

**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 THE:**

**APPLICATION OF ENDURANCE RESOURCES LLC FOR APPROVAL OF A  
PRESSURE MAINTENANCE PROJECT, EDDY COUNTY, NEW MEXICO**

**CASE NO. 14799  
ORDER NO. R-13615**

**ORDER OF THE DIVISION**

**BY THE DIVISION:**

This case came on for hearing at 8:15 a.m. on March 15, 2012, at Santa Fe, New Mexico before Examiner David K. Brooks.

NOW, on this 13<sup>th</sup> day of August, 2012, 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) Endurance Resources LLC ("Endurance" or "applicant"), seeks approval to institute a lease Pressure Maintenance Project into the Queen and Grayburg formations, Shugart-Yates-Seven Rivers-Queen-Grayburg Pool (Pool Code 56439), within its Hinkle "B" Federal Lease, through conversion to injection of one well, the Hinkle "B" Federal Well No. 19 (API No. 30-015-24527) located 990 feet from the North line and 330 feet from the West line, Unit letter D of Section 34, Township 18 South, Range 31 East, NMPM, Eddy County, New Mexico.

(3) Endurance submitted to the Division in July of 2011 an administrative application for salt water disposal into this well. The Division directed Endurance to set the matter for hearing due to the presence of producing wells within one half mile of the proposed well in the proposed disposal interval. The case was heard March 15, 2012, but the decision was delayed until August 2012 due to bonding requirements of 19.15.5.9 NMAC.

(4) The Hinkle "B" Federal Lease (Federal Lease LC 029392B) covers the

following lands within Eddy County, New Mexico:

**Township 18 South, Range 31 East, NMPM**

Section 26: E/2 E/2, NW/4 NW/4, SE/4 NW/4  
Section 27: S/2 SW/4, W/2 SE/4  
Section 34: N/2 NW/4, SW/4 NW/4  
Section 35: E/2 SE/4

(5) Endurance requests permission to convert the Hinkle "B" Federal Well No. 19 (the "proposed well") from a depleted, inactive oil well to injection of oil field produced water into the Queen and Upper Grayburg formations from perforated depths of 3410 feet to 3902 feet.

(6) Endurance presented exhibits and testimony from a geologist and engineer indicating the following:

(a) Endurance operates the Hinkle "B" Federal lease where the disposal costs of produced water have recently gone up to uneconomic levels. The lease makes approximately 30 barrels of oil per day and approximately 300 barrels of water per day.

(b) The proposed injection well is expected to easily take this volume of produced water. A commercial disposal well located within one half mile west of this location is completed in the Seven Rivers, Queen, and Grayburg formations and is taking 2100 barrels of water per day.

(c) The proposed well has been depleted in the Queen and Grayburg formations and last produced two barrels of oil per day in December of 2011. The well was acidized, went on a vacuum, and never again produced.

(d) The producing intervals in these formations are controlled by porosity trends, but there is a slight regional dip of these formations to the southeast – towards the East Shugart Unit. The East Shugart Unit was permitted for waterflooding into depths roughly equivalent to the injection depths requested in this case.

(e) This reservoir becomes water-wet towards the west as noted in wells completed in Section 33 and improves in productivity towards the east or southeast.

(f) Endurance needs this well primarily for water disposal purposes; however, Endurance has seen a small positive effect on its producers located near the East Shugart Unit especially in Section 26 and expects that water injection into the proposed well may help offsetting production wells.

(g) Endurance has noted by analogy that conditions are favorable for waterflooding in the Queen and Grayburg formations.

(h) Endurance did not find water wells within one mile of the proposed well. Any possible fresh waters will be protected by surface casing and cement.

(7) Endurance did not present testimony from a Landman, but has represented at the hearing that it is the operator of the Hinkle "B" Federal lease. The lease acreage listed in this application is scattered over portions of four sections. Endurance has indicated that the proposed well to be located in Unit letter D of Section 34 is the only well it intends to use for injection purposes, and did not present proposed or prospective waterflood patterns over the extent of this lease. Therefore, the approved Project Area should be limited to the portion of the Hinkle "B" Federal lease area reasonably expected to be affected by injection which would be the lands contained in Section 34.

(8) Within one half mile from the proposed injection well, there are 17 total wells drilled to this depth. One of those is plugged and abandoned. All of these Area of Review wells are cased, cemented, and/or plugged to adequately isolate the intended injection interval within the Queen and Grayburg formations and to protect any underground fresh waters if present.

(9) Notice was provided by Endurance in this case of its intent to inject. Endurance sent notices to all "affected persons" as defined in 19.15.26.7A. NMAC. The surface owner at the well site of the Hinkle "B" Federal Well No. 19 is the U.S. Bureau of Land Management ("BLM") and the BLM was notified. The Bureau of Land Management's Carlsbad Field Office objected to the proposed conversion of this well, with letter dated February 14, 2012. Endurance reported at the hearing it had met with the BLM and discussed concerns. The lands immediately offsetting this lease in Section 33 are leased by Canyon E&P Company. Efforts to contact Canyon have not been successful.

(10) No other parties appeared in this case or otherwise opposed this application.

(11) Endurance Resources LLC (OGRID 270329) is the operator of record of the wells located on this acreage. Endurance is now in compliance with Division Rule 5.9 and therefore eligible for approval of disposal and injection permits.

(12) The proposed secondary recovery injection project or waterflood within this lease is feasible and should result in the recovery of additional oil and gas that would not otherwise be recovered.

(13) The estimated additional costs of the proposed secondary recovery operations will not exceed the estimated value of the additional oil and gas recovered plus a reasonable profit.

(14) The proposed project will prevent waste, protect correlative rights, and should be approved and called the **Hinkle "B" Federal Pressure Maintenance Project**.

The Project Area to be affected by this secondary recovery operation should consist of the portion of the Hinkle "B" Federal lease area contained in the N/2 NW/4 and SW/4 NW/4 of Section 34.

(15) As proposed, Endurance should be approved to inject into the Hinkle "B" Federal Well No. 19 (API No. 30-015-24527) located within Unit letter D of Section 34 into the Queen and Grayburg formations from depths of 3410 feet to 3902 feet.

**IT IS THEREFORE ORDERED THAT:**

(1) Endurance Resources LLC ("operator", OGRID 270329) is hereby authorized to implement secondary recovery operations within the project area of its Hinkle "B" Federal Lease (LC 029392B) by water injection into the Queen and Grayburg formations, Shugart-Yates-Seven Rivers-Queen-Grayburg Pool (Pool Code 56439).

(2) The project shall be called the **Hinkle "B" Federal Pressure Maintenance Project** and the Project Area shall consist of the N/2 NW/4 and SW/4 NW/4 of Section 34, Township 18 South, Range 31 East, NMPM, Eddy County, New Mexico.

(3) Injection is approved within the Hinkle "B" Federal Well No. 19 (API No. 30-015-24527), located 990 feet from the North line and 330 feet from the West line, Unit letter D in Section 34, Township 18 South, Range 31 East, NMPM, Eddy County, New Mexico. Injection shall be through perforations in that well from a maximum depth range from 3410 to 3902 feet, and through lined tubing and a packer set no higher than 100 feet above the approved injection interval.

(4) The operator shall take all steps necessary to ensure that the injected water enters only the permitted injection intervals and is not permitted to escape to other formations or onto the surface from injection, production, or plugged and abandoned wells.

(5) The casing-tubing annulus shall be filled with an inert fluid, and a gauge or approved leak-detection device shall be attached to the annulus in order to detect any leakage in the casing, tubing, or packer.

(6) The injection well or pressurization system shall be equipped with a pressure control device or acceptable substitute that will limit the maximum surface injection pressure to 682 psi.

(7) The Division Director may administratively authorize a pressure limitation in excess of the above, upon a showing by the operator, supported by approved Step Rate Tests that such higher pressure will not result in the fracturing of the injection formation or confining strata or damage to the reservoir.

(8) As per Division Rule 19.15.26.11A. NMAC, the operator shall test the approved injection well for mechanical integrity prior to commencing injection into that

well and prior to resuming injection each time the packer is unseated. All MIT testing procedures and schedules shall follow the requirements in Division Rule 19.15.26.11A. NMAC. The Division Director retains the right to require at any time wireline verification of completion and packer setting depths in this well.

(9) The operator shall provide notice, 72 hours in advance, to the supervisor of the Division's district office of the date and time of the installation of injection equipment and of any mechanical integrity test so that the same may be inspected and witnessed.

(10) The operator shall provide written notice of the date of commencement of injection to the Division's district office. In accordance with Division rules, the operator shall submit monthly reports of the injection operations on Division Form C-115.

(11) Without limitation on the duties of the operator as provided in Division rules, or otherwise, the operator shall immediately notify the Division's district office of any failure of the tubing, casing or packer in the well, or of any leakage or release of water, oil or gas from or around any produced or plugged and abandoned well in the area, and shall take such measures as may be timely and necessary to correct such failure or leakage.

(12) The injection authority granted under this order is not transferable except upon Division approval. The Division may require the operator to demonstrate mechanical integrity of any injection well that will be transferred prior to approving transfer of authority to inject.

(13) The Division may revoke this injection permit after notice and hearing if the operator is in violation of 19.15.5.9 NMAC.

(14) The injection authority granted herein shall terminate two years after the effective date of this order if the operator has not commenced injection operations into the permitted injection well, provided however, the Division, upon written request, mailed by the operator prior to the termination date, may grant an extension thereof for good cause.

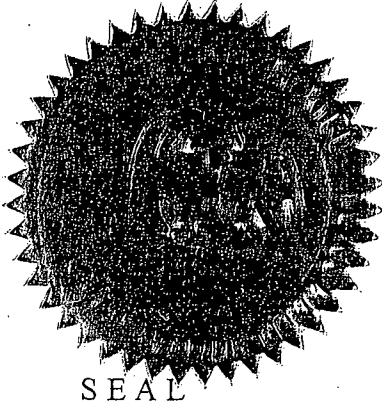
(15) One year after all injection into the project area has ceased (or not reported), the Division shall consider the project abandoned, and the authority to inject will terminate *ipso facto*. The Division, upon written request mailed by the operator prior to that termination date, may grant an extension thereof for good cause.

(16) Compliance with this order does not relieve the operator of the obligation to comply with other applicable federal, state or local laws or rules, or to exercise due care for the protection of fresh water, public health and safety and the environment.

(17) Jurisdiction is retained by the Division for the entry of such further orders as may be necessary for the prevention of waste and/or protection of correlative rights or upon failure of the operator to conduct operations (1) to protect fresh or protectable

waters or (2) consistent with the requirements in this order, whereupon the Division may, after notice and hearing (or without prior notice and hearing in case of emergency), terminate the injection authority granted herein.

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



STATE OF NEW MEXICO  
OIL CONSERVATION DIVISION

A handwritten signature in black ink, appearing to read "Jami Bailey".

JAMI BAILEY  
Director