

# *Using an Online Evaluation Tool to Assess Management of Private Water Wells*



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# *Research Goals:*

- To learn more about the characteristics of private water systems along with the prevalence and causes of groundwater contamination so that education and recommendations about proper management practices can be provided to homeowners.
- To determine how effective voluntary versus regulatory management of private wells is in reducing exposure to risk.

# Methods

- Funding was obtained through the Pennsylvania Water Resources Research Center
- Subscription to online evaluation tool was obtained
  - no need to do the work on your own
  - cheap and easy
  - we used survey monkey – [www.surveymonkey.com](http://www.surveymonkey.com)
- Developed an online survey about well management
  - obtain permission to survey “human participants”
- Advertised the survey
  - data was needed statewide
  - advertising was done through Penn State Cooperative Extension and various media outlets.

# *Methods*

- Monitored and collected responses
  - advertise more in areas where survey responses are low
  - only 1 survey can be submitted per computer
  - determine timeline for survey collection
- Compared to data collected in field for quality control
- Analyzed survey results
- Made recommendations

# Example Online Survey Tool

SurveyMonkey.com - Powerful tool for creating web surveys. Online survey software made easy! - Windows Internet Explorer

http://www.surveymonkey.com/

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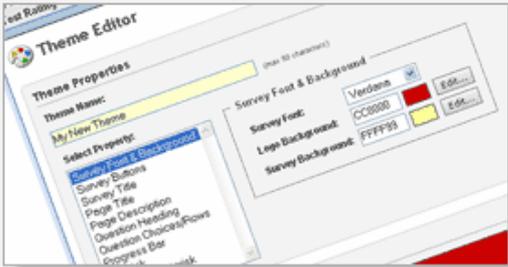
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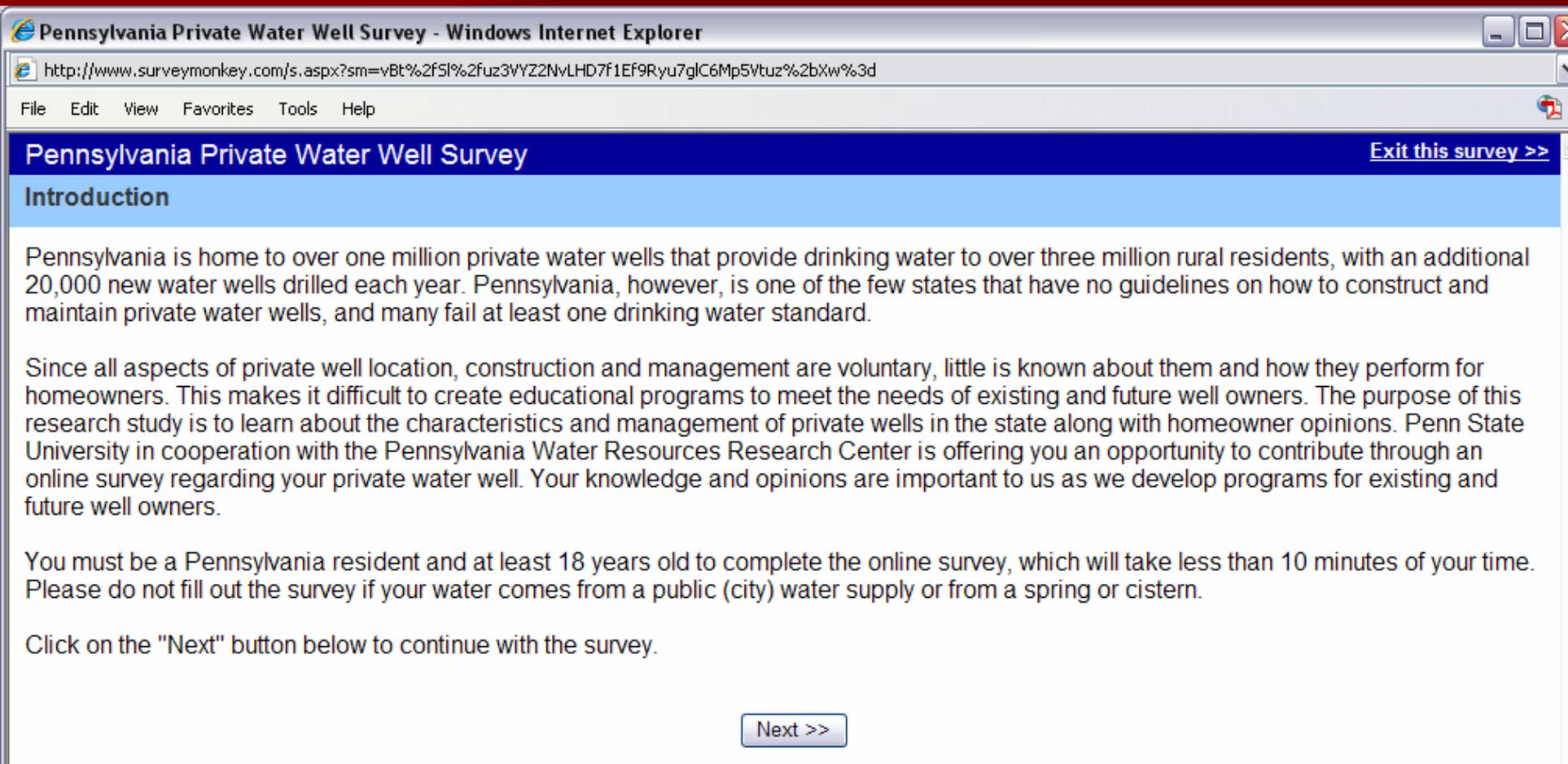


**Complete Creative Control**

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Done Internet 100%

# *The Survey – keep it simple!*



The image is a screenshot of a web browser window. The title bar reads "Pennsylvania Private Water Well Survey - Windows Internet Explorer". The address bar shows the URL: "http://www.surveymonkey.com/s.aspx?sm=vBt%2F5l%2fuz3WYZ2NvLHD7f1EF9Ryu7glC6Mp5Vtuz%2bXw%3d". The browser menu includes "File", "Edit", "View", "Favorites", "Tools", and "Help". The page content is titled "Pennsylvania Private Water Well Survey" with a blue header and a "Exit this survey >>" link. Below the header is a section titled "Introduction" in a light blue bar. The main text describes the survey's purpose and eligibility requirements. At the bottom, there is a "Next >>" button.

**Pennsylvania Private Water Well Survey** [Exit this survey >>](#)

## Introduction

Pennsylvania is home to over one million private water wells that provide drinking water to over three million rural residents, with an additional 20,000 new water wells drilled each year. Pennsylvania, however, is one of the few states that have no guidelines on how to construct and maintain private water wells, and many fail at least one drinking water standard.

Since all aspects of private well location, construction and management are voluntary, little is known about them and how they perform for homeowners. This makes it difficult to create educational programs to meet the needs of existing and future well owners. The purpose of this research study is to learn about the characteristics and management of private wells in the state along with homeowner opinions. Penn State University in cooperation with the Pennsylvania Water Resources Research Center is offering you an opportunity to contribute through an online survey regarding your private water well. Your knowledge and opinions are important to us as we develop programs for existing and future well owners.

You must be a Pennsylvania resident and at least 18 years old to complete the online survey, which will take less than 10 minutes of your time. Please do not fill out the survey if your water comes from a public (city) water supply or from a spring or cistern.

Click on the "Next" button below to continue with the survey.

[Next >>](#)

## Pennsylvania Private Water Well Survey

[Exit this survey >>](#)

### Well Characteristics

First, we would like to know some basic information about your well. Please answer as many of the following questions as possible.

**1. In what county of Pennsylvania is your private water well located? (choose from the list of counties)**

**2. What type of water well do you mostly use? (select one)**

- Drilled Well (rotary, percussion, driven, etc.)
- Hand Dug Well
- Unsure
- Other (please specify)

**3. Do you have a well completion report or well log from the driller that constructed your well? (the well log usually includes the rock type, well depth, type of well casing and other well characteristics)**

- Yes
- No
- Unsure

**4. Approximately what year was your water well drilled or dug? (leave blank if you are unsure)**

**5. Approximately how many feet deep is your well? (leave blank if you are unsure)**

Water Testing History

Next, we would like to learn more about water testing that you may have done on this well.

**11. How often have you had the water quality tested from your private well?**

- I have never had the well water tested (skip to question 13)
- I have had the water tested once
- I have had the water tested every few years
- I have had the water tested every year
- I have had the water tested more than once every year
- Unsure
- Other (please specify)

**12. Where did you have your water tested? (select all that apply)**

- PA Department of Environmental Protection (DEP) office
- A certified private water testing laboratory
- A water treatment company (Sears, Culligan, etc.)
- A local city water company
- Unsure
- Other (please specify)

# *Results of the Survey*

- 866 Surveys were collected between September 2006 and April 2007 (representing 63 of 67 PA counties)
- 91% of respondents had drilled wells
- 18% had their well completion report
- 4% had a well that was properly constructed
- 7% had their water tested on a regular basis
- 70% had some type of water treatment equipment
- Homeowner opinions were also collected



# *Quality Control*

Online survey results were compared to survey data collected by individual well owners...

- 91% of respondents had drilled wells - online
- 94% of respondents had drilled wells - field
- 18% had their well completion report - online
- 13% had their well completion report - field
- 15% had a well that was properly constructed - online
- 4% had a well that was properly constructed - field
- 7% had their water tested on a regular basis – online
- 4% had their water tested on a regular basis - field
- 70% had some type of water treatment equipment – online
- 55% had some type of water treatment equipment - field

# *Benefits of Using an Online Evaluation Tool*

- Increased the number of study participants
- Very cheap compared to collecting data personally
  - no travel required
  - subscription is inexpensive
- Very easy
  - no need to find participants
  - online tool is very user friendly & no training necessary
  - tool summarizes results for you

skipped question

3

## 2. What type of water well do you mostly use? (select one)

		Response Percent	Response Count
Drilled Well (rotary, percussion driven, etc.)		91.4%	785
Hand Dug Well		1.7%	15
Unsure		6.2%	53
view Other (please specify)		0.7%	6
<i>answered question</i>			859
<i>skipped question</i>			7

## 3. Do you have a well completion report or well log from the driller that constructed your well? (the well log usually includes the type, well depth, type of well casing and other well characteristics)

		Response Percent	Response Count
Yes		18.3%	156
No		67.5%	574
Unsure		14.2%	121
<i>answered question</i>			851
<i>skipped question</i>			15

## 4. Approximately what year was your water well drilled or dug? (leave blank if you are unsure)

# *Issues with Using an Online Evaluation Tool*

- Unsure of data quality (unless you have a field study for comparison)
- Can't collect all of the data that you would like
  - can't collect water quality data for comparison
  - some questions can be difficult to explain online
  - needs to be advertised properly for good response rate
  - in general, data distribution is out of your hands
  - some respondents don't answer every question



Current Folder: -- View All Surveys -- Manage Folders Title Search:  Search

Survey Title <a href="#">[sort]</a>	Created <a href="#">[sort]</a>	Modified <a href="#">[sort]</a>	Design	Collect	Analyze <a href="#">[sort]</a>	Clear	De
Water Resources Inservice Registration	Wed, 3/22/06 10:14 PM	4 days ago			20		
Online Pond Home Study Course Survey	Tue, 11/28/06 3:57 AM	5 days ago			7		
Mid-Atlantic Contact Information	Sun, 3/19/06 3:39 AM	5 days ago			0		
Mid-Atlantic MWON Application	Wed, 1/4/06 2:05 AM	5 days ago			0		
Contact Information	Wed, 9/28/05 4:13 AM	5 days ago			0		
Master Well Owner Accomplishment Report	Wed, 9/28/05 3:01 AM	5 days ago			0		
Water Resources Web Site Survey	Tue, 9/27/05 3:03 AM	10 days ago			2		
EPA Pond Survey	Thu, 1/24/08 11:56 AM	11 days ago			0		
Well Study Follow-Up Survey	Mon, 1/22/07 9:53 PM	13 days ago			20		
Online Home Water Study Course Survey	Fri, 1/4/08 10:56 AM	22 days ago			2		

## 1. Introduction

Please take a few minutes to fill out this six-question survey. Your answers will help us improve this web site for future users. Thank you!

### 1. How did you find this web site?

- Attended a Cooperative Extension program
- Heard about it from a county Extension educator
- Heard about it from a friend or family member
- Found it linked on another web site
- Found it using a web search (Google, etc.)
- Other (please specify)

### \* 2. How helpful was this web site to you?

- Very helpful
- Somewhat helpful
- Not helpful

### 3. What type of information were you seeking on this web site (choose all that apply)?

- How to properly construct or manage a private well, spring or cistern
- How to properly construct or manage a private pond
- Information on water conservation
- How to properly construct or manage a septic system
- Information about watershed education
- Information about weather, climate or drought
- Nutrient management information
- Information on Penn State water research
- Other information (please specify)



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