

**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. 15017
ORDER NO. R-13775**

**APPLICATION OF ENERGEN RESOURCES CORPORATION FOR
DETERMINATION OF CEMENT ADEQUACY IN PROXIMITY TO
PROPOSED WELL PERFORATIONS, SANDOVAL COUNTY, NEW MEXICO.**

ORDER OF THE DIVISION

BY THE DIVISION:

This case came on for hearing at 8:15 a.m. on July 11, 2013, at Santa Fe, New Mexico, before Examiner Richard I. Ezeanyim.

NOW, on this 3rd day of December, 2013, 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) Energen Resources Corporation ("Energen", or "Applicant", or "Operator") seeks an order from the Division pursuant to *inter alia*, Division Rules 19.15.16.9 and 19.15.16.10 NMAC, to determine the adequacy of existing cement top in its Chacon Jicarilla D Well No. 7 (**API No. 30-043-20236**), and to authorize the placement of new perforations in the Niobrara formation, the West Lindrith-Gallup-Dakota Pool (**Code 39189**).

The Applicant appeared at the hearing through counsel and presented the following testimony.

(3) The Chacon Jicarilla D Well No. 7 located 330 feet from the North line and 2310 feet from the West line (Unit C) of Section 21, Township 23 North, Range 3 West, NMPM, Sandoval County, New Mexico, was drilled in 1976, and is currently producing from the Dakota formation through perforations from 7,308 feet to 7,436 feet.

(4) Energen proposes to re-complete the well through perforations from 6,294 feet to 6,403 feet. The Cement Bond Log (CBL) indicates that the top of the cement is at 6,164 feet, which is 130 feet of cement isolation from the top of the cement to the top perforations planned to be added to the well.

(5) The re-completion of the Chacon Jicarilla D Well No. 7 with cement top at 130 feet above the top perforations as indicated by CBL, will provide adequate zonal isolation in compliance with the requirements of Division Rules 19.15.16.9 and 19.15.16.10 NMAC.

(6) Energen is not asking for exceptions to the requirements of Rules 19.15.16.9 and 19.15.16.10 NMAC. In practice, Energen uses conventional-type, hard-setting cement in its operations, and does not use oil-base casing packing material.

(7) There is no indication of abnormal pressure zones in this area, and as such, there is no risk of cross-flow between the hydrocarbon bearing zones.

(8) The Bureau of Land Management (BLM) has already approved the re-completion of this well in the Niobrara formation, with cement top at 130 feet above the proposed top of the perforations. This well is located in the Jicarilla Indian land.

(9) Energen estimates that it will recover 75,000 barrels of oil equivalent (BOE) from the re-completion operation in the Niobrara formation.

The Oil Conservation Division (OCD) appeared at the hearing through counsel in opposition to the granting of this application, and presented the following testimony.

(10) Division rules require Energen Resources Corporation as an operator to seal and separate the oil, gas and water bearing strata above the producing horizon to prevent their contents from passing into other strata.

(11) The Oil Conservation Division is obligated to prevent waste, protect correlative rights, and protect the environment; therefore, in accordance with Rule 19.15.16.10.E NMAC, OCD should allow a minimum of 500 feet of conventional-type , hard-setting cement above the top of the perforations in lieu of circulating the cement to the surface.

(12) This minimum of 500 feet of cement above the proposed top of the perforations is crucial in this case, as this producing well has a cement block that does not allow for bradenhead tests to monitor and ensure strata isolation.

(13) The OCD District III office refused to approve the re-completion operation requested by Energen Resources Corporation, because the operation does not have 500 feet

of conventional-type, hard-setting cement above the top of the perforations, or alternatively, Energen should have a cement column that goes up 100 feet into the next casing string.

The Division concludes as follows:

(14) Division Rule 19.15.16.10.D NMAC provides as follows: "Cementing shall be with conventional-type hard-setting cements to which the operator has added additives (lighteners, densifiers, extenders, and accelerators, etc) to suit conditions in the well".

(15) Division Rule 19.15.16.10.E NMAC provides as follows: "Authorized division field personnel may, when conditions warrant, allow exceptions to Subsection D of 19.15.16.10 NMAC and permit the operator to use oil-base casing packing material in lieu of hard-setting cements on intermediate and production casing; provided that when the operator uses such materials on the intermediate casing string, the operator places conventional-type hard-setting cements throughout all oil-and gas-bearing zones and throughout at least the lowermost 300 feet of the intermediate casing string. When the operator uses such materials on the production casing string, the operator shall place conventional-type hard-setting cements throughout all oil and gas-bearing zones that shall extend upward a minimum of 500 feet above the uppermost perforation or, in case of an open-hole completion, 500 feet above the production casing shoe".

(16) Energen Resources Corporation is not asking for an exception to the requirements of Division Rule 19.15.16.10.D, NMAC to use oil-base casing packing material. Energen is using American Petroleum Institute (API) Monogrammed Class H cements in its operations; therefore the requirements of Division Rule 19.15.16.10.E NMAC do not apply in this case. The Cement Bond Log (CBL) clearly indicates that the top of cement is 130 feet above the proposed top of the perforations in the Niobrara formation.

(17) The cement bond log indicates that the quality of the bond is such that 130 feet of such cement is adequate to provide zonal isolation, and to seal and separate the oil, gas and water bearing strata above the producing horizon, to prevent their contents from passing into other strata.

(18) The Niobrara formation is normally pressured, probably closer to hydrostatic pressure; therefore, there is no significant risk of cross-flow between hydrocarbon bearing formations in this area.

(19) The Chacon Jicarilla D Well No. 7 is a producing well not located in a water flow area, or any other known restricted area, and therefore, should not pose any problem or risk to underground sources of drinking water, or the environment.

(20) If Energen Resources Corporation is required to bring up cement an additional 370 feet by squeezing cement through the production casing, it will likely compromise the mechanical integrity of the production casing string.

(21) Energen Resources Corporation will recover 75,000 barrels of oil equivalent by the re-completion operation in the Niobrara formation.

(22) Waste of oil and gas will be prevented, correlative rights and the environment will be protected, and accordingly this application should be approved.

IT IS THEREFORE ORDERED THAT:

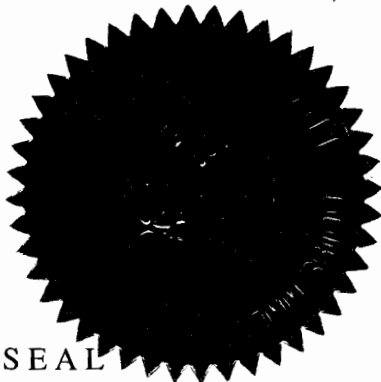
(1) The application of Energen Resources Corporation to conduct a re-completion operation in the Niobrara formation, the West Lindrith-Gallup-Dakota Pool (Code 39189), in its Chacon Jicarilla D Well No. 7 (API No. 30-043-20236) located 330 feet from the North line and 2310 feet from the West line (Unit C) of Section 21, Township 23 North, Range 3 West, NMPM, Sandoval County, New Mexico, is hereby approved.

(2) The perforations in the well shall be from 6,294 feet to 6,403 feet, and the cement top shall be at 6,164 feet, providing 130 feet of cement above the top of the perforations. The 130 feet of zonal isolation is adequate to seal and separate the oil, gas, and water-bearing strata above the producing zone, to prevent their contents from passing into other strata.

(3) On all subsequent wells recompleted in the West Lindrith-Gallup-Dakota pool, according to 19.15.16.10.I(1) NMAC, the operator shall pressure test casing strings in wells drilled with rotary tools. Minimum casing test pressure shall be approximately one-third of the manufacturer's rated internal yield pressure except that the test pressure shall not be less than 600 psi and need not be greater than 1500 psi. In cases where combination strings are involved, the above test pressure shall apply to the lowest pressure rated casing used. The operator shall apply test pressures for a period of 30 minutes. If a drop of more than 10 percent of the test pressure occurs the casing shall be considered defective and the operator shall apply corrective measures.

(4) Jurisdiction of this case is hereby 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

JAMI BAILEY
Director