

1 **15A NCAC 05H .0XX1 BASELINE AND SUBSEQUENT TESTING REQUIREMENTS**

2 This Section establishes ~~the general and specific~~ requirements for the pre-drilling testing of water supplies, for the  
3 testing of water supplies after production has commenced, and for the reporting of data collected from the testing,  
4 ~~and for air quality testing~~ where drilling operations are proposed to occur. ~~The provisions of this Rule shall apply to~~  
5 ~~all new oil and gas wells for which a permit is issued on or after the effective date of this Rule and in accordance~~  
6 ~~with § 113-391.~~

**Comment [RC1]:** Can we remove the reference to air quality in Section .0XX1?

7  
8 **15A NCAC 05H .0XX2 WATER SUPPLY TESTING**

9 (a) A developer or operator shall provide written notice to all surface owners or owners of a water supply, as  
10 defined in §113-389, ~~within the presumptive liability distance established pursuant to §113-420(a) and 113-421(a).~~

**Comment [AP2]:** Statute says: "oil or gas developer or operator" FLAG: Should this be permittee? Recommendation: NO, but should flag for consistency.

11 ~~The~~ written notice shall include the following:

**Comment [AP3]:** Replace with actual distance. "within 5,000 feet of a wellhead that is part of the oil or gas developer's or operator's activities."

12 (1) ~~A statement of t~~he developer's or operator's intent to perform testing of water supplies prior to  
13 drilling an oil or gas well;

**Comment [AP4]:** Is the intent to require notice be given for subsequent testing? Or is this just pre-drilling?

14 (2) ~~A statement explaining that if the surface owner or owner of the water supply refuses the~~  
15 ~~developer or operator access to conduct pre-drilling testing of the water supply, then the developer~~  
16 ~~or operator may rebut the presumption of liability established by~~ ~~The developer or operator may~~  
17 ~~rebut the presumption established pursuant to §113-421(a) if the surface owner or owner of the~~  
18 ~~water supply refuses the developer or operator or a representative of same access to conduct pre-~~  
19 ~~drilling testing of a water supply;~~ and

**Comment [AP5]:** NOT for Rules: But shouldn't this include (1) The identity of the operator or developer making the request (2) the nature of the proposed action (an explanation of who is to perform the test and what they are testing for) (3) the timing and duration of the proposed tests, e.g., access for one time? Multiple times?

20 (3) The name, address, and telephone number of the Department, to which the surface owner or owner  
21 of the water supply may respond.

**Comment [AP6]:** Definition needed?

22 (b) A developer or operator shall provide ~~written notice~~ to the Department ~~when refusal to test a water supply~~  
23 ~~occurs if a surface owner or water supply owner refuses to allow access to conduct pre-drilling testing.~~ The written  
24 notice must include the following:

**Comment [AP7]:** In what time frame?

25 (1) The name, address, and telephone number of the developer or operator;

26 (2) ~~A statement of intent to~~ ~~The desire to~~ conduct pre-drilling testing of the water supply;

**Comment [AP8]:** Could this be the same as providing a copy of the written notice

27 (3) The name of the person or firm who requested and was refused access to conduct the testing, the  
28 date of the request, and a copy of all documentation ~~including that~~ showing the request for access  
29 was denied; and

30 (4) The name, address, and telephone number of the surface owner or owner of the water supply.

31 (c) Any surface owner or owner of a water supply who suspects contamination as a result of the drilling, alteration or  
32 operation of an oil or gas well may notify the Department and request that an investigation be conducted.

33 (1) The developer or operator at the request of the Department shall conduct a test of the water supply  
34 and provide the analytical results to the Department; and

1 (2) The Department shall require the developer or operator to replace a water supply pursuant to §113-  
2 421(a4) if the investigation and analytical results indicate that the water supply is contaminated due  
3 to the activities of the developer or operator.

4 (d) All water supplies located within the presumptive liability distance, established pursuant to §113-421(a), of the  
5 proposed oil or gas well shall be tested prior to initial drilling activities as well as and after production has  
6 commenced.

7 (1) Initial water supply testing shall be conducted no earlier than 12 months but no later than 30 days  
8 prior to commencement of drilling activities to establish a baseline;

9 (2) Subsequent water supply testing shall be conducted at all initial sample locations between 6 and  
10 12 months, and between 18 and 24 months after completion of installation of all permitted [will  
11 we put a time limit on this being complete so many days after permitting? Concerned operator  
12 could use this to delay subsequent testing by saying not all wells in, they plan more] oil or gas  
13 wells at a well pad;

14 (3) When multiple wells are permitted and constructed at a well pad, baseline testing shall be  
15 completed prior to drilling the initial oil or gas well. The analytical results conducted for the  
16 initial well will shall serve as the baseline for all future wells drilled at the same well pad. [isn't  
17 this superfluous? I would move next section up to para 2].

18 (i) Additional testing shall be completed every two years, in accordance with Paragraph (g)  
19 of this Rule, if all oil or gas well construction is not completed within 4 years of the  
20 installation of the initial oil or gas well.

21 (4) Water supply testing required hereunder shall be conducted in accordance with the U.S.  
22 Environmental Protection Agency (EPA) Region IV Science and Ecosystem Support Division  
23 (SESD) "Operating Procedure for Groundwater Sampling," document number SESDPROC-301-  
24 R3, and "Operating Procedure for Surface Water Sampling," document number SESDPROC-201-  
25 R3, and the U.S. Geological Survey (USGS) "National Field Manual for the Collection of Water-  
26 Quality Data," Book 9, Handbooks for Water-Resources Investigations, which are incorporated by  
27 reference, including subsequent amendments and editions. These documents, published by the  
28 U.S. EPA and USGS, may be obtained online at no charge at  
29 <http://www.epa.gov/region4/sesd/fbqstp/Groundwater-Sampling.pdf>, and  
30 <http://www.epa.gov/region4/sesd/fbqstp/Surfacewater-Sampling.pdf>, and  
31 <http://water.usgs.gov/owq/FieldManual/> or by mail at U.S. EPA, Region 4, Sam Nunn Atlanta  
32 Federal Center, 61 Forsyth Street SW, Atlanta, GA 30303 and Office of Water Quality, USGS,  
33 12201 Sunrise Valley Drive, Mail Stop 412, Reston, VA 20192 respectively.

34 (5) If a developer or operator drills an oil or gas well but does not install production casing and has  
35 abandoned the well in accordance with the plugging and abandonment requirements outlined in

**Comment [AP9]:** This section is out of place. Recommend removing from the section and placing in own rule.

**Comment [AP10]:** Change to distance required by statute, i.e., "within 5,000 feet of the wellhead that is part of the oil or gas operator's activities."

**Comment [CM11]:** See NCGS 113-423(f)

**Comment [AP12]:** Consistent wording. Use "baseline" or "initial" Recommend "initial"

**Comment [AP13]:** FLAG: Lack of clarity

1 15A NCAC 05H .0XX17, subsequent testing pursuant to Paragraph (g) of this Rule is not  
2 required; and

- 3 (6) The Department may require additional testing if the most recent data collected show an increase  
4 in concentration from the previous data for any water supply within the presumptive liability  
5 distance established pursuant to §113-421(a).

**Comment [AP14]:** Change to 5,000 feet of

6 (e) ~~To be adequate for use in rebutting the presumption that arises pursuant to §113-421(a)~~ Any analytical  
7 determinations required hereunder shall be made by a laboratory certified in accordance with 15A NCAC 2H .0800  
8 and pursuant to laboratory analytical procedures that comply with 15A NCAC 02L .0112 and 15A NCAC 02B  
9 .0103.

**Comment [AP15]:** REWRITE: "All sample analysis required by this Rule shall"

10 (f) The baseline samples collected in accordance with ~~15A NCAC 05H .0XX2(d)(1)~~ this Rule shall be analyzed for  
11 pH, specific conductance, total dissolved solids (TDS), turbidity, alkalinity, calcium, chloride, magnesium,  
12 potassium, fluoride, sodium, sulfate, arsenic, barium, boron, bromide, chromium, iron, manganese, selenium,  
13 strontium, lithium, lead, zinc, uranium, isotopic radium (<sup>226</sup>Ra and <sup>228</sup>Ra), isotopic strontium (<sup>87</sup>Sr and <sup>86</sup>Sr),  
14 trihalomethanes, benzene, toluene, ethyl benzene, xylenes (BTEX), diesel range organics (DRO), gasoline range  
15 organics (GRO), total petroleum hydrocarbons (TPH), polycyclic aromatic hydrocarbons (PAH) (including  
16 benzo(a)pyrene), and dissolved methane, propane, and ethane.

**Comment [AP16]:** Use either "initial" or "baseline" Recommend "initial" to parallel "subsequent."

17 (g) The first series of subsequent samples collected in accordance with 15A NCAC 05H .0XX2(d)(2) shall include  
18 all parameters listed in paragraph (f) of this section.

19 (h) If the results from the first series of subsequent sampling and testing, listed in paragraph (f) of this section, did  
20 not exceed the permissible concentrations outlined in 15A NCAC 02L .0202 and 15A NCAC 02B .0200 then the  
21 developer or operator may sample and test for pH, specific conductance, TDS, chloride, sodium, divalent cations,  
22 and dissolved methane, propane, ethane to complete the second series of subsequent sampling and testing in  
23 accordance with 15A NCAC 05H .0XX2(d)(2).

**Comment [AP17]:** Possible contradiction with (i)?

24 (i) If there is an increase in the concentration or the occurrence of any analytes set forth in Paragraph (h) the well  
25 operator shall test for those analytes set forth in Paragraph (g) of this Rule.

**Comment [AP18]:** (f)

26 (j) If testing conducted ~~hereunder pursuant to this Rule~~ reveals a concentration of dissolved methane greater than  
27 1.0 milligram per liter (mg/l), then a gas compositional analysis and stable isotope analysis of the methane (carbon  
28 and hydrogen – <sup>12</sup>C, <sup>13</sup>C, <sup>1</sup>H and <sup>2</sup>H) to determine the gas type shall be conducted, the results of which shall be  
29 reported in accordance with 15A NCAC 05H .0XX4.

30 (k) If the developer or operator uses a technology that the Department has approved as effective in tracing hydraulic  
31 fracturing fluid back to the oil or gas well where the fluid was injected, testing for the tracer may substitute for the  
32 subsequent testing required under paragraph (h) except that the subsequent testing shall also include testing for  
33 dissolved methane, ethane, and propane. If the subsequent testing detects the presence of the tracer substance in the  
34 water supply, the developer or operator shall conduct tests for all of the parameters listed in paragraph (f) of this  
35 section and shall carry out subsequent testing as provided in paragraphs (h) and (i). Tracer technology may be  
36 approved only if the technology is effective in tracing hydraulic fracturing fluid back to the well where the fluid was

1 injected and can be used without chemical or radiological impacts to groundwater supplies or other adverse impacts  
2 to human health or the environment.

#### 3 4 **15A NCAC 05H .0XX4 REPORTING OF TEST RESULTS**

5 (a) ~~To be eligible to rebut the presumption that arises pursuant to §113-421(a) by relying upon the option set forth~~  
6 ~~in §113-421(a)(1)a,~~ An oil or gas developer shall provide a water supply testing report ~~related to the testing of the~~  
7 ~~water supply~~ to the Department, local health department, surface owner(s), and owner(s) of the water supply within  
8 30 business days of receipt of analytical determinations required ~~hereunder in this Section~~. The report shall be sealed  
9 by either a licensed geologist or professional engineer and shall include the following information:

- 10 (1) The surveyed location of the water supply ~~as well as~~  
11 (2) name, address, and telephone number of the surface owner or owner of the water supply.
- 12 (2) Identification of the certified laboratory at which analyses ~~required hereunder are~~ required by this  
13 Section were conducted; the date(s) on which the analyses were conducted, and identification of  
14 the technical personnel who conducted such analyses.
- 15 (3) A description of where and how the sample was collected and the name of the person who  
16 collected the sample.
- 17 (4) Field observations to include odor, water color, sediment, bubbles, and effervescence.
- 18 (5) A description of the type and age, if known, of the water supply, and water supply treatment, if  
19 any.
- 20 (6) The name of the well operator, name and number of the oil or gas well, and API number of the oil  
21 or gas well.
- 22 (7) The complete results of the ~~required analysis~~ analyses required hereunder, in hard copy as well as  
23 in pdf, which shall clearly indicate any exceedences of applicable Maximum Contaminant Levels  
24 ("MCLs") for public drinking water, as set forth in 15A NCAC 18C.

#### 25 26 **15A NCAC 05H .0XX5 RECORD KEEPING AND REPORTING**

27 (a) The Department shall maintain baseline and subsequent analytical data and reports required hereunder, which  
28 will be available to the public through the Department's website.

**Comment [AP19]:** Deleted reference to GS b/c we do not have the authority to add a eligibility criteria to "rebut the presumption"

**Comment [AP20]:** Is this a latitude and longitude? Or other description?

**Comment [CM21]:** Treatment that occurs before or after the point of sample collection? Ryan Channell - As outlined in the referenced standard operating procedures from the EPA, sample collection must be before any type of water system treatment system. The Department would like to know if a treatment system is in use at the water supply to manage potential water quality issues and investigations.

**Comment [AP22]:** Consistent with other rules, but not consistent with this rule.