TITLE 19 NATURAL RESOURCES AND WILDLIFE
CHAPTER 15 OIL AND GAS
PART 16 DRILLING AND PRODUCTION

19.15.16.1 ISSUING AGENCY: Energy, Minerals and Natural Resources Department, Oil Conservation Division.
[19.15.16.1 NMAC - Rp, 19.15.3.1 NMAC, 12/1/08]

19.15.16.2 SCOPE: 19.15.16 NMAC applies to persons engaged in the drilling and production of oil and gas wells within New Mexico.
[19.15.16.2 NMAC - Rp, 19.15.3.2 NMAC, 12/1/08]

19.15.16.3 STATUTORY AUTHORITY: 19.15.16 NMAC is adopted pursuant to the Oil and Gas Act, NMSA 1978, Section 70-2-6, Section 70-2-11 and Section 70-2-12.
[19.15.16.3 NMAC - Rp, 19.15.3.3 NMAC, 12/1/08]

19.15.16.4 DURATION: Permanent.
[19.15.16.4 NMAC - Rp, 19.15.3.4 NMAC, 12/1/08]

19.15.16.5 EFFECTIVE DATE: December 1, 2008, unless a later date is cited at the end of a section.
[19.15.16.5 NMAC - Rp, 19.15.3.5 NMAC, 12/1/08]

19.15.16.6 OBJECTIVE: To regulate the drilling and production of oil and gas wells within the state.
[19.15.16.6 NMAC - Rp, 19.15.3.6 NMAC, 12/1/08]

19.15.16.7 DEFINITIONS:

A. "Azimuth" means the deviation in the horizontal plane of a well bore expressed in terms of compass degrees.

B. "Deviated well" means a well bore that is intentionally deviated from vertical but not with an intentional azimuth.

C. "Directional well" means a well bore that is intentionally deviated from vertical with an intentional azimuth.

D. "Kick-off point" means the point at which a directional well is intentionally deviated from vertical.

E. "Lateral" means a portion of a directional well past the point where the well bore has been intentionally departed from the vertical.

F. "Penetration point" means the point where a directional well penetrates the top of the pool from which it is intended to produce.

G. "Producing area" means the portion of a project area that lies within a window formed by plotting the measured distance from the project area's north, south, east and west boundaries, inside of which a vertical well bore can be drilled and produced in conformity with the setback requirements from the outer boundary of a standard spacing unit for the applicable pools.

H. "Producing interval" means that portion of a directional well drilled inside a pool's vertical limits between its penetration point and its terminus.

I. "Project area" means an area the operator designates on form C-102 that a spacing unit's outer boundaries enclose, a combination of complete, contiguous spacing units or an approved secondary, tertiary or pressure maintenance project.

J. "Project well" means a well drilled, completed, produced or injected into as either a vertical well, deviated well or directional well.

K. "Spacing unit" means the acreage that is dedicated for a well in accordance with 19.15.15 NMAC. Included in this definition is a unit of proration for oil or gas as defined by the division and all non-standard units the division has previously approved.

L. "Terminus" means the farthest point attained along the well bore.

M. "Vertical well" means a well that does not have an intentional departure or course deviation from the vertical.
[19.15.16.7 NMAC - Rp, 19.15.3.111 NMAC, 12/1/08]

19.15.16.8 SIGN ON WELLS:

A. An operator shall identify wells and related facilities the division regulates by a sign, which shall remain in place until the operator plugs and abandons the well and closes the related facilities.

B. For drilling wells, the operator shall post the sign on the derrick or not more than 20 feet from the well.

C. The sign shall be of durable construction and the lettering shall be legible and large enough to be read under normal conditions at a distance of 50 feet.

D. The wells on each lease or property shall be numbered in non-repetitive, logical and distinctive sequence.

E. An operator shall have 90 days from the effective date of an operator name change to change the operator name on the well sign unless the division grants an extension of time, for good cause shown along with a schedule for making the changes.

F. Each sign shall show the:

(1) well number;

(2) property name;

(3) operator's name;

(4) location by footage, quarter-quarter section, township and range (or unit letter can be substituted for the quarter-quarter section);

BEFORE THE OIL CONSERVATION DIVISION
Santa Fe, New Mexico
Case No. 14290 Exhibit No. 2
Submitted by:
WILLIAMS PRODUCTION COMPANY, LLC.
Hearing Date: October 15, 2009

and

(5) API number.

[19.15.16.8 NMAC - Rp, 19.15.3.103 NMAC, 12/1/08]

19.15.16.9 SEALING OFF STRATA:

A. During the drilling of an oil well, injection well or other service well, the operator shall seal and separate the oil, gas and water strata above the producing or injection horizon to prevent their contents from passing into other strata.

B. The operator shall ensure that fresh waters and waters of present or probable value for domestic, commercial or stock purposes are confined to their respective strata and are adequately protected by division-approved methods. The operator shall take special precautions by methods satisfactory to the division in drilling and abandoning wells to guard against loss of artesian water from the strata in which it occurs, and the contamination of artesian water by objectionable water, oil or gas.

C. The operator shall ensure that water is shut off and excluded from the various oil- and gas-bearing strata that are penetrated. The operator shall ordinarily make water shut-offs by cementing casing.

[19.15.16.9 NMAC - Rp, 19.15.3.106 NMAC, 12/1/08]

19.15.16.10 CASING AND TUBING REQUIREMENTS:

A. The operator shall equip a well drilled for oil or gas with surface and intermediate casing strings and cement as may be necessary to effectively seal off and isolate all water-, oil- and gas-bearing strata and other strata encountered in the well down to the casing point. In addition, the operator shall equip a well completed for oil or gas production with a string of properly cemented production casing at sufficient depth to ensure protection of oil- and gas-bearing strata encountered in the well, including the strata to be produced.

B. The operator shall use sufficient cement on surface casing to fill the annular space behind the casing to the top of the hole, provided that authorized division field personnel may allow exceptions to this requirement when known conditions in a given area render compliance impracticable.

C. Cementing shall be by pump and plug method unless the division expressly authorizes some other method.

D. Cementing shall be with conventional-type hard-setting cements to which the operator has added additives (lighteners, densifiers, extenders, accelerators, retarders, etc.) to suit conditions in the well.

E. Authorized division field personnel may, when conditions warrant, allow exceptions to Subsection D of 19.15.16.10 NMAC and permit the operator to use oil-base casing packing material in lieu of hard-setting cements on intermediate and production casing strings; provided that when the operator uses such materials on the intermediate casing string, the operator places conventional-type hard-setting cements throughout all oil- and gas-bearing zones and throughout at least the lowermost 300 feet of the intermediate casing string. When the operator uses such materials on the production casing string, the operator shall place conventional-type hard-setting cements throughout all oil- and gas-bearing zones that shall extend upward a minimum of 500 feet above the uppermost perforation or, in the case of an open-hole completion, 500 feet above the production casing shoe.

F. The operator shall test casing strings and prove satisfactory as provided in Subsection I of 19.15.16.10 NMAC.

G. After cementing, but before commencing tests Subsection I of 19.15.16.10 NMAC requires, all casing strings shall stand cemented in accordance with one of the options in Paragraphs (1) and (2) of Subsection G of 19.15.16.10 NMAC. Regardless of which option the operator chooses, the casing shall remain stationary and under pressure for at least eight hours after the operator places the cement. Casing shall be under pressure if the operator uses some acceptable means of holding pressure or if the operator employs one or more float valves to hold the cement in place. The operator shall either

(1) allow casing strings to stand cemented a minimum of 18 hours prior to commencing tests; an operator using this option shall report on form C-103 the actual time the cement was in place before the operator initiated tests; or

(2) in the counties of San Juan, Rio Arriba, McKinley, Sandoval, Lea, Eddy, Chaves and Roosevelt only, allow casing strings to stand cemented until the cement reaches a compressive strength of at least 500 psi in the "zone of interest" before commencing tests; provided however, that the operator shall not commence tests until the cement is in place for at least eight hours.

(a) The "zone of interest" for surface and intermediate casing strings is the bottom 20 percent of the casing string, but is no more than 1000 feet nor less than 300 feet of the bottom-part of the casing unless the casing is set at less than 300 feet. The "zone of interest" for production casing strings includes the interval or intervals where immediate completion is contemplated.

(b) To determine that a minimum compressive strength of 500 psi has been attained, the operator shall use the typical performance data for the particular cement mix used in the well, at the minimum temperature indicated for the zone of interest by Figure 107-A, Temperature Gradient Curves. Typical performance data used shall be that data the cement manufacturer or a competent materials testing agency furnishes, as determined in accordance with the latest edition of API publication Recommended Practice for Testing Well Cements, RP 10B-2. (See Temperature Gradient - Page 17A)

H. An operator using the compressive strength criterion in Paragraph (2) of Subsection G of 19.15.16.10 NMAC shall report the following information on form C-103:

(1) volume of cement slurry in cubic feet and brand name of cement and additives, percent additives used and sequence of placement if the operator uses more than one type cement slurry;

(2) approximate temperature of cement slurry when mixed;

(3) estimated minimum formation temperature in zone of interest;

(4) estimate of cement strength at time of casing test; and

(5) actual time cement in place prior to starting test.

I. The operator shall test casing strings except conductor pipe after cementing and before commencing other operations on the well. The operator shall file form C-103 with the division for each casing string reporting the grade and weight of pipe used. In the case of combination strings utilizing pipe of varied grades or weights, the operator shall report the footage of each grade and weight used. The operator shall also report results of the casing test, including actual pressure held on pipe and the pressure drop observed on the same form C-103.

(1) The operator shall pressure test casing strings in wells drilled with rotary tools. Minimum casing test pressure shall be approximately one-third of the manufacturer's rated internal yield pressure except that the test pressure shall not be less than 600 psi and need not be greater than 1500 psi. In cases where combination strings are involved, the above test pressure shall apply to the lowest pressure rated casing used. The operator shall apply test pressures for a period of 30 minutes. If a drop of more than 10 percent of the test pressure occurs the casing shall be considered defective and the operator shall apply corrective measures.

(2) The operator may test casing strings in wells drilled with cable tools as outlined in Paragraph (1) of Subsection I of 19.15.16.10 NMAC, or by bailing the well dry in which case the hole shall remain satisfactorily dry for a period of at least one hour before the operator commences further operations on the well.

J. Well tubing requirements.

(1) The operator shall tube flowing oil wells equipped with casing larger in size than 2 7/8-inch OD.

(2) The operator shall tube gas wells equipped with casing larger in size than 3½-inch OD.

(3) The operator shall set tubing as near the bottom as practical and tubing perforations shall not be more than 250 feet above top of pay zone.

(4) The district supervisor of the appropriate division district office, upon application, may grant exceptions to these requirements, provided waste will not be caused.

(5) The district supervisor may request that the director review an application. The operator shall submit information and give notice as the director requests. The division may approve un-protested applications after 20 days of receipt of the application and supporting information. If a person protests the application, or the director decides, the division shall set the application for hearing.

[19.15.16.10 NMAC - Rp, 19.15.3.107 NMAC, 12/1/08]

19.15.16.11 DEFECTIVE CASING OR CEMENTING: If a well appears to have a defective casing program or faultily cemented or corroded casing that will permit or may create underground waste or contamination of fresh waters, the operator shall give written notice to the division within five working days and proceed with diligence to use the appropriate method and means to eliminate the hazard. If the hazard of waste or contamination of fresh water cannot be eliminated, the operator shall properly plug and abandon the well.

[19.15.16.11 NMAC - Rp, 19.15.3.108 NMAC, 12/1/08]

19.15.16.12 BLOWOUT PREVENTION: (See Subsection B of 19.15.10 NMAC also)

A. The operator shall install and maintain blowout preventers in good working order on drilling rigs operating in areas of known high pressures at or above the projected depth of the well and in areas where pressures that will be encountered are unknown, and on workover rigs working on wells in which high pressures are known to exist.

B. The operator shall install and maintain blowout preventers in good working order on drilling rigs and workover rigs operating within the corporate limits of a city, town or village, or within 1320 feet of habitation, a school or a church, wherever located.

C. An operator, when filing form C-101 or form C-103 for an operation requiring blowout prevention equipment in accordance with Subsections A and B of 19.15.16.12 NMAC, shall submit a proposed blowout prevention program for the well. The district supervisor may modify the program as submitted if, in the district supervisor's judgment, modification is necessary.

[19.15.16.12 NMAC - Rp, 19.15.3.109 NMAC, 12/1/08]

19.15.16.13 PULLING OUTSIDE STRINGS OF CASING: In pulling outside strings of casing from an oil or gas well, the operator shall keep and leave the space outside the casing left in the hole full of mud-laden fluid or cement of adequate specific gravity to seal off fresh and salt water strata and strata bearing oil or gas not producing.

[19.15.16.13 NMAC - Rp, 19.15.3.110 NMAC, 12/1/08]

19.15.16.14 DEVIATION TESTS AND DIRECTIONAL WELLS:

A. Deviated well bores.

(1) Deviation tests required. An operator shall test a vertical or deviated well that is drilled or deepened at reasonably frequent intervals to determine the deviation from the vertical. The operator shall make the tests at least once each 500 feet or at the first bit change succeeding 500 feet. The operator shall file with the division a tabulation of deviation tests run, that is sworn to and notarized, with form C-104.

(2) Excessive deviation. When the deviation averages more than five degrees in a 500-foot interval, the operator shall include the calculations of the hole's maximum possible horizontal displacement. When the maximum possible horizontal displacement exceeds the distance to the appropriate unit's nearest outer boundary line the operator shall run a directional survey to establish the location of the producing interval or intervals.

(3) Unorthodox locations. If the results of the directional survey indicate that the producing interval is more than 50 feet from the approved surface location and closer than the minimum setback requirements to the applicable unit's outer boundaries, then the well is considered unorthodox. To obtain authority to produce the well, the operator shall file an application with the director with a copy to the appropriate division district office, and shall otherwise follow the normal process outlined in Subsection C of 19.15.15.13 NMAC to obtain approval of the unorthodox location.

(4) Directional survey requirements. Upon the director's request, the operator shall directionally survey a vertical or deviated well. The operator shall notify the appropriate division district office of the approximate time the operator will conduct the directional survey. The operator shall file directional surveys run on a well with the division upon the well's completion. The division shall not assign an allowable to the well until the operator has filed the directional surveys.

B. Directional well bores.

(1) Directional drilling within a project area. The appropriate division district office may grant a permit to directionally drill a well bore if the producing interval is entirely within the producing area or at an unorthodox location the division previously approved. Additionally, if the project area consists of a combination of drilling units and includes state, federal or tribal lands, the operator shall send a copy of form C-102 to the state land office or the BLM, as applicable.

(2) Unorthodox well bores. If all or part of a directional well bore's producing interval is projected to be outside of the producing area, the well's location is considered unorthodox. To obtain approval for the well's location, the applicant shall file a written application in duplicate with the director with a copy to the appropriate division district office and shall otherwise follow the normal process in Subsection C of 19.15.15.3 NMAC.

(3) Allowables for project areas with multiple proration units. The division shall base the maximum allowable it assigns to the project area within a prorated pool upon the number of standard spacing units or approved non-standard spacing units that the directional well bore's producing interval develops or traverses. The maximum allowable shall apply to production from the project area, including vertical well bores on standard spacing units inside the project area.

(4) Directional surveys required. An operator shall run a directional survey on each well drilled pursuant to Subsection B of 19.15.16.14 NMAC. The operator shall notify the appropriate division district office of the approximate time the operator will conduct the directional survey. The operator shall file a directional survey run on a well with the division upon the well's completion. The division shall not assign an allowable to the well until the operator files the directional survey. If the directional survey indicates that part of the producing interval is outside of the producing area, or, in the case of an approved unorthodox location, less than the approved setback requirements from the applicable unit's outer boundary, then the operator shall file an application with the director with a copy to the appropriate division district office and shall otherwise follow the normal process outlined in Subsection C of 19.15.15.13 NMAC to obtain approval of the unorthodox location.

(5) Re-entry of vertical or deviated well bores for directional drilling projects. These well bores are considered orthodox provided the surface location is orthodox and the producing interval's location is within the tolerance allowed for deviated well bores under Paragraph (3) of Subsection A of 19.15.16.14 NMAC.

C. Additional matters.

(1) Directional surveys that 19.15.16.14 NMAC requires shall have shot points no more than 200 feet apart and shall be run by competent surveying companies that are approved by the director. The division shall allow exceptions to the minimum shot point spacing provided the survey's accuracy is still within acceptable limits.

(2) The director may set an application for administrative approval whereby the operator shall submit appropriate information and give notice as the director requests. The division may approve un-protested applications administratively within 20 days after the division receives the application and supporting information. If the application is protested, or the director decides that a hearing is appropriate, the division may set the application for hearing.

(3) The division shall grant permission to deviate or directionally drill a well bore for any reason or in a manner not provided for in 19.15.16.14 NMAC only after notice and opportunity for hearing.

[19.15.16.14 NMAC - Rp, 19.15.3.111 NMAC, 12/1/08]

19.15.16.15 MULTIPLE COMPLETIONS; BRADENHEAD GAS WELLS:

A. Multiple completions.

(1) Filing. An operator intending to multiple complete shall file form C-101 or C-103 with the division for approval before completing and C-104 after completing along with information required by the form instructions.

(2) Operation and testing.

(a) The operator shall complete and produce wells so that commingling of hydrocarbons from separate pools does not occur.

(b) The operator shall commence a segregation or packer leakage test within 20 days after the multiple completion. The operator shall also make segregation tests or packer leakage tests any time the packer is disturbed. The operator shall conduct other tests and determinations the division requires. The operator shall notify the appropriate division district office 48 hours in advance of tests so the district office may schedule personnel to witness the tests. Offset operators may witness such tests and shall advise the operator in writing if they desire to be notified of the tests. The operator shall file test results with the division within 20 days of test completion. In the event a segregation or packer leakage test indicates communication between separate pools, the operator shall immediately notify the division and commence corrective action on the well.

(c) The operator shall equip wells so that reservoir pressure may be determined for each of the separate pools, and may install meters so that the gas or oil produced from each of the separate pools may be accurately measured.

(d) No multiple completion shall produce in a manner unnecessarily wasting reservoir energy.

(e) The division may require the operator to properly plug a zone of a multiple-completed well if the plugging appears necessary to prevent waste, protect correlative rights or protect ground water, public health or the environment.

B. Bradenhead gas wells.

(1) The division may permit production of gas from a bradenhead gas well only after hearing, except as noted in Paragraph (3) of Subsection B of 19.15.16.15 NMAC.

(2) The operator shall submit the application for a hearing to the division in triplicate and include an exhibit showing the location of wells on applicant's lease and offset wells on offset leases, together with a diagrammatic sketch showing the casing program, formation tops, estimated top of cement on each casing string run and other pertinent data, including drill stem tests.

(3) The director may grant an exception to Subsection A of 19.15.16.15 NMAC's requirements without notice and hearing where the operator files the application in due form, and when the lowermost producing zone involved in the completion is an oil or gas producing zone within an oil or gas pool's defined limits and the producing zone to be produced through the bradenhead connection is a gas producing zone within a gas pool's defined limits. The applicant shall include with the application a written stipulation that the applicant has properly notified offset operators.

(4) The applicant shall furnish operators who offset the lease upon which the subject well is located a copy of the application. The director shall wait at least 10 days before approving gas production from the bradenhead gas well, and shall approve the production only in the absence of an offset operator's objection. If an operator objects to the completion the director shall consider the matter only after proper notice and hearing.

(5) The division may waive the 10-day waiting period requirement if the applicant furnishes the division with the written consent to the production of gas from the bradenhead connection by the offset operators involved.

(6) Subsection B of 19.15.16.15 NMAC shall apply only to wells completed after January 1, 1950 or, in Lea County after February 1, 1937, as bradenhead gas wells.

[19.15.16.15 NMAC - Rp, 19.15.3.112 NMAC, 12/1/08]

19.15.16.16 SHOOTING AND CHEMICAL TREATMENT OF WELLS: If shooting, fracturing or treating a well injures the producing formation, injection interval, casing or casing seat and may create underground waste or contaminate fresh water, the operator shall within five working days notify in writing the division and proceed with diligence to use the appropriate method and means for rectifying the damage. If shooting, fracturing or chemical treating results in the well's irreparable injury the division may require the operator to properly plug and abandon the well.

[19.15.16.16 NMAC - Rp, 19.15.3.113 NMAC, 12/1/08]

19.15.16.17 WELL AND LEASE EQUIPMENT:

A. The operator shall install and maintain christmas tree fittings or wellhead connections in first class condition so that necessary pressure tests may easily be made on flowing wells. On oil wells the christmas tree fittings shall have a test pressure rating at least equivalent to the calculated or known pressure in the reservoir from which production is expected. On gas wells the christmas tree fittings shall have a test pressure equivalent to at least 150 percent of the calculated or known pressure in the reservoir from which production is expected.

B. The operator shall install and maintain valves in good working order to permit pressures to be obtained on both casing and tubing. The operator shall equip each flowing well to control properly the flowing of each well, and in case of an oil well, produce the well into an oil and gas separator of a type the industry generally uses.

[19.15.16.17 NMAC - Rp, 19.15.3.115 NMAC, 12/1/08]

19.15.16.18 LOG, COMPLETION AND WORKOVER REPORTS: Within 20 days after the completion of a well drilled for oil or gas, or the recompletion of a well into a different common source of supply, the operator shall file a completion report with the division on form C-105. For the purpose of 19.15.16.18 NMAC, a hole drilled or cored below fresh water or that penetrates oil- or gas-bearing formations or that an owner drills is presumed to be a well drilled for oil or gas.

[19.15.16.18 NMAC - Rp, 19.15.3.117 NMAC, 12/1/08]

19.15.16.19 ALLOWABLES AND AUTHORIZATION TO TRANSPORT OIL AND GAS:

A. The division may assign an allowable to a newly completed or re-completed well or a well completed in an additional pool or issue an operator authorization to transport oil or gas from the well if the operator:

(1) has filed a complete form C-104;

(2) has provided a sworn and notarized tabulation of all deviation tests the operator has run on the well, and directional surveys with calculated bottom hole location, in accordance with the requirements of 19.15.16.14 NMAC;

(3) has dedicated a standard unit for the pool in which the well is completed, a standard unit has been communitized or pooled and dedicated to the well or the division has approved a non-standard unit; and

(4) is in compliance with Subsection A of 19.15.5.9 NMAC.

B. The allowable the division assigns to an oil well is effective at 7:00 a.m. on the completion date, provided the division receives form C-104 during the month of completion. The date of completion shall be that date when new oil is delivered into the stock tanks. Unless otherwise specified by special pool orders, the allowable the division assigns to a gas well is effective at 7:00 a.m. on the date of connection to a gas transportation facility, as evidenced by an affidavit of connection from the transporter to the division, or the date of receipt of form C-104 by the division, whichever date is later.

[19.15.16.19 NMAC - Rp, 19.15.13.1104 NMAC, 12/1/08]

HISTORY of 19.15.16 NMAC:

History of Repealed Material: 19.15.3 NMAC, Drilling (filed 10/29/2001) and 19.15.13 NMAC, Reports (filed 6/17/2004) repealed 12/1/08.