STATE OIL AND GAS BOARD GOVERNING SUBMERGED OFFSHORE LANDS OPERATIONS
ADMINISTRATIVE CODE

CHAPTER 400-2-4
DRILLING

400-2-4-.11 Plugging And Abandonment Of Wells.

(1) Any nonproductive well shall be plugged within thirty (30) days of completion unless said well has been classified as temporarily abandoned or shut in pursuant to Rule 400-2-4-.14. Any productive well that has not produced in six (6) months or any Class II injection well or underground reservoir storage well that has ceased operation for six (6) months shall be plugged within thirty (30) days unless said well has been classified as temporarily abandoned or shut in pursuant to Rule 400-2-4-.14. Before any work is commenced to plug and abandon any well drilled in search of oil and gas or utilized as a Class II injection well or utilized as an underground reservoir storage well the operator shall provide the Supervisor with the proposed method and procedure to plug and abandon such well. Such method and procedure may be required in writing by the Supervisor. Also, the Supervisor may require that well records, including logs, be made available to determine if the proposed depths and lengths of plugs are adequate. Operations to plug and abandon a well shall not begin until approval of procedures has been obtained from the Supervisor. Unless otherwise allowed by the Supervisor, the operator shall notify the Supervisor at least twenty-four (24) hours prior to the commencement of plugging operations so that said operation may be witnessed by an agent of the Board. The cement in all plugs shall meet American Petroleum Institute (API) standards and shall be mixed with water of adequate quality so as not to degrade the setting properties. Unless specified otherwise by the Supervisor, the operator shall comply with the following requirements which apply to all wells drilled in search of oil and gas or utilized as Class II injection wells or underground reservoir storage wells.

(2) **Permanent Abandonment.**

(a) **Isolation in Uncased Hole.**

1. A cement plug shall be placed across each hydrocarbon-bearing, abnormally pressured, or injection zone or a permanent-type bridge plug shall be place at the top of each hydrocarbon-bearing or injection zone, but in either event a cement plug at least two hundred (200) feet in length shall be placed above the uppermost hydrocarbon-bearing or injection zone.

2. When the base of fresh water is penetrated, a cement plug at least two hundred (200) feet in length shall be placed fifty (50) feet below and shall extend to at least one hundred fifty (150) feet above the base of fresh water. A cement plug may be required in the casing-borehole annulus if fresh water is not adequately protected by casing and cement.

(b) **Isolation of Open Hole.** Where there is open hole below casing, a cement plug shall be placed in the deepest casing string in accordance with 1. or 2. below, or in the event lost circulation conditions exist or are anticipated, the plug may be placed in accordance with 3. below:

1. A cement plug at least two hundred (200) feet in length shall be placed by the displacement method at least fifty (50) feet below and shall extend to at least one hundred fifty (150) feet above the casing shoe.

2. A cement retainer with effective back-pressure control shall be placed at least seventy-five (75) feet above the casing shoe with a cement plug calculated to extend at least one hundred (100) feet below the casing shoe and at least fifty (50) feet above the retainer.

3. A permanent-type bridge plug shall be placed within one hundred fifty (150) feet above the casing shoe with fifty (50) feet of cement on top of the bridge plug. This plug shall be tested prior to placing subsequent plugs.

(c) **Plugging or Isolating Perforated Intervals.** A cement plug shall be placed by the displacement method across all open perforations (perforations not squeezed with cement) extending a minimum of at least one hundred (100) feet above the top of the perforated interval and at least one hundred (100) feet below the base of the perforated interval or down to a casing plug, whichever is less. In lieu of setting a cement plug by the displacement method, the following two methods may be acceptable, provided the perforations are isolated from the hole below:

1. A cement retainer with effective back-pressure control shall be place at least fifty (50) feet above the top of the perforated interval with a cement plug calculated to extend at least one hundred (100) feet below the base of the perforated interval and at least fifty (50) feet above the retainer.

2. A permanent-type bridge plug shall be placed within one hundred fifty (150) feet above the top of the perforated interval with fifty (50) feet of cement on top of the bridge plug.

(d) **Plugging of Casing Stubs.** If casing is cut and recovered leaving a stub, one of the following methods shall be used to plug the casing stub.

1. **Stub Termination Inside Casing String.** A stub terminating inside a casing string shall be plugged by one of the following methods:

(i) A cement plug at least two hundred (200) feet in length shall be place at least one hundred (100) feet below and extend to at least one hundred (100) feet above the stub.

(ii) A cement retainer with effective back-pressure control shall be placed at least fifty (50) feet above the stub with a volume of cement equivalent to one hundred fifty (150) feet squeezed below the retainer and with an additional fifty (50) feet of cement placed above the retainer.

(iii) A permanent-type bridge plug shall be placed at least fifty (50) feet above the stub and capped with at least fifty (50) feet of cement.

2. **Stub Termination Below Casing String.** If the stub is below the next larger string, a cement plug at least two hundred (200) feet in length shall be placed to extend at least one hundred (100) feet above to at least one hundred (100) feet below the stub.

(e) **Plugging of Annular Space.** No annular space that extends to the waters floor shall be left open to drilled hole below. If this condition exists, cement shall be used to plug the annulus to prevent the upward migration of fluids to the waters floor.

(f) **Surface Plug Requirement.** A cement plug at least one hundred fifty (150) feet in length shall be place with the top of the plug one hundred fifty (150) feet or less below the waters floor, and shall be placed in the smallest string of casing which extends to, or nearest to, the waters floor.

(g) **Testing of Plugs.** The setting and location of the first plug below the surface plug required in (f) above shall be verified by one of the following methods:

1. By placing a minimum pipe weight of fifteen thousand (15,000) pounds on the cement plug, cement retainer, or bridge plug. The cement placed above the bridge plug or retainer need not be tested.

2. By testing the plug with a minimum pump pressure of one thousand (1,000) pounds per square inch (psi) with no

more than a ten percent (10%) pressure drop during a fifteen-(15) minute period.

(h) **Fluid Between Plugs.** Each of the respective intervals of the hole between the various plugs shall be filled with a fluid of sufficient density to maintain well control while plugging and abandonment operations are in progress.

(i) Other plugging and permanent abandonment procedures may be required by the Supervisor.

(j) Clearance of location shall be done in accordance with Rule 400-2-4-.13.

Author: State Oil and Gas Board
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