SUBCHAPTER 5D - OIL AND GAS CONSERVATION

15A NCAC 05D .0101 GENERAL PROVISIONS

These Rules establish general and specific rules for the drilling, completion or abandonment and development of any well drilled for the production of oil or gas or any operations concerned with the production of oil and gas. No person, firm or corporation shall drill, complete or plug or produce any such well contrary to these Rules.

History Note: *Authority G.S. 113-391;*
Eff. February 1, 1976;
Amended Eff. October 1, 1984; January 31, 1979.

15A NCAC 05D .0102 PENALTIES

History Note: *Authority G.S. 113-391;*
Eff. February 1, 1976;
Repealed Eff. August 1, 1988.

15A NCAC 05D .0103 DEFINITIONS

The terms used in this Subchapter shall have the definitions assigned by G.S. 113-389. In addition, the words defined in this Rule shall have the following meanings:

(1) "Director" means the Director of the Division of Land Resources.
(2) "Drilling unit" means the area which can be efficiently and economically drained by one well.
(3) "Pooled unit" means one or more tracts of land, on which mineral ownership is different, that are consolidated and operated as a single tract for production of oil or gas either by voluntary agreement or by order of the department.
(4) "Protection of correlative rights of equity" means that action or regulation by the department which affords a reasonable opportunity to each person entitled thereto to recover or receive the oil or gas under his tract or tracts without being required to drill unnecessary wells or incur unnecessary expenses to recover such oil or gas.
(5) "Well spacing" means the pattern of minimum distances on the surface from lease boundary lines and from other wells drilling to or producible from the same pool.

History Note: *Authority G.S. 113-391;*
Eff. February 1, 1976;
Amended Eff. August 1, 1988; October 1, 1984; January 31, 1979.

15A NCAC 05D .0104 REGISTRATION

Prior to making any drilling exploration in this state for oil and gas, persons, firms or corporations must register with the department and furnish bond in the amount of five thousand dollars ($5,000) running to the State of North Carolina, conditioned that any well opened or caused to be opened by an operator shall upon abandonment be plugged in accordance with the rules of the department. Forms for registration and posting of bond may be obtained by application to the Director, Division of Land Resources, P.O. Box 27687, Raleigh, N.C. 27611.

History Note: *Authority G.S. 113-391;*
Eff. February 1, 1976;
Amended Eff. October 1, 1984.

15A NCAC 05D .0105 DRILLING PERMITS

Registration as required by the statutes shall be by application to the director for a drilling permit, upon a form specified by the director, accompanied by a fee of fifty dollars ($50.00) and a bond as set forth in Rule .0004 of this Subchapter.

History Note: *Authority G.S. 113-391; 113-395;*
Eff. February 1, 1976;
Amended Eff. October 1, 1984.

15A NCAC 05D .0106 WELL SPACING

(a) The director shall not issue a permit for the drilling, deepening or plugging back of any well for the production of oil or gas unless the proposed well location and spacing conform to the rules of the department. These Rules do not apply to wells drilled for geological information, stratigraphic testing, fluid injection or disposal or storage of natural hydrocarbons.

(b) Upon completion of a discovery well within a new pool or reservoir, the department shall consider and adopt after public hearing, temporary well spacing and drilling units. The rule shall be designed to result in drilling the smallest number of wells necessary to determine within the shortest possible time, all information pertaining to the reservoir and its contained fluids, in order to determine the proper permanent plan of drilling wells on, and allocating production to the various separate leaseholds within the reservoir. When such information has been obtained and after public hearing, the department shall adopt permanent rules including:

(1) minimum size unit on which one well may be drilled,
(2) method of determining total allowable for the pool,
(3) method of allocating and distributing total allowable among various separate leaseholds on pooled units so that correlative rights and equity will be protected,
(4) minimum distance from separate leasehold or pooled unit and between wells to the same reservoir.

(c) An exception to the general rules or special rules may be granted by the director upon application and after public hearing, if it is shown that more hydrocarbons can be recovered under the lease-hold by such exceptions. The exceptions may be granted because of:

(1) topographical conditions, both natural and manmade;
(2) geologic conditions, faults, etc.;
(3) other conditions accepted as pertinent by the director.

(d) The allowable of such off pattern wells may be adjusted to protect the correlative rights of offset operators and land owners and to conserve the resource.

(e) When separately owned tracts are embraced within a single drilling unit, the involved persons may pool their interests or in the absence of voluntary pooling, the director, for the prevention of waste or to avoid drilling unnecessary wells, may order pooling of all interests. Each such pooling order shall be made after a public hearing held by the director which shall determine the following:

(1) equitable share of oil or gas in the pool for each owner,
(2) operator of pooled interest,
(3) drilling and operating costs and provision for equitable distribution of the costs among owners,
(4) penalty allowable of any owner who refused to pay his share accordingly.

History Note: *Authority G.S. 113-391;*
Eff. February 1, 1976;
Amended Eff. October 1, 1984.

15A NCAC 05D .0107 DRILLING AND COMPLETION

(a) Unless altered or changed by special rules, the following rules on drilling procedure shall apply to all wells drilled.

(b) All fresh water strata shall be protected by suitable and sufficient casing and cement. The casing shall extend from the surface to the first impervious layer not less than 50 feet below all fresh water strata. The casing shall be so centralized and the annulus of such size that cement can be injected to fill the entire annular space behind the casing back to the surface.

(c) If a flow or producing string of casing is set, it shall be cemented with sufficient volume to fill the annular space back of the casing to a point at least 500 feet above the casing shoe and at least 50 feet above the producible reservoir nearest to the

surface. If drilling is to continue following cementing operations, the cement shall set a minimum of 24 hours before the plug is drilled. The flow string shall be tested by either of the two methods below:

(1) Pressure Test. If a pressure test is used, the pressure should be raised to a pressure calculated by multiplying the length of casing in feet by 0.2 not to exceed 1,500 psi and after 30 minutes if the pressure has dropped 10 percent or more, the casing has failed to meet the requirements.

(2) Bailer Test. If the bailer test is used, the fluid level shall be lowered to a point midway between the casing base and the top of cement column behind such casing, and if after 12 hours the fluid level rises or subsides two percent or more of the length of the water column, the casing has failed to meet the requirements.

(d) In all proven areas, the use of blowout preventers shall be in accordance with practice established in drilling the pool under development. In unproven areas, all drilling wells should be equipped with a master gate or equivalent, an adequate blowout preventer and a properly sized flow line value. "Adequate" shall be taken to mean that consideration has been given to the depth of the test and pressures likely to be encountered at those depths. The entire control equipment shall be in good working condition at all times and shall have been tested to working pressures at least 50 percent above the hydrostatic pressures anticipated in the well.

(e) All wells shall be drilled in such a manner so that vertical deviation of the hole does not exceed three degrees between the bottom of the hole and the top of hole, and shall not deviate in such a manner as to cross property or unit lines, unless an exception is granted by the director. An inclination survey shall be filed with the director for each well subsequently produced for oil or gas.

(f) Slush or mud pits shall be constructed prior to commencement of drilling operations and should be of adequate size to confine all anticipated drilling mud and cuttings. Precautions should be taken to prevent the contamination of streams and potable water. All such pits should be refilled or otherwise returned to prior condition upon termination of drilling operations.

(g) The operator shall not, except in extreme emergencies or with permission of the director, permit oil or salt water to be temporarily stored in earthen reservoirs.

(h) Any rubbish or debris shall be disposed of so as not to constitute a fire hazard.

(i) Christmas tree fittings or well head connections, flow lines and treating facilities, shall have a working pressure in keeping with anticipated working pressures generated by the well as determined from drillstem tests or other pressure testing procedures acceptable to the director.

History Note: *Authority G.S. 113-391;*
Eff. February 1, 1976;
Amended Eff. October 1, 1984.

15A NCAC 05D .0108 COMPLETION REPORT

(a) Within 30 days after the completion of a producing well drilled for oil or gas, or the recompletion of a producing well into a different formation, or where the producing interval is changed, a completion report shall be filed with the director on a form prescribed by the director. The information required shall include the following:

(1) name, number and location of the well;
(2) lease name;
(3) date of completion and date of recompletion;
(4) total depth;
(5) record of stimulation;
(6) initial potential test and method;
(7) casing and tubing size and weight;
(8) cement record including squeeze jobs or remedial cementing;
(9) types of borehole geophysical logs run. (Copies of logs not previously furnished should be included.)

(b) If such information is of a confidential nature, then upon request of the operator, the director will hold such information in confidence for a period of one year. Extensions of this confidentiality shall be allowed up to a maximum of one year at the discretion of the director.

History Note: *Authority G.S. 113-391;*
Eff. February 1, 1976;
Amended Eff. October 1, 1984.

15A NCAC 05D .0109 PLUGGING OF WELLS

(a) The operator or owner shall not permit any well drilled for oil or gas or any other purpose in connection with the production of oil or gas to remain unplugged for a period exceeding 30 days from termination of drilling activities without prior approval. Prior to this date, the operator must submit to the director his intention to plug and abandon or complete the well. A written request on the form prescribed, accompanied by a fee of fifteen dollars ($15.00) must be submitted prior to commencement of plugging operations. The form shall contain the following information:

(1) location of well, name and number of well;
(2) name of operator;
(3) projected plugging date;
(4) casing, cement, pipe to remain in the hole;
(5) types of borehole geophysical logs run;
(6) proposed plugging procedure.

(b) The director shall determine the proper plugging procedure to be used and will provide a representative to witness the plugging operation.

(c) If the well is a dry hole, written notification can be waived in favor of verbal notification at the discretion of the director. However, the written forms must be submitted following plugging operations prior to release of the bond.

(d) Upon the director finding that all the rules regarding the plugging of such wells have been complied with, the bond, referred to in Regulation .0004 of this Subchapter, given to guarantee proper plugging, may be released.

History Note: Authority G.S. 113-391; 113-395;
Eff. February 1, 1976;
Amended Eff. October 1, 1984.

15A NCAC 05D .0110 FILING OF THE LOG OF DRILLING

(a) Within 30 days of the termination of drilling operations of any oil or gas well, the operator must file with the director a complete log of the drilling of the well. The record shall include the following:

(1) copy of the driller's log;
(2) a set of drill cuttings at 10 foot intervals;
(3) a copy of all borehole geophysical logs run on the well;
(4) all oil or gas show reports and a copy of the mud log if run;
(5) results of tests such as drill stem tests, bailer tests, etc.;
(6) core descriptions and analyses.

(b) Upon request by the operator, this information will be kept confidential for a period of one year after completion or abandonment of the well. Extensions of this confidentiality shall be allowed up to a maximum of one year at the discretion of the director.

(c) No bond shall be released until this Regulation has been complied with.

(d) The operator shall cause a drillers log to be kept at the drill site during drilling operations which shall include the following:

(1) formations penetrated,
(2) drilling depth,
(3) fluids encountered,
(4) tests performed.

This record shall be available to an authorized representative of the department at all reasonable times.

History Note: Authority G.S. 113-391;
Eff. February 1, 1976;
Amended Eff. October 1, 1984.

15A NCAC 05D .0111 LIMITATION OF PRODUCTION AND ALLOCATION

(a) The department has the authority to limit production for the purpose of prevention of waste, both above and below ground, and the protection of correlative rights. The department reserves the right upon public hearing, held by the director,

to determine the amount of oil which can be produced without waste from each designated pool. The director shall consider the following factors:

(1) productive capacities,
(2) effective pay thicknesses,
(3) permeability and porosity,
(4) type of drive mechanism,
(5) size and content of reservoir,
(6) bottom hole pressures,
(7) gas-oil ratios,
(8) water-oil ratios.

(b) Operators shall maintain a record of decline of production and of pressure for each well. The pressure decline may be based either on bottom hole pressure tests or on shut in pressure tests which should be run every 120 days.

(c) The department has the authority to limit production, set allowables and allocate allowables, whenever the total amount of oil and/or gas which all of the pools in the state can produce, exceeds the amount reasonably required to meet market demand. Such proration and allocation will be done only after a public hearing is held by the director.

History Note: *Authority G.S. 113-391;*
Eff. February 1, 1976;
Amended Eff. October 1, 1984.