



Spring 2024



## *Know Your Well Publication*

### EVALUATING YOUTH-LED CITIZEN SCIENCE

A research article about Know Your Well was published in ACS ES&T Water, a journal of the American Chemical Society, in early 2024. The study was led by Christopher Olson, Chittaranjan Ray, Daniel Snow, and others from the Nebraska Water Center. The paper focused on ten public high schools from rural areas of Nebraska that participated in testing groundwater samples from domestic drinking water wells in an early phase of Know Your Well.



## *Staff Spotlight*

### JULIA RAMSAY - STUDENT ASSISTANT

Julia, University of Nebraska-Lincoln class of 2026, is our new undergrad hire. She is majoring in Environmental Studies with minors in English and Spanish and has a passion for water science. She will be working as a social media marketer for Know Your Well.







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Overall, 15 teachers and more than 140 students were involved in the project during this period, and 171 wells were sampled. The team compared what students measured from groundwater samples to results from analyses conducted at the University of Nebraska Water Sciences Lab. Measurements made by students matched reasonably well with laboratory measurements for many tests, but researchers also identified some areas for improvement. Many wells that were sampled had nitrate concentrations that exceeded levels that are safe for drinking. Overall, the authors concluded that youth-led citizen science can contribute to monitoring well water quality and help integrate local communities in such monitoring efforts.





## Water for Food

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## *KGLN Students Present at Statewide Environmental Education Conference*

On February 29th, Ms. Shelly Averys and several science students from Wausa High School shared the results of their months-long well water testing project to attendees of the 2024 Nebraska Environmental Education Conference, held in Ponca State Park. Mrs. Avery's classes have been learning about groundwater quality, collecting samples from local household wells, and testing water quality since 2020 through Know Your Well. Fourteen students worked together, collecting and testing well water samples and then analyzing and reporting results. Ms. Avery's class was selected by the Nebraska Association of Conservation and Environmental Education to give a 20-minute Bright Spot talk, sharing their results and experiences with the program. They were joined by Julie Wragge, Lower Elkhorn Natural Resources District, and Sara Brock-Contreras from the Know Your Well program at the University of Nebraska-Lincoln. Students were particularly interested in whether the water that they, their families, and their livestock drink was safe and they learned that many of the wells they tested were over the maximum contaminant level of 10 parts per million set by the EPA for nitrates. They said it was interesting to learn what was actually in their water and they enjoyed contributing to ongoing research to monitor groundwater quality.





# Know Your Well App

## EXPANDING OUR PROGRAM

The School of Computing's Senior Design Capstone project worked for a second year on Know Your Well's data collection app, available to schools and students currently involved in the program. After successfully setting up the design and layout of the web app the first year, this year's team focused on Single Sign On integration with the Nebraska Department of Education's Nebraska Cloud server, which allows for SSO access for all public schools in the state. It can be used both as a website, for classroom research and laboratory data reporting, and as an app on any mobile device, allowing for usage in the field. Additionally, this year's team accomplished photo integration, allowing for pictures to tell part of the story behind the analytical findings. A video tutorial, sign-on instructions, and link to the app can be found at <https://knowyourwell.unl.edu/know-your-well-app>.

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