

Recommended Oil and Gas Pre-Drill Parameters





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The Pennsylvania Department of Environmental Protection (DEP) has developed the following list of parameters that are suggested for homeowners who want to have their private water supply well tested independently. The following is not an exhaustive list of available testing, and homeowners may want to have their water supply tested more extensively. Additionally, while it is not recommended, if a homeowner wants to test for less than the full recommendations, the minimum parameters are printed in bold in the table below.

It is recommended that homeowners test their water before any well site drilling and earth disturbance activity. To obtain valid results, samples must be collected by a qualified third party. Homeowners may also want 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, homeowners should use an independent, Mississippi-accredited laboratory for valid results.

Analyte (Inorganic)	Analyte (Trace Metal)	Analyte (Organic)	
Alkalinity ¹	Barium ¹	Methane ¹	<p>¹At a minimum, homeowners should have their private water supply well tested for the parameters listed in bold.</p> <p>²Consider the presence of coal formations and oil-producing regions.</p> <p>³Recommended 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.</p> <p>⁴Due 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.</p> <p>⁵While 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.</p>
Chloride ¹	Calcium ¹	Ethane ¹	
Conductivity	Iron ¹	Propane ¹	
Hardness	Magnesium	Ethylene Glycol	
Bromide	Manganese ¹	Total Petroleum Hydrocarbons ³	
pH ¹	Potassium	VOCs/(BTEX) ⁴	
Sulfate ²	Sodium ¹	Additional Suggested Testing	
Total Dissolved Solids ¹	Strontium	Total Coliform Bacteria ⁵	
Turbidity ¹	Arsenic		
Total Suspended Solids	Zinc		
	Aluminum		
	Lithium		
	Copper		
	Vanadium		
	Boron		
	Chromium		
	Selenium		

Laboratory Testing of Drinking Water in Proximity to Oil and Gas Development

There are recommended practices, testing, and maintenance for private drinking water wells that can be performed by a homeowner. For more information on regulations, applications, and forms, visit the Mississippi Department of Environmental Quality (MDEQ) online at <https://www.mdeq.ms.gov/water/water-availability-and-use/regulations-applications-and-forms/> and the Mississippi State Department of Health–Division of Onsite Waste Water for Private Water Wells at https://msdh.ms.gov/msdhsite/_static/30,0,76,762.html.

Finding a Laboratory

1. Go to https://msdh.ms.gov/msdhsite/_static/14,0,188.html and look for the Laboratory Service Areas ribbon. Underneath will be Environmental Services, and then Environmental Laboratory Certification Program. Once on that page, scroll down until you see Participating In-State Labs, and click there to find a laboratory accredited to perform these tests.
2. Contact a local laboratory and ask if it is accredited to perform the above testing or if it can refer you to a laboratory that is accredited.
3. Contact the MSDH Laboratory Accreditation Program via telephone at (601) 576-7582.

Before Sending Samples

1. Inform the chosen laboratory that the homeowner wants to have well water tested for oil and gas pre-drill parameters.
2. Ask the laboratory if it is accredited to perform the requested testing. If the laboratory is not, ask if it will subcontract to an accredited laboratory.
3. Ask the laboratory if it provides sample-collection services. MDEQ recommends that a qualified third party (a consultant or the laboratory) collect and transport the sample for testing.
4. Instruct the laboratory to perform the testing and reporting of the samples in accordance with all accreditation requirements (relating to Environmental Laboratory Accreditation Regulations).

Please contact MDEQ for information about well permits or to report complaints about wells.





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