

## ADDENDUM B

1. For what state, do your responses apply?

North Carolina

2. Please consider throughout the survey that (1) the interest is in identifying monitoring networks that are NOT targeted to known contaminated sites, e.g. Superfund sites; and (2) the term "regional" is meant to refer to monitoring networks that cover large, multi-county areas within a state. Given points 1 and 2, does your state have: (check all that apply)

There was a state-wide ground water quality monitoring network in the past, but it is no longer active

One or more regional (large, multi-county area within the state) ground water quality monitoring networks

3. Please select one from the following list. Then answer questions 4 through 25 based on the specific network you selected. If you are responsible for both a state-wide and regional ground water quality monitoring network and do not have time to take the survey twice to cover both, we ask that you complete the survey for the state-wide network.

Regional (large, multi-county area within the state) ground water quality monitoring network

4. Please indicate whether the existing state-wide/regional ground water quality monitoring network is INTENDED TO PROVIDE ground water quality data to answer the following questions: (check all that apply)

How effective are ground water permitting programs in protecting water quality?

What is the extent of ground water contamination?

What are the trends in ground water quality over time?

How/why does a specific ground water quality parameter change over time?

What is the current background (ambient) quality?

What is the age of ground water within an aquifer?

What is the ground water quality contribution to surface water, and vice versa?

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5. Please indicate whether the existing state-wide/regional ground water quality monitoring network COULD BE USED to answer the following questions: (check all that apply)

How effective are ground water permitting programs in protecting water quality?  
How effective are voluntary protection programs?  
How effective are protection programs in source water protection areas?  
What is the extent of ground water contamination?  
What are the trends in ground water quality over time?  
What are the effects of drought/climate change?  
How/why does a specific ground water quality parameter change over time?  
What is the current background (ambient) quality?  
What are the impacts to ground water quality due to over-pumping of aquifers?  
What is the age of ground water within an aquifer?  
What is the ground water quality contribution to surface water, and vice versa?  
What type(s) of uses (e.g. domestic, irrigation, livestock, industrial, etc.) is ground water suitable for?

6. Who manages the state-wide/regional ground water quality monitoring network? (check all that apply)

NCDENR Division of Water Quality

7. How is the state-wide/regional ground water quality monitoring network funded?

Mostly state and/or county and/or local government funds

8. Is the state-wide/regional ground water quality monitoring network designed based on: (check all that apply)

Watersheds

Physiography/geographic areas

9. What wells or other observation points are used for the state-wide/regional ground water quality monitoring network? (check all that apply)

Dedicated water quality monitoring wells  
Domestic wells and/or other private wells  
Springs  
Stream baseflow water quality measurements

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10. (NOTE: Questions 10-17 are designed to determine the number of wells or observation points in your network, the frequency of measurement, and the length of available historic record. Please respond with that in mind.) Responses for TOTAL WELLS OR OBSERVATION POINTS IN YOUR NETWORK:

**Total wells or observation points measured**

97

**Total wells or observation points with at least 5 years of measurements**

50

11. Responses for WELLS OR OBSERVATION POINTS MEASURED AT LEAST ONCE PER YEAR:

**Total wells or observation points measured**

97

**Total wells or observation points measured with at least 5 years of measurements**

50

12. Responses for WELLS OR OBSERVATIONS POINTS MEASURED AT LEAST TWICE PER YEAR (SEMI-ANNUAL):

**Total wells or observations points measured**

45

**Total wells or observation points with at least 5 years of measurements**

30

13. Responses for WELLS OR OBSERVATION POINTS MEASURED AT LEAST 4 TIMES PER YEAR (QUARTERLY):

**Total wells or observation points measured**

12

**Total wells or observation points with at least 5 years of measurements**

0

14. Responses for WELLS OR OBSERVATION POINTS MEASURED AT LEAST MONTHLY:

**Total wells or observation points measured**

0

**Total wells or observation points with at least 5 years of measurements**

0

15. Responses for WELLS OR OBSERVATION POINTS MESURED AT LEAST WEEKLY:

**Total wells or observation points measured**

0

**Total wells or observation points with at least 5 years of measurements**

0

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16. Responses for WELLS OR OBSERVATION POINTS MEASURED AT LEAST DAILY (INSTRUMENTED):
<b>Total wells or observations points measured</b> 4
<b>Total wells or observation points with at least 5 years of measurements</b> 0
17. Responses for WELLS OR OBSERVATION POINTS MEASURED AT LEAST DAILY, AND AVAILABLE IN "REAL TIME":
<b>Total wells or observation points measured</b> 4
<b>Total wells with at least 5 years of measurements</b> 0
18. What analytes are included in the state-wide/regional ground water quality monitoring network? (check all that apply)
Basic field and unstable parameters (e.g. pH, temperature, conductivity, DO) Major cations and anions (e.g. Ca, Mg, NA, K, SO <sub>4</sub> , Cl, HCO <sub>3</sub> + CO <sub>3</sub> ) Minor and trace metals (e.g. Fe, Mn, Ni, Cu) Nutrients (e.g. nitrate, phosphate, etc.) Pesticides and herbicides (e.g. atrazine, metolachlor) Organic chemicals (e.g. benzene, vinyl chloride)
19. Who collects ground water quality data for the state-wide/regional ground water quality monitoring network? (check all that apply)
State agency employees
USGS staff
University researchers

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20. What information is typically available for wells or observation points in the state-wide/regional ground water quality monitoring network? (check all that apply)

Well number/name

County code

Latitude/Longitude

Owner

Driller

Land surface elevation

SOP or protocols for sampling

Date drilled

Land use in the area

Weather/climate at time of sampling

Well type

Well depth

Sampled using pump

Sampled using bailer

Water level available

Well log available

Construction method

Completion method

Casing material

Screen material

Depth of open or screened interval

21. The written Standard Operating Procedures (SOP's) used for FIELD DATA COLLECTION for the state-wide/regional ground water quality monitoring network were developed by: (check all that apply)

State government

U.S. Geological Survey

22. The written Standard Operating Procedures (SOP's) used for DATA MANAGEMENT AND STORAGE for the state-wide/regional ground water quality monitoring network were developed by: (check all that apply)

State government

23. Are the data collected for the state-wide/regional ground water quality monitoring network routinely entered/maintained in a computer data base?

Some

24. Are the data available on a website accessible to the public?

c. Data for some wells are available on the Internet

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25. If you are NOT the contact person for additional information on the state-wide/regional ground water quality monitoring network, please provide his/her contact information below.

**Name**

Evan Kane

**Agency**

NCDENR Division of Water Quality

**Phone**

919-715-6182

**Email**

evan.kane@ncmail.net

26. Contact information for the person completing this survey.

**Name**

Rick Bolich

**Agency**

NCDENR Division of Water Quality

**Address**

2728 Capital Blvd.

**City**

Raleigh

**State**

NC

**Zip**

27604

**Phone**

919-715-6180

**Email**

rick.bolich@ncmail.net

27. Are you aware of other individuals who might be able to provide information on other ground water quality monitoring programs in your state, either state-wide or regional? If so, please provide name and contact information.

**Name**

Melinda Chapman

**Agency**

USGS Water Resources Division

**Phone**

919-571-4047

**Email**

mjchap@usgs.gov

28. Please share any additional comments on state-wide or regional ground water quality monitoring networks in your state?