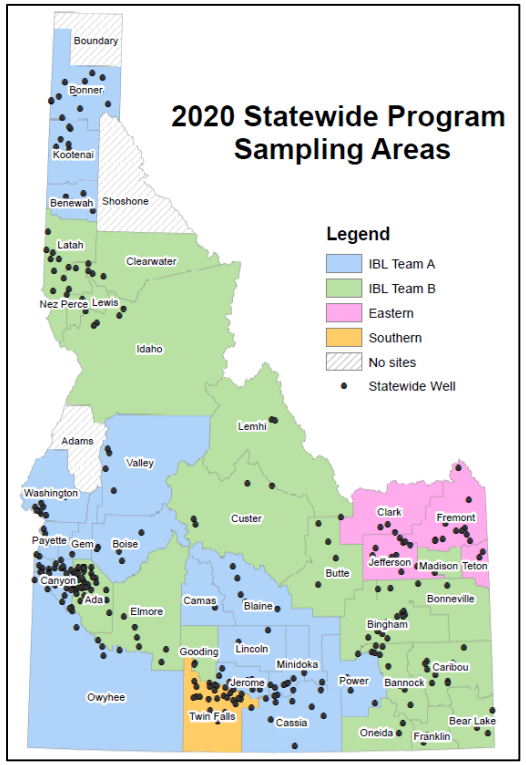


2020 Statewide Program Update

Presented by Amy Steimke, IDWR

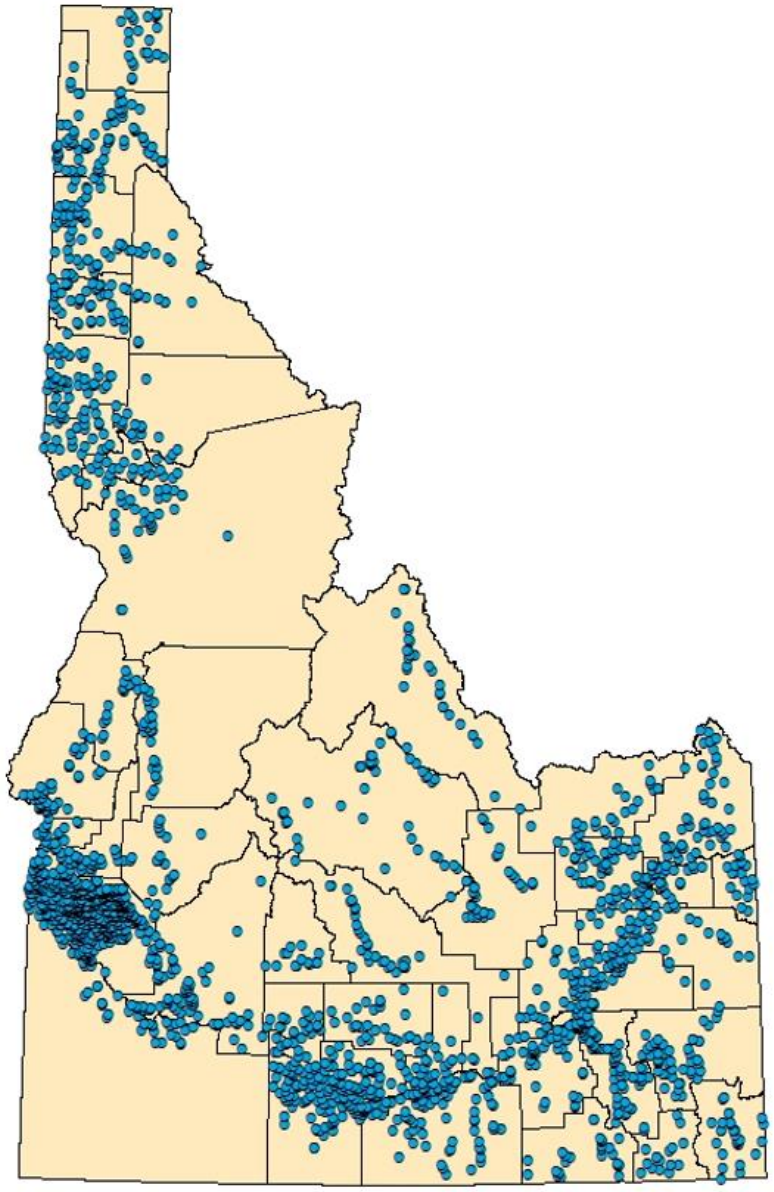
GWMTC: June 26, 2020

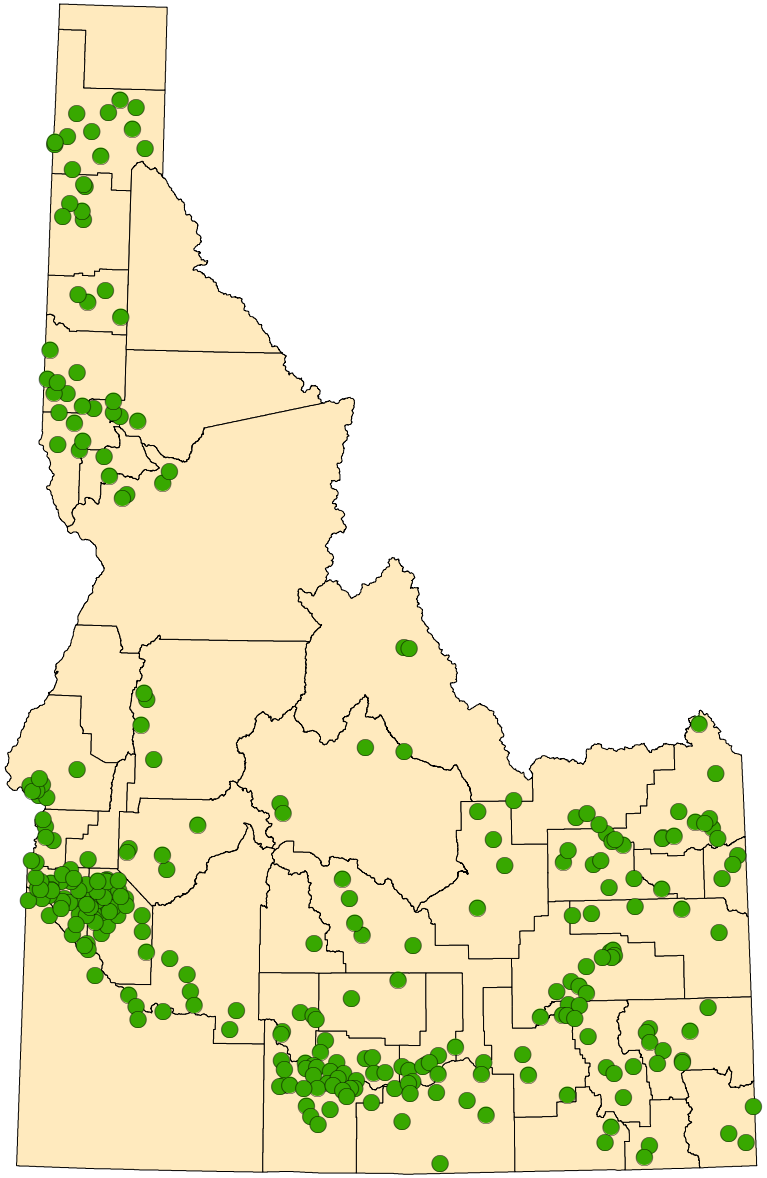
Presentation Outline

- Overview of the 2020 Statewide Program
- Updates for 2020
  1) COVID-19 Modifications
  2) Uranium & Alkalinity
  3) Database Update

Statewide Ground Water Quality Monitoring Program

- “Statewide Program” began sampling wells in 1990
- To date, have sampled 2,134 unique wells resulting in over 775,000 results
- Typically target ~300 wells each year with a 5-year rotation
  - 200-250 of those 300 wells are sampled
- The program provides data to homeowners, other agencies, and the general public

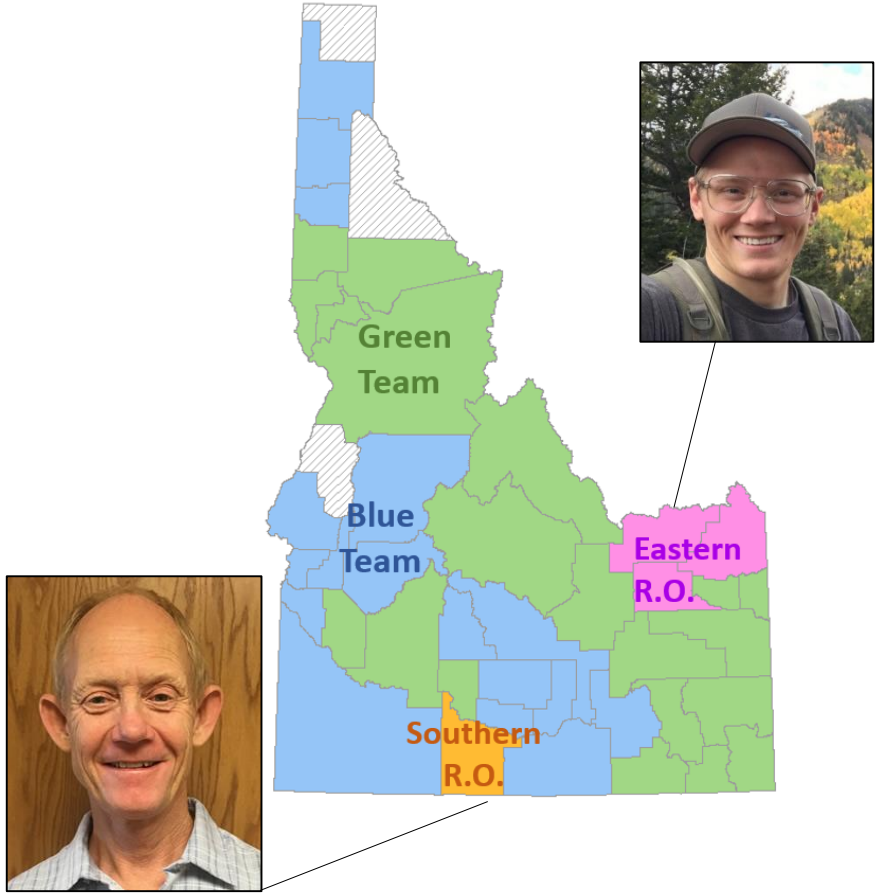




2020 Sampling Season

- 31st season of sampling for the Statewide Program
- Targeting 290 wells
  - 180 currently have written permission
- 41 counties
- 6 field samplers (2 IDWR, 4 IBL)

Cast of Characters



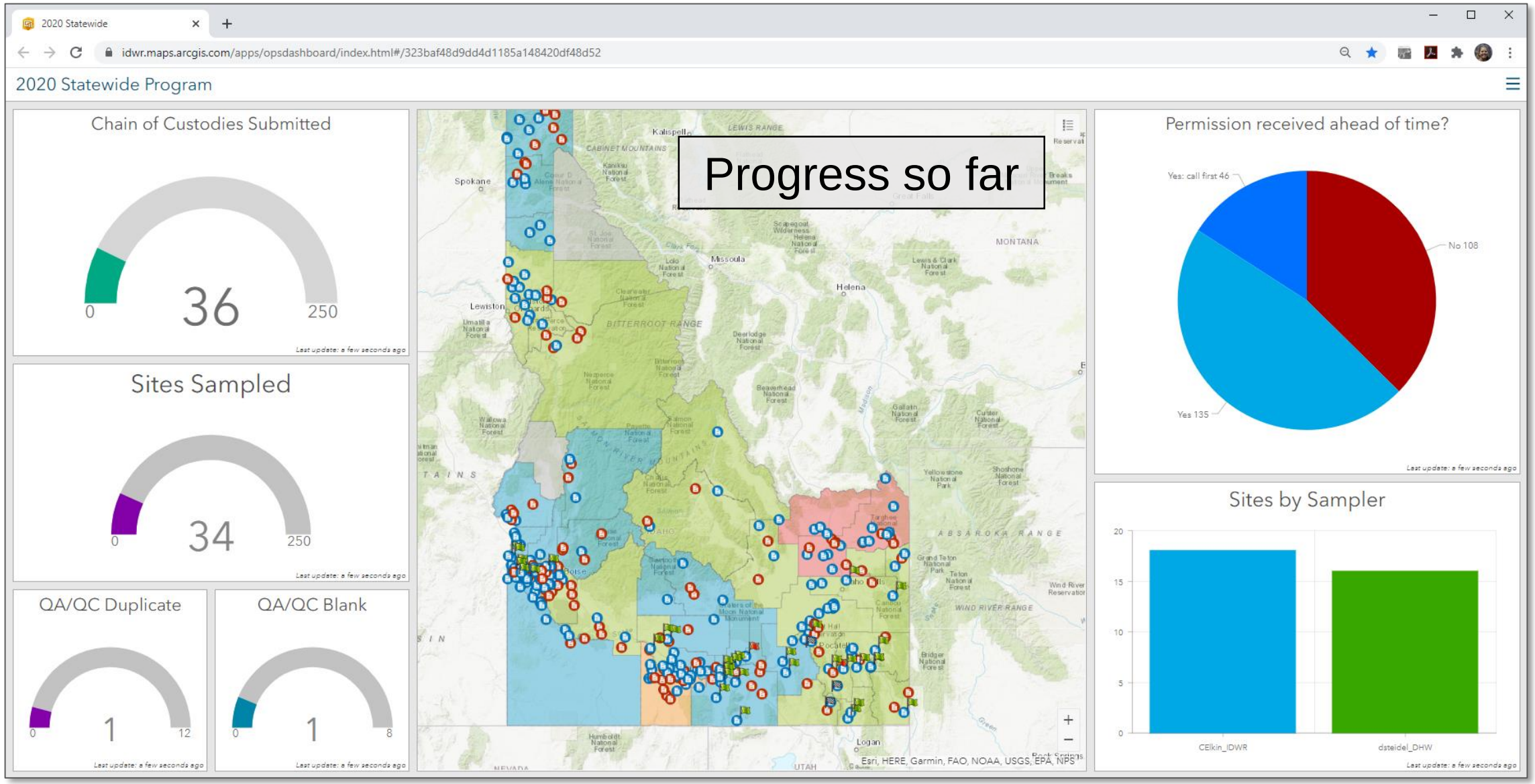
What we're sampling for

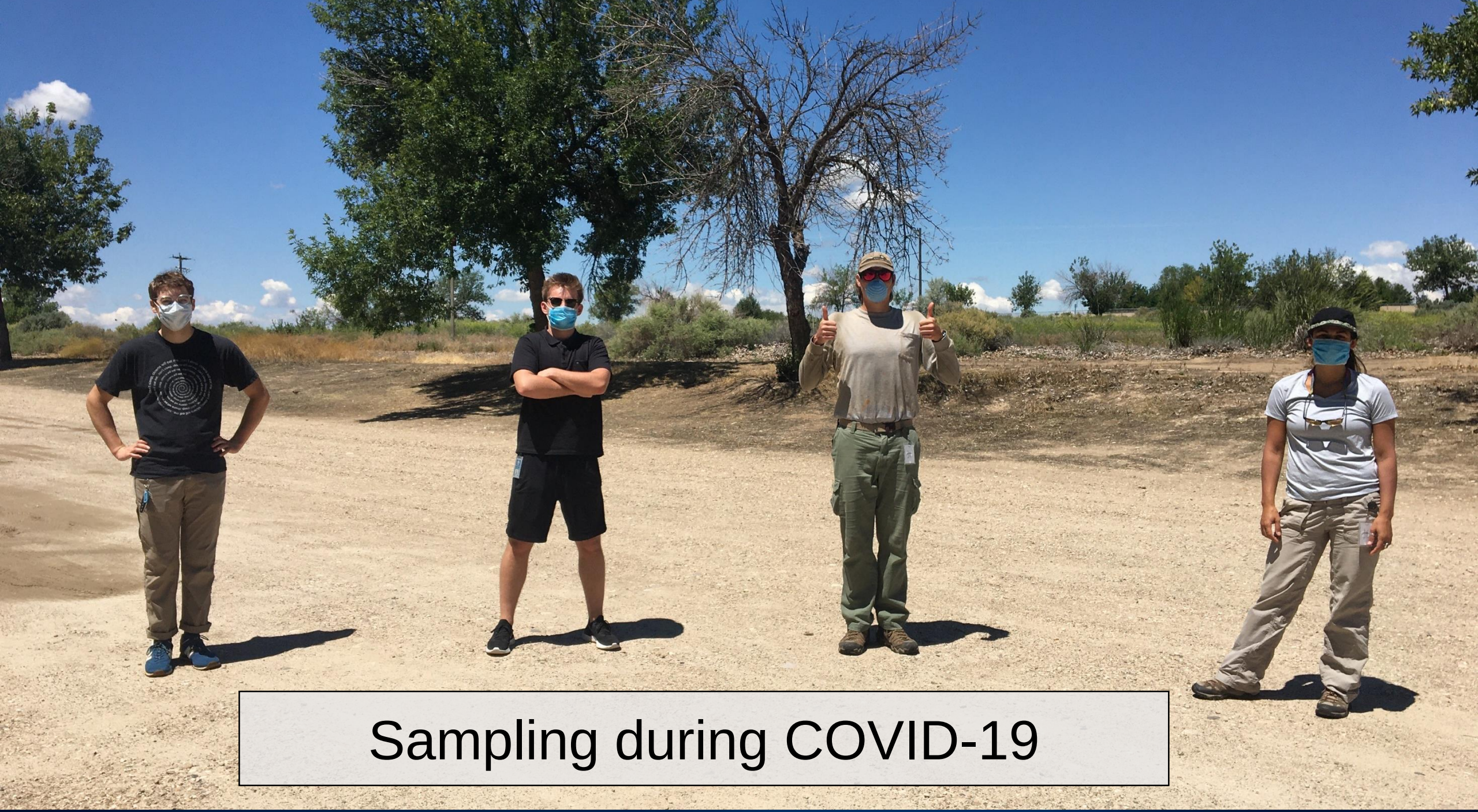
IDAHO DEPARTMENT OF HEALTH & WELFARE
DIVISION OF PUBLIC HEALTH

IDWR

IDWR Statewide Program: 2020 Constituents		
Field Parameters	**Metals**	**Nutrients**
pH	Arsenic	Ammonia
Conductivity	Cadmium	Nitrate
Dissolved Oxygen	Calcium	Total Phosphorus
Temperature	Copper	**Pesticides**
Alkalinity	Iron	Atrazine
Common Ions	Magnesium	Glyphosate
Chloride	Manganese	Imidacloprid
Fluoride	Potassium	Metolachlor
Sulfate	Selenium	**Collaborative Sampling**
Alkalinity	Silica	N-15 isotope
Emerging Contaminants	Sodium	
BPA	Uranium	
Triclosan		

IDAHO DEPARTMENT OF ENVIRONMENTAL QUALITY


2020 Statewide
idwr.maps.arcgis.com/apps/opsdashboard/index.html#/323baf48d9dd4d1185a148420df48d52
2020 Statewide Program
Chain of Custodies Submitted
0
36
250
Last update: a few seconds ago
Sites Sampled
0
34
250
Last update: a few seconds ago
QA/QC Duplicate
0
1
12
Last update: a few seconds ago
QA/QC Blank
0
1
8
Last update: a few seconds ago
Progress so far
Kalispell
Spokane
Missoula
Helena
Lewiston
MONTANA
BITTERROOT RANGE
ABSAROKA RANGE
WIND RIVER RANGE
Logan
UTAH
Esri, HERE, Garmin, FAO, NOAA, USGS, EPA, NPS
Permission received ahead of time?
Yes: call first 46
No 108
Yes 135
Last update: a few seconds ago
Sites by Sampler
20
15
10
5
0
CElkin_IDWR
dsteidel_DHW
Last update: a few seconds ago


Sampling during COVID-19

Summer 2020 Planning

Statewide Program modifications in response to COVID-19

- Unannounced site visits will not be made and staff will call all well owners prior to sampling their well.

Statewide Program modifications in response to COVID-19

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- Permission slips were modified to allow well owners to opt out of the current sampling cycle.

☐ I/We grant permission for a water sample to be collected from our well, even if we are not at home.

☐ I/We grant permission for a water sample to be collected from our well, but please call and schedule a time for sampling ahead of time.

☑ I/We do not want to participate this year, but would like to be considered for sampling again in subsequent years.

☐ I/We do not want to participate. Could you please list why? _____

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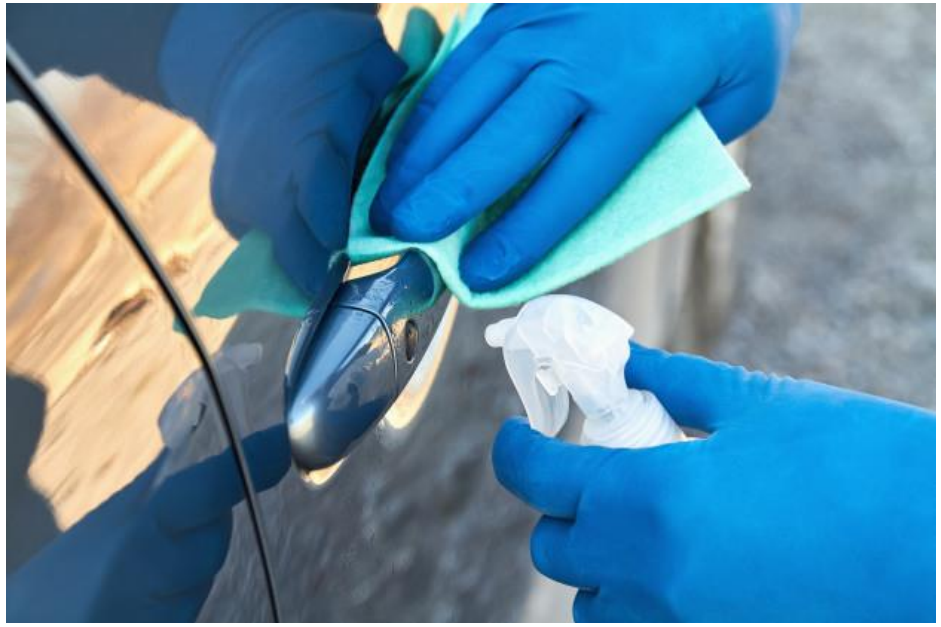

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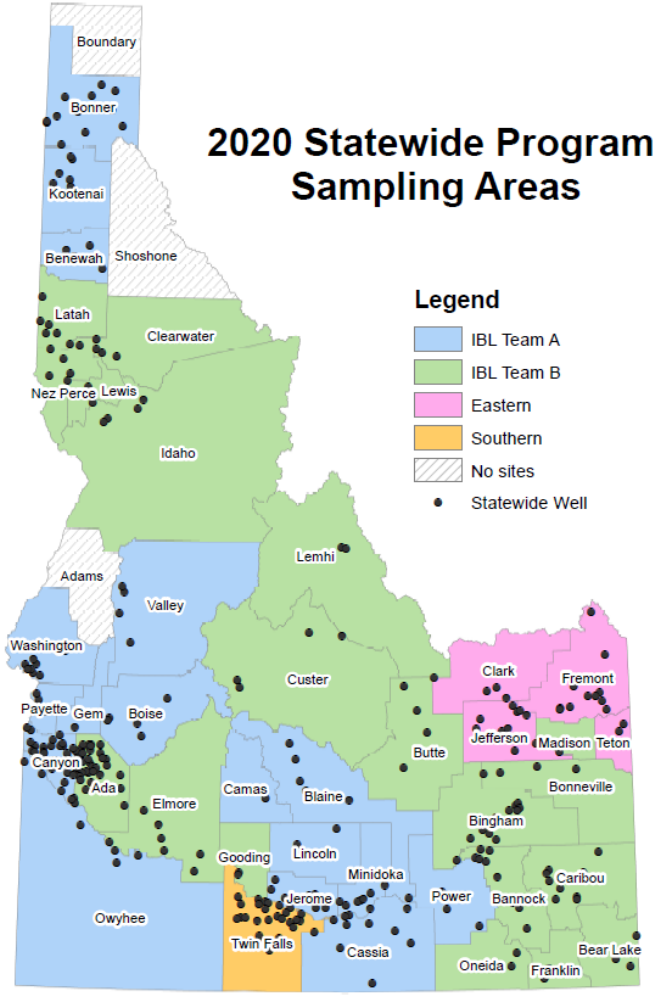
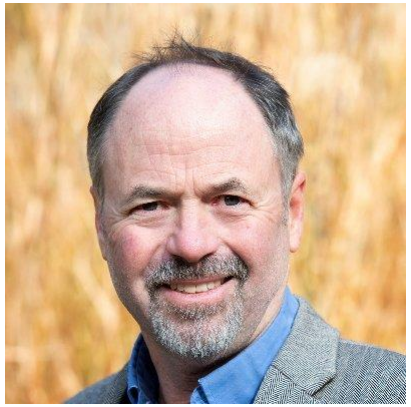
- Both IBL teams have a mix of travel and local sites.



Uranium & Alkalinity

Gus Womeldorph



Dr. Sean Benner

Craig Tesch

NEWS

TREASURE VALLEY WELLS SHOW ELEVATED URANIUM

BSU, Water Resources joint report shows number of Ada, Canyon county wells have unsafe Uranium levels

COURTESY OF ADA COUNTY

Wells across the Treasure Valley show elevated levels of Uranium, which occurs naturally in the sediment.

By XAVIER WARD

Especially in the West, where water can be scarce, the quality of the groundwater is vital to the heath of communities.

In the Treasure Valley's urban areas, the quality of water is monitored by municipal agencies that clean the water before it goes out to consumers. People who rely on well water, however, are often responsible for their own water quality.

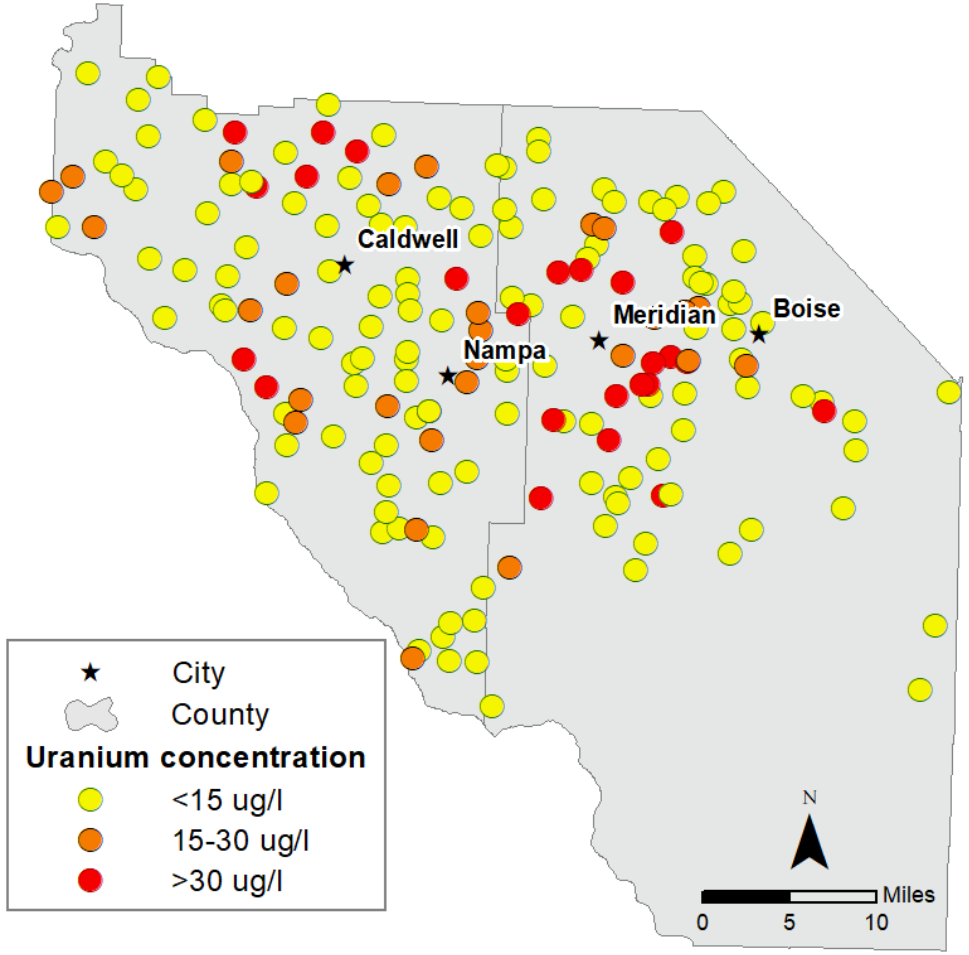
"It seems from what we found that [Uranium is] present throughout the valley, and there's some variability," said Gus Womeldorph, a recent graduate of Boise State University, whose master's thesis containing 30 micrograms per liter of Uranium or greater is unfit for drinking. In Womeldorph's study, 37% of domestic wells, or 54 total wells, showed unsafe levels of Uranium. By contrast, 18.5%, or 210 wells, of public supply wells showed unsafe levels of Uranium. The data set for Ada County covered less than 2% of total wells in the county.

In Canyon County, 15.5% of domestic wells, or 58, showed levels of Uranium that exceed federal standards. For public supply wells, 14.1%, or 156, showed nants, exceed safe levels, install a reverse osmosis water filter on your system, which costs around $200.

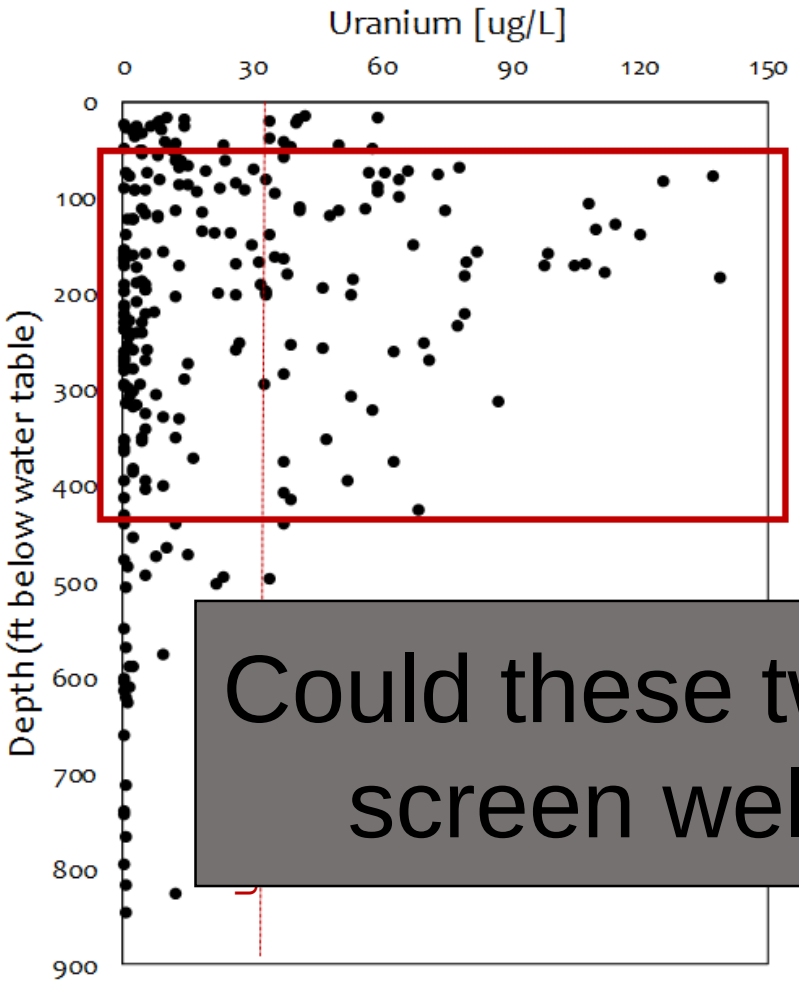
"You don't really know what you're drinking until you sample your wells," said Tom Neace, manager of the Ground Water Protection Section.

Neace said if your water is a public utility, coming from Suez or another local water company, it's being tested before it reaches customers, and is likely safe but well owners are responsible for testing their own supply.

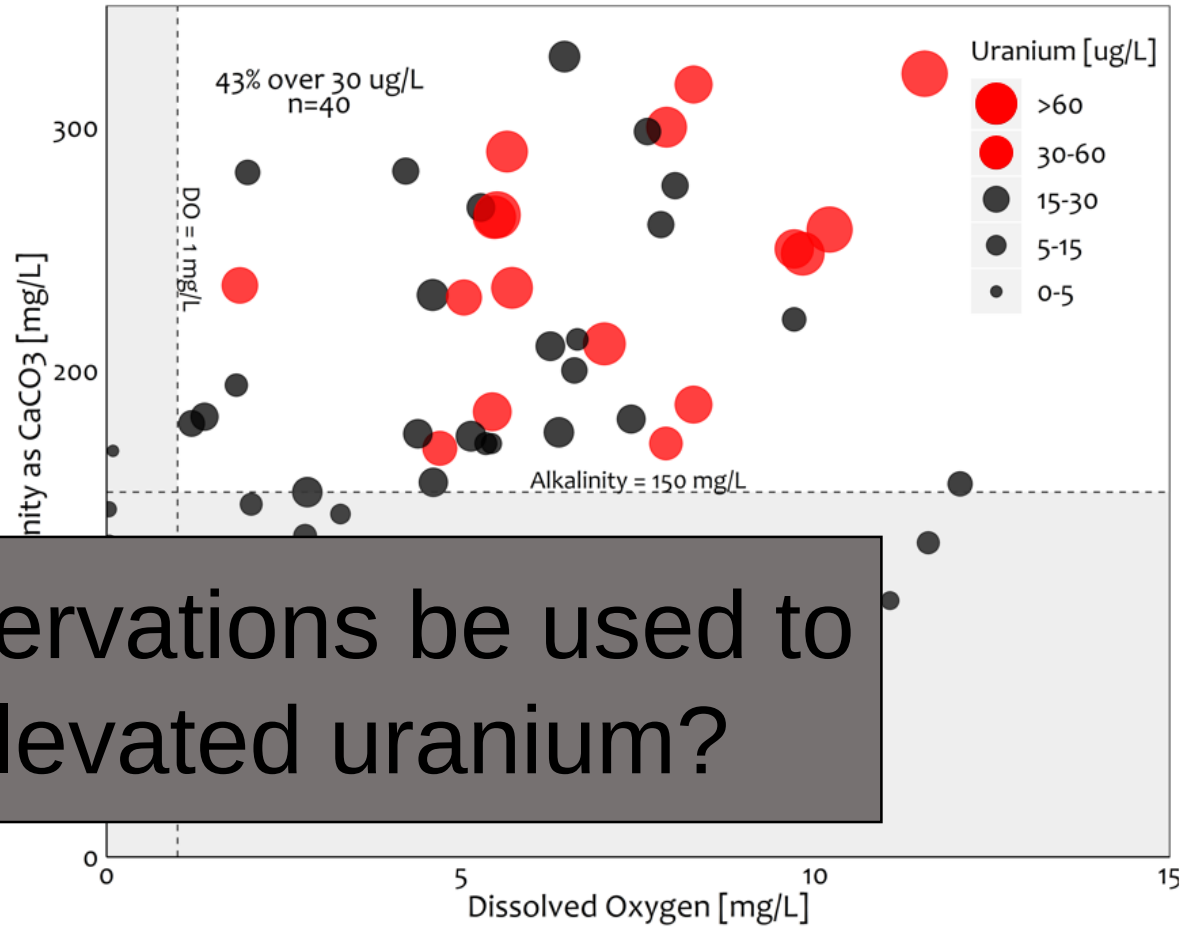
No significant trends in the horizontal dimension were identified.



Vertical trends were found.

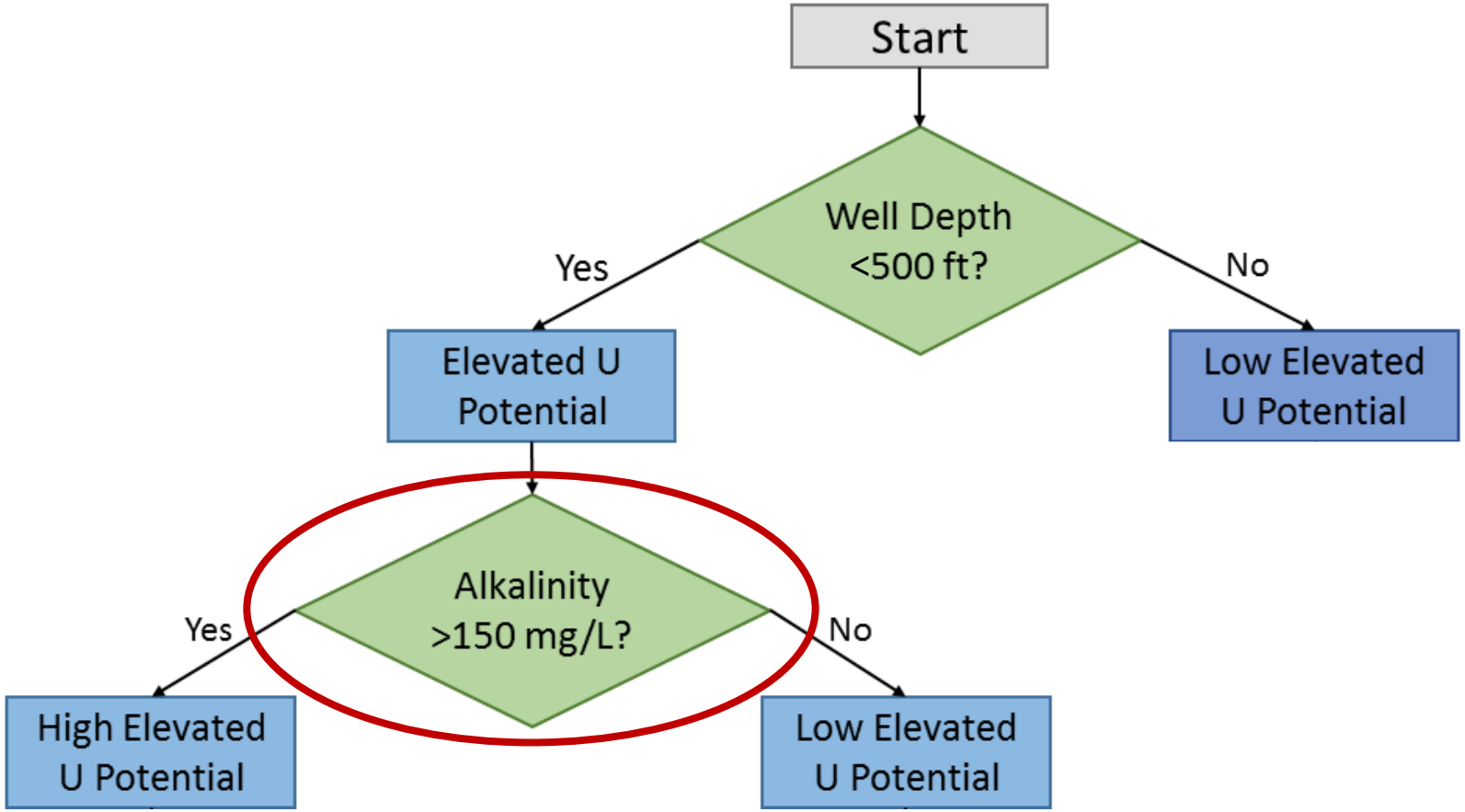


Positive correlations were found between uranium, alkalinity, and dissolved oxygen.



Could these two observations be used to screen wells for elevated uranium?

Alkalinity as a screening tool for elevated uranium



Project Goals

- Identify an easy, affordable method to test for alkalinity.
- Identify how reliable the method is and in what circumstances it is appropriate to use.
- If successful, develop guidance for others to use.
- Could be utilized as a screening tool for health districts, ground water awareness fairs, etc.

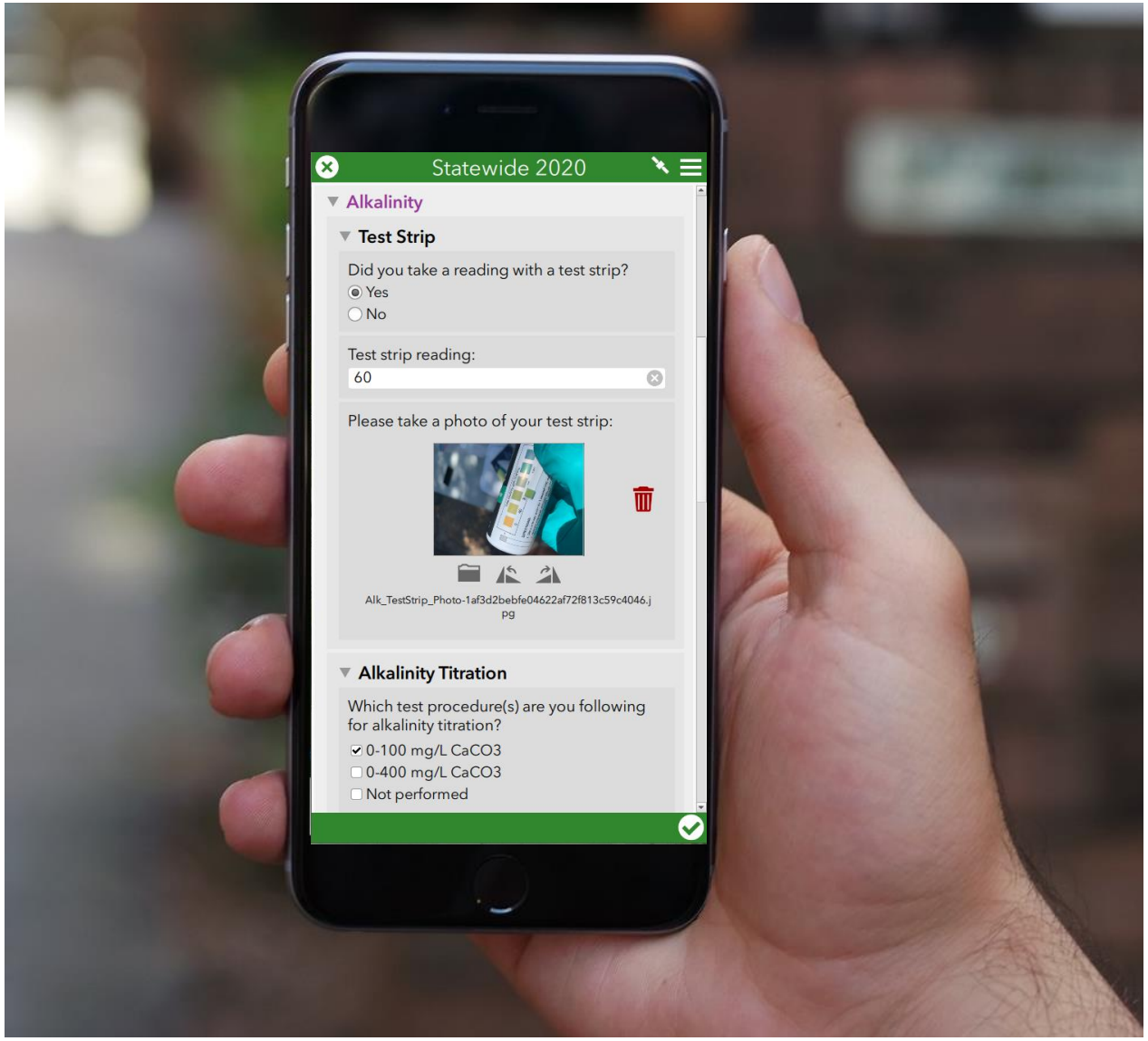
Summer 2020: Comparing two methods to laboratory results

	Test Strips	Test Kit
Cost	$14 for a 50 pack	$53 for 100 tests
Cost per sample	28¢	53¢
Range covered (in mg/L $CaCO_3$)	0-240 (increments of 40)	Range 1: 0-100 (increments of 5) Range 2: 0-400 (increments of 20)

Running samples at the State Lab:
Alkalinity: $14
Uranium: $44

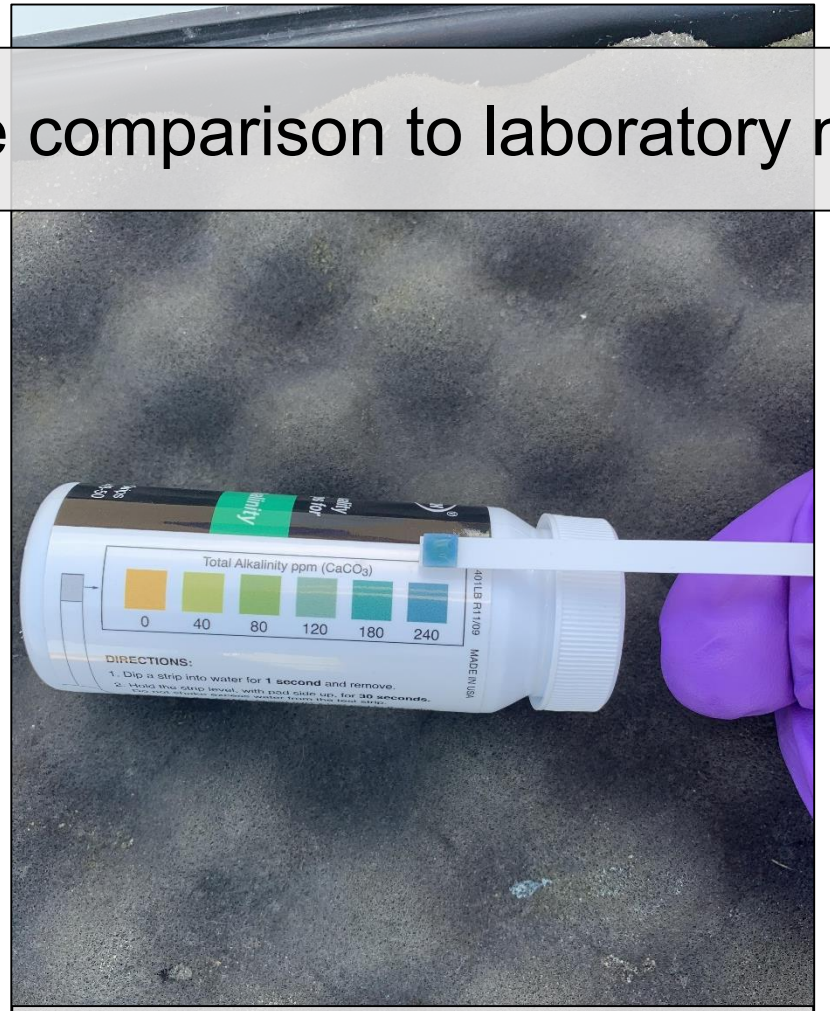
Methods

- At each site, the sampler will dip a test strip and take a reading.
- Photos are taken with the test strip compared to the scale on the bottle.
- Sampler chooses which alkalinity test to complete based on test strip reading.
  - (0-100 mg/L vs 0-400 mg/L)
- Survey[123] provides steps for the test and calculates the final alkalinity.



Stay tuned for the comparison to laboratory measurements…

Technician identified test strip as **120**.
Got **120** via the test kit.

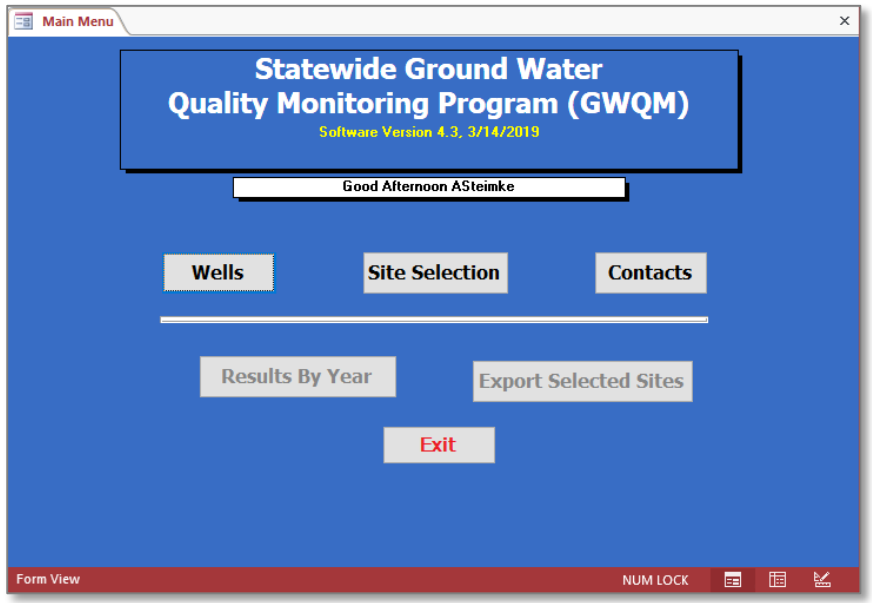


Technician identified test strip as **240**.
Got **300** via the test kit.

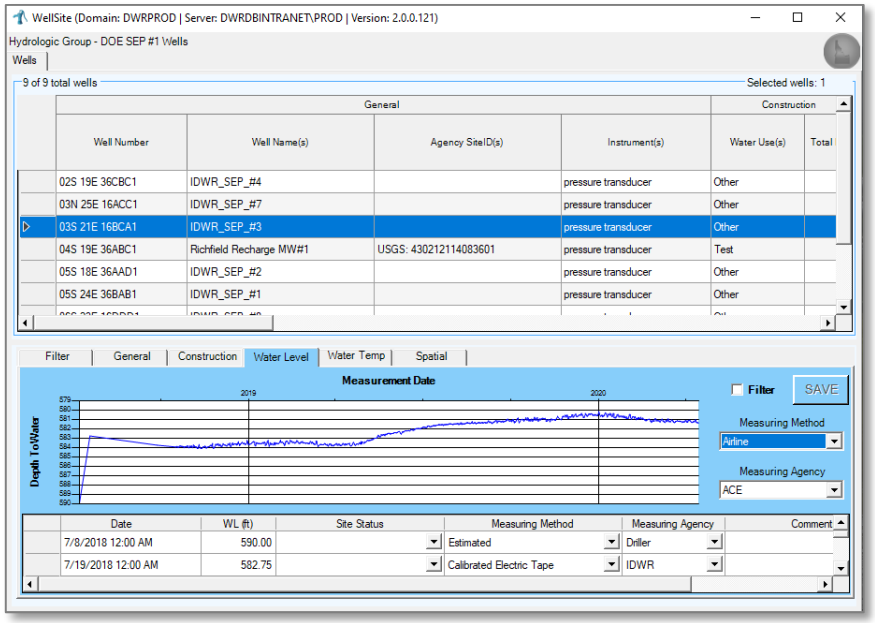
Technician identified test strip as **120**.
Got **180** via the test kit.

IDWR Database Update

Problem: IDWR has aging, custom databases for Statewide Program and water level program



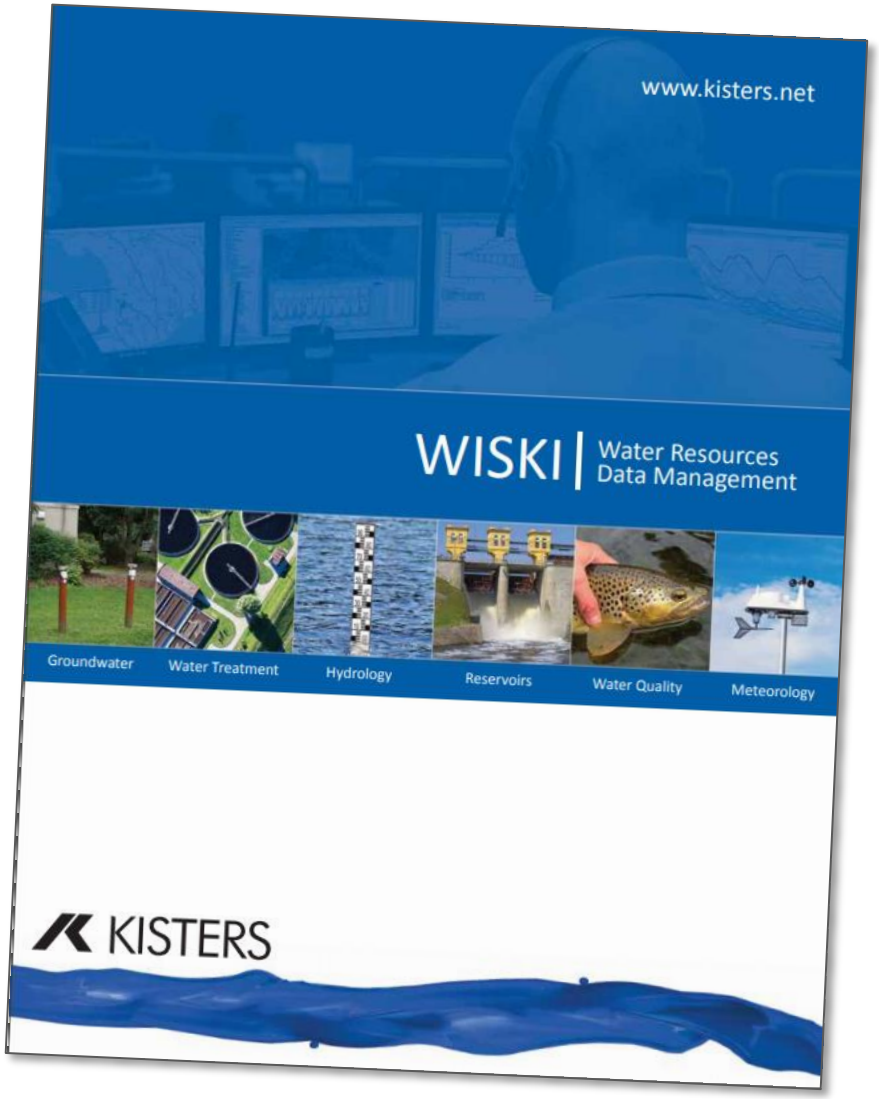
Water Quality (GWQM)
Contains 775,000 results



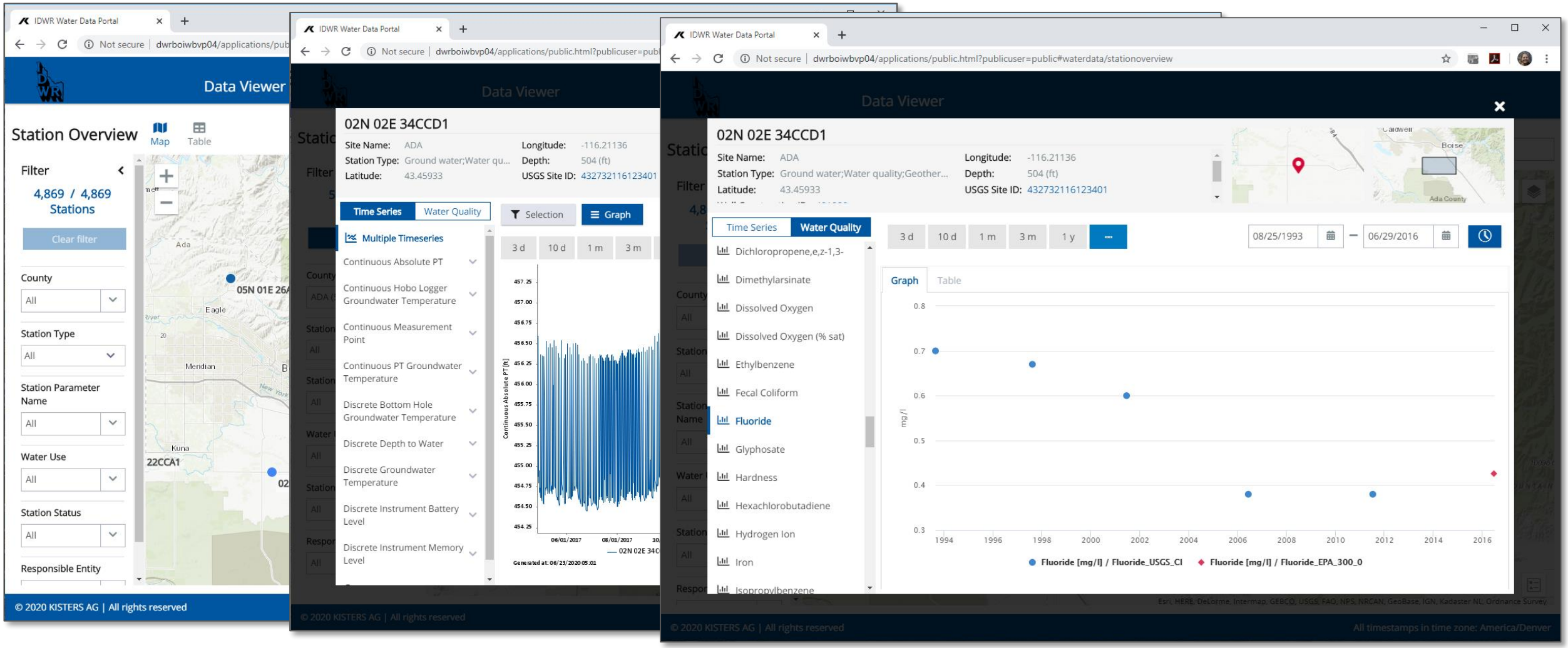
Water Levels (WellSite)
Contains 4.1 million water level records

IDWR Database Update

- Received funding for a new combined (water quality & levels) database.
- RFP went out in May 2019.
- Kisters was awarded the project in September 2019.
- Database customization, data migration, and building has been ongoing throughout winter/spring.
- Project is anticipated to wrap up by the end of summer.



WISKI Web Portal to serve data to the public



IDAHO Department of Water Resources

Thanks for listening!

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Phone: (208) 287-4833