

## Recommended Basic Oil and Gas Pre-Drill Parameters

The Pennsylvania Department of Environmental Protection (DEP) has developed the following list of parameters that are suggested for homeowners who wish to independently have their private water supply well tested. The following list does not represent an exhaustive list of testing and homeowners may wish to have their water supply tested for a more extensive list of parameters. Additionally, while it is not recommended, if a homeowner wishes to test for less than those listed, the minimum parameters that should be analyzed for are printed in bold and denoted with an asterisk in the table below. It is recommended that homeowners test their water prior to well site drilling and earth disturbance activity. To obtain valid results, samples must be collected by a qualified third party. Homeowners may also wish to discuss the option of having the headspace of their private well tested for the presence of methane gas at the time of sampling. Finally, all laboratory analyses must be conducted by an independent Pennsylvania-accredited laboratory in order to be considered valid. Homeowners can sign up for DEP's eNotice system to receive notice of well permit applications DEP has received for wells in the area they choose. The website address is: [www.ahs.dep.pa.gov/eNOTICEWeb](http://www.ahs.dep.pa.gov/eNOTICEWeb).

<i>Analyte (Inorganic)</i>
<b>Alkalinity*</b>
<b>Chloride*</b>
Conductivity
Hardness
Bromide
<b>pH*</b>
Sulfate**
<b>Total Dissolved Solids*</b>
<b>Turbidity*</b>
Total Suspended Solids

<i>Analyte (Trace Metal)</i>
<b>Barium*</b>
<b>Calcium*</b>
<b>Iron*</b>
Magnesium
<b>Manganese*</b>
Potassium
<b>Sodium*</b>
Strontium
Arsenic
Zinc
Aluminum
Lithium
Copper
Vanadium
Boron
Chromium
Selenium

<i>Analyte (Organic)</i>
<b>Methane*</b>
<b>Ethane*</b>
<b>Propane*</b>
Ethylene Glycol
<sup>1</sup> Total Petroleum Hydrocarbons***
<sup>2</sup> VOCs/(BTEX)***

<i><sup>3</sup>Additional Suggested Testing</i>
Total Coliform Bacteria

<sup>1</sup> Recommended as a preliminary screening test. If test shows a detection for Total Petroleum Hydrocarbons, an environmental professional should be consulted and additional tests considered to identify the specific hydrocarbon source responsible for the water supply impacts. Please note there are many sources of hydrocarbons not related to oil and gas production.

<sup>2</sup> Due to the lower detection limit associated with the test method, volatile organic compounds (VOC)/benzene, toluene, ethylbenzene, and xylene (BTEX) testing may provide a more sensitive method for detecting hydrocarbon impacts.

<sup>3</sup> While not related to drilling activities, Total Coliform Bacteria testing is suggested due to health concerns and as a way to assess overall drinking water quality.

Note - \*As a minimum, a homeowner wishing to have their private water supply well tested should analyze for these parameters. \*\*Consider where coal formations are present. \*\*\*Consider in western Pennsylvania's oil-producing regions.

