

**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 COULTHURST MANAGEMENT & INVESTMENT, INC.
FOR AUTHORIZATION TO INJECT AS A PART OF A PRESSURE
MAINTENANCE PROJECT, SANDOVAL COUNTY, NEW MEXICO**

**CASE NO. 14835
ORDER NO. R-2975-A**

ORDER OF THE DIVISION

BY THE DIVISION:

This case came on for hearing at 8:15 a.m. on May 10, 2012 and again on July 12, 2012, at Santa Fe, New Mexico before Examiner David K. Brooks.

NOW, on this 29th 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) Coulthurst Management & Investment, Inc. ("Coulthurst" or "applicant"), seeks approval to institute a lease Pressure Maintenance Project into the Menefee formation, South San Luis-Mesaverde Oil Pool (Pool Code 53630), within its Federal Erin Lease, through conversion to injection of one well, the Erin Well No. 2 (API No. 30-043-20862) located 990 feet from the North line and 2310 feet from the West line, Unit C of Section 33, Township 18 North, Range 3 West, NMPM, Sandoval County, New Mexico.

(3) Coulthurst submitted to the Division in October of 2011 an administrative application for salt water disposal into this well. The Division directed Coulthurst to set the matter for hearing due to (among other things) the presence of producing wells within one half mile of the proposed well within the proposed disposal interval. The case was heard May 10, 2012 and taken under advisement, but upon review was found to be lacking in proof of notice. An affidavit of notice (applicant's Exhibit No. 5) was presented at the July 12, 2012 examiner hearing.

(4) The Federal Erin Lease (NMSF 0081171K) operated by Coulthurst covers the following 520 acres, more or less, within Sandoval County, New Mexico:

Township 18 North, Range 3 West, NMPM

Section 33: N/2 NE/4, W/2, N/2 SE/4, SW/4 SE/4

(5) Coulthurst requests permission to convert the Erin Well No. 2 (the "subject well") from a depleted, inactive oil well to injection of produced water into the Menefee formation from perforated depths of 525 feet to 580 feet.

(6) Coulthurst presented exhibits and testimony from a consulting engineer indicating the following:

(a) Coulthurst operates the Federal "Erin" Lease where for years it used the relatively fresh produced water from the shallow Menefee formation for drinking water by domestic livestock. The water was first pumped into an unlined pit – but this practice is now against the rules enacted by the Division. These waters contain approximately 1350 mg/l of total dissolved salts.

(b) The proposed injection well is needed to handle produced waters from the Erin Well No. 3 and the Erin Well No. 9 located southwest and east, respectively, from the proposed injection well. Maximum water production from these two wells is estimated at 100 barrels per day.

(c) There is one other producing well in the Menefee formation located to the north of the subject well in Unit O of Section 28, operated by Three Forks Resources ("Three Forks") of Denver, Colorado. Coulthurst does not expect this well to be affected by the proposed injection project for the reason that lands within Section 28 are structurally down dip within the Menefee formation.

(d) The subject well was spud in 1991 and produced until 2003 with very little production since that date. It has been largely depleted in the Menefee sands from where it produced. The cumulative production from this well has been approximately 10,000 barrels of water and 25,000 barrels of oil. This oil reservoir makes no casing head gas.

(e) Coulthurst needs this well primarily for water disposal purposes; however, Coulthurst expects a small positive effect on its two offsetting producers from water injection into the proposed well.

(f) Coulthurst also operates the Water Well No. 1 (API No. 30-043-20887) located in Unit A of Section 33. This well was drilled to 1001 feet as a water supply well and completed from approximately 800 feet to 1001 feet. The well has been in use by a local rancher to supply livestock water. These waters from this depth contain approximately 1830 mg/l of total dissolved salts.

(g) The surface and minerals within the Erin Lease are federal. This lease is located south and west of the town of Cuba within Sandoval County, New Mexico.

(h) The Menefee producing interval is mostly sands with very little shales and no coals. However, this producing interval is bounded above and below by shale.

(i) Waters injected into the subject well would be contained within the Menefee formation sands by thick shales above and below. The two producing wells will provide a pressure sink to further contain injection.

(7) Division records indicate the Menefee formation starts at approximately 120 feet from surface and the Point Lookout formation starts at approximately 914 feet from surface. This is in contrast to testimony from Coulthurst that the Dakota formation starts at approximately 900 feet in this area and the waters producing for use by the rancher is from the Dakota formation. In any event, the Menefee sand productive interval is separated by shale from the next lower sand interval located at approximately 900 feet.

(8) There are four active wells located within the Area of Review. These wells are cemented across the proposed injection interval.

(9) There are eight plugged and abandoned wells within the one half mile Area of Review that were drilled to the proposed injection depths. These wells have cement or cement plugs which will contain the injected fluids within the gross Menefee formation thickness if not the specific Menefee sand injection interval. With the condition that injection waters be sourced only from the Menefee formation waters being produced from the Erin lease and the presence of the surrounding two producers, injection water should stay within the Menefee sand injection interval.

(10) Coulthurst did not present testimony from a Landman, but has represented at the hearing that it is the operator of this federal lease covering the aforementioned lands within Section 33. Coulthurst initially mailed a formal notice to Three Forks at the address on file with the Division. That address was incorrect and the notice was returned. Coulthurst then obtained a current address and provided proof of notice to Three Forks at the second hearing on July 12th. Three Forks did not appear in this case.

(11) Coulthurst has indicated the proposed well located in Unit C of Section 33 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.

(12) The Commission by hearing Order No. R-2975 issued in Case No. 3307 on October 7, 1965, (i) created the South San Luis-Mesaverde Oil Pool initially covering the NE/4 of Section 33, (ii) established Special Rules for this pool governing oil well locations and maximum well production, and (iii) established a waterflood within the NE/4 of Section 33.

(13) This pool has been extended three times since creation and now covers the NE/4 and the E/2 NW/4 of Section 33 and the SW/4 SE/4 of adjacent Section 28. Lands within the Erin lease would be considered as within this oil pool or within 2 miles of the pool and therefore the Special Rules of that pool would apply.

(14) The waterflood created by Order No. R-2975 has expired due to lack of water injection within the project area lasting over one year. Coulthurst in this case is asking for establishment of a pressure maintenance project through injection into one well within the Erin lease.

(15) Notice was provided by Coulthurst in this case of its intent to inject. No other parties appeared in this case or otherwise opposed this application.

(16) Coulthurst Management & Investment, Inc. (OGRID 5337) is the operator of record of the wells located on this lease. Coulthurst is in compliance with Division Rule 19.15.5.9 NMAC and therefore eligible for approval of disposal and injection permits.

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

(18) 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.

(19) The proposed project will prevent waste, protect correlative rights, and should be approved and called the **Erin Pressure Maintenance Project**. The Project Area to be affected by this secondary recovery operation should consist of the entire Federal Erin Lease area as described above.

(20) As proposed, Coulthurst should be approved to inject into the Erin Well No. 2 (API No. 30-043-20862) located within Unit C of Section 33 into the Menefee formation from depths of 525 feet to 580 feet. Injected waters should be limited to those produced from the Menefee formation and from this Erin Pressure Maintenance Project area.

IT IS THEREFORE ORDERED THAT:

(1) Coulthurst Management & Investment, Inc. ("operator", OGRID 5337) is hereby authorized to implement secondary recovery operations within the project area of its Federal Erin Lease by water injection into the Menefee formation, South San Luis-Mesaverde Oil Pool (Pool Code 53630).

(2) The project shall be called the **Erin Pressure Maintenance Project** and the Project Area shall consist of the entire Federal Erin Lease as described below:

Township 18 North, Range 3 West, NMPM

Section 33: N/2 NE/4, W/2, N/2 SE/4, SW/4 SE/4

all in Sandoval County, New Mexico.

(3) Injection is approved within the Erin Well No. 2 (API No. 30-043-20862), located 990 feet from the North line and 2310 feet from the West line, Unit C of Section 33, Township 18 North, Range 3 West, NMPM, Sandoval County, New Mexico.

(4) Injection waters into this well shall be sourced only from the Menefee formation as produced from this Project Area. Injection shall be through perforations in that well from a maximum depth range from 525 feet to 580 feet, and through tubing and a packer set no higher than 100 feet above the approved injection interval.

(5) The operator of this lease may apply administratively to the Division Director for the addition of additional injection wells into this project area.

(6) 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.

(7) 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.

(8) 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 105 psi.

(9) 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 Test that such higher pressure will not result in the fracturing of the injection formation or confining strata or damage to the reservoir.

(10) As per Division Rule 19.15.26.11A NMAC, the operator shall test this injection well for mechanical integrity ("MIT") 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.

(11) The operator shall provide notice, at least 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.

(12) 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.

(13) 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 producing 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.

(14) 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.

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

(16) 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.

(17) 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.

(18) 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.

(19) 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 at Santa Fe, New Mexico, on the day and year hereinabove designated.



STATE OF NEW MEXICO
OIL CONSERVATION DIVISION

JAMI BAILEY
Director