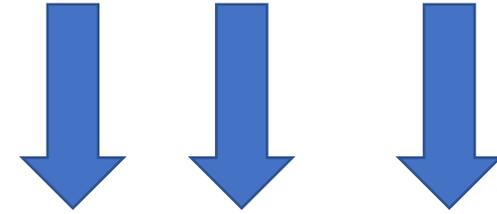


Standardized data formats

Matrix Style Dataset

- AKA “Flat” “Wide” “Tidy”

Each Characteristic
(measure) occupies its
own column



- Handy for analysis
- Compact
- Just the values
- Not the best way to manage your metadata though
- Requires a crosstab import config

Activity Identifier	Activity Start Date	Monitoring Location Identifier	Iron	Lead	Manganese
nwiswi.01.99208821	8/28/1992	USGS-04072050	1400	1.5	510
nwiswi.01.99208822	8/28/1992	USGS-04072050	1800	1.2	650
nwiswi.01.99208826	8/28/1992	USGS-04085110	2200	1.2	890
nwiswi.01.99208856	8/29/1992	USGS-04085475	1600	1.4	480
nwiswi.01.99407330	9/19/1994	USGS-04063700	120		250
nwiswi.01.99407332	9/19/1994	USGS-04063700	5000	1.2	2100
nwiswi.01.99407338	9/21/1994	USGS-04080798	1400	1.2	820
nwiswi.01.99407340	9/21/1994	USGS-04080798	1200	1	2400

Standardized data formats

Stacked Style Dataset - AKA “Tall” “Narrow”

All measures in one
column

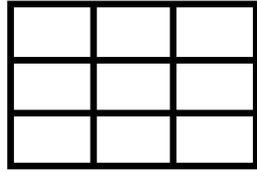
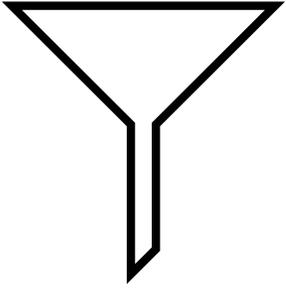


Additional information about those measures



- How data is stored/served by the WQP
- Good for data management
- Not ideal for data analysis
- Allows for metadata

Result Identifier	Characteristic Name	Sample Fraction	Measure Value	Unit
NWIS-114877794	Stream width measure		3	ft
NWIS-114877795	Temperature, water		16.8	deg C
NWIS-114877797	Stream flow, instantaneous		0.19	ft ³ /s
NWIS-114877798	Specific conductance	Total	696	<u>uS/cm @25C</u>
NWIS-114877799	Acidity, (H ⁺)	Total	0.00001	mg/l
NWIS-114877800	Oxygen	Dissolved	11.4	mg/l
NWIS-114877801	pH	Total	8.3	std units

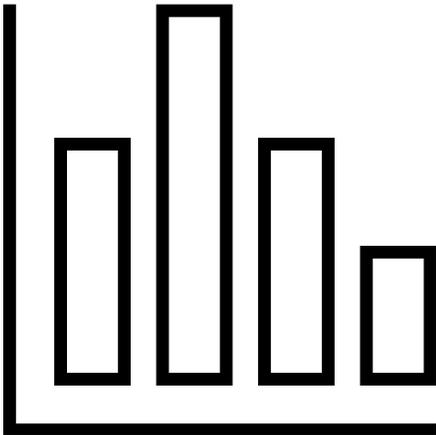


Spreadsheets

Manage datasets (not really a database)

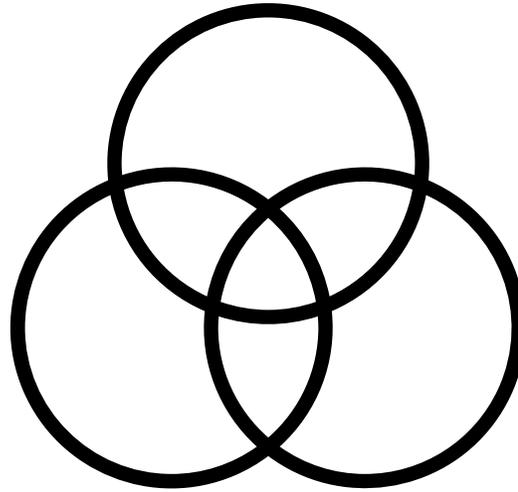
Very useful for manipulating, analyzing, organizing one dataset at a time

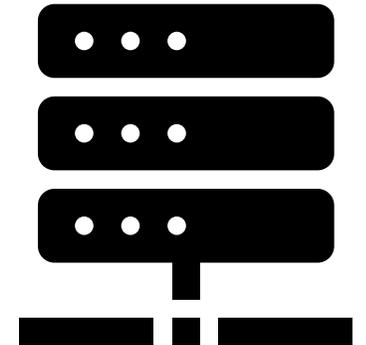
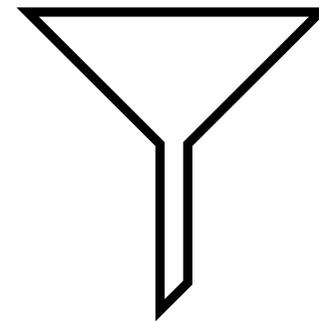
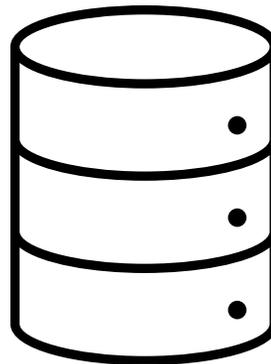
Expandable – Macros, external data, XML, data visualization



Relational Databases (light)

- MS Access (primarily)
- Entry-level database management
- Allows for the management of multiple tables of related data
- Connect, query, filter, update, or append data
- Ensure integrity of data quality/relationships
- Allows for front-end “forms” or “reports” or views of the data





What do we mean by relational?

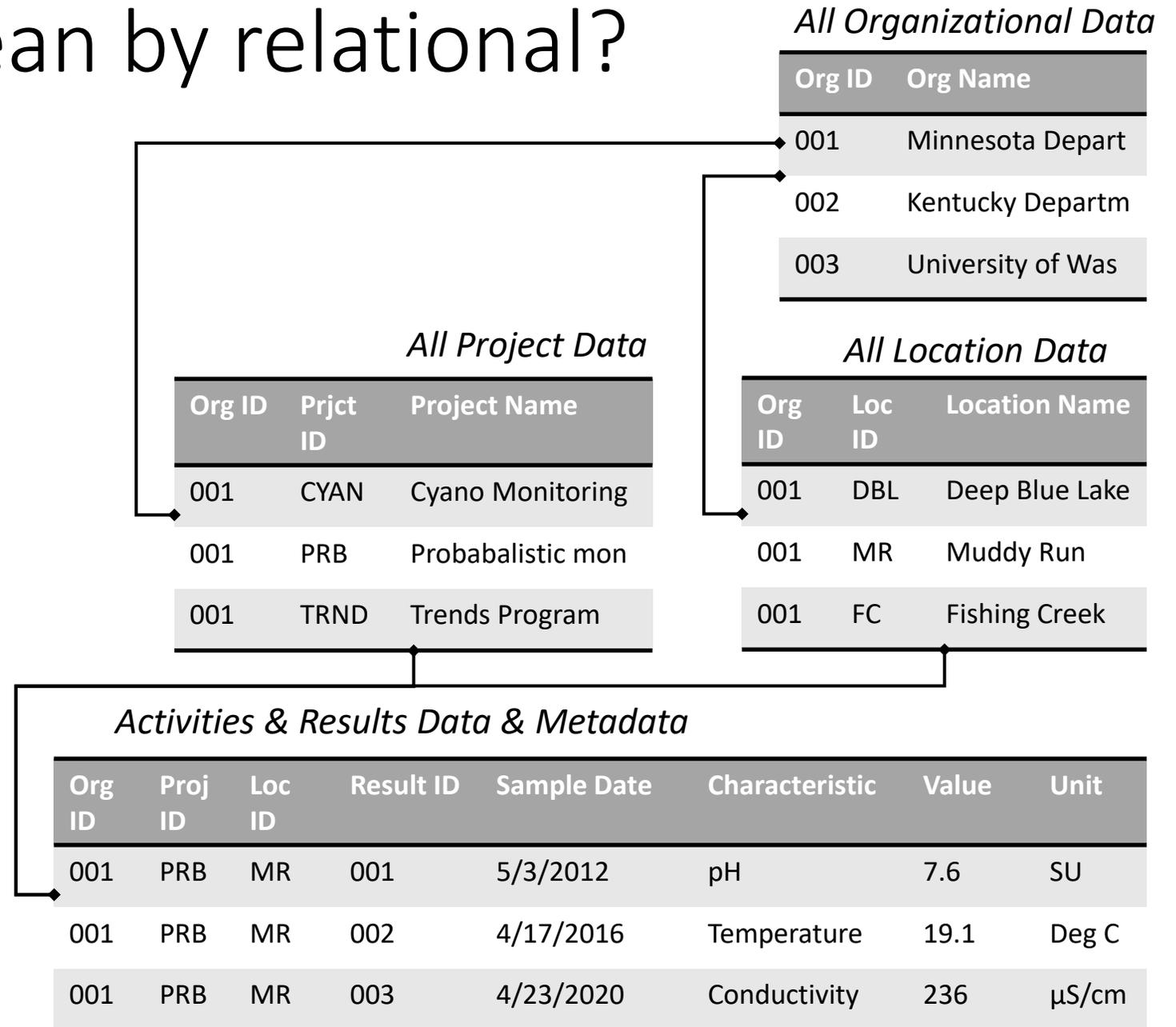
Data of different types are each managed in their own table

We establish relationships between certain pieces of information in the tables

The related pieces of information are often (but not always) ID or “key” fields

This allows for more detailed information to be stored in separate tables, allowing for useful queries of the database

Ex. This is what allows users to query across place, time, program, and result type in the WQP



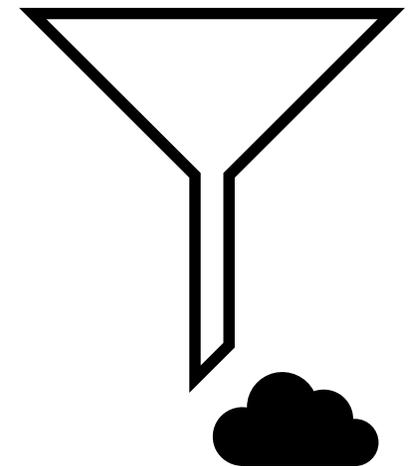
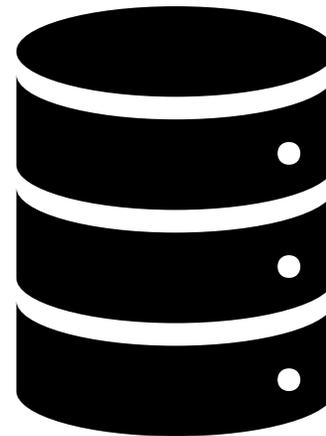
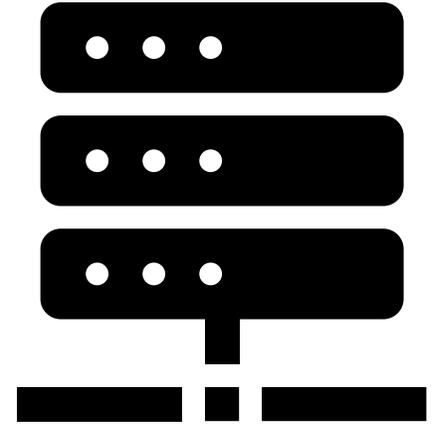
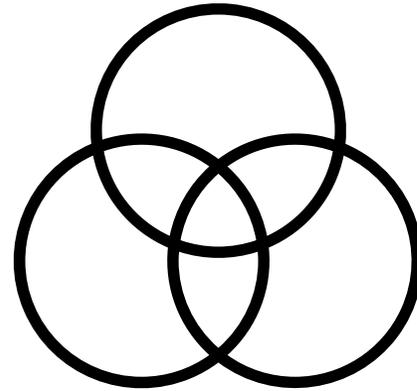
Relational Databases (Heavy)

Enterprise

These are fully customized Enterprise database solutions usually built in Oracle, SQL Server, or PostGres, as examples.

These systems are typically operated from a server or more commonly these days, in the Cloud.

These are typically built by developers, at some cost and may include front-ends for staff to access and manipulate.



Selecting a data management tool

Who needs to manage the data?

What resources are available?

How much data needs to be managed?

How often will you need to complete this task?

	Spreadsheets	Relational dB lite	Enterprise dB
Data Entry	√ (Can link forms)	√ (Can add forms)	Requires forms
Relational data	Some (Power Pivot)	√	√
Run queries		√	√
Manual data fixes	√	√	Dev req'd
Expertise required	Low	Medium	High
Costs required	Low	Low-Medium	Med-High
Ensure Data Integrity	Some	√	√

How can submitting to WQX help your program?



Data Security – You’ve invested a lot in your monitoring data. Sharing it to WQX ensures that there will always be a copy in case something happens on your end



Continuity – Turnover happens. We not only store your data, but also the pathway you’ve built. Happy to train new employees on WQX.



Data Management – Sprograms are relying solely on WWX/WQP to be their database.



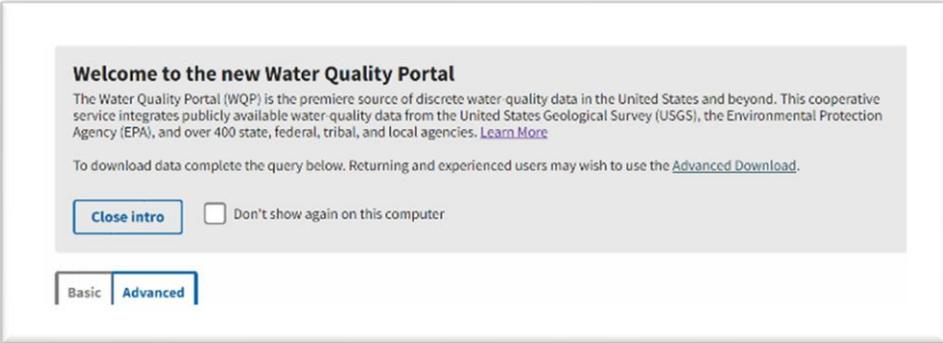
Data Use – The Water Quality Portal is a modern data delivery service. Your data analysis team can build projects that call the WQP, allowing you to build online data portals, maps, and reports with ease.

EPA Connected Water Data Systems

Data Viewer

Data Portal

Data Standard



Activity Type	Activity Media Name	Activity Start Date	Activity Start Time	Activity Start Time Zone	Depth/Height Measure	Activity Depth/Height Unit	Sample Collection Method ID	Sample Method
Sample-Routine	Water	3/1/2017	14:33	MST			Grab Sample Method	
Sample-Routine	Water	3/1/2017	14:33	MST			Grab Sample Method	
Sample-Routine	Water	3/1/2017	14:33	MST			Grab Sample Method	
Sample-Routine	Water	3/1/2017	14:33	MST			Grab Sample Method	
Method Msr/Obs	Water	3/1/2017	14:33	MST			Grab Sample Method	
Sample-Routine	Water	3/1/2017	14:33	MST			Grab Sample Method	
Sample-Routine	Water	3/1/2017	14:33	MST			Grab Sample Method	
Method Msr/Obs	Water	3/3/2017	10:01	MST			Field Sample Method	
Method Msr/Obs	Water	3/3/2017	10:01	MST			Field Sample Method	
Method Msr/Obs	Water	3/3/2017	10:01	MST			Field Sample Method	

What Is WQX today?



WQX is a 'standardized' approach for sharing water quality monitoring data of various types



WQX defines a common data model for communicating water quality data (sample data)



Designed to be automated

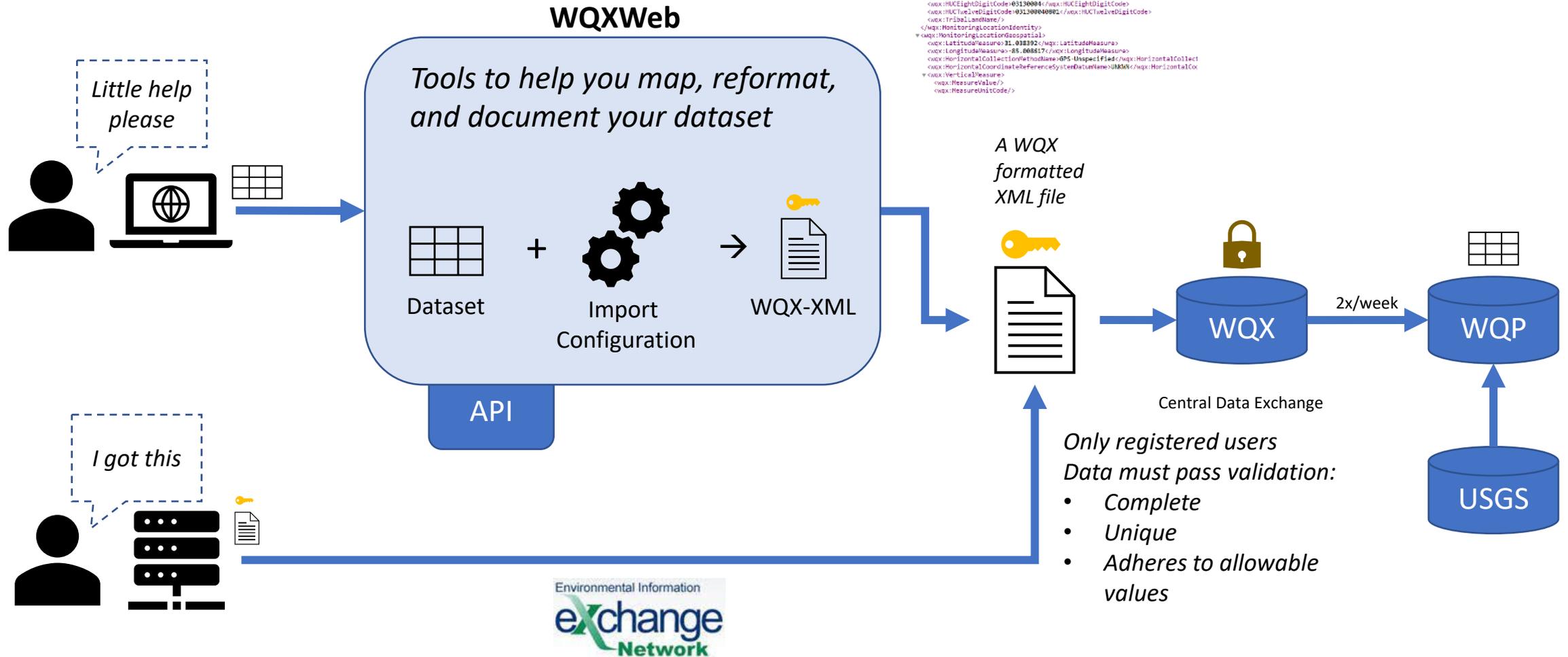


The structure of partner data systems don't matter, so long as they can map data to WQX standards



Many ways to prepare and submit data to WQX: including direct submissions, WQXWeb, and 3rd party apps

Ways to share your data to WQX



Submitting to WQX – Step-by-Step Example

A brief step-by-step demonstration to understand the overall process by using the WQX Web (Excel) Templates

Step 1. Register for a WQX Account

How to Sign up for a CDX/WQXWeb account

1. Email the WQX team to Request a WQX Web account

The email address is: wqx@epa.gov

First name

Middle name

Last name

Prefix (Mr./Mrs./Ms)

WQX Organization ID

WQX Organization Name

Mailing Address 1

Mailing Address 2

City

State

Zip/Postal Code

E-mail Address

Phone Number

The screenshot shows the EPA website's navigation bar with the EPA logo and search bar. Below the navigation bar, there are links for 'Environmental Topics', 'Laws & Regulations', 'Report a Violation', and 'About EPA'. The main content area is titled 'WQX Web Account Registration' and includes a sub-section 'How to Gain Access to WQX Web'. The text explains that access to WQX web occurs through EPA's portal for environmental data, the Central Data Exchange (CDX). It details the registration process involving two accounts: one with CDX to verify identity and allow access to the WQX web application, and another with the WQX team to submit data. The process is seamless and requires only one login step. Below this, there is a section titled 'Registration Steps for CDX and WQX Web' with a numbered list of steps. Step 1 is 'Email the WQX team to Request a WQX Web account', which includes a list of required information: First name, Middle name, Last name, Prefix (Mr./Mrs./Ms), WQX Organization ID, Mailing Address 1, Mailing Address 2, City, State, Zip/Postal Code, E-mail Address, and Phone Number. There is also a section titled 'Does my Organization have an ID registered with WQX?' which explains that all organizations submitting data through WQX Web require a WQX Organization ID that is unique from any previous STORET Org IDs. It provides instructions on how to find this information and offers contact information for assistance.

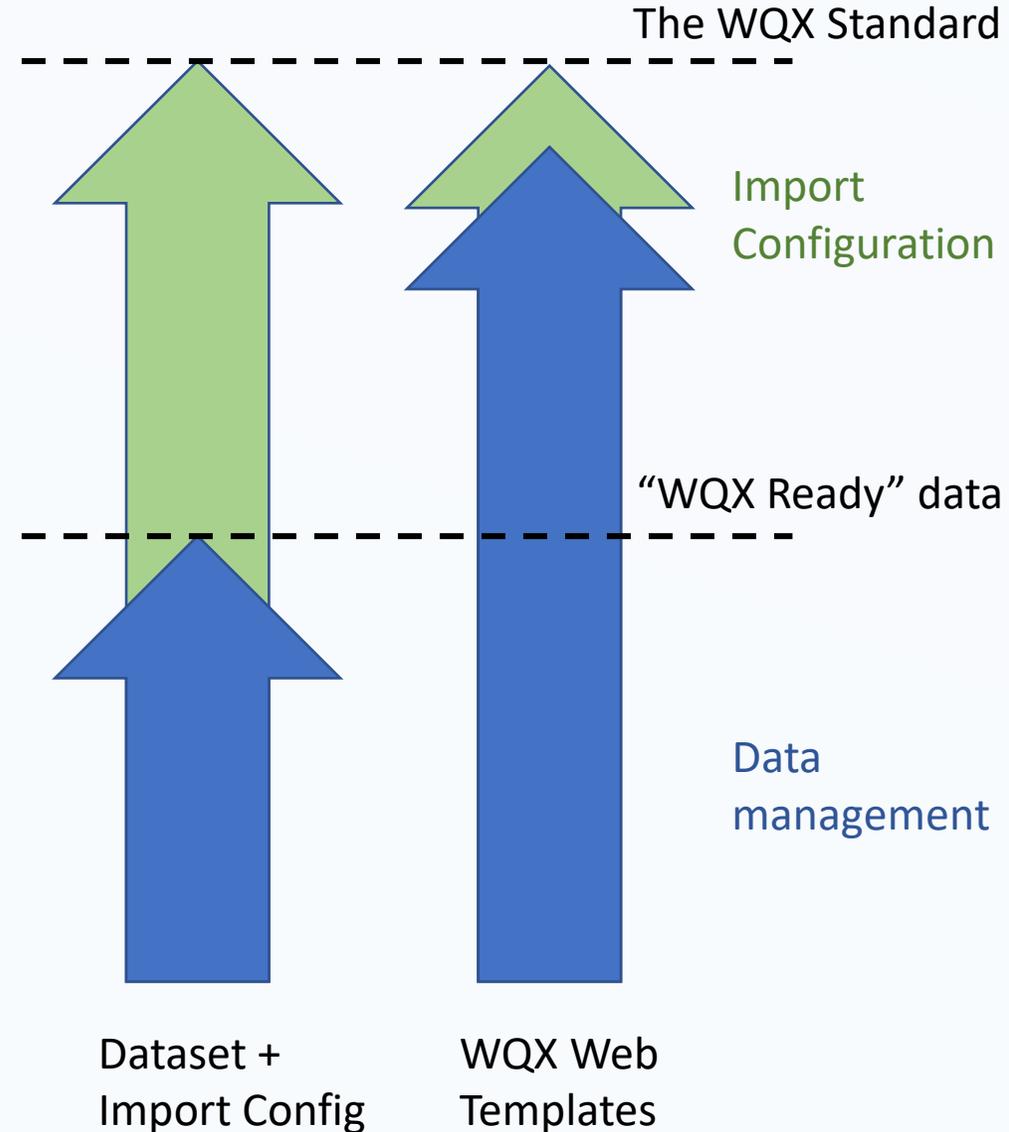
How to Register Page: <https://www.epa.gov/waterdata/wqx-web-account-registration>

Step 2. Choose a Path for the Dataset

What is “WQX ready” data?

Datasets do not need to match WQX 100% to be “WQX-ready”

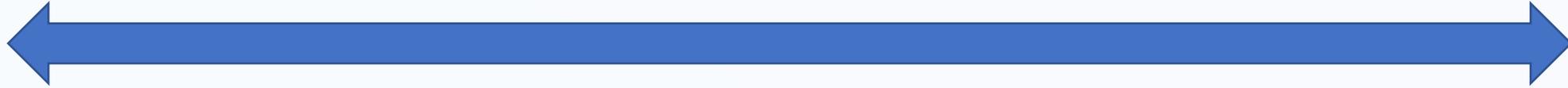
- The dataset should be in a standardized format (wide or tall)
- The dataset should be in one contiguous range of cells, not separated somehow
- Data should be complete and consistent for the primary identifying info (proj, loc, date)
- Required metadata is either already in the dataset or it can be added by the import configuration based on existing data elements
- Does NOT require full adoption of WQX terms and structure



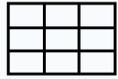
Step 2. Choose a Path for the Dataset

Manual

Custom / Automate



WQX Web Excel Templates

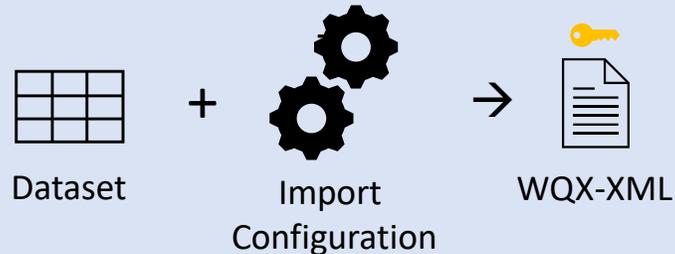


Manually transform your data to the WQX standard before you upload

- Use WQX fields
- Use WQX allowable values
- Simple import steps w/ no edits necessary
- Use a template designed for the data type you are uploading

WQXWeb

Tools to help you map, reformat, and document your dataset



Import Configurations



Create an import configuration that instructs WQX how to read your dataset

- Work with a stacked or matrix style data format
- Add your missing metadata elements through the IC
- Apply transformations to your dataset to achieve the standard
- Save the IC to import new data of this type in the future

Step 3. Assemble Your Data / Understand What's Needed

When you submit data to WQXWeb, you submit three tables, one each for Projects, Locations, and Activities/Results.

All Project Info

Prjct ID	Project Name
001	Cyano Monitoring
002	Probabalistic mon
003	Trends Program

Project ID
Project Name
Project Description

All Location Info

Loc ID	Location Name
001	Deep Blue Lake
002	Muddy Run
003	Fishing Creek

Location ID
Location Name
Location Type
Coordinates
Location Method

All Result-level Info and metadata

Activity ID	Sample Date	Characteristic	Value	Unit
003	5/3/2012	pH	7.6	SU
003	5/3/2012	Temperature	19.1	Deg C
003	5/3/2012	Conductivity	236	μS/cm

Sample Media
Start Date
Collection Method
Collection Equipment
Characteristic Name
*Other reqmnts

Result Value
Result Unit
Result Status
Analytical Methods
Result Value Type

How is data Organized and Stored in WQX ?

It can be helpful to think of the data as being stored in levels
...or related tables of information

**Table 1*

All Project Info

Prjct ID	Project Name
001	Cyano Monitoring
002	Probabalistic mon
003	Trends Program

**When you register*

Your WQX Organizational Account

Org ID	Org Name
001	Minnesota Depart
002	Kentucky Departm
003	University of Was

**Table 2*

Unique Locations

Loc ID	Location Name
001	Deep Blue Lake
002	Muddy Run
003	Fishing Creek

**Table 3*

All Activities and Results

Activity ID	Prjct ID*	Loc ID	Sample Date	Activity Type	Characteristic	Value	Unit	Sample Collection Method
001	002	003	4/23/2020	Sample-Routine	TSS	7.6	SU	Grab Sample Method
002	002	003	4/23/2020	Field Msr/Obs	Temperature	19.1	Deg C	Field Probe Method
002	002	003	4/23/2020	Field Msr/Obs	Conductivity	236	µS/cm	Field Probe Method

Step 4. Download a WQX Web Template

<https://www.epa.gov/waterdata/water-quality-exchange-web-template-files>

Using WQX – Templates	Water Quality Exchange Web Template User Guide US EPA Link to Web Templates Web Templates Overview Video
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Available WQX Web Templates

Physical/Chemical
Biological
Fish Tissue ***New!**
Habitat

Metric Indices
Lab Data
Continuous Template



[WQX Web 3.0 Biological Template \(zip\)](#)

The Biological Template is provided to assist in formatting biological results.
*Note this template does not include the data elements for submitting biological metrics or indexes; these are handled using a separate WQX Web template file.

Import Configuration:

Element	Type of Data
.WQX 3.0 - Template Biological (Template) - 7045	Results & Activities



[WQX Web 3.0 Habitat Template \(zip\)](#)

The Habitat Template is provided to assist in formatting habitat results.
*Note this template does not include the data elements for submitting metrics or habitat indexes; these are handled using the WQX Web Metric-Index Template.

Import Configuration:

Element	Type of Data
.WQX 3.0 - Template Habitat (Template) - 7044	Results & Activities



[WQX Web 3.0 Metric-Index Template \(zip\)](#)

The Metric-Index Template is provided to assist in formatting biological and habitat metrics and indices.

Import Configuration:

Element	Type of Data
.WQX 3.0 - Template Metric-Index (Template) - 7043	Results & Activities

Step 5. Fill out the three data entry worksheets

Projects Tab – Provide an ID, name, and description for your project(s)

Red = Required



Hyperlink =
Allowable values /
validation



Black = Optional



	A	B	C	D	E	F
1	Project ID	Project Name	Project Description	<u>QAPP Approved Indicator (Yes/No)</u>	Project Attachment File Name	Project Attachment Type
2	TEMPLATE_PCHEM	Physical-Chemical Template Project	Project for testing of template only	Yes		
3						
4						
5						
6						
7						

Step 5. Fill out the three data entry worksheets

Locations Tab - Provide basic information on each unique (new) location in your dataset

Some fields only allow certain values. Links and cell references* have been provided to those value lists ([blue](#)/[red](#)).



	A	B	C	D	E	F	G	H	I	J	K
1	Monitoring Location ID	Monitoring Location Name	Monitoring Location Type	Tribal Land Indicator (Yes/No)	Tribal Land Name	Monitoring Location Latitude (DD.DDDD)	Monitoring Location Longitude (-DDD.DDDD)	Monitoring Location Source Map Scale	Monitoring Location Horizontal Collection Method	Monitoring Location Horizontal Coordinate Reference System	
2	ML-01	Template ML 1	Spring	No		40.594	-111.72	24000	Interpolation-Map	NAD27	U
3	ML-02	Template ML 2	River/Stream	No		40.594	-111.72		GPS-Unspecified	NAD83	S
4	ML-03	Template ML 3	River/Stream	No		40.527	-111.755		GPS-Unspecified	NAD83	W
5	ML-04	Template ML 4	Spring	No		40.657	-111.77	12000	Interpolation-Map	NAD27	C
6	ML-05	Template ML 5	River/Stream	No		40.522	-112.149		GPS-Unspecified	NAD83	ID
7	ML-06	Template ML 6	River/Stream	No		40.765	-111.848		GPS-Unspecified	NAD83	U
8	ML-07	Template ML 7	River/Stream	No		40.771	-111.892		GPS-Unspecified	NAD83	U
9	ML-08	Template ML 8	River/Stream	No		40.779	-112.099		GPS-Unspecified	NAD83	U
10	ML-09	Template ML 9	River/Stream	No		40.598	-111.685		GPS-Unspecified	NAD83	U
11											

You can download the allowable value lists by clicking on the links in the header row.

Step 5. Fill out the three data entry worksheets

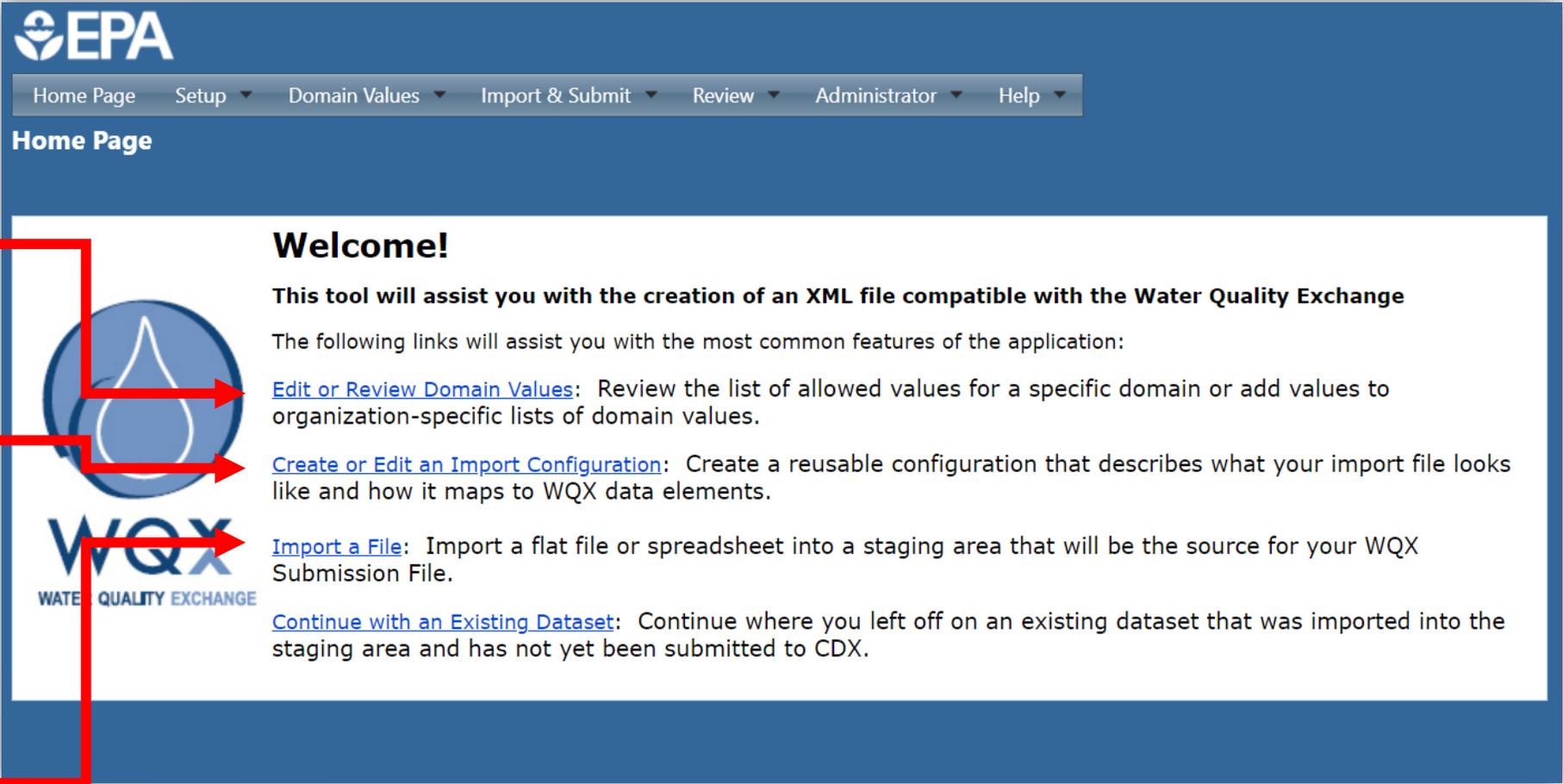
Results Tab - Provide basic information that describes your Activities and Results

	A	B	C	D	E	F	G	H	I
1	<u>Project ID</u>	<u>Monitoring Location ID</u>	<u>Activity ID (CHILD-subset)</u>	<u>Activity ID User Supplied (PARENTs)</u>	<u>Activity Type</u>	<u>Activity Media Name</u>	<u>Activity Start Date</u>	<u>Activity Start Time</u>	<u>Activity Start Time Zone</u>
2	TEMPLATE_PCHEM	ML-06	ML-06:20170301:1433:SR:WB:		Sample-Routine	Water	3/1/2017	14:33	MST
3	TEMPLATE_PCHEM	ML-06	ML-06:20170301:1433:SR:WB:		Sample-Routine	Water	3/1/2017	14:33	MST
4	TEMPLATE_PCHEM	ML-06	ML-06:20170301:1433:SR:WB:		Sample-Routine	Water	3/1/2017	14:33	MST
5	TEMPLATE_PCHEM	ML-06	ML-06:20170301:1433:SR:WB:		Sample-Routine	Water	3/1/2017	14:33	MST
6	TEMPLATE_PCHEM	ML-06	ML-06:20170301:1433:FM:WB:		Field Msr/Obs	Water	3/1/2017	14:33	MST
7	TEMPLATE_PCHEM	ML-06	ML-06:20170301:1433:SR:WB:		Sample-Routine	Water	3/1/2017	14:33	MST
8	TEMPLATE_PCHEM	ML-06	ML-06:20170301:1433:SR:WB:		Sample-Routine	Water	3/1/2017	14:33	MST
9	TEMPLATE_PCHEM	ML-06	ML-06:20170301:1433:SR:WB:		Sample-Routine	Water	3/1/2017	14:33	MST

	L	M	N	O	P	Q	R	S	T	U
1	<u>Sample Collection Method ID</u>	<u>Sample Collection Method Context</u>	<u>Sample Collection Equipment Name</u>	<u>Sample Collection Equipment Comment</u>	<u>Characteristic Name</u>	<u>Characteristic Name User Supplied</u>	<u>Method Speciation</u>	<u>Result Detection Condition</u>	<u>Result Value</u>	<u>Result Unit</u>
2	Grab Sample Method		Water Bottle		Phosphate-phosphorus		as P	Not Detected		
3	Grab Sample Method		Water Bottle		Kjeldahl nitrogen		as N	Not Detected		
4	Grab Sample Method		Water Bottle		Total Nitrogen/Total Phosphorus Ratio (TN:TP)			Not Detected		
5	Grab Sample Method		Water Bottle		pH				7.1	None
6	Grab Sample Method		Water Bottle		Conductivity				4.3	mg/l
7	Grab Sample Method		Water Bottle		Turbidity			Not Detected		
8	Grab Sample Method		Water Bottle		Fecal Coliform			Not Detected		
9	Grab Sample Method		Water Bottle		Total Coliform			Not Detected		
10	Field Sample Method		Probe/Sensor		Temperature, water				11.2	deg C
11	Field Sample Method		Probe/Sensor		pH				8.02	None
12	Field Sample Method		Water Bottle		Escherichia coli				119	MPN/100ml
13	Field Sample Method		Water Bottle		Turbidity				0.98	NTU

Step 6: Log in to WQXWeb

1. Register your Organization's unique sample collection or analysis methods
2. If you made any edits to the columns of the template, you'll need to adjust its matching import configuration (or start your custom upload)
3. Import your Web Template file with all your data



The screenshot shows the EPA WQXWeb Home Page. At the top left is the EPA logo. A navigation menu contains links for Home Page, Setup, Domain Values, Import & Submit, Review, Administrator, and Help. Below the menu is the 'Home Page' title. The main content area features a 'Welcome!' message and a list of links with descriptions. Red arrows from the list on the left point to the 'Domain Values', 'Import Configuration', and 'Import a File' links.

EPA

Home Page Setup Domain Values Import & Submit Review Administrator Help

Home Page

Welcome!

This tool will assist you with the creation of an XML file compatible with the Water Quality Exchange

The following links will assist you with the most common features of the application:

- [Edit or Review Domain Values](#): Review the list of allowed values for a specific domain or add values to organization-specific lists of domain values.
- [Create or Edit an Import Configuration](#): Create a reusable configuration that describes what your import file looks like and how it maps to WQX data elements.
- [Import a File](#): Import a flat file or spreadsheet into a staging area that will be the source for your WQX Submission File.
- [Continue with an Existing Dataset](#): Continue where you left off on an existing dataset that was imported into the staging area and has not yet been submitted to CDX.

WQX
WATER QUALITY EXCHANGE

Step 7: Import your dataset

To Add or Update Data in WQX:

[Import a File of Projects](#)

[Import a File of Monitoring Locations](#)

[Import a File of Monitoring Location Weights](#)

[Import a File of Indexes](#)

[Import a File of Results and Activities](#)

[Import a File of Metrics and Activities](#)

[Import a File of Activity Groups](#)

[Submit an existing XML file to the Water Quality Exchange \(WQX\)](#)

To Delete Data in WQX:

[Import a File of Project IDs to be deleted](#)

[Import a File of Monitoring Location IDs to be deleted](#)

[Import a File of Activity IDs to be deleted](#)

[Import a File of Activity Group IDs to be deleted](#)

[Import a File of Index IDs to be deleted](#)

Import an Excel Spreadsheet or Text File into WQX Web

Import Data

Import Configuration and Type of File

Type of Data:

Projects

Import Configuration:

.WQX 3.0 ~ .Project Template (Template) ~ 7039

Type of File:

Microsoft Excel (xlsx)

Worksheet(s) to Import:

3rd

(note: the "1st" worksheet is the left-most tab of the Excel)

Ignore First Row of Import File?

Generated Values

Element	Value	Format
Organization ID	{none}	

New or Existing Data:

- This file contains new data only (i.e. not in WQX).
- This file contains existing data only (i.e. already in WQX).
- This file may contain new and/or existing data.

- First select the matching Project Import config from the template #7039
- It will automatically know that the data is on the 3rd tab of an Excel sheet
- Hit Import!

Step 8: Upload your data

To Add or Update Data in WQX:

[Import a File of Projects](#)

[Import a File of Monitoring Locations](#)

[Import a File of Monitoring Location Weights](#)

[Import a File of Indexes](#)

[Import a File of Results and Activities](#)

[Import a File of Metrics and Activities](#)

[Import a File of Activity Groups](#)

[Submit an existing XML file to the Water Quality Exchange \(WQX\)](#)

To Delete Data in WQX:

[Import a File of Project IDs to be deleted](#)

[Import a File of Monitoring Location IDs to be deleted](#)

[Import a File of Activity IDs to be deleted](#)

[Import a File of Activity Group IDs to be deleted](#)

[Import a File of Index IDs to be deleted](#)

Import an Excel Spreadsheet or Text File into WQX Web

Import Data

Import Configuration and Type of File

Type of Data:

Projects

Import Configuration:

.WQX 3.0 ~ .Project Template (Template) ~ 7039

Type of File:

Microsoft Excel (xlsx)

Worksheet(s) to Import:

3rd

(note: the "1st" worksheet is the left-most tab of the Excel)

Ignore First Row of Import File?

Generated Values

Element	Value	Format
Organization ID	{none}	

New or Existing Data:

- This file contains new data only (i.e. not in WQX).
- This file contains existing data only (i.e. already in WQX).
- This file may contain new and/or existing data.

Repeat these steps for your Locations and Results data, using the matching import configuration for each tab of the file.

Projects - config#7039	Monitoring Locations - cfg#7040	Results - config#7043
------------------------	---------------------------------	-----------------------

Step 9: Review your data/Troubleshooting

- After importing, you will immediately see if the upload passes validation and be able to review and resolve any errors

Dataset Details

[Return](#) [Delete](#) [Export & Submit to CDX](#)

Dataset Information:

Type: Projects
Import Configuration: [.Project Template \(Template\)](#)
Organization ID: WQXTEST
Status: Import Failed

Import Event

Start Time: 05-01-2023 08:56:32 AM
End Time: 05-01-2023 08:56:40 AM
File Name: Physical Chemical Template - new.xlsx
Event Log: [View all validation errors and warnings](#)

Message Type	Total	Resolved	Event Log	Resolution
General Validation Error	1	0	View Log	Resolve in Import File
Message	7	7	View Log	N/A

Imported Records:

Entity	Total	Valid	New	Existing
Project	1	0	0	1

! Import Completed (with errors)

Step 1 of 3 completed.

The dataset has been imported, but there are errors that need to be resolved (step 2), and then the dataset needs to be submitted to CDX (step 3). If you submit to CDX before resolving all errors, then only the valid records will be included.

A dataset only becomes permanent after it has been submitted to CDX.



Step 10: Export your data to CDX

- If your imported dataset/configuration combo passes validation, you can Export and Submit the file to CDX

Dataset Details

[Return](#) [Delete](#) [Export & Submit to CDX](#)

Dataset Information:

Type: Results & Activities
Import Configuration: [.Template Physical/Chemical \(Template\)](#)
Organization ID: WQXTEST

Status: Completed at CDX

Export Event

Start Time: 03-31-2023 04:11:12 PM
End Time: 03-31-2023 04:11:30 PM
Transaction ID: _3647a3f6-a442-45ce-9691-db0a71941bfd

Event Log:

Message Type	Count	Event Log
Message	5	View Log

 **Submission to CDX Successful!**

The final step in this process has completed and the WQX database has been updated. It may take up to four days for this data to be published and become available from the Water Quality Portal.

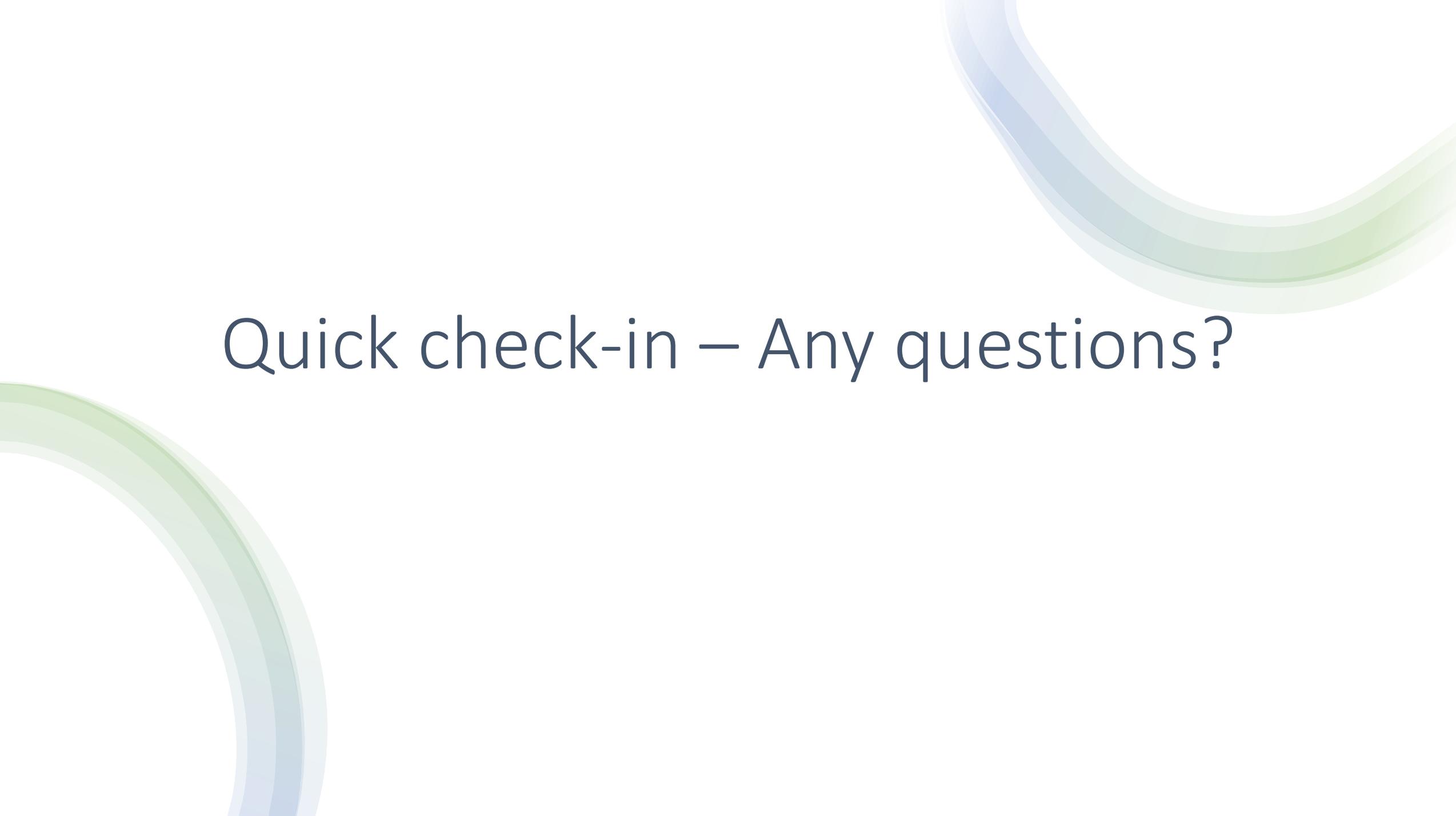
Step 11: Review your Submission

- After the Export to CDX has been completed, you will be able to hit a “Refresh Documents” button to retrieve QA reports of your submission and other documents.
- Review these QA reports to check your data against our QA flags

Documents:

Name
Export Log.xlsx
Import Log.xlsx
Physical Chemical Template.xlsx
ProcessingReport.zip - View in Browser
QAQCResults.zip ←
ValidationResults.xml
WQX Submission 86358 Update.zip

	S	T	U	V	W	X	Y	Z	AA	AB	AC	AD	AE	AF	
	Transacti	Invalid_Ch	Invalid_U	Invalid_S	Invalid_F	Uncommon_Analytical	Result_S	QAPP_N	QAPP_Do	Below_L	Exceeds_	LowerRa	UpperRa	TargetUn	
	onIdentif	aracteristic	nit_YN	peciation	raction_Y	_Method_YN	pecial_C	OTAppro	c_Missin	ower_Thr	hreshold	nge	nge	itRange	e
	ier	Name_YN		_YN	N		_YN	ved_YN	g	eshold_Y	_YN				t
###	_3647a3f6	N	N	N	N	N	N	N	N	N	N	0	47.5	DEG C	
###	_3647a3f6	N	N	N	N	Y	N	N	N	N	N	0	14	NONE	
###	_3647a3f6	N	N	N	N	Y	N	N	N	N	N	0	562.5	NTU	
###	_3647a3f6	N	N	N	N	Y	N	N	N	N	N	0	448.5	MPN/100M	
###	_3647a3f6	N	N	N	N	Y	N	N	N	N	N	0	562.5	NTU	
###	_3647a3f6	N	N	N	N	Y	N	N	N	N	N	0	14	NONE	
###	_3647a3f6	N	Y	N	N	N	N	N	N	N	N	0	109.5	%	
###	_3647a3f6	N	N	N	N	N	N	N	N	N	N	0	47.5	DEG C	
###	_3647a3f6	N	N	N	N	N	N	N	N	N	N				

The background features decorative curved lines in shades of blue and green, positioned in the top right and bottom left corners. The text is centered in a dark blue, sans-serif font.

Quick check-in – Any questions?

So what are the Data Requirements for WQX?



Available Fields

- The “[Data Exchange Template](#)”
- Web Templates – “All ResultElements”
- Within the Import Config Module

Allowable Values

- [The WQX Domain List / Service](#)
- The WQXWeb application
- Built into the Excel templates

Rules & Requirements

- [Business Rules](#)
- Required Fields
- [Flow Configuration Document](#)

How WQX Domains work

~75 WQX Fields have controlled Domain Values

GetDomainValues

To download the domain lists (as zipped CSV files), click the links below:

- [All - The Entire Domain Lists \(ZIP\) | \(XML\)](#)
- [All-Individual Domains Library \(ZIP\) | \(XML\)](#)

Individual Domain Values Lists:

- [ActivityGroupType \(ZIP\) | \(XML\) | \(CSV\)](#)
- [ActivityMedia \(ZIP\) | \(XML\) | \(CSV\)](#)
- [ActivityMediaSubdivision \(ZIP\) | \(XML\) | \(CSV\)](#)
- [ActivityRelativeDepth \(ZIP\) | \(XML\) | \(CSV\)](#)
- [ActivityType \(ZIP\) | \(XML\) | \(CSV\)](#)
- [AddressType \(ZIP\) | \(XML\) | \(CSV\)](#)
- [AliasType \(ZIP\) | \(XML\) | \(CSV\)](#)
- [AnalyticalMethod \(ZIP\) | \(XML\)](#)
- [AnalyticalMethodContext \(ZIP\) | \(XML\) | \(CSV\)](#)
- [Assemblage \(ZIP\) | \(XML\) | \(CSV\)](#)
- [BiologicalIntent \(ZIP\) | \(XML\) | \(CSV\)](#)
- [CellForm \(ZIP\) | \(XML\) | \(CSV\)](#)
- [CellShape \(ZIP\) | \(XML\) | \(CSV\)](#)
- [Characteristic \(ZIP\) | \(XML\) | \(CSV\)](#)
- [CharacteristicAlias \(ZIP\) | \(XML\)](#)
- [CharacteristicGroup \(ZIP\) | \(XML\) | \(CSV\)](#)
- [CharacteristicWithPickList* \(ZIP\) | \(XML\)](#)
- [Country \(ZIP\) | \(XML\) | \(CSV\)](#)
- [County \(ZIP\) | \(XML\) | \(CSV\)](#)
- [DetectionQuantitationLimitType \(ZIP\) | \(XML\) | \(CSV\)](#)
- [ElectronicAddressType \(ZIP\) | \(XML\) | \(CSV\)](#)
- [FrequencyClassDescriptor \(ZIP\) | \(XML\) | \(CSV\)](#)
- [Gear Procedure Unit \(ZIP\) | \(XML\) | \(CSV\)](#)

Example Domain Value List

Domain	Unique Id	Name	Description	Last Change Date
Biological Intent	5	Frequency Class	for provid	7/18/2008 11:57
Biological Intent	4	Group Summary	For	7/18/2008 11:57
Biological Intent	1	Individual	For report	7/18/2008 11:57
Biological Intent	3	Population Census	for provid	7/18/2008 11:57
Biological Intent	7	Species Density	for provid	7/10/2013 0:00
Biological Intent	9	Targeted Sampling	For report	6/12/2015 13:03
Biological Intent	2	Tissue	For report	7/18/2008 11:57
Biological Intent	6	Toxicity	For report	7/18/2008 11:57

Your Dataset

	AX	AY	AZ	
g	Biological Intent	Biological Individual ID	Subject Taxonomic Name	Te
	Population Census		Dicranota	
	Population Census		Baetis	18
	Population Census		Hydropsychidae	
	Frequency Class		Cheumatopsyche	
	Frequency Class		Chironomini	
	Frequency Class		Dicranota	
	Frequency Class		Dicranota	

Value Lists we follow:

- EPA Substance Registry System
- ITIS (Taxonomic names, TSNs)

Domain Lists the User Controls:

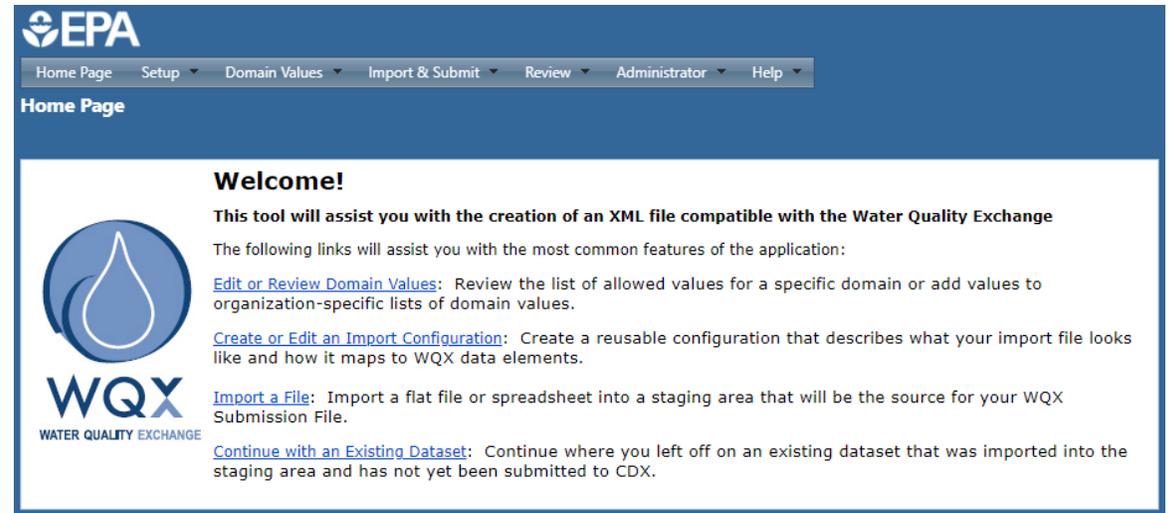
- Your Projects
- Your Locations
- Sample Collection Methods
- Analytical Methods
- Your Metrics

All Other Domain Lists:

- Maintained by EPA at direction of the WQX User Community

What can WQX Web do?

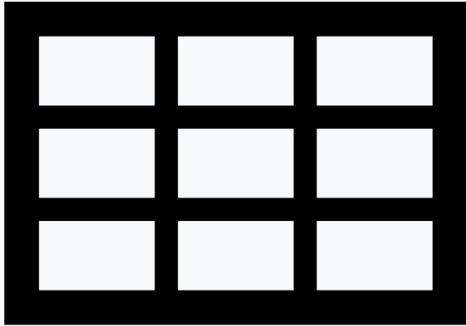
- Review all the allowable values and register your unique sampling or analytical methods
- Import your datasets
- Build custom import configurations for your dataset
- Review a number of reports on the data
- Receive QA/QC reports
- Custom error resolution



The screenshot shows the EPA WQX Web application home page. At the top left is the EPA logo. A navigation menu includes links for Home Page, Setup, Domain Values, Import & Submit, Review, Administrator, and Help. Below the navigation is a 'Home Page' header. The main content area features a 'Welcome!' message, a description of the tool's purpose (creating XML files compatible with the Water Quality Exchange), and a list of helpful links: 'Edit or Review Domain Values', 'Create or Edit an Import Configuration', 'Import a File', and 'Continue with an Existing Dataset'. The WQX logo (Water Quality Exchange) is also present on the left side of the main content area.

Templates and Import Configurations

Templates

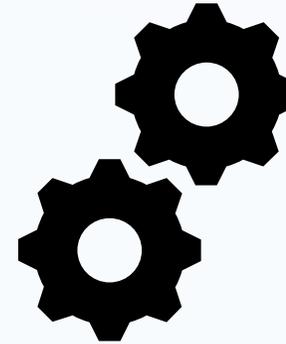


Standardized Data Format

Using WQX –
Templates

[Water Quality Exchange Web Template User Guide | US EPA](#)
[Link to Web Templates](#)
[Web Templates Overview Video](#)

Import Configurations



Reads and Configures Dataset to the WQX-XML

Using WQX – Import
Configurations

[WQX Web Import Configuration Options](#)
[Translations via Expert Mode](#)

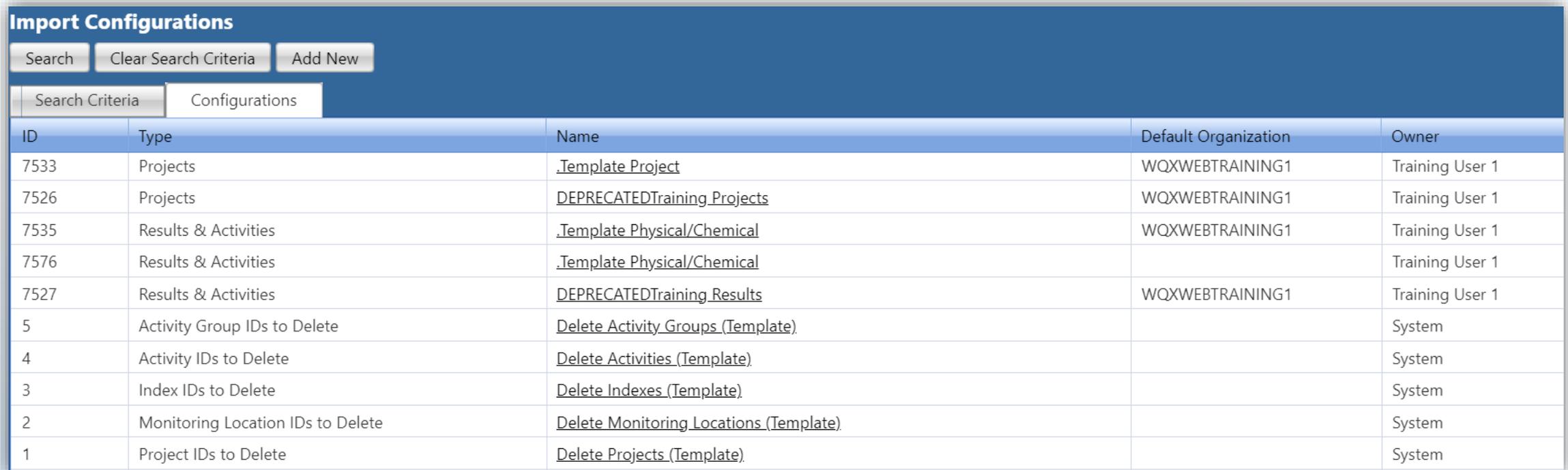
The Power of Import Configurations

Three main flavors

- Import, edit, delete

Unique to level of information

- Projects, Locations, Results and Activities, Indexes, Monitoring Location Weights



The screenshot displays the 'Import Configurations' interface. At the top, there are three buttons: 'Search', 'Clear Search Criteria', and 'Add New'. Below these buttons are two tabs: 'Search Criteria' and 'Configurations'. The 'Configurations' tab is active, showing a table with the following columns: ID, Type, Name, Default Organization, and Owner. The table contains ten rows of configuration data.

ID	Type	Name	Default Organization	Owner
7533	Projects	.Template Project	WQXWEBTRAINING1	Training User 1
7526	Projects	DEPRECATED Training Projects	WQXWEBTRAINING1	Training User 1
7535	Results & Activities	.Template Physical/Chemical	WQXWEBTRAINING1	Training User 1
7576	Results & Activities	.Template Physical/Chemical		Training User 1
7527	Results & Activities	DEPRECATED Training Results	WQXWEBTRAINING1	Training User 1
5	Activity Group IDs to Delete	Delete Activity Groups (Template)		System
4	Activity IDs to Delete	Delete Activities (Template)		System
3	Index IDs to Delete	Delete Indexes (Template)		System
2	Monitoring Location IDs to Delete	Delete Monitoring Locations (Template)		System
1	Project IDs to Delete	Delete Projects (Template)		System

The Power of Import Configurations

The screenshot shows the EPA Import Configuration interface. The main window has a menu bar (Home Page, Setup, Domain Values, Import & Submit, Review, Administrator, Help) and a toolbar (Return, Save, Save As, Save To File, Cancel, Delete, Change User Rights, Options, Show Columns as Numbers). The 'Import Configuration' section is active, showing a 'File Type' dropdown set to 'When Column P:' with a value of 'Equals' and 'Total Nitrogen'. Below this, there's a 'Then:' dropdown set to 'Use this element value...' and a 'Characteristic Name' dropdown set to 'Total Nitrogen, mixed forms'. A 'Translation Notes' section is also visible. An 'Expression Builder' dialog box is open in the foreground, displaying a list of expressions and their examples. The dialog has checkboxes for 'Show the Quick Reference' (checked) and 'Allow me to test this expression' (unchecked). Below the list is an 'Expression:' input field containing '=' and 'OK'/'Cancel' buttons. A table at the bottom of the main window shows columns for 'Activity', 'Activity Start Date', and 'Activity Start Time'.

1. ID your dataset and file type

2. Add in any universal metadata (Org ID, Media, etc)

Expression	Example
@ImportValue A token used in any expression to represent the value from your import file	=@ImportValue
Concatenate(text1, text2, ...) Joins several text strings into one text string	=Concatenate(@ImportValue, " PM")
Left(text, num_chars) Returns the specified number of characters from the start of a text string	=Left(@ImportValue, 5)
Mid(text, start_num, num_chars) Returns the characters from the middle of a text string, given a starting	=Mid(@ImportValue, 3, 5)

Activity	Activity Start Date	Activity Start Time
Activity	1	Activity Start Date
Activity	1	Activity Start Time

Example Dataset

- Stacked data, structured metadata, non-WQX values
- Is this dataset WQX-ready?

Yes! A custom import config will be required to transform all the metadata values (When x = 'XXXXX' then...)

	A	B	F	G	H	I	J	K	L	M	N	O	P	Q	R	S
	StationCode	SampleDate	AgencyCode	SampleComments	LocationCode	GeometryShape	Collection Time	CollectionMethodCode	Sample TypeCode	Replicate	CollectionDeviceName	CollectionDepth	UnitCollectionDepth	PositionWaterColumn	LabCollectionComments	LabBatch
	Sediment Chemistry															
	723NROTWM	28/Apr/2009	MPSL-DFG		Bank	Point	16:55	Sed_Grab	Integrated		1 scoop, polyethylene		2 cm	Not Applicable		WPCL_L-024-226-09_BS559_S_PAH
	723NROTWM	28/Apr/2009	MPSL-DFG		Bank	Point	16:55	Sed_Grab	Integrated		1 scoop, polyethylene		2 cm	Not Applicable		WPCL_L-024-226-09_BS559_S_PAH
	Water Chemistry															
	723NROTWM	28/Apr/2009	MPSL-DFG		Bank	Point	16:55	Water_Grab	Grab		1 Individual Collection by hand	0.1	m	Subsurface	Field dup taken	WPCL_L-222-226-09_W_OCH
	723NROTWM	28/Apr/2009	MPSL-DFG		Bank	Point	16:55	Water_Grab	Grab		2 Individual Collection by hand	0.1	m	Subsurface		WPCL_L-222-226-09_W_OCH
	723NROTWM	28/Apr/2009	MPSL-DFG		Bank	Point	16:55	Water_Grab	Grab		1 Individual Collection by hand	0.1	m	Subsurface		MPSL-DFG_WTM071509_W_TM
	723NROTWM	28/Apr/2009	MPSL-DFG		Bank	Point	16:55	Water_Grab	Grab		1 Individual Collection by hand	0.1	m	Subsurface		WPCL_L-222-226-09_W_TRIAZ
	723NROTWM	28/Apr/2009	MPSL-DFG		Bank	Point	16:55	Water_Grab	Grab		1 Individual Collection by hand	0.1	m	Subsurface		WPCL_4832_W_NH3
	723NROTWM	28/Apr/2009	MPSL-DFG		Bank	Point	16:55	Water_Grab	MS1		1 Not Recorded	0.1	m	Not Applicable		MPSL-DFG_WTM071509_W_TM
	723NROTWM	28/Apr/2009	MPSL-DFG		Bank	Point	16:55	Water_Grab	MS2		1 Individual Collection by hand	0.1	m	Subsurface		SFL_170690_W_B
	LABQA	28/Apr/2009	DFG-WPCL		Not Applicable		00:00	Not Applicable	CRM		1 None	-88	m	Not Applicable		WPCL_4798_W_CL
	LABQA	28/Apr/2009	DFG-WPCL		Not Applicable		00:00	Not Applicable	CRM		1 None	-88	m	Not Applicable		WPCL_4753_W_SO4
	LABQA	28/Apr/2009	DFG-WPCL		Not Applicable		00:00	Not Applicable	LabBlank		1 None	-88	m	Not Applicable		WPCL_4798_W_CL
	Bacteria															
	723NROTWM	28/Apr/2009	MPSL-DFG		Bank	Point	16:55	Water_Grab	Grab		1 RWQCB5S Sampling pole w/ac	0.1	m	Subsurface		RWB5S_STS_ARW110711_W_Bac
	723NROTWM	28/Apr/2009	MPSL-DFG		Bank	Point	16:55	Water_Grab	Grab		1 RWQCB5S Sampling pole w/ac	0.1	m	Subsurface		RWB5S_STS_ARW110711_W_Bac
	FIELDQA	28/Apr/2009	MPSL-DFG		Not Applicable		00:00	Not Applicable	TravelBlank		1 None	-88	m	Not Applicable		RWB5S_STS_ARW110711_W_Bac
	LABQA	28/Apr/2009	RWQCB5S		Not Applicable		00:00	Not Applicable	LabBlank		1 None	-88	m	Not Applicable		RWB5S_STS_ARW110711_W_Bac
	723NROTWM	28/Apr/2009	MPSL-DFG		Bank	Point	16:55	Water_Grab	Grab		1 RWQCB5S Sampling pole w/ac	0.1	m	Subsurface		RWB5S_STS_ARW110711_W_Bac
	723NROTWM	28/Apr/2009	MPSL-DFG		Bank	Point	16:55	Water_Grab	Grab		1 RWQCB5S Sampling pole w/ac	0.1	m	Subsurface		RWB5S_STS_ARW110711_W_Bac

Example Dataset

- Wide format file: stack or Crosstab Import Config
- Is this file WQX-ready?

Yes! A custom import config will be required to transform the data and apply metadata

A	B	C	D	E	F	G	H	I
RecNo	AwwSiteID	Sample Date	Sample Time	Air Temp °C	Water Temp °C	Sample Volume (ml)	E. coli / 100 mL (cfu)	Tot coli / 100 mL (cfu)
1	7	6-Jun-08	8:30	27.0	28.0	1.0	67	500
2	8	26-Jun-99	11:45		23.0	1.0	50000	75000
3	8	26-Jun-99	11:45		23.0	1.0	50000	75000
4	9	30-Sep-99	18:08		20.0	1.0	33	1167
5	9	20-Sep-00	14:00		21.0	1.0	0	2467
6	10	30-Sep-99	17:55		19.0	1.0	67	1267
7	10	20-Sep-00	14:15		27.0	1.0	0	2067
8	11	30-Sep-99	17:45		19.0	1.0	233	1900
9	11	20-Sep-00	14:30		28.5	1.0	0	13333
10	11	13-May-08	12:00		22.0	1.0	167	3733
11	15	25-Sep-99	10:15		21.0	1.0	0	4933
12	16	27-Aug-99	17:35		28.0	1.0	33	5667
13	17	27-Aug-99	17:05		28.0	1.0	167	25167
14	19	13-Jul-00	15:15		27.0	1.0	0	25000
15	19	20-Sep-00	13:24		22.0	1.0	33	1400
16	22	27-Oct-01	8:45			0.5	16667	19533
17	22	4-Nov-01	10:35		15.0	0.5	67	1800
18	22	2-Feb-02	11:35		12.0	1.0	100	2800
19	25	2-Aug-00	12:30		27.0	1.0	3967	6333
20	25	5-Sep-00	13:15		29.0	1.0	100	2600
21	25	3-Oct-00	13:30		26.0	1.0	0	1600
22	27	18-Oct-99	14:50		23.5	1.0	100	4167
23	27	15-Apr-00	13:00		18.0	1.0	867	25867
24	27	27-Aug-00	11:45		26.0	1.0	1267	2567

WQX Basic Resources

<u>Topic Area</u>	<u>Resource Links</u>
Open Water Data Resources / Links	Water Quality Exchange (WQX) [Data In] The Water Quality Portal (WQP) [Data Out] How's My Waterway (HMW) [Info Out] Central Data Exchange (CDX) [Data Held] Exchange Network (Node Submissions to CDX)
WQX Nuts and Bolts	Upload Resources Page Glossary of Terms Business Rules Data Exchange Template (List of Available Elements) Domain Service (Acceptable Values)
Using WQX – Getting Started	Introduction to WQX, WQX Web, and WQP (5 min video) Quick WQX Web User Guide (PDF Guide) User Guide Version 3.0 for Water Quality Exchange Web Getting Started with WQX Web: How to Gain Access WQX Web Basics – Two-part session--Day 1 WQX Web Basics – Two-part session--Day 2
Using WQX – Templates	Water Quality Exchange Web Template User Guide US EPA Link to Web Templates Web Templates Overview Video
Using WQX – Import Configurations	WQX Web Import Configuration Options Translations via Expert Mode
Using WQX – Best Practices	Best Practices for Sharing Benthics Data WQX Metals Best Practices Guide WQX Nutrients Best Practices Guide
Using WQX - Other	Water Quality eXchange Factsheet Common Errors Resolution WQX Program Information

Helpdesk / Support / Training

- We can be reached at WQX@epa.gov M-F 8am-5pm
- We also have a 1-800 number where you can leave a voicemail
- Monthly User Call
- Several user guides
- Best-practice manuals
- Instructional videos on Youtube
- Access one-on-one support from WQX contractors

Using Your Data from the Water Quality Portal

Water Quality Portal

Operated under An Interagency Agreement (USGS & EPA)

- Serves data from USGS and EPA standard WQX format
- # WQP: Data from > 1000 sites
- # WQP: >410m records
- Serves data OF All Water Quality Parameters
- Includes a Graphical User Interface and Data Services
- One of Our Integrated Data Services can be accessed in HMW
- Growing Number of users at the top of this Primary

NATIONAL WATER QUALITY MONITORING COUNCIL

Home Explore WQP Sites Help & About

Water-quality data in the United States and beyond. This cooperative effort is supported by the United States Geological Survey (USGS), the Environmental Protection Agency (EPA), and other federal, state, and local agencies. Advanced users may wish to use the [Advanced Download](#).

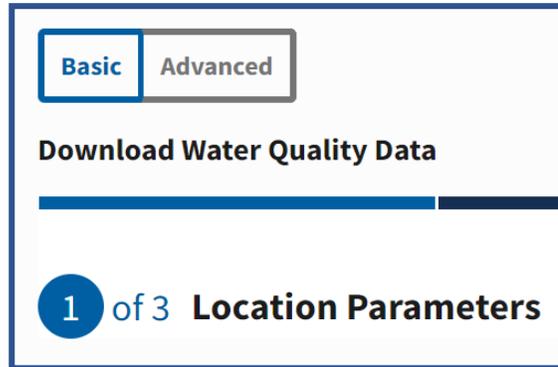
Download Weighting Data (chemical metadata)

Download Weighting Data (biological metadata)

Download Weighting Data (narrow)

Download Weighting Data (MS Excel 2007+)

Water Quality Portal



Start your search here, if searching by a state, county, or point location. Or, click on the Advanced Tab to open up additional search options

The screenshot shows the National Water Quality Monitoring Council website. The header includes the logo and navigation links: Home, Explore WQP Sites, and Help & About. Below the header, there are tabs for 'Basic' (selected) and 'Advanced'. The main heading is 'Download Water Quality Data'. A progress indicator shows '1 of 3 Location Parameters'. The instructions state: 'Specify location parameters to describe the spatial extent of the desired dataset. Additional options are available in the [Advanced Download](#). All fields are optional.' The search filters include: Country (All Countries), State (All States), County (All Counties), Point Location (Miles of, Lat, Long) with a 'Use my location' button, and Site Type (All Site Types). At the bottom of the search area are 'Clear search' and 'Next' buttons. The footer contains links for 'What is the WQP?', 'Contributing orgs', 'Apps using the WQP', 'Other Water Quality Portals', and 'Explore WQP sites'. Logos for USGS and EPA are displayed, along with contact information for the Agency Contact Center (1-800-424-9067, WQX@epa.gov) and last content change dates for NWIS (USGS), STEWARDS (ARS), and WQX (EPA).

Building Your Query - Locations

Select Location Parameters

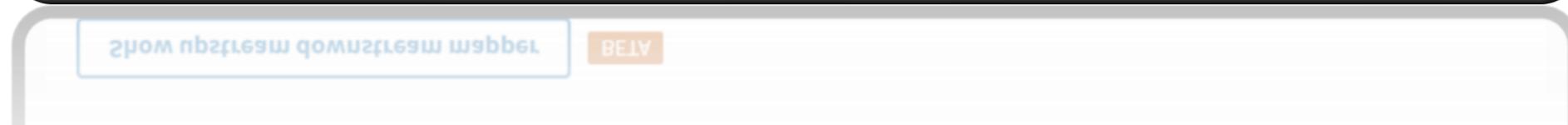
Specify location parameters to describe the spatial extent of the desired dataset. All fields are optional.

AND

<p>Country ⓘ</p> <p>All Countries</p>	<p>Point Location ⓘ</p> <p>Within</p> <p>miles of Latitude</p> <p>Longitude</p> <p>Use my location</p>	<p>Bounding Box ⓘ</p> <p>North: 90</p> <p>South: -90</p> <p>East: 180</p> <p>West: -180</p>	<p>Site Type ⓘ</p> <p>All Site Types</p> <p>Organization ID ⓘ</p> <p>All Organization IDs</p> <p>Site ID ⓘ</p> <p>All Site IDs</p> <p>HUC ⓘ</p> <p>All HUCs</p>
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OR **OR** **OR**

[Show upstream downstream mapper](#) **BETA**



Filtering Your Results

*optional

Water, sediment,
tissue, etc.

Chemicals, physical
measures, obs., etc.

Example of a query to
retrieve fish
contaminant data
(Mercury in
largemouth bass)

Filter Results

Specify data source, date range, and sampling filters to apply to the desired dataset. All fields are optional.

Sample Media ⓘ Tissue (STORET) ▾ Biological Tissue (NWIS) ▾	Parameter Code(NWIS ONLY) ⓘ All Parameter Codes	Date Range ⓘ Dates should be entered as mm-dd-yyyy, mm-yyyy, or yyyy from: 01-01-2015 to: mm-dd-yyyy
Characteristic Group ⓘ All Characteristic Groups ▾	Biological Parameters Assemblage ⓘ All Assemblages ▾	
Characteristics ⓘ Mercury (NWIS, STORET) ▾ Methylmercury(1+) (NWIS, ...) ▾	Taxonomic Name ⓘ Micropterus salmoides (NW...) ▾	Minimum Sampling Activities Per Site ⓘ 1
Project ID ⓘ All Project IDs ▾		Minimum Results Per Site ⓘ 1

Assemblages:
Fish/Nekton,
Macrinvertebrates

Latin names

Download your Data

WQX/WQP support a LOT of metadata.

The screenshot shows a web interface titled "Download the Data" with two main sections: "Data Source" and "Data Profiles".

Data Source

- NWIS (USGS)
- STEWARDS (ARS)
- WQX (EPA)

File Format

- Comma-Separated
- Tab-Separated
- MS Excel 2007+

Data Profiles

- Organization Data
- Site Data Only
- Project Data
- Project Monitoring Location Weighting Data
- Sample Results (physical/chemical metadata)
- Sample Results (biological metadata)
- Sample Results (narrow)
- Sampling Activity
- Sampling Activity Metrics
- Result Detection Quantitation Limit Data
- Biological Habitat Metrics

Callout 1: "Choose your download format" points to the File Format section.

Callout 2: "Results measures and result-level metadata" points to the Sample Results (physical/chemical metadata), Sample Results (biological metadata), and Sample Results (narrow) options.

Using Data from WQP Web Services

- Web services are URLs that provide the instructions from your query

Save the URL to your Query

URL of your data download

Use this web service URL in data applications

Query URL
Copy and share the URL of this query.

`https://www.waterqualitydata.us/#mimeType=csv&providers=NWIS&providers=STEWARDS&providers=STORET`

Station

`https://www.waterqualitydata.us/data/Station/search?
mimeType=csv&zip=yes&providers=NWIS&providers=STEWARDS&providers=STORET`

cURL

`curl -X POST --header 'Content-Type: application/json' --header 'Accept: application/zip' -d '{"providers":
["NWIS","STEWARDS","STORET"]}' 'https://www.waterqualitydata.us/data/Station/search?mimeType=csv&zip=yes'`

WFS GetFeature

`https://www.waterqualitydata.us/ogcservices/wfs/?
request=GetFeature&service=wfs&version=2.0.0&typeName=wqp_sites&SEARCHPARAMS=providers%3ANWIS%7CSTEWARDS%7C
STORET&outputFormat=application%2Fjson`

[Clear search](#) [Download](#)

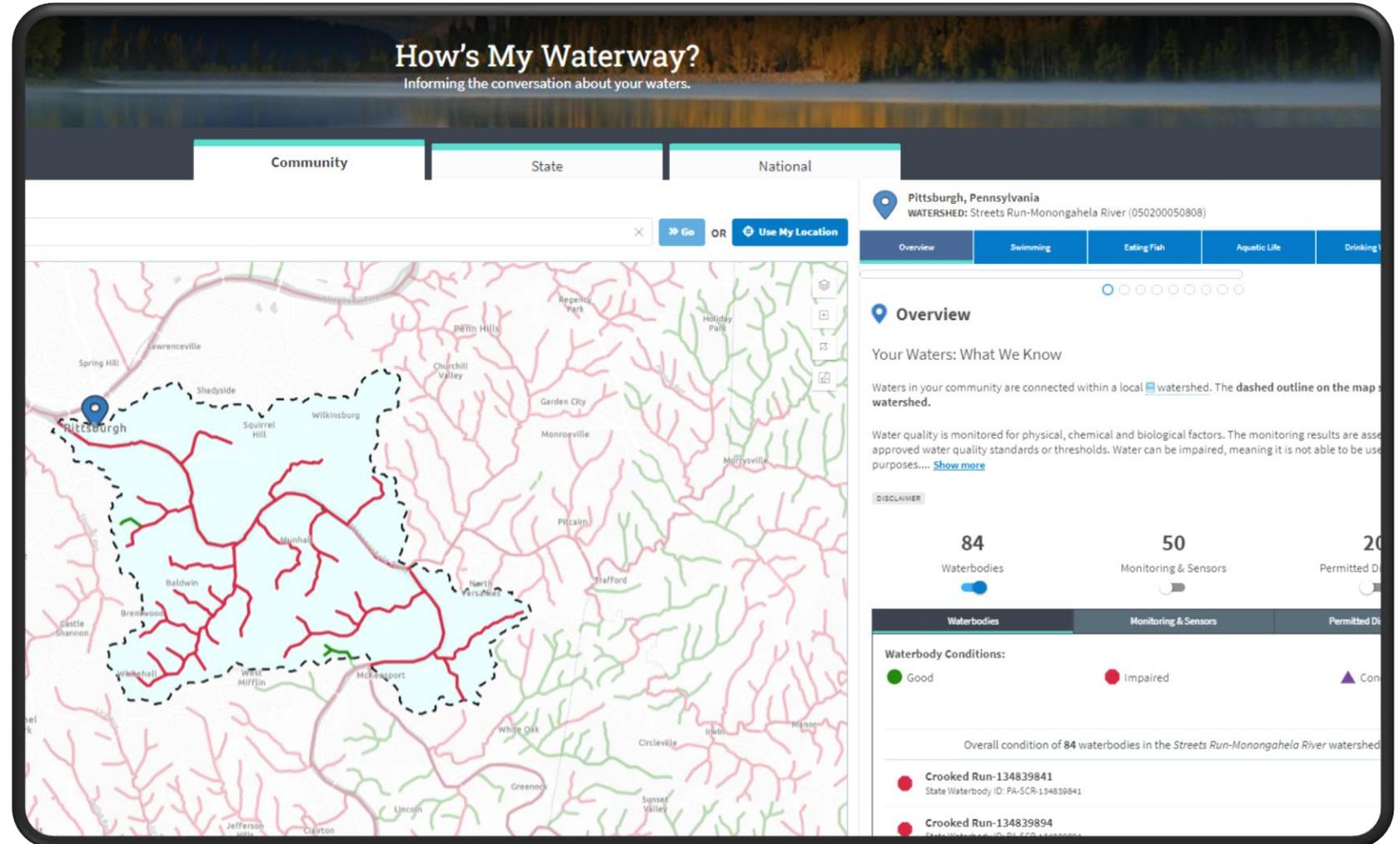
How's My Waterway

Public Information

Powered by open data and web services

Accesses, interprets, and displays data from over a dozen sources

Including ATTAINS, and the WQP among many others



WQX 1-on-1s tomorrow

- Please contact me at Griggs.adam@epa.gov to schedule a time

Questions or Demo

As time allows