

**STATE OF NEW MEXICO
ENERGY, MINERALS, AND NATURAL RESOURCES DEPARTMENT
OIL CONSERVATION DIVISION**

**IN THE MATTER OF THE HEARING CALLED
BY THE OIL CONSERVATION DIVISION FOR
THE PURPOSE OF CONSIDERING:**

**CASE NO. 11323
CASE NO. 11338
Order No. R-10432**

**APPLICATION OF STEVENS & TULL INC. FOR
AN EXCEPTION TO THE CASING REQUIREMENTS
OF DIVISION ORDER NO. R-111-P, LEA COUNTY,
NEW MEXICO.**

**APPLICATION OF STEVENS & TULL INC. FOR AN
EXCEPTION TO THE SALT PROTECTION CASING
STRING REQUIREMENT OF DIVISION ORDER
NO. R-111-P FOR CERTAIN WELLS LOCATED IN
PORTIONS OF TOWNSHIP 20 SOUTH, RANGE 33
EAST, LEA COUNTY, NEW MEXICO.**

ORDER OF THE DIVISION

BY THE DIVISION:

This cause came on for hearing at 8:15 a.m. on July 27, 1995, at Santa Fe, New Mexico, before Examiner David R. Catanach.

NOW, on this 2nd day of August, 1995, the Division Director, having considered the testimony, the record, and the recommendations of the Examiner, and being fully advised in the premises,

FINDS THAT:

(1) Due public notice having been given as required by law, the Division has jurisdiction of this cause and the subject matter thereof.

(2) Division Case Nos. 11323 and 11338 were consolidated at the time of the hearing for the purpose of testimony and inasmuch as applicant's request in Case No. 11323 is duplicated in Case No. 11338, one order should be entered for both cases.

(3) The applicant, Stevens & Tull, Inc., seeks an exception to the salt protection casing string requirement contained within Division Order No. R-111-P in the "Known Potash Leasing Area" ("Potash Area") for its proposed Federal "9" Well No. 7 to be drilled 2310 feet from the South line and 990 feet from the East line (Unit I) of Section 9, Township 20 South, Range 33 East, NMPM, and for certain additional wells to be drilled anywhere within the following described area in Lea County, New Mexico:

TOWNSHIP 20 SOUTH, RANGE 33 EAST, NMPM

Section 9: NE/4 NW/4, NE/4, E/2 SE/4

Section 10: SW/4

Section 16: N/2 NW/4, NE/4 NE/4, S/2 NE/4, S/2

(4) Stevens & Tull, Inc. has the right to develop the oil and gas minerals underlying the area described in Finding No. (3) above and proposes to drill ten or more wells within this area to an anticipated depth of approximately 3,500 feet to test for production within the Upper Yates portion of the West Teas Yates-Seven Rivers Pool.

(5) The subject area is located within the "Potash Area" as described within Division Order No. R-111-P, and is therefore subject to the casing and cementing requirements contained within Parts D(3)(a) through (i) which state in part:

" (3) Salt Protection String:

(a) A salt protection string of new or used oil field casing in good condition shall be set not less than 100 feet nor more than 600 feet below the base of the salt section; provided that such string shall not be set below the top of the highest known oil or gas zone."

"(b) The salt protection string shall be cemented as follows:

For wells drilled to the shallow zone, the string may be cemented with a nominal volume of cement for testing purposes only. If the exploratory test well is completed as a productive well, the string shall be re-cemented with sufficient cement to fill the annular space back of the pipe from the top of the first cementing to the surface or to the bottom of the cellar, or may be cut and pulled if the production string is cemented to the surface as provided in sub-section D (5)(a)(i) below."

(6) The requirement for a salt protection casing string is required within the "Potash Area" in order to protect commercial potash deposits from oil and gas activities where such activities would have the effect to reduce the total quantity of potash which may reasonably be recovered, and, in order to prevent the migration of methane gas from oil and gas bearing strata into potash mine workings.

(7) Within the affected area of this application, Mississippi Potash Inc. is the potash lessee of all of Section 16 (Potash Lease No. M-651-9), IMC Global Operations Inc. is the potash lessee of all of Section 8 (Potash Lease No. NM-013298-A), and New Mexico Potash Corporation is the potash lessee of the S/2 S/2 of Section 17 (Potash Lease No. M-19262-1). According to applicant's evidence and testimony, Sections 9 and 10 are currently unleased.

(8) By letter dated May 5, 1995, Mississippi Potash, Inc. advised the applicant that it objected to the drilling of the Federal "9" Well No. 7 without the salt protection casing string. In addition, by letter dated June 7, 1995, IMC Global Operations Inc. advised the applicant that it also objected to the drilling of the Federal "9" Well No. 7 without the salt protection casing string.

(9) Neither Mississippi Potash, Inc. or IMC Global Operations Inc. appeared at the hearing to present evidence and testimony in opposition to the application.

(10) Prior to the Oil Conservation Commission's adoption of Order No. R-111-P effective April 21, 1988, Sections 9, 10 and 16 were outside the boundaries of the "Potash Area" as described in Order No. R-111, as amended, and these wells would not have been subject to the casing and cementing requirements of that order.

(11) Order No. R-111-P expanded the "Potash Area" as described in Order No. R-111-O but further provided:

"Finding (22). Expansion of the R-111 area to coincide with the KPLA (Known Potash Leasing Area, established by the BLM) will bring under the purview of this order areas where potash is either absent or noncommercial and such areas should be granted less stringent casing, cementing and plugging requirements, at the discretion of the OCD district supervisor.",
and

"Decretory Paragraph C. (4) provides that "the Division's District Supervisor may waive the requirements of Section D and F (dealing with drilling, casing and plugging) which are more rigorous than the general rules upon satisfactory showing that a location is outside the Life of the Mine Reserves (LMR) and surrounding buffer zone as defined hereinbelow and that no commercial potash reserves will be unduly diminished."

(12) According to applicant's testimony, exceptions to the requirement for salt protection casing strings were routinely approved by the United States Bureau of Land Management (BLM) on Federal lands until recently at which time BLM advised the applicant that concurrent OCD approval would be required.

(13) Exceptions to the requirement for salt protection casing strings have been approved by the BLM for approximately ten wells within Section 9, and exceptions have previously been granted by the OCD (Division Order No. R-10122 issued in Case No. 10858 on May 31, 1994) for nine wells located in Section 4, Township 20 South, Range 33 East, NMPM.

(14) According to applicant's evidence, eight wells have been drilled within Sections 9 and 16 with salt protection casing strings, however, according to applicant's testimony, exceptions for these wells were not requested.

(15) The applicant's geologic and reservoir engineering evidence demonstrated that:

- (a) it is likely that wells drilled within the proposed "excepted area" will encounter oil and gas production within the Upper Yates portion of the West Teas Yates-Seven Rivers Pool;
- (b) the expected average ultimate recovery for wells drilled and completed in the Upper Yates portion of the West Teas Yates-Seven Rivers Pool ranges from approximately 20,000-70,000 barrels of oil per well;
- (c) the total cost of a well drilled with the salt protection casing string would be approximately \$226,000. The total cost of a well drilled without the salt protection casing string would be approximately \$162,000.

- (d) based upon recoveries of 52,000 barrels of oil per well, the deletion of the salt protection casing string increases applicant's rate of return by approximately 15 percent to acceptable levels; and directly affects the economic viability of drilling these wells;
- (e) the deletion of the salt protection casing string significantly improves the economic viability of drilling these wells which will result in the recovery of oil that might otherwise be lost or subject to drainage;
- (f) deletion of the salt protection casing string will provide the applicant with the same opportunity as the offsetting operators who have not been required to pay the costs of salt protection casing strings in their wells thereby protecting applicant's correlative rights.

(16) Applicant's potash expert, who utilized publicly available potash core data, ore grade information, BLM Potash Data, and potash economic information, presented evidence which indicates that:

- (a) the vast majority of Section 9 is within an area defined by BLM as being "barren" of commercial potash;
- (b) the proposed "excepted area" within Sections 10 and 16 is within an area defined by BLM to contain commercial potash reserves within the 10th Potash Zone;
- (c) the proposed "excepted area" is not located within an LMR or within 1/4 mile of any LMR;
- (d) the proposed "excepted area" is located approximately 4.5 miles from an area which has been mined in the past and approximately 9 miles from active potash mine workings;

- (e) Sections 10 and 16 may be economically minable if there were active mine workings located adjacent to or in close proximity to these sections, however, due to the location of this area relative to active mine workings, it is highly unlikely that either active operations will be extended into this area or new mine workings initiated in this area;
- (f) since 1966, mining in the "Potash Area" has been on a significant decline and it is highly improbable that mining activity will occur towards the proposed "excepted area" from any existing mining operation;
- (g) there are factors which suggest that the potash industry in New Mexico is likely to remain depressed for an extended period of time and which may indefinitely preclude any mining activity within the proposed "excepted area".

(17) Applicant's expert on drilling, completing and producing the proposed wells presented evidence which demonstrated that:

- (a) the wells within the proposed "excepted area" can be drilled, cased, cemented, completed and produced by deleting the salt protection casing string without risk to miner's safety or causing the undue waste of commercial deposits of potash;
- (b) the proposed procedures for drilling and completing the wells within the "excepted area" have been previously utilized in Section 9 and have been approved by the BLM.
- (c) the wellbore integrity of these wells is expected to continue for a longer time than the time required to produce the wells to abandonment.

(18) The evidence and testimony presented in this case indicates that approval of the subject applications will not unduly reduce the total quantity of commercial deposits of potash which may reasonably be recovered in commercial quantities, nor will it interfere unduly with the orderly commercial development of potash deposits, nor will it constitute a risk to miner's health or safety.

(19) Approval of the subject applications will afford the applicant the opportunity to produce its just and equitable share of the hydrocarbons in the Yates formation of the West Teas Yates-Seven Rivers Pool, will prevent the economic loss caused by drilling of wells with unnecessary salt protection casing strings and will otherwise prevent waste and protect correlative rights.

(20) The applicant should take all steps necessary to ensure that the surface and production casing strings within the wells in the "excepted area" are cemented to surface in conformance with its drilling and completing procedure presented as evidence in this case.

(21) Except as modified by this order, all of the provisions of Order No. R-111-P applicable to the casing, actual drilling, cementing and plugging of a shallow well within the "Potash Area" shall be strictly adhered to.

IT IS THEREFORE ORDERED THAT:

(1) The application of Stevens & Tull, Inc., for approval to delete the salt protection casing string requirement of Order No. R-111-P is hereby granted for its proposed Federal "9" Well No. 7 to be drilled 2310 feet from the South line and 990 feet from the East line (Unit I) of Section 9, Township 20 South, Range 33 East, NMPM, and for certain additional wells to be drilled anywhere within the following described area in Lea County, New Mexico:

TOWNSHIP 20 SOUTH, RANGE 33 EAST, NMPM

Section 9: NE/4 NW/4, NE/4, E/2 SE/4

Section 10: SW/4

Section 16: N/2 NW/4, NE/4 NE/4, S/2 NE/4, S/2

PROVIDED HOWEVER THAT: each well drilled within the area described above shall be drilled, cased, cemented, produced and plugged and abandoned in conformance with applicant's procedures presented as evidence in this case.

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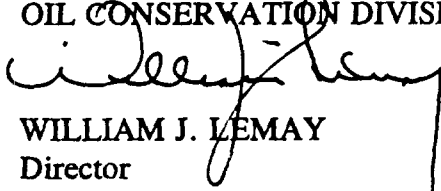
(2) The applicant shall notify the OCD District Supervisor of the Hobbs Office of the times when casing is to be run and cemented, when bond or temperature logs are to be run, and when remedial cementing operations are to occur on any wells within the area described above.

(3) Except as modified by Decretory Paragraph No. (1) of this order, all of the provisions of Order No. R-111-P applicable to the casing, actual drilling, cementing and plugging of a shallow well within the "Potash Area" shall be strictly adhered to.

(4) Jurisdiction of this cause is retained for the entry of such further orders as the Division may deem necessary.

DONE at Santa Fe, New Mexico, on the day and year hereinabove designated.

STATE OF NEW MEXICO
OIL CONSERVATION DIVISION


WILLIAM J. LEMAY
Director

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