

# STATE OF ALASKA

WALTER J. HICKEL, GOVERNOR

## ALASKA OIL AND GAS CONSERVATION COMMISSION

3001 PORCUPINE DRIVE  
ANCHORAGE, ALASKA 99501-3192  
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October 21, 1991

### ADMINISTRATIVE APPROVAL NO. AIO 9.5

Re: Amend Rule 6 of Area Injection Order (AIO) No. 9

W. F. Simpson  
Manager, Regulatory Affairs  
Shell Western E & P Inc.  
601 West 5th Ave., Suite 810  
Anchorage, AK 99501-2257

Dear Mr. Simpson:

Shell Western E & P Inc. (SWEPI), as operator of the central portion of the Middle Ground Shoal (MGS) field, by letter dated September 23, 1991, requested modification to Rule 6 of AIO No. 9 (as amended by AA No. AIO 9.2, 9.2-A, 9.3-A and 9.4). The modification would allow a lower surface pressure for testing the mechanical integrity of MGS well No. C41-23. Pressuring the annulus to the required pressure of 25 psi/ft multiplied by the true vertical depth of the casing shoe may break down the cement repair of the casing at 2147' which was squeezed cemented and tested to 1000 psi in 1987. To minimize the risk of such damage, yet still confirm casing integrity, SWEPI requests authorization to test MGS well No. C41-23 using a surface pressure of 1000 psig.

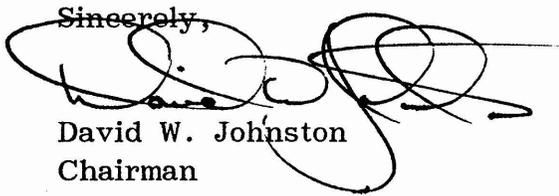
The Commission has determined that MGS well No. C41-23 does not inject into, through, or above an underground source of drinking water, and therefore less stringent requirements for testing mechanical integrity may be approved per 20 AAC 25.450. The Commission concludes that the mechanical integrity of the MGS well No. C41-23 will be demonstrated if the casing annulus holds 1000 psig surface pressure for 30 minutes with less than a 10 percent leakoff.

Therefore, as provided by "Rule 9 Administrative Relief," Rule 6 is amended to read:

Rule 6 Demonstration of Tubing/Casing Annulus Mechanical Integrity

- a. A schedule must be developed and coordinated with the Commission which ensures that the tubing/casing annulus for each injection/disposal well is pressure tested prior to initiating injection and at least once every four years thereafter. A test surface pressure of 1500 psi or 0.25 psi/ft multiplied by the vertical depth of the packer, whichever is greater, but not to exceed a hoop stress greater than 70% of the casing's minimum yield strength, must be held for 30 minutes with no more than a 10% decline.
- b. As an alternative, injection/disposal wells may be survey-tested to verify that fluids injected are confined to designated injection strata using an EPA approved method every other year for wells with tubing-to-casing pressure communication. The proposed test method and detailed operations program shall be submitted to the Commission for approval on Form 10-403 prior to testing the well.
- c. The Commission must be notified at least 24 hours in advance to enable a representative to witness the test.
- d. The tubing-casing annulus of Middle Ground Shoal Well No. A34-14RD2 shall be tested to 1000 psig surface pressure. This pressure must be held for 30 minutes with no more than a 100 psi decline to qualify as a valid test. Daily monitoring of the annulus pressure between integrity tests shall be performed. Should the well be worked over and permanent packers installed the testing criteria of paragraphs a. and b. shall take effect.
- e. The tubing-casing annulus of Middle Ground Shoal Well No. C41-23 shall be tested to 1000 psig surface pressure. This pressure must be held for 30 minutes with no more than a 100 psi decline to qualify as a valid test. Daily monitoring of the annulus pressure between integrity tests shall be performed.

Sincerely,



David W. Johnston  
Chairman

BY ORDER OF THE COMMISSION