

Accessing water-quality data for the Nation in a few clicks from USGS and EPA



Water Quality Portal

www.waterqualitydata.us

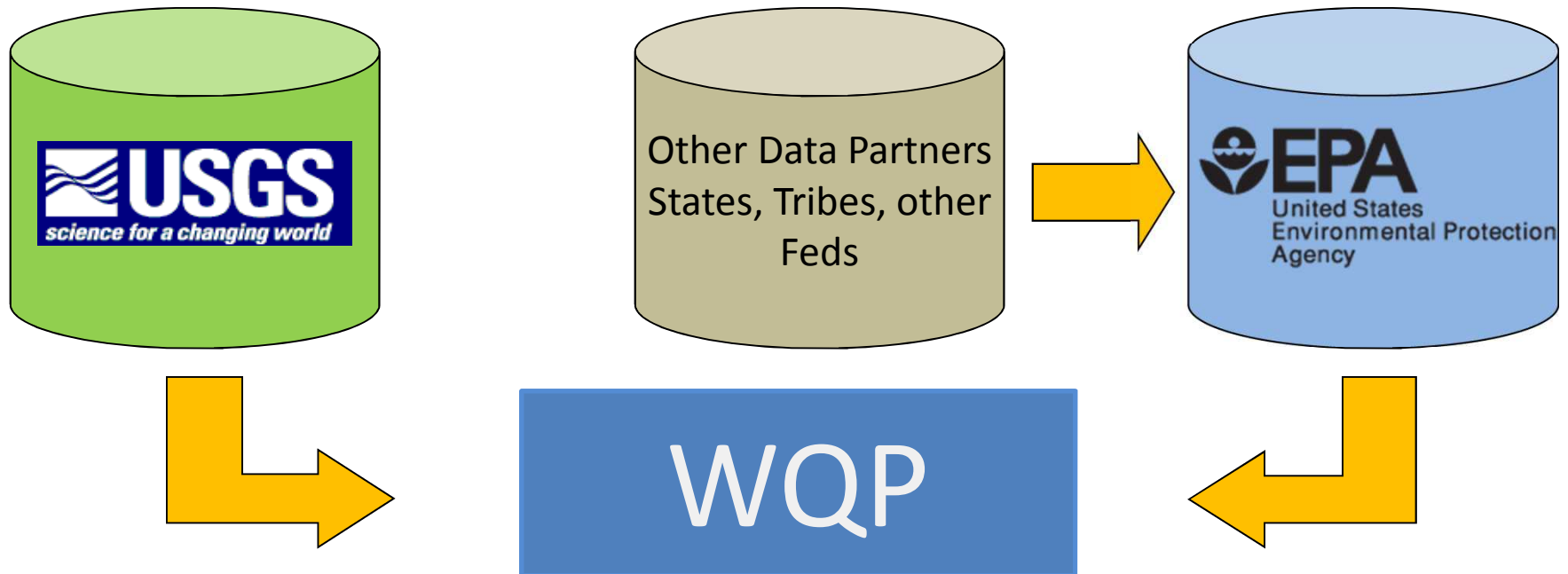
Team:

Nate Booth, I-Lin Kuo, Tom Kunicki, Mike Stern, Scott Lewein,
Lorraine Murphy, Mary Bucknell, Andrew Yan



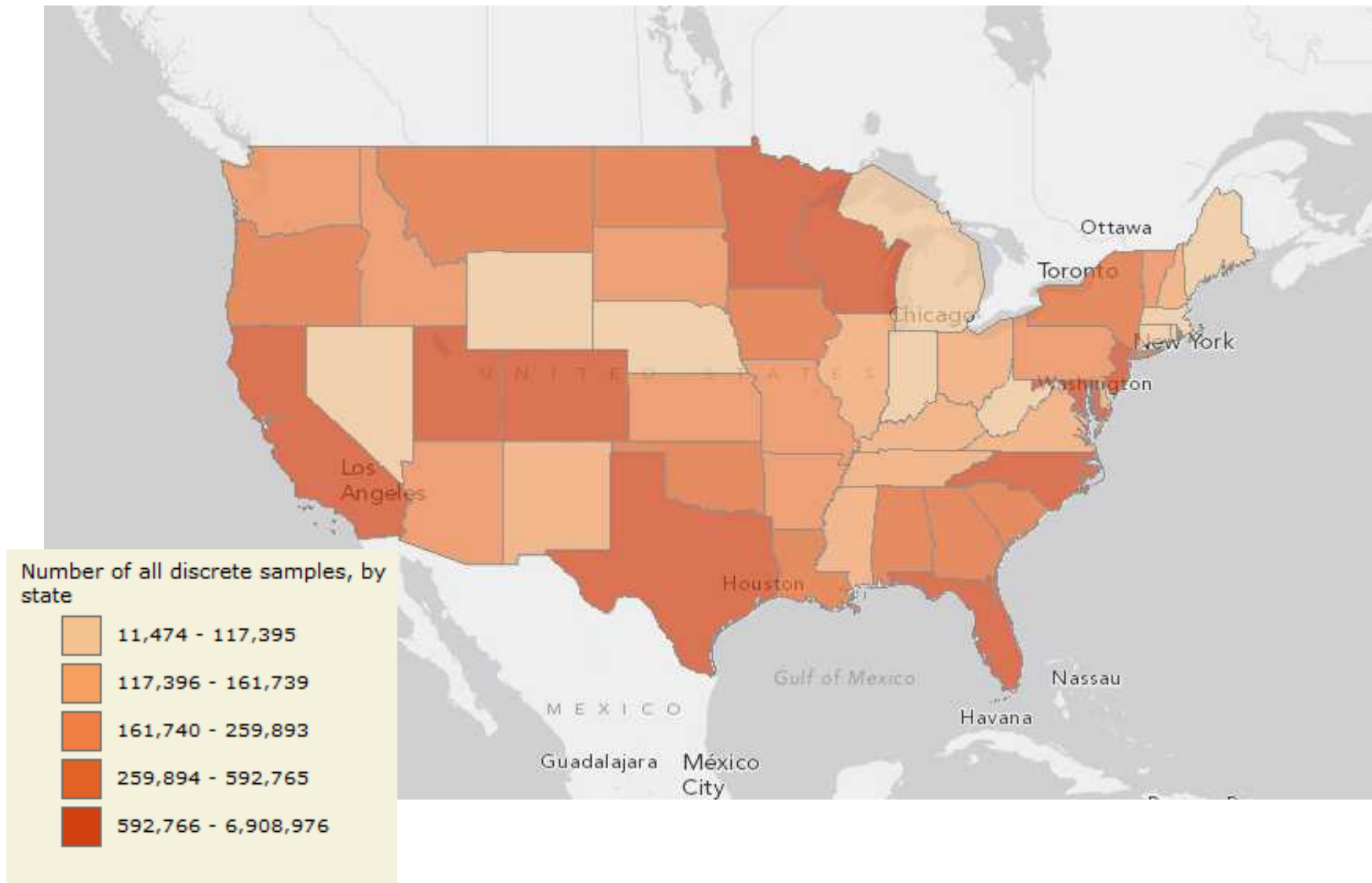
Water Quality Portal

The WQP integrates publicly available water-quality data from the USGS National Water Information System (**NWIS**) and the EPA STOrage and RETrieval (**STORET**) Data Warehouse.



Water Quality Portal National Results Coverage

STORET & NWIS





Water Quality Portal

LOCATION

Country: [select](#)
State: [select](#)
County: [select](#)

Point location: ?

Within: miles from:
Lat: Long:
[my location](#)

Bounding box: ?

North:
West: East:
South:

SITE PARAMETERS

Site Type: [select](#)
Organization ID: [select](#)
Site ID: ?
HUC: ?

SAMPLING PARAMETERS

Sample Media: [select](#)
Characteristic Group: [select](#)
Characteristics: [select](#)
Date range: from to (mm-dd-yyyy)

DOWNLOAD

Select database: All databases USGS NWIS only EPA STORET only
Select data: Sites only Sample results only

Download tabular data:

File format:

- Comma-separated
- Tab-separated
- MS EXCEL (Excel 2003 and earlier versions have a limit of 65,536 rows. If your download exceeds this limit, only the first 65,536 rows will open.)

Download map data:

File format:

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[Show data on Google Maps](#) Google Maps limits the number of sites shown to a maximum of 1000. It will also time out if the query is slow.

DOWNLOAD

Search by Region

LOCATION

Country: [select](#)
State: [select](#)
County: [select](#)

Point location: ?

Within: miles from:
Lat: Long:
[my location](#)

Bounding box: ?

North:
West: East:
South:

Select statecode x

- NEBRASKA
- NEVADA
- NEW HAMPSHIRE
- NEW JERSEY
- NEW MEXICO
- NEW YORK
- NORTH CAROLINA
- NORTH DAKOTA
- OHIO
- OKLAHOMA
- OREGON
- PALAU (STORET only)
- PALMYRA ATOLL (STORET only)
- PENNSYLVANIA
- PUERTO RICO
- RHODE ISLAND
- SOUTH CAROLINA
- SOUTH DAKOTA
- TENNESSEE
- TEXAS
- UNSPECIFIED (NWIS only)
- UTAH
- VERMONT
- VIRGIN ISLANDS

Ok

-OR-

Point location: ?

Within: miles from:
Lat: Long:
[my location](#)

-OR-

Bounding box: ?

North:
West: East:
South:

Search by Site & Sample Parameters

SITE PARAMETERS

Site Type: [select](#)

Organization ID: [select](#)

Site ID: [?](#)

HUC: [?](#)

SAMPLING PARAMETERS

Sample Media: [select](#)

Characteristic Group: [select](#)

Characteristics: [select](#)

Date range: from to (mm-dd-yyyy)

Select siteType

For help, go to the [User's Guide](#)

Check the box to select all items

- Aggregate groundwater use (NWIS only)
- Aggregate surface-water-use (NWIS only)
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- Estuary
- Facility
- Glacier (NWIS only)
- Lake, Reservoir, Impoundment
- Land
- Ocean
- Other-Ground Water (STORET only)
- Other-Surface Water (STORET only)
- Spring
- Stream
- Subsurface
- Well
- Wetland

Ok

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- Inorganics, Major, Non-metals (NWIS only)
- Inorganics, Minor, Metals
- Inorganics, Minor, Non-metals
- Microbiological
- Not Assigned (STORET only)
- Nutrient
- Organics, Other
- Organics, PCBs
- Organics, Pesticide
- Physical
- Radiochemical
- Sediment (NWIS only)
- Stable Isotopes (NWIS only)

Ok

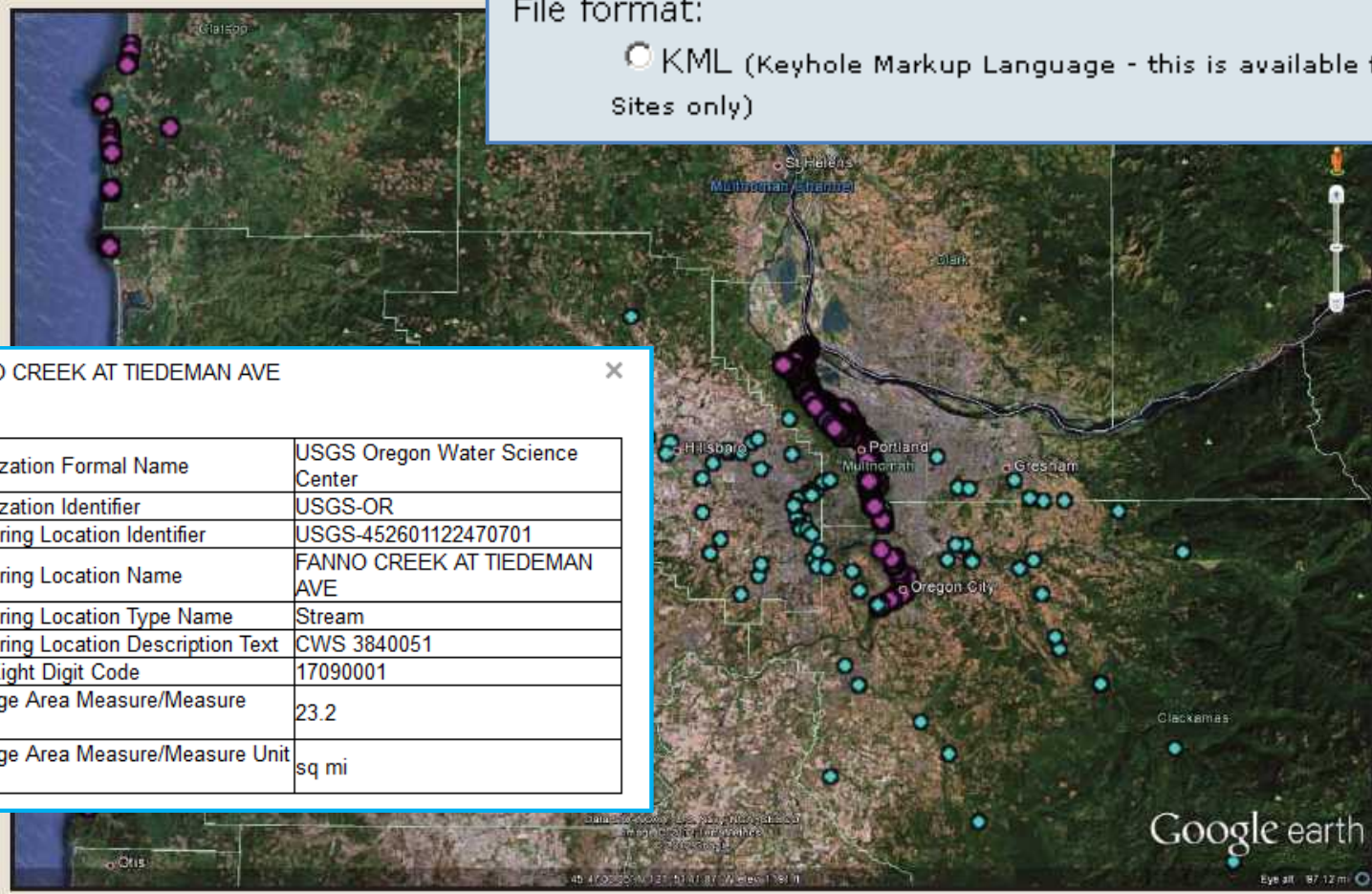
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FANNO CREEK AT TIEDEMAN AVE

Organization Formal Name	USGS Oregon Water Science Center
Organization Identifier	USGS-OR
Monitoring Location Identifier	USGS-452601122470701
Monitoring Location Name	FANNO CREEK AT TIEDEMAN AVE
Monitoring Location Type Name	Stream
Monitoring Location Description Text	CWS 3840051
HUC Eight Digit Code	17090001
Drainage Area Measure/Measure Value	23.2
Drainage Area Measure/Measure Unit Code	sq mi



Map output from the Water Quality Portal for all sites in the Portland, Oreg. area that have been sampled since 2005. The WQP portal was used to query for all sites (NWIS and STORET) in Clatsop, Columbia, Tillamook, Washington, Yamhill, Multnomah, and Clackamas counties. The pink dots represent STORET and the blue dots represent NWIS sites.

Result-2.xls [Read-Only] - Microsoft Excel

Home Insert Page Layout Formulas Data Review View

Clipboard Font Alignment Number Styles Cells Editing

F2068 Surface Water

	B	F	G	AF	AG	AH	AI	AJ
1	OrganizationFormalName	ActivityMedia SubdivisionName	ActivityStartDate	CharacteristicName	ResultSampleFractionText	ResultMeasureValue	ResultMeasure/MeasureUnitCode	MeasureQualifierCode
2062	USGS Oregon Water Science Center	Surface Water	2009-12-02	Phosphorus	Total	0.10500	mg/l	
2063	USGS Oregon Water Science Center	Surface Water	2009-12-02	Organic nitrogen	Total	0.39	mg/l	
2064	USGS Oregon Water Science Center	Surface Water	2009-12-02	Ammonia and ammonium	Dissolved	0.015	mg/l NH4	
2065	USGS Oregon Water Science Center	Surface Water	2009-12-16	Kjeldahl nitrogen	Total	0.857	mg/l as N	
2066	USGS Oregon Water Science Center	Surface Water	2009-12-16	Nitrogen, mixed forms (NH3), (NH4), organic, (N	Total	3.2	mg/l	
2067	USGS Oregon Water Science Center	Surface Water	2009-12-16	Phosphate	Dissolved	0.178	mg/l	
2068	USGS Oregon Water Science Center	Surface Water	2009-12-16	Ammonia and ammonium	Dissolved	0.017	mg/l NH4	
2069	USGS Oregon Water Science Center	Surface Water	2009-12-16	Phosphate	Dissolved	0.05800	mg/l as P	
2070	USGS Oregon Water Science Center	Surface Water	2009-12-16	Phosphorus	Total	0.18400	mg/l	
2071	USGS Oregon Water Science Center	Surface Water	2009-12-16	Ammonia and ammonium	Dissolved	0.013	mg/l as N	
2072	USGS Oregon Water Science Center	Surface Water	2009-12-16	Nitrate-nitrite	Dissolved	2.39	mg/l as N	
2073	USGS Oregon Water Science Center	Surface Water	2009-12-16	Organic nitrogen	Total	0.84	mg/l	
2074								
2075	EPA Region 10 Superfund Portland	Groundwater	2005-05-12	Phosphorus	Total	2.23	mg/l	
2076	EPA Region 10 Superfund Portland	Groundwater	2005-05-12	Nitrate	Total	0.0392	mg/l	
2077	EPA Region 10 Superfund Portland	Groundwater	2005-05-12	Nitrite	Total	0.025	mg/l	U
2078	EPA Region 10 Superfund Portland	Groundwater	2005-05-12	Nitrite	Total	0.025	mg/l	U
2079	EPA Region 10 Superfund Portland	Groundwater	2005-05-12	Nitrate	Total	0.111	mg/l	
2080	EPA Region 10 Superfund Portland	Groundwater	2005-05-12					
2081	EPA Region 10 Superfund Portland	Groundwater	2005-05-13					
2082	EPA Region 10 Superfund Portland	Groundwater	2005-05-13					
2083	EPA Region 10 Superfund Portland	Groundwater	2005-05-13					
2084	EPA Region 10 Superfund Portland	Groundwater	2005-05-13					

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•Export Sites

Sites Retrieval

OrganizationIdentifier	USGS-OR
OrganizationFormalName	USGS Oregon Water Science Center
MonitoringLocationIdentifier	USGS-452601122470701
MonitoringLocationName	FANNO CREEK AT TIEDEMAN AVE
MonitoringLocationTypeName	Stream
MonitoringLocationDescriptionText	CWS 3840051
HUCEightDigitCode	17090001
DrainageAreaMeasure/MeasureValue	23.2
DrainageAreaMeasure/MeasureUnitCode	sq mi
LatitudeMeasure	45.4336778
LongitudeMeasure	-122.7853417
CountryCode	US
StateCode	41
CountyCode	67

Result-3.xls [Read-Only] - Microsoft Excel

Home Insert Page Layout Formulas Data Review View

Clipboard Font Alignment Styles Cells Editing

ActivityStartTime/TimeZoneCode

	B	F	G	V	AF	AG	AH	AI
1	OrganizationFormalName	ActivityMediaSubdivisionName	ActivityStartDate	MonitoringLocationIdentifier	CharacteristicName	ResultSampleFractionText	ResultMeasureValue	ResultMeasure/MeasureUnitCode
2	USGS Oregon Water Science Center	Surface Water	2005-01-18	USGS-14211720	Nitrate	Dissolved	0.815	mg/l as N
3	USGS Oregon Water Science Center	Surface Water	2005-01-18	USGS-14211720	Nitrogen, mixed forms (NH3), (NH4), organic, (NO2)	Total	1.11	mg/l
4	USGS Oregon Water Science Center	Surface Water	2005-01-18	USGS-14211720	Ammonia and ammonium	Dissolved	0.200	mg/l NH4
5	USGS Oregon Water Science Center	Surface Water	2005-01-18	USGS-14211720	Phosphorus	Suspended	0.0	%
6	USGS Oregon Water Science Center	Surface Water	2005-01-18	USGS-14211720	Phosphate	Dissolved	0.120	mg/l
7	USGS Oregon Water Science Center	Surface Water	2005-01-18	USGS-14211720	Nitrite	Dissolved	0.072	mg/l
8	USGS Oregon Water Science Center	Surface Water	2005-01-18	USGS-14211720	Phosphorus	Total	0.069	mg/l
9	USGS Oregon Water Science Center	Surface Water	2005-01-18	USGS-14211720	Nitrate-nitrite	Dissolved	0.837	mg/l as N
10	USGS Oregon Water Science Center	Surface Water	2005-01-18	USGS-14211720	Ammonia and ammonium	Dissolved	0.15	mg/l as N
11	USGS Oregon Water Science Center	Surface Water	2005-01-18	USGS-14211720	Phosphate	Dissolved	0.039	mg/l as P
12	USGS Oregon Water Science Center	Surface Water	2005-01-18	USGS-14211720	Nitrate	Dissolved	3.61	mg/l
13	USGS Oregon Water Science Center	Surface Water	2005-01-18	USGS-14211720	Organic nitrogen	Total	0.12	mg/l
14	USGS Oregon Water Science Center	Surface Water	2005-01-18	USGS-14211720	Nitrite	Dissolved	0.022	mg/l as N
15	USGS Oregon Water Science Center	Surface Water	2005-01-18	USGS-14211720	Nitrogen, mixed forms (NH3), (NH4), organic, (NO2)	Suspended	0.66	%
16	USGS Oregon Water Science Center	Surface Water	2005-01-18	USGS-14211720	Nitrogen	Suspended	0.04	mg/l
17	USGS Oregon Water Science Center	Surface Water	2005-02-03	USGS-14211720	Organic nitrogen	Total	0.18	mg/l
18	USGS Oregon Water Science Center	Surface Water	2005-02-03	USGS-14211720	Phosphate	Dissolved	0.035	mg/l as P
19	USGS Oregon Water Science Center	Surface Water	2005-02-03	USGS-14211720	Ammonia and ammonium	Dissolved	0.164	mg/l NH4
20	USGS Oregon Water Science Center	Surface Water	2005-02-03	USGS-14211720	Phosphorus	Total	0.070	mg/l
21	USGS Oregon Water Science Center	Surface Water	2005-02-03	USGS-14211720	Phosphate	Dissolved	0.107	mg/l
22	USGS Oregon Water Science Center	Surface Water	2005-02-03	USGS-14211720	Ammonia and ammonium	Dissolved	0.13	mg/l as N
23	USGS Oregon Water Science Center	Surface Water	2005-02-03	USGS-14211720				
24	USGS Oregon Water Science Center	Surface Water	2005-02-03	USGS-14211720				

• Export Results

Download tabular data:

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Sample Result Retrieval

ActivityMediaName	Water
ActivityStartDate	4/25/2011
ActivityStartTime/Time	16:15:00
ActivityStartTime/TimeZoneCode	PDT
ProjectIdentifier	97119H6TU
ActivityConductingOrganizationText	U.S. Geological Survey-Water Resources Discipline
MonitoringLocationIdentifier	USGS-452601122470701
ActivityCommentText	A-1220118 TPCN Volumes: 1- 15.20mL 2- 17.30mL 3- 16.50mL L-1220118 Date on FCC 4/26/11,
HydrologicCondition	Rising Stage
HydrologicEvent	Storm
CharacteristicName	Nitrogen
ResultSampleFractionText	Suspended
ResultMeasureValue	0.53
ResultMeasure/MeasureUnitCode	mg/l
ResultValueTypeName	actual
USGSPCode	49570
ResultAnalyticalMethod/MethodIdentifier	COMB7
ResultAnalyticalMethod/MethodName	TPN, GF/F, combustion
LaboratoryName	USGS-National Water Quality Lab, Denver, CO
AnalysisStartDate	5/19/2011
DetectionQuantitationLimitTypeName	Long Term Method Detection Level
DetectionQuantitationLimitMeasure/MeasureValue	0.017
DetectionQuantitationLimitMeasure/MeasureUnitCode	mg/l

Available Documentation & Resources

- User Guide
- Web Services Guide
- FAQs
- Upload Data



HOW TO USE THE WQP

User Guide

Web Services Guide

FAQs

Upload Data

Example Data Retrieval

“I want to download all the stream sites and sampling results in the Big Thompson River Basin (HUC 10190006) where nutrient data were collected from October 1, 2000 to September 30, 2004.”

www.waterqualitydata.us

LOCATION

Country: [select](#)
State: [select](#)
County: [select](#)

Point location: ?

Within: miles from:
Lat: Long:
[my location](#)

Bounding box: ?

North:
West: East:
South:

SITE PARAMETERS

Site Type: [select](#)
Organization ID: [select](#)
Site ID: ?
HUC: ?

SAMPLING PARAMETERS

Sample Media: [select](#)
Characteristic Group: [select](#)
Characteristics: [select](#)
Date range: from to (mm-dd-yyyy)

DOWNLOAD

Select database: All databases USGS NWIS only EPA STORET only
Select data: Sites only Sample results only

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Country: [select](#)
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County: [select](#)

Point location

Within:
Lat:
[my location](#)

SITE PARAMETERS

Site Type: [select](#)
Organization ID: [select](#)
Site ID: ?
HUC: ?

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Select siteType ✕

For help, go to the [User's Guide](#)

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 - Aggregate surface-water-use (NWIS only)
 - Atmosphere
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 - Other-Surface Water (STORET only)
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 - Subsurface
 - Well
 - Wetland

Ok

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Select sampleMedia



Select characteristicType



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- Stable Isotopes (NWIS only)

Ok

n: ?

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North:

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SAMPLING PARAMETERS

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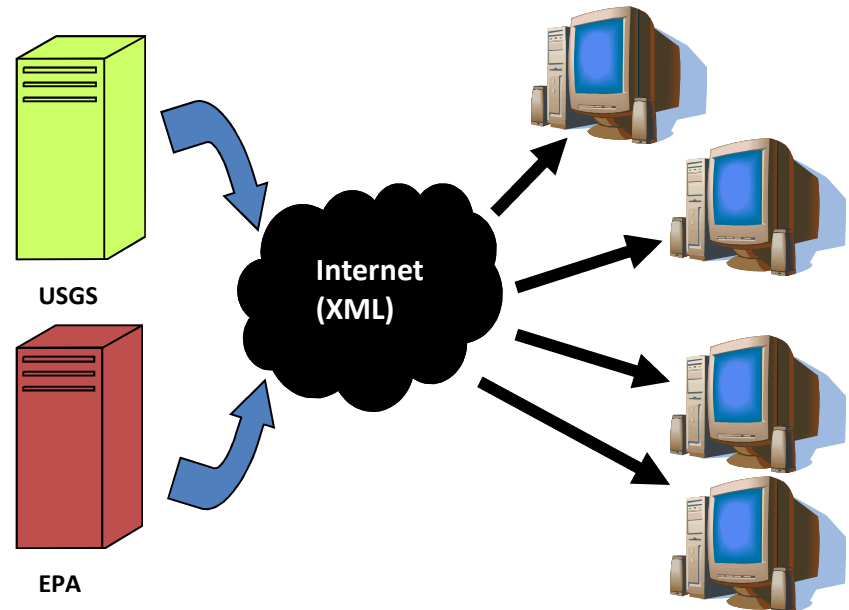
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DOWNLOAD

What is a web service?

- Computer-to-computer data sharing
- Uses Input parameters and outputs XML
- Can be used in multiple ways by many applications



<http://www.waterqualitydata.us/Station/search?countrycode=US&siteType=Stream&sampleMedia=Water&characteristicType=Nutrient&startDateLo=01-01-2005&startDateHi=01-01-2012>

Integrated water-quality monitoring data is made possible through:

- **DATA STANDARDS**
- Compatible search parameters
- Common web services technology

