

This fact brochure provides answers to some basic questions that may be asked by private and/or public water supply owners regarding pre-drill water supply sampling programs conducted in conjunction with planned oil and gas drilling operations. It is offered for use as a reference document to serve as a tool for continuous improvement in our communications and stewardship with the public.

Pre-drill water supply sampling and surveys are recommended practices of the Marcellus Shale Coalition. They also serve to address and complement regulatory requirements.

Guiding Principles

We, the members of the Marcellus Shale Coalition, embrace and operate by the following guiding principles:

- We provide the safest possible workplace for our employees, with our contractors, and in the communities in which we operate;
- We implement state-of-the-art environmental protection across our operations;
- We continuously improve our practices and seek transparency in our operations;
- We strive to attract and retain a talented and engaged local workforce;
- We are committed to being responsible members of the communities in which we work;
- We encourage spirited public dialogue and fact-based education about responsible shale gas development; and
- We conduct our business in a manner that will provide sustainable and broad-based economic and energy-security benefits for all.

We recognize that to succeed in business, we not only embrace these principles, we live by them each and every day. This will be our legacy.

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400 Mosites Way • Suite 101 • Pittsburgh, PA 15205
412.706.5160

www.MarcellusCoalition.org



Pre-Drill Water Supply Sampling Facts



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1. What is pre-drill water supply sampling?

Pre-drill water supply sampling is the collection of water quality data for a given area prior to an oil and gas operator's drilling activities for development of oil and gas resources. This service is provided at no cost to the property owner.

2. Why is it important to perform pre-drill water supply sampling?

Pre-drill water supply sampling provides important information to water supply owners on their water quality. Water supply owners are strongly encouraged to participate in the program. The sampling provides a snapshot of water quality to establish baseline conditions prior to any oil or gas drilling related activities.

3. What happens if I refuse sampling?

If a water supply owner refuses access to conduct the water supply survey or sampling, the oil and gas operator will send an acknowledgement to the water supply owner confirming that access was refused.

4. What will be included in the water supply survey?

A Water Supply Survey form will request information regarding water sources on your property or that you use (such as potable wells, springs, streams, ponds, cisterns, etc.) and will request permission to sample them. Once you return the survey form, you will be contacted by the oil and gas operator's representative to schedule an appointment to collect samples of your water.

5. What's my role?

You will be requested to provide basic contact information (e.g. name, address, phone number, etc.) and assistance in identifying water sources on your property and their use. You are also responsible for providing safe access (dogs, livestock, etc.) for the sampling technician to collect samples.

6. Who will collect the water samples?

Independent, third-party sampling personnel contracted by the oil and gas operator or designee will collect the samples.

7. What water sources will be included?

Potential water supplies that are within a certain radius of the oil and gas development activities may be sampled. Some examples of water supplies that may be evaluated include: wells, springs, and ponds used for domestic or agricultural purposes. An oil and gas operator may choose to collect additional samples.

8. What water quality tests will be performed?

An independent laboratory accredited by the appropriate regulatory agency will analyze the samples using an operator's specified list of parameters. A typical list of parameters that may be analyzed as part of a pre-drill water supply sampling program includes:

Alkalinity	Total Chromium
Oil & Grease	Total Arsenic
pH	Total Barium
Specific Conductance	Total Lead
Total Dissolved Solids	Total Selenium
Total Suspended Solids	Total Strontium
Chloride	Total Calcium
Sulfate	Total Iron
Total Hardness	Total Magnesium
MBAS (Methylene Blue Activated Substances; surfactants / foaming agents)	Total Manganese
Benzene, Toluene, Ethylbenzene, Xylenes (BTEX)	Total Potassium
Dissolved Methane	Total Sodium
Dissolved Ethane	E. Coli
Dissolved Propane	Total Coliform
Nitrate as Nitrogen	Turbidity

This program includes the basic PADEP list of recommended oil and gas parameters, which can be found at

<http://www.elibrary.dep.state.pa.us/dsweb/Get/Document-91717/8000-FS-DEP4300.pdf>

9. Why this list of parameters?

The list of analytical parameters includes both typical indicators of water quality as well as potential indicators of drilling activity. In other words, the data will not only indicate general pre-drilling water quality, but it will also set a baseline for a number of selected substances that are typically associated with drilling and hydraulic fracturing. An oil and gas operator may also choose to modify parameter lists based on operation-specific knowledge.

10. Do I get a copy of the water quality test results?

Yes, the oil and gas operator or their designee will mail or hand-deliver the test results to you.

11. How do I interpret the test results?

See the "Tips on Understanding Your Water Test Results" fact brochure for help with interpreting the test results.

12. How do I know I can trust these results?

Only independent properly trained technicians and accredited laboratories will be employed for collecting and analyzing samples.

13. Who should be contacted with questions?

If you have questions related to your testing results, you may contact the oil and gas operator or call the state regulatory authority office for assistance in interpreting the analytical results. In addition, see the fact brochure "Tips on Understanding Your Water Test Results" for a listing of general and state-specific references.

