

**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. 12506
Order No. R-10432-B**

**APPLICATION OF SAPIENT ENERGY CORPORATION FOR
MODIFICATION OF DIVISION ORDER NO. R-10432 TO EXPAND THE AREA
EXEMPT FROM THE SALT PROTECTION CASING STRING
REQUIREMENTS OF DIVISION ORDER NO. R-111-P TO INCLUDE THE
ENTIRE WEST TEAS (YATES-SEVEN RIVERS) UNIT AREA, LEA COUNTY,
NEW MEXICO.**

ORDER OF THE DIVISION

BY THE DIVISION:

This case came on for hearing at 8:15 a.m. on October 19, 2000, at Santa Fe, New Mexico, before Examiner David R. Catanach.

NOW, on this 28th day of November, 2000, the Division Director, having considered the testimony, the record, and the recommendations of the Examiner,

FINDS THAT:

(1) Due public notice has been given and the Division has jurisdiction of this case and its subject matter.

(2) By Order No. R-10432 as amended, issued in Cases No. 11323 and 11338 on August 2, 1995, the Division approved the application of Stevens & Tull, Inc. to delete the salt protection casing string requirements of Division Order No. R-111-P for its Federal "9" Well No. 7 located 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, Lea County, New Mexico, and for certain additional wells to be drilled anywhere within the following described area:

TOWNSHIP 20 SOUTH, RANGE 33 EAST, NMPM

Section 9: E/2 SE/4
Section 10: SW/4
Section 16: N/2 NW/4, NE/4 NE/4, S/2 NE/4, S/2

(3) The applicant, Sapient Energy Corporation (“Sapient”), seeks to amend Division Order No. R-10432 as amended, to expand the area exempt from the salt protection casing string requirements of Division Order No. R-111-P to include the entire West Teas (Yates-Seven Rivers) Unit Area. The additional lands to be included are described as follows:

TOWNSHIP 20 SOUTH, RANGE 33 EAST, NMPM

Section 4: SE/4
Section 9: NE/4 NW/4, S/2 NW/4, NE/4, SW/4, W/2 SE/4
Section 16: NW/4 NE/4, S/2 NW/4
Section 17: E/2 NE/4, NE/4 SE/4

(4) IMC Potash Carlsbad, Inc. (“IMC”), the potash lessee in Sections 5, 6, 7 and 8, Township 20 South, Range 33 East, being the area immediately to the northwest and west of the West Teas (Yates-Seven Rivers) Unit Area, appeared at the hearing in opposition to the application.

(5) Pursuant to the application of Falcon Creek Resources, Inc., the West Teas (Yates-Seven Rivers) Unit Area was approved for secondary recovery operations by Division Order No. R-11375 issued in Cases No. 12331 and 12332 on May 18, 2000.

(6) Sapient is the successor operator of the West Teas (Yates-Seven Rivers) Unit Area.

(7) At the request of Sapient, the hearing transcript and exhibits presented in Cases No. 11323 and 11338 were incorporated into the record in this case.

(8) The West Teas (Yates-Seven Rivers) Unit Area is located within the “Known Potash Leasing Area” (“Potash Area”) as described within Division Order No. R-111-P and is therefore subject to the drilling, casing and cementing requirements contained within Section D of the “*Rules and Regulations Governing the Exploration and Development of Oil and Gas in Certain Areas Herein Defined, Which are Known to Contain Potash Reserves,*” 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 one hundred (100) feet nor more than six hundred (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 subsection D(5)(a)(i) below.

(9) 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 of reducing the total quantity of potash that may be reasonably recovered and to prevent the migration of methane gas from oil and gas bearing strata into potash mine workings.

(10) According to the applicant's evidence, portions of Sections 4, 9, 10 and 16 have previously been exempted from the salt protection casing string requirements of Division Order No. R-111-P by various orders and directives from the Division and the United States Bureau of Land Management ("BLM"), described as follows:

- (a) Division Order No. R-10432 as amended, described in Finding No. (2), exempted portions of Sections 9, 10 and 16;
- (b) Division Order No. R-10122 dated May 31, 1994, granted wellbore specific exemptions for nine wells located in Section 4;

- (c) BLM granted wellbore specific exemptions for certain wells located in the NE/4 NW/4 and NE/4 of Section 9; and
 - (d) certain wells were drilled without the salt protection casing string in the S/2 NW/4, N/2 SW/4, SE/4 SW/4 and NW/4 SE/4 of Section 9 prior to this area being included in the Potash Area by Division Order No. R-111-P.
- (11) In Cases No. 11323 and 11338, evidence was presented demonstrating:
- (a) the vast majority of Section 9 is within an area defined by the BLM as being “barren” of commercial potash;
 - (b) the proposed “excepted area” within Sections 10 and 16 is within an area defined by the BLM to contain commercial potash reserves within the 10th Potash Zone;
 - (c) the proposed “excepted area” is not located within a Life of Mine Reserves (“LMR”) or within ¼ mile of any LMR;
 - (d) the proposed “excepted area” is located approximately 4.5 miles from an area that has been mined in the past and approximately 9 miles from active potash mine workings;
 - (e) Sections 10 and 16 might be economically mineable if there were active mine workings located adjacent to or in close proximity to these sections; however, due to the distance of this area from 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; and

- (g) there are factors that suggest that the potash industry in New Mexico is likely to remain depressed for an extended period of time, which may indefinitely preclude any mining activity within the proposed “excepted area.”

(12) The evidence presented in Cases No. 11323 and 11338 was presented by a “potash expert” representing Stevens & Tull, Inc.

(13) Neither Mississippi Potash, Inc. nor IMC Global Operations, Inc., both potash lessees to whom notice was given in Cases No. 11323 and 11338, appeared at the hearing in opposition to the application of Stevens & Tull, Inc.

(14) Sapient presented further evidence in this case that demonstrates:

- (a) in order to complete an efficient injection/production pattern within the West Teas (Yates-Seven Rivers) Unit Waterflood Project, it intends to drill an additional four producing wells and five injection wells. The proposed wells are located within the following described quarter-quarter sections:

Section 9: SW/4 SW/4 and SE/4 SW/4

Section 16: NW/4 NW/4, NW/4 NE/4,
SW/4 NW/4, SW/4 NE/4,
SE/4 NE/4, NE/4 SW/4

Section 17: SE/4 NE/4;

- (b) four of the wells are in the area previously exempted by Division Order No. R-10432;
- (c) the addition of a salt protection casing string adds approximately \$97,000 to the cost of drilling these wells;
- (d) based upon its economic analysis, it will be uneconomic to drill the additional wells if Sapient is

required to drill these wells with a salt protection casing string; and

- (e) if Sapiient is precluded economically from drilling the proposed additional wells, recovery from the West Teas (Yates-Seven Rivers) Unit Waterflood Project will be reduced by approximately 640,000 barrels of oil.

(15) IMC presented no evidence or testimony, but stated its position in this case at the conclusion of hearing proceedings.

(16) Subsequent to the hearing and at the request of the Division, IMC submitted a map that identifies its LMR in this area. This map also identifies the LMR "Buffer Zone," which is defined by Division Order No. R-111-P as that area that extends beyond the LMR a distance of 1,320 feet **or** 110 percent of the depth of the ore, whichever is greater. According to IMC's map, the LMR Buffer Zone has been determined to extend a distance of 2,211 feet from the LMR boundary.

(17) The map presented by IMC demonstrates that its LMR encompasses the vast majority of Section 8, immediately to the west of the West Teas (Yates-Seven Rivers) Unit Area. In addition, the LMR Buffer Zone extends into portions of Sections 9 and 16.

(18) IMC stated its position in this case as follows:

- (a) this area (Section 8) contains commercial potash reserves that will be mined within 15 years;
- (b) the drilling of wells without salt protection casing strings presents a danger to safe mining operations; and
- (c) it objects to the drilling of wells without salt protection casing strings within the LMR Buffer Zone **in areas not previously subject to exemption** (as described in Finding No. (10)).

(19) According to IMC's LMR map and accompanying letter, its objection to Sapiient's application is limited to that area encompassing the E/2 NE/4 and NE/4 SE/4 of Section 17 and the SW/4 SW/4 of Section 9. This "contested" area affects the drilling of two of Sapiient's proposed wells.

- (20) The evidence and testimony presented in this case demonstrate that:
- (a) a portion of the area Sapient seeks to exempt from the salt protection casing string requirements of Division Order No. R-111-P lies within IMC's LMR Buffer Zone;
 - (b) it appears that IMC's LMR within Section 8 will be mined at some time in the future;
 - (c) exempting areas from the salt protection casing string requirements of Division Order No. R-111-P within IMC's LMR Buffer Zone that have not previously been exempted will increase the danger to potash mining operations in this area; and
 - (d) the exclusion of the E/2 NE/4 and NE/4 SE/4 of Section 17 and the SW/4 SW/4 of Section 9 from the proposed exempted area will allow Sapient to drill seven of its proposed nine wells without salt protection casing strings which should positively impact the project economics.

(21) Approval of the proposed exempted area, excluding the E/2 NE/4 and NE/4 SE/4 of Section 17 and the SW/4 SW/4 of Section 9, will allow Sapient to recover additional secondary oil and gas reserves underlying the West Teas (Yates-Seven Rivers) Unit Area, thereby preventing waste, and will serve to prevent further danger to future potash mining operations in Section 8.

IT IS THEREFORE ORDERED THAT:

(1) Pursuant to the application of Sapient Energy Corporation, Division Order No. R-10432, as amended, is hereby amended by expanding the area exempt from the salt protection casing string requirements of Division Order No. R-111-P to include the following described area within the West Teas (Yates-Seven Rivers) Unit Area, Lea County, New Mexico:

TOWNSHIP 20 SOUTH, RANGE 33 EAST, NMPM

Section 4:	SE/4
Section 9:	NE/4 NW/4, S/2 NW/4, NE/4, N/2 SW/4, SE/4 SW/4, W/2 SE/4
Section 16:	NW/4 NE/4, S/2 NW/4

(2) The application of Sapient Energy Corporation to amend Division Order No. R-10432, as amended, by exempting the following described area within the West Teas (Yates-Seven Rivers) Unit Area from the salt protection casing string requirements of Division Order No. R-111-P, Lea County, New Mexico, is hereby **denied**.

TOWNSHIP 20 SOUTH, RANGE 33 EAST, NMPM

Section 9: SW/4 SW/4
Section 17: E/2 NE/4, NE/4 SE/4

(3) All other provisions contained within Division Order No. R-10432, as amended, shall remain in full force and effect.

(4) Jurisdiction is hereby retained for the entry of such further order 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


LORI WROTENBERY
Director

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