

15A NCAC 05H .1613 WELL STIMULATION REQUIREMENTS

(a) The applicant or permittee shall indicate on the Form 2 – Oil or Gas Well Permit Application the intent to perform well stimulation operations. If well stimulation was not approved as part of the initial application, the permittee desiring to perform such operations shall submit for approval the information required by this Rule via email, fax or mail to the Department for review at least 30 calendar days prior to commencement of planned well stimulation operations.

(b) The production casing shall withstand the maximum anticipated treating pressure of the proposed well stimulation operations. The maximum anticipated treating pressure shall not exceed 80 percent of the minimum internal yield pressure for such production casing.

(c) Non-cemented portions of the oil or gas well shall be tested prior to well stimulation operations to ensure that the wellbore can meet one of the following conditions:

- (1) 70 percent of the lowest activating pressure for pressure actuated sleeve completions; or
- (2) 70 percent of formation integrity for open-hole completions, as determined by a formation integrity test (FIT).

(d) The permittee shall notify the Department via telephone or email a minimum of 48 hours prior to the commencement of all well stimulation operations at the oil or gas well. The contact information is set forth in Rule .0201 of this Subchapter. The permittee shall submit Form 11 – Required Notifications to the Department, by mail, email, or fax within five calendar days of the telephone or email notice and shall include the following information:

- (1) the permittee's name, address, telephone number, fax number, and email address;
- (2) the county and nearest city or town where the oil or gas well is located;
- (3) the property street address, or nearest address to the ingress and egress point leading from a public road to the well pad;
- (4) the API number, the lease name, and the oil or gas well name and number; and
- (5) the scheduled date and approximate time for the well stimulation operations.

(e) The permittee shall monitor and record all casing annuli via pressure gauges and by visual discharge for any pressure or flow increases or discharges that would be indicative of a potential loss of wellbore integrity during the well stimulation operations. The permittee shall take remedial action to avoid the loss of wellbore integrity and shall notify the Department within 24 hours of discovery via telephone or email.

(f) If well stimulation treatment design does not allow the surface casing annulus to be open to atmospheric pressure, then the surface casing pressures shall be monitored with a gauge and pressure relief device. The maximum set pressure on the pressure relief device shall be the lower of:

- (1) a pressure equal to: 0.70 times 0.433 times the true vertical depth of the surface casing shoe (expressed in feet);
- (2) 80 percent of the API rated minimum internal yield for the surface casing; or
- (3) 80 percent of the surface casing shoe test pressure, adjusted for fluid density.

The well stimulation treatment shall be terminated if the pressures exceed the limits set in Subparagraphs (f)(1) through (f)(3) of this Rule and the Department shall be notified within 24 hours of the occurrence of an exceeded pressure. Pressures on any casing string other than the surface casing shall not be allowed to exceed 80 percent of the API rated minimum internal yield pressure for such casing string throughout the stimulation treatment. The permittee shall notify the Department within 24 hours via telephone or email if treatment pressure exceeds 80 percent of the API rated minimum internal yield pressure on any casing string other than surface casing.

(g) The permittee shall monitor and record, at all times, the following parameters during well stimulation operations:

- (1) surface injection pressure, in pounds per square inch (psi);
- (2) fluid injection rate in barrels per minute (BPM);
- (3) proppant concentration in pounds per thousand gallons;
- (4) fluid pumping rate in BPM;
- (5) identities, rates, and concentrations of additives used in accordance with Rule .1702 of this Subchapter; and
- (6) all annuli pressures.

(h) Following the notification in Paragraph (f) of this Rule, the Department may require additional documentation or oil or gas well tests to determine if the well stimulation operations potentially endanger any fresh groundwater zones, if the permittee is unable to assess the wellbore integrity. If either the permittee or the Department determines fresh groundwater zones are endangered, the Department shall require the permittee to perform remedial operations to correct any oil or gas well failure.

(i) The Department shall notify the Commission at its next regularly scheduled meeting of any remedial operations conducted pursuant to Paragraph (h) of this Rule.

History Note: Authority G.S. 113-391(a)(5)k; 113-391(a)(10); 113-391(a)(11); 113-391(b); 113-391(b1);
Eff. March 17, 2015.