



HEI Research Report 233

Hydrocarbon Extraction and Risk to Groundwater in Pennsylvania: Part 2. An Analysis of Water Quality in the Oldest Hydrocarbon Basin in the United States

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Additional Materials 2: Penn State Groundwater Sampling Household Survey

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Penn State Groundwater Sampling Household Survey

1. When was your groundwater well drilled? (If you're uncertain, please leave blank)
2. Do you have a copy of your well drilling report?
 - a. Yes
 - b. No
 - c. If yes, can we please take a picture of it? We will not include identifying information in the picture.
3. How deep is your well?
4. Has your well ever run dry?
5. For which of the following activities do you use well water?
 - a. Drinking
 - b. Drinking, pets only
 - c. Cooking
 - d. Bathing
 - e. Farming
 - f. Other (describe)
6. What is your main source of drinking water?
 - a. Well
 - b. City
 - c. Bottled
 - d. Other (describe)
7. Why is well water NOT your primary source of drinking water?
8. Has water from your well ever had an unusual **appearance**?
 - a. Yes
 - b. No
9. If yes, how often has this occurred?
10. When did it first occur?
11. When did it last occur?
12. How long did it last?
 - a. A day or less
 - b. More than a day, but not more than a week
 - c. More than a week, but less than a month
 - d. More than one month
 - e. Don't know

13. Did this change prevent members of your household from drinking, cooking or otherwise using the water?
14. Has water from your well ever had an unusual smell?
- a. Yes
 - b. No
15. If yes, how often has this occurred?
16. When did it first occur?
17. When did it last occur?
18. How long did it last?
- a. A day or less
 - b. More than a day, but not more than a week
 - c. More than a week, but less than a month
 - d. More than one month
 - e. Don't know
19. Did this change prevent members of your household from drinking, cooking or otherwise using the water?
20. How often do you have your water tested?
- a. Never
 - b. Less than once a year
 - c. Once per year
 - d. More than once per year
21. When was your water last tested?
22. What were the results?
- a. Met all water quality standards
 - b. Did not meet water quality standards
 - c. Don't know
23. What, if anything, did you do if your water did not meet water quality standards?
24. May we take a picture of your water testing results? We will not include your identifying information in the picture.
25. Have you ever relied on bottled water?
- a. When?
 - b. Why?
 - c. For how long?

26. Do you have any filtration systems on your water? (Check all that apply)
- a. Under-the-sink, faucet-mounted, refrigerator dispenser, or countertop water filter
 - b. An in-line water treatment system that uses one or more of the following:
 - i. Reverse osmosis
 - ii. UV sterilization
 - iii. Water softener system
 - iv. Sediment filter
 - v. Other (describe)

27. For each filtration system:
- a. How frequently is maintenance on the system performed?
 - i. Never
 - ii. Less than once per year
 - iii. Once per year
 - iv. More than once per year

28. What other sources of water sources do you use at your home? (Check all that apply)
- a. Spring
 - b. Municipal/city water
 - c. Other (describe)

Home & Household Characteristics Questions

29. How many people currently live in your home?

30. For each resident:
- a. Age
 - b. Gender
 - c. Occupation
 - d. Location of occupation or school
 - e. Highest level of education completed

31. How long have you lived in this home?

32. When was your home built?

33. Do you own or rent your home?
- a. Own
 - b. Rent
 - c. Other (describe)

34. Which of the following best describes the home? (Check one)
- a. A one-family house detached from any other house
 - b. A one-family house attached to one or more houses (for example Row house/Town house)
 - c. A building with 10 or fewer apartments

- d. A building with more than 10 apartments
- e. Mobile home, Boat, RV, van, or other
- f. Other (describe)

35. How many bedrooms does your home have?

36. What is the primary fuel used to heat your home?

- a. No fuel used
- b. Natural gas from pipes serving the neighborhood
- c. Gas or propane tank
- d. Fuel oil
- e. Electricity
- f. Coal
- g. Solar energy
- h. Wood
- i. Other (describe)
- j. Don't know

37. Which of the following is used for your home's wastewater?

- a. Municipal sewer system (you pay a bill)
- b. Septic or other onsite wastewater treatment system (holding pool or cesspool on your property)
- c. Other offsite wastewater treatment system (Describe)
- d. Don't know

38. Are there any businesses on your property?

- a. Yes
- b. No
- c. If yes, describe.

39. Do you store any of the following at your home?

- a. Gasoline
- b. Diesel
- c. Pesticides
- d. Fertilizers

40. Has your house ever been tested for radon?

- a. Yes
- b. No
- c. If yes, when?
- d. If yes, what were the results?

41. How close is the nearest working farm to your home?

42. Do you grow any fruit or vegetables on your property?

- a. Yes

- b. No
43. Do you water your fruit or vegetable with untreated well water, or water from another well on the property (ie. a hand-dug well).
44. Do you raise any farm animals for food? For example, pigs, cows, chickens (meat or eggs).
- a. Yes
 - b. No
45. Were your farm animals fed untreated well water or crops grown on your property?
- a. yes.
 - b. no
46. Do you purchase produce or meat from local farms or farmer's markets (i.e., not from grocery stores)?
- a. Yes
 - b. No
47. What farm(s) to you purchase produce or meat from?
48. Are there any local 'swimming holes' at or near your property or close to an oil or gas wellpad?
- a. Yes, about how far from an oil or gas wellpad
 - b. No.
49. How close is the nearest oil or gas wellpad to your home?
50. How often do you see trucks transporting water and wastewater for oil and gas wells in your community?
51. How close is the nearest gas station to your home?
52. In which of the following groups would you place yourself?
- a. White
 - b. Black or African American
 - c. Hispanic/Latino
 - d. American Indian/Alaskan Native
 - e. Asian
 - f. Native Hawaiian or Pacific Islander
 - g. More than one race (specify)
 - h. Other (describe)

53. Which best describes your household income last year?

- a. < \$25,000
- b. \$25,000 - \$49,999
- c. \$50,000 - \$74,999
- d. \$75,000 - \$99,999
- e. \$100,000 - \$149,000
- f. \$150,000 - \$199,999
- g. \$200,000 or more
- h. No answer
- i. Don't know