



STATE HYGIENIC LABORATORY  
**Iowa's Environmental and  
Public Health Laboratory**  
[www.shl.uiowa.edu](http://www.shl.uiowa.edu)

## STATE HYGIENIC LABORATORY PRIVATE WELL PROGRAM

### *The Iowa Well Survey (IWS) Handbook*

V.2 Effective April 1, 2018

State Hygienic Laboratory – **Coralville**  
2490 Crosspark Road  
Coralville, IA 52241  
(319) 335-4500

State Hygienic Laboratory – **Ankeny**  
2220 S. Ankeny Blvd.  
Ankeny, IA 50023  
(515) 725-1600

State Hygienic Laboratory – **Lakeside**  
1838 Hwy 86  
Milford, IA 51351  
(712) 337-3669

## BACKGROUND

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The Iowa Well Survey (IWS) is an ongoing study by the State Hygienic Laboratory, and supported by partner agencies, intended to characterize the water quality in private wells in Iowa. The survey expands the knowledge of the concentration and distribution of existing and emerging contaminants that affect the health of Iowans consuming water from private wells.

The Iowa Well Survey complements two previous large-scale private well-water quality studies in Iowa. In 1988-89, the Iowa Statewide Rural Well Water Survey (SWRL) collected and analyzed 1,048 water samples from 686 sites. Analytes for SWRL included coliform bacteria, nitrite, nitrate, common ions, herbicides, and insecticides. The Iowa Statewide Rural Well Water Survey Phase 2 (SWRL2) followed from 2006-08. SWRL2 collected and analyzed samples from 473 sites. Analytes for SWRL2 included herbicides, insecticides, coliform bacteria, nitrite, nitrate, ammonia, chloride, perchlorate, orthophosphate, metals (including arsenic) and somatic coliphage (virus indicator).

## ELIGIBILITY & PARTICIPATION

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All Iowa county environmental and public health departments participating in the Grants-to-Counties Program are eligible to participate in the Iowa Well Survey. Counties are encouraged, but not required, to participate in this voluntary program. Enrollment will open prior to each biannual sampling season; however, the number of participants may be limited.

The Iowa Well Survey provides additional specified testing, free-of-charge, separate from the Grants-to-Counties Program testing menu as defined in the Iowa Administrative Code 641, Chapter 24.5(4). The State Hygienic Laboratory selects the additional test(s) prior to each sampling season based on persistent and emerging contaminants of interest that may pose a risk to human health.

## SITE SELECTION

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Participating county environmental and public health departments will select wells through their routine well monitoring program and as part of their normal sample collection for bacteria, nitrate, and arsenic.

For special projects that may fall under the Iowa Well Survey, SHL will coordinate with the county environmental and public health departments and other partners to select well sites.

## WELL WATER SAMPLING

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As with all Iowa Grants-to-Counties testing, trained specialists at the county environmental and public health department must collect the samples. The collector will follow guidelines and instructions for sample collection as provided by SHL. SHL will provide any on-site assistance needed by participating counties.

Collectors should select a representative sampling point, preferably an indoor faucet. If the home has a water treatment system (excluding water softener), collect one sample before the water treatment system and another sample at the point of use. Label the samples to differentiate pre and post treatment.

## SAMPLE INFORMATION

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**Sample Shipment:** Pre-paid return shipping labels for all samples are included with the sample bottle and shipping container.

**Sample Information:** Each sample bottle and accompanying collection form must note the collector's name and the date, time and location of collection (Appendix 1). Additional information about the well may be requested, including filtration, well depth, age of the well, and type of well. It is acceptable to submit an Iowa Department of Natural Resources Private Well Water Testing Background Information Form (Appendix 2), or alternately, a well site survey.

**Consent Forms:** An Iowa Well Survey "Well Owner Consent Form" (Appendix 3) must accompany each set of samples from a physical address. It is vital that the consent is completed or the sample may not be tested.

**Sample Storage:** Samples submitted as part of the Iowa Well Survey will be stored at the SHL Coralville facility but may be analyzed at any SHL location. These samples may be used in additional testing and future studies.

## LABORATORY TESTING

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Rush processing is not available and standard laboratory turn-around will be used for all samples in the Iowa Well Survey. Turn-around times may vary by individual analysis.

## RESULTS REPORTING

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The State Hygienic Laboratory will provide results to the county environmental and public health department. It is the responsibility of the county to notify the well owner of the test results. SHL will be available to respond to questions. Access to final test results are also available 24/7 via a password protected portal at the SHL website ([shl.uiowa.edu](http://shl.uiowa.edu)). Contact Michael Hayek at [michael-hayek@uiowa.edu](mailto:michael-hayek@uiowa.edu) or 319-335-4358 to arrange this service.

## DATA STORAGE AND MANAGEMENT

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SHL will consolidate the well testing data following each sampling season and provide a summary of the data to participating partners. No unique well identifiers will be included in these summary reports.

## PARTNERS

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The Iowa Well Survey is a partnership of the State Hygienic Laboratory and the following:

- Participating Iowa County Health Departments
- University of Iowa, Center for Health Effects from Environmental Contamination
- Iowa Department of Natural Resources
- Iowa Department of Public Health

## FOR FURTHER INFORMATION

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**Michael Schueller or Alyssa Mattson**

Private Well Program

State Hygienic Laboratory at the University of Iowa

Email: [shl-gtc@uiowa.edu](mailto:shl-gtc@uiowa.edu)

Phone: (319) 467-4503

Appendix 1: Example of SHL Collection Form

Order #: XXXXX	REPORT TO: 3200 ENVIRONMENTAL SPECIALIST COUNTY HEALTH DEPT ADDRESS, CITY, STATE, ZIP	BILL TO: 3200										
Pages in Order: X of X Containers in Order: X												
Requested Analyses/Tests												
IOWA WELL SURVEY (GTC) E. coli and coliform MPN, Nitrite as N, Nitrate as N, Total Arsenic in drinking water Neonicotinoid insecticides												
Complete or correct the following information												
<table style="width: 100%; border: none;"> <tr> <td style="width: 50%; border: none;">                     Collected Date: _____  <small>yyyy-mm-dd</small> </td> <td style="width: 50%; border: none;">                     Collected Time: _____  <small>24 hour format hh:mm</small> </td> </tr> <tr> <td style="border: none;">                     Client Reference: _____                 </td> <td style="border: none;">                     Collector: _____  <small>Print last, first name</small> </td> </tr> <tr> <td style="border: none;">                     Location: _____  <small>Kilobars sink, plasttap, etc.</small> </td> <td style="border: none;">                     Location City: _____                 </td> </tr> <tr> <td style="border: none;">                     Collector Phone: _____  <small>000/111-2222</small> </td> <td style="border: none;">                     Description: <u>private well water</u> </td> </tr> <tr> <td style="border: none;">                     Project Name: <u>gto ius</u>  <small>Laboratory approved projects only</small> </td> <td></td> </tr> </table>			Collected Date: _____ <small>yyyy-mm-dd</small>	Collected Time: _____ <small>24 hour format hh:mm</small>	Client Reference: _____	Collector: _____ <small>Print last, first name</small>	Location: _____ <small>Kilobars sink, plasttap, etc.</small>	Location City: _____	Collector Phone: _____ <small>000/111-2222</small>	Description: <u>private well water</u>	Project Name: <u>gto ius</u> <small>Laboratory approved projects only</small>	
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Casing Depth: _____ <small>feet</small>	Casing Diameter: _____ <small>inches</small>											
Year or Decade Constructed: _____	Type of Construction: _____ <small>Drilled, Drive, Boed, Augered, Dug etc.</small>											
Chain of Custody/Tracking Signatures												
<table style="width: 100%; border: none;"> <tr> <td style="width: 60%; border: none;">                     Relinquished By: _____                 </td> <td style="width: 40%; border: none;">                     Date/Time: _____  <small>year / mm / dd Military Time</small> </td> </tr> <tr> <td style="border: none;">                     SHL Sample Receiving Custodian: _____                 </td> <td style="border: none;">                     Date/Time: _____  <small>year / mm / dd Military Time</small> </td> </tr> <tr> <td style="border: none;">                     Relinquished By: _____                 </td> <td style="border: none;">                     Date/Time: _____  <small>year / mm / dd Military Time</small> </td> </tr> <tr> <td style="border: none;">                     SHL Sample Receiving Custodian: _____                 </td> <td style="border: none;">                     Date/Time: _____  <small>year / mm / dd Military Time</small> </td> </tr> </table>			Relinquished By: _____	Date/Time: _____ <small>year / mm / dd Military Time</small>	SHL Sample Receiving Custodian: _____	Date/Time: _____ <small>year / mm / dd Military Time</small>	Relinquished By: _____	Date/Time: _____ <small>year / mm / dd Military Time</small>	SHL Sample Receiving Custodian: _____	Date/Time: _____ <small>year / mm / dd Military Time</small>		
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SHL Sample Receiving Custodian: _____	Date/Time: _____ <small>year / mm / dd Military Time</small>											
For SHL Use Only – Please do not write below this line												
<table style="width: 100%; border: none;"> <tr> <td style="width: 60%; border: none;">                     Received By: _____                 </td> <td style="width: 40%; border: none;">                     pH: _____                 </td> </tr> <tr> <td style="border: none;">                     Evidence of Tampering: <input type="checkbox"/> Yes <input type="checkbox"/> No                 </td> <td style="border: none;">                     Evidence of Cooling: <input type="checkbox"/> Yes <input type="checkbox"/> No                 </td> </tr> <tr> <td style="border: none;">                     Date Printed: 2018-03-05                 </td> <td style="border: none;">                     Temperature ( Celsius): _____                 </td> </tr> <tr> <td style="border: none;">                     Bottles Received: _____                 </td> <td style="border: none;">                     Thermometer ID: _____                 </td> </tr> </table>			Received By: _____	pH: _____	Evidence of Tampering: <input type="checkbox"/> Yes <input type="checkbox"/> No	Evidence of Cooling: <input type="checkbox"/> Yes <input type="checkbox"/> No	Date Printed: 2018-03-05	Temperature ( Celsius): _____	Bottles Received: _____	Thermometer ID: _____		
Received By: _____	pH: _____											
Evidence of Tampering: <input type="checkbox"/> Yes <input type="checkbox"/> No	Evidence of Cooling: <input type="checkbox"/> Yes <input type="checkbox"/> No											
Date Printed: 2018-03-05	Temperature ( Celsius): _____											
Bottles Received: _____	Thermometer ID: _____											
FOR INTERNAL USE ONLY	FOR INTERNAL USE ONLY	FOR INTERNAL USE ONLY										

Environmental Sample Collection Form

State Hygienic Laboratory

Lakeside Laboratory  
 1535 Highway 86  
 Midwest, IA 51351-7267  
 Phone # 712-337-3669

Ashley Laboratory  
 2220 S. Ashley Blvd.  
 Ashley, IA 50203-5093  
 Phone # 515-725-1600  
<http://www.shl.iowa.gov>

U of I Research Park  
 2450 Campus Park Road  
 Coburn Hall, IA 52241-4721  
 Phone # 319-335-4500 or  
 800-421-4010



**Appendix 2: IDNR Private Well Water Testing Background Information Form**



**IOWA DEPARTMENT OF NATURAL RESOURCES  
PRIVATE WELL WATER TESTING  
BACKGROUND INFORMATION**

**1. Well User:** (contact person)

Name: \_\_\_\_\_ Phone: \_\_\_\_\_  
 Address: \_\_\_\_\_  
 City: \_\_\_\_\_ State: \_\_\_\_\_ Zip: \_\_\_\_\_

**2. Location of Well:**

\_\_\_\_\_ ¼ of, \_\_\_\_\_ ¼ of, \_\_\_\_\_ ¼ of, Section \_\_\_\_\_, T \_\_\_\_\_ N, R \_\_\_\_\_  East  West  
 County: \_\_\_\_\_ Longitude: \_\_\_\_\_ Latitude: \_\_\_\_\_

**3. Well Identification:**

a. Only well on property:  Yes  No (if no, fill in "b")  
 b. Identify well tested: \_\_\_\_\_

**4. Well Description:**

Well depth: \_\_\_\_\_ ft  
 Casing depth: \_\_\_\_\_ ft. Casing Material:  Steel  Plastic  Concrete  Clay  Brick  Stone  
 Casing diameter: \_\_\_\_\_ in.  
 Year or decade constructed: \_\_\_\_\_ Type of Construction:  Drilled  Driven  Bored  Augured  Dug  
 Years used by present user: \_\_\_\_\_

**5. Well Assessment:**

Is wellhead sealed?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown	<50' from septic tank?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown
Is wellhead covered?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown	<100' from absorption field?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown
Is wellhead in pit?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown	<100' from any livestock?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown
Is visible casing intact?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown	<100' from fuel tanks?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown
Is casing >1' above grade?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown	<300' from chemical storage?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown
Is cistern in use?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown	<100' from abandoned well?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown
Other adverse conditions?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown	Other potential contaminants?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown

Describe: \_\_\_\_\_ Describe: \_\_\_\_\_  
 > means "greater than" < means "less than"

6. List water treatment systems used: \_\_\_\_\_

7. Where was sample taken? \_\_\_\_\_  Before OR  After Treatment?

8. Mention any historical contamination of which the owners are aware:  
 \_\_\_\_\_

9. Form filled out by: \_\_\_\_\_ Date: \_\_\_\_\_

**10. Water Testing Record:**

Date Sampled:						
Sample Collector:						
Laboratory:						
Coliform: (present/absent)						
E. coli: (present/absent)						
Nitrate: (as N or NO <sub>3</sub> ?)						
Arsenic:						
Other Constituents?:						



**Appendix 3: Iowa Well Survey Well Owner Consent**



STATE HYGIENIC LABORATORY  
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 Public Health Laboratory  
 www.shl.uiowa.edu

Dear Private Well Owner,

The State Hygienic Laboratory (SHL) invites you to participate in the Iowa Well Survey, a study of various contaminants that may affect private drinking water wells lead to health risks. All laboratory tests associated with this study will be free of charge to the well owner.

During the spring of 2018, SHL will be sampling for the following contaminants:

- Bacteria (Total Coliform Bacteria, *E.coli*)
- Nitrate
- Arsenic
- Neonicotinoid insecticides

An environmental health specialist from your county will collect samples of your drinking water. The State Hygienic Laboratory will analyze the sample and report the results of this testing to your county environmental health department, who will notify you of the results.

We would greatly appreciate your participation in this study. If you have any questions, please contact us by phone at (319) 467-4503 or by email.

Sincerely,

Michael D. Schueller  
 Alyssa J. Mattson  
 Private Well Program – Iowa Well Survey  
 State Hygienic Laboratory  
[Shl-gtc@uiowa.edu](mailto:Shl-gtc@uiowa.edu)

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I, \_\_\_\_\_ agree/disagree (please circle) to participate in the above study and allow the researcher to use the results for publication. I understand that no personally identifiable information about me or the well will be included in any publication and the sample may be stored and used for additional research ~~at a later date~~.

Signature: \_\_\_\_\_ Date: \_\_\_\_\_

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