## CHAPTER 62C-27 CONSERVATION OF OIL AND GAS: DRILLING



**62C-27.001 General.**

(1) Identification of Wells. Every person drilling or operating an oil or gas well shall keep posted in a conspicuous place near the well a sign legible from 100 feet and displaying the name of the operator, fee owner, well number, Department permit number, county name, section, township, and range. This sign shall remain until the well is plugged and the site restored.

(2) Continuous Operations. Once commenced, drilling operations shall not be suspended except in emergency situations created by hurricanes, flooding, fire, etc. and shall be resumed as soon as the emergency passes. All wells under construction on which drilling activities have been suspended in non-emergency situations shall be considered abandoned and shall be plugged in accordance with Rule 62C-29.009.

(a) Shut-in Periods. Every well not plugged and abandoned must have an operating permit. Once an operating permit has been granted, the operator may shut the well in for the life of the operating permit after first pressure testing the well in accordance with 62C-29.007. Every shut in well must be retested prior to recertification of its operating permit.

(b) Security. All shut in wells shall be continuously covered by security as specified in 62C-26.003.

(3) Reporting Requirements. The operator shall submit post paid to the Department a Well Record (Form 8), abbreviated driller's log, a cut of all samples and cores taken, two complete sets of all well logs, a mud log, and a core or sample analysis report, if made.

(a) Logs. The operator shall keep at the well site a complete driller's log and a copy of all well logs run on the well.

(b) Water Quality Analysis. If necessary to determine the depth to the base of the deepest USDW, the Department shall require resistivity and porosity logs be run before setting surface casing and a representative water sample taken immediately after drilling out of the surface casing.

(4) Mud Tanks, Reserve Pits, and Dikes. Before spudding the well, mud tanks of sufficient size to hold the active mud volume at the surface shall be installed for containment of all active drilling fluids. Earthen mud pits shall not be used for this purpose.

(a) Additional Requirements. In national and state forests and parks, in wetlands, and in other sensitive areas, prefabricated tanks and drip pans shall be required for the containment of all waste fluids and, on a site specific basis, reserve pits must be either lined with impermeable material or reserve pit fluids intermittently pumped down the wellbore to reduce hydrostatic head.

(b) Pit Volume. If the volume of fluid in the reserve pit exceeds 75% of pit capacity, all drilling operations shall be suspended until additional pit volume is provided or the level reduced.

(c) Dikes. Dikes of sufficient size and strength to prevent rain water from washing onto and inundating pads and to contain any spills that may occur during drilling operations shall be constructed around well sites. For productive wells drilled subsequent to this rule and located where potential spillage, flooding or drainage problems exist, such as in closed drainage basins, floodplains, hillsides overlooking rivers, etc. the Department shall require the dike to remain until permanent abandonment.

(5) Control of Wells. The operator shall take all necessary precautions to keep all wells under control at all times, shall utilize only contractors or employees trained and competent to drill and operate such wells, and shall use only oil field equipment and practices generally used in the industry. The design of the integrated casing, cementing, drilling mud, and blowout prevention programs shall be based upon sound engineering principles, and shall take into account all relevant geologic and engineering data and information.

(6) Drill Stem Tests. All drill stem tests shall be conducted in accordance with generally accepted industry standards and practices and shall be concluded only during daylight hours. Prefabricated tanks shall be used to contain all produced fluids and a gas flare system with automatic ignition and scrubbers shall be used to safely flare gas and prevent spills. Flare pits shall be lined and the fluid level kept to a minimum. Earthen flare pits shall not be used for long-term production.

(7) Operations Involving Hydrogen Sulfide. When rig operations are undertaken where H2 S is likely, operators shall use only materials and equipment rated for sour service and shall develop a plan to safely and effectively control any H2 S encountered. Such plan shall meet generally accepted industry standards and practices and shall include well and mud design, a personnel training and safety program, and a contingency plan for notifying authorities and evacuating civilians in the event of an accident.

*Specific Authority 377.22 FS. Law Implemented 377.22 FS. History–New 11-26-81, Formerly 16C-27.01, Repromulgated 5-12-93, Formerly 16C-27.001, Amended 3-24-96.*

**62C-27.005 Casing.**

The operator shall case and cement all wells so as to maintain well control and prevent degradation of other natural resources, including water and petroleum. All casing shall be new pipe or reconditioned so as to be equivalent to new pipe. After cementing, drilling shall be discontinued for 12 hours if float valves are used; 24 hours if such valves are not used or do not hold pressure.

(1) Surface casing. Surface casing shall be set below the deepest USDW and cemented to the surface. If circulation is lost, a survey shall be run and if a seal to a point at least 100 feet above the base of the deepest freshwater aquifer has not been achieved, remedial measures will be taken to do so.

(a) Lost Circulation. Surface casing may be set above the deepest USDW if necessitated by lost circulation zones provided the operator implements an alternate and equally effective method of

protecting such aquifers.

(b) Minimum Depth. The minimum acceptable surface casing depths are based on the proposed total depth of the well or the first full string of intermediate casing in true vertical feet from the rotary table and are as follows:

Minimum Surface Casing (Feet)

| Well Depth | Surface Casing |
|---|---|
| 0 – 7,000 | 1,500 |
| 7,000 – 9,000 | 1,750 |
| 9,000 – 11,000 | 2,250 |
| 11,000 – 13,000 | 3,000 |
| 13,000 – Below | 3,500 |

(2) Intermediate Casing. The intermediate casing shall be set and cemented in accordance with generally accepted industry standards and practices. If a liner is used as intermediate casing, the liner seal shall be pressure tested to determine whether a seal between the liner top and next larger string has been achieved. The test shall be recorded on the driller's log. When such liner is used as production casing, it shall be extended to the surface and cemented as described above to avoid surface casing being used as production casing.

(3) Production/Injection Casing. Production casing shall be set and cemented in accordance with generally accepted industry standards and practices. However, a sufficient quantity of cement to fill the annular space at least 1,500 feet above the uppermost producible hydrocarbon zone must be used. When a liner is used as production casing, the testing of the seal between the liner top and next larger string shall be conducted as in the case of intermediate liners.

(4) Pressure Tests. All casing strings except the conductor shall be pressure tested as specified below prior to well completion or drilling out after cementing. These tests shall not exceed the working pressure of the casing.

| CASING STRING (whichever is greater) | MINIMUM SURFACE TEST PRESSURE |
|---|---|
| (a) Surface | 1000 (psi) |
| (b) Intermediate | 1500 or 0.2 psi/ft. of depth |
| (c) Liner | 1500 or 0.2 psi/ft. of depth |
| (d) Production | 1500 or 0.2 psi/ft. of depth |
| (e) Tubing and Packer | 1000 or 0.2 psi/ft. of depth |

(5) Retests. These pressure tests shall be thirty minutes long and shall have no more than a 10 percent pressure drop. If there is an indication of a leak, necessary remedial measures will be taken and the casing retested. All pressure tests will be recorded in the driller's log and may be witnessed by an agent of the Department.

(6) Tubing and packer pressure tests are waived for Type II Wells.

*Specific Authority 377.22 FS. Law Implemented 377.22 FS. History–New 11-26-81, Formerly 16C-27.05, Amended 6-4-89, 5-12-93, Formerly 16C-27.005, Amended 3-24-96.*

**62C-27.006 Blowout Prevention Equipment.**

(1) Blowout preventers and related well control equipment shall be installed, used, and tested in a manner necessary to prevent blowouts. Prior to drilling below the surface casing, blowout prevention equipment shall be installed and maintained ready for use until drilling operations are completed and, in addition, an inside blowout preventer assembly (back pressure valve) and drill-string safety valve in the open position shall be maintained on the rig floor at all times while drilling operations are being conducted. Separate valves shall be maintained on the rig floor to fit all pipe in the drill string. In water operations, a Kelly cock shall be installed below the swivel, and an essentially full opening Kelly cock of such design that it can be run through the blowout preventers shall be installed at the bottom of the Kelly.

(2) Blowout preventers and related well-control equipment shall be pressure-tested when installed, before drilling out after each string of casing is set, not less than once each week while drilling, following repairs that require disconnecting a pressure seal in the assembly, and at such other times as prescribed by the Department. A required weekly test while drilling may be deferred up to one week to avoid unnecessary tripping of the drill string or conditions that would endanger the hole. Blowout preventer tests shall be recorded on the driller's log.

(3) Ram-type blowout preventers shall be tested to the working pressure of the stack assembly or the casinghead, whichever is the lesser. Bag-type blowout preventers shall be tested up to 70 percent of the above pressure requirements.

(4) A bag-type blowout preventer shall be actuated on the drill pipe or drill collars once each week. Accumulators and pumps shall maintain a pressure capacity reserve at all times to provide for repeated operation of hydraulic preventers. A blowout prevention drill shall be conducted weekly for each drilling crew to insure that all equipment is operational and that crews are properly trained to carry out emergency duties. All blowout preventer tests and crew drills shall be recorded in the driller's log.

(a) Before drilling below the conductor casing in non-field Type I wells, at least one remotely controlled bag-type blowout preventer and equipment for circulating the drilling fluid to the shale shaker shall be installed. To avoid formation fracturing from complete shut-in of the well, a large diameter pipe with control valves shall be installed on the conductor pipe below the blowout preventer so as to permit the diversion of hydrocarbons and other fluids.

(b) Before drilling below the surface casing (except in south Florida locations which drill through the Boulder Zone) the blowout prevention equipment shall include a minimum of three remotely controlled, hydraulically operated, blowout preventers with a working pressure which exceeds the maximum anticipated surface pressure, including one equipped with pipe rams, one with blind rams, and one bag-type; drilling spool with side outlets, if side outlets are not provided in the blowout preventer body, a choke manifold, a kill line, and a fill-up line. In locations in which the hole below the surface hole is drilled through the Boulder Zone, the blowout prevention equipment shall include a bag-type blowout preventer and a drilling spool with side outlet.

(c) Before drilling below the intermediate string the blowout prevention equipment shall include a minimum of three, or in abnormal pressure areas, four remotely controlled, hydraulically operated, blowout preventers with a working pressure which exceeds the maximum anticipated surface pressure, including at least one equipped with pipe rams, one with blind rams, and one bag-type; a drilling spool with side outlets, if side outlets are not provided in the blowout preventer body, a choke manifold, a kill line, and a fill-up line.

*Specific Authority 377.22 FS. Law Implemented 377.22 FS. History–New 11-26-81, Formerly 16C-27.06, Amended 6-4-89, 5-12-93, Formerly 16C-27.006.*

**62C-27.007 Drilling Fluid.**

(1) The operator shall maintain readily accessible for use quantities of mud and mud additives sufficient to insure well control. The testing procedures, characteristics and use of drilling fluid and the conduct of related drilling procedures shall be such as are necessary to prevent blowouts. Necessary mud testing equipment and mud volume measuring devices shall be maintained at all times, and mud tests shall be performed frequently and recorded in the driller's log.

(2) Before starting out of hole with drill pipe, the drilling fluid shall be circulated with drill pipe just off bottom until the drilling fluid is properly conditioned to insure a safe trip. When coming out of the hole with drill pipe, the annulus shall be filled with drilling fluid before the drilling fluid level drops below 100 feet, and a mechanical device for measuring the amount of drilling fluid required to fill the hole shall be utilized. The volume of drilling fluid required to fill the hole shall be watched, and any time there is an indication of swabbing, or an influx of formation fluids, the necessary safety device(s) shall be installed on the drill pipe, the drill pipe shall be run to bottom and the drilling fluid properly conditioned. The drilling fluid shall not be circulated and conditioned except on or near bottom, unless well conditions prevent running the pipe to bottom. The provisions of this subsection shall not apply when drilling in lost circulation zones.

(3) Drilling fluid testing equipment shall be maintained on the drilling location at all times, and drilling fluid tests shall be performed daily, or more frequently as conditions warrant.

(4) The following drilling fluid system monitoring equipment, with derrick floor indicators, shall be installed and used throughout the period of drilling after setting and cementing surface casing, if weighted drilling fluid is required.

(a) Pit level and mud flow indicators with charts and alarms.

(b) A drilling fluid volume measuring device for accurately determining volumes required to fill the hole on trips.

(c) A drilling fluid return indicator to determine that returns essentially equal the pump discharge rate.

*Specific Authority 377.22 FS. Law Implemented 377.22 FS. History–New 11-26-81, Formerly 16C-27.07, Amended 6-4-89, 5-12-93, Formerly 16C-27.007.*

**62C-27.010 Deviation Tests.**

(1) A directional survey or equivalent shall be run to total depth and a certified copy filed with the Department on all Type I and productive Type II wells when the inclination survey is insufficient to demonstrate that the bottom hole location conforms to 62C-26.004. For non-productive Type I Wells, total depth shall mean within 500 feet of the target formation.

(2) No well shall be produced, except for testing, unless its bottom hole location conforms to its permit. If a well is drilled as a standard location in accordance with 62C-26.004 but the bottom hole location wanders outside of the approved limit then it shall be treated as a nonroutine location and 62C-26.004(5) shall apply. In such a case the operator must obtain a new permit or have the existing permit amended accordingly. Until the new location is approved the well may not be produced except as noted above.

(3) The Department may require the operator of any well to run a directional survey whenever the Department determines that there is a reasonable need to do so.

*Specific Authority 377.22 FS. Law Implemented 377.22 FS. History–New 11-26-81, Formerly 16C-27.10, Amended 6-4-89, 5-12-93, Formerly 16C-27.010.*