

**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. 15519  
ORDER NO. R-14300**

**APPLICATION OF MEWBOURNE OIL COMPANY TO REVOKE THE  
INJECTION AUTHORITY GRANTED UNDER SWD-744 FOR THE WILLOW  
LAKE WELL NO. 1 OPERATED BY PYOTE WELL SERVICE, LLC, EDDY  
COUNTY, NEW MEXICO**

**ORDER OF THE DIVISION**

**BY THE DIVISION:**

This case came on for hearing at 8:15 a.m. on September 29, 2016, at Santa Fe, New Mexico, before Examiner Michael A. McMillan.

NOW, on this 21<sup>st</sup> day of February, 2017, 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 of the subject matter.

(2) The Division on May 11, 1999, granted Administrative Order SWD-744 to Griffin Petroleum Company allowing disposal of produced water into its Willow Lake Com Well No. 1 (API No. 30-015-21499) [the subject SWD] located 660 feet from the North line and 1980 feet from the West line, Unit C of Section 22, Township 24 South, Range 28 East, NMPM, Eddy County, New Mexico. The Order allowed disposal into the Bone Spring formation from approximately 7184 feet to approximately 8850 feet. Disposal commenced into the Bone Spring formation in June of 1999 and has continued to the present day.

(3) The Willow Lake Com Well No. 1 was drilled in 1975 to a depth of 13,205 feet in the Barnett formation and first completed on January 16, 1976, as a gas well in the Atoka formation, Willow Lake; Atoka Gas Pool (Pool Code 87440) dedicated to the N/2

of Section 22. The well had produced over four billion cubic feet of gas at the last reported production date, April of 1992.

(4) Division records indicate that 13-3/8 inch casing was set at 633 feet and 7-5/8 inch casing was set at 9825 feet; both casings were circulated with cement to surface although the 7-5/8 inch casing utilized diverter tools, and no cement bond log is available to show the quality of the coverage.

(5) The subject SWD well is located on privately owned surface lands and federally owned oil and gas minerals. Mesquite SWD, Inc. took over from Griffin Petroleum Company as the operator of this well on January 1, 2005, and in turn ceded the well to Pyote Well Service, LLC (OGRID 294873) on March 27, 2013.

(6) The operator of the subject SWD well, Pyote Well Service, LLC, has been placed in receivership, and the U.S. District Court, Western District of Texas (Midland-Odessa Division) has appointed David Baker as Receiver for the benefit of Pyote Water Solutions LLC and Pyote SWD II LLC.

(7) Mewbourne Oil Company ("Applicant" or "Mewbourne") has made application to revoke Division Administrative Order SWD-744. OXY USA, Inc. ("OXY") entered an appearance and appeared at the hearing in support of Mewbourne's application. Kaiser-Francis Oil Company ("KFOC") entered a Notice of Intervention in this case and appeared at the hearing in support of Mewbourne.

(8) The opponent in this case is David Baker from Aurora Management Partners as Receiver for the benefit of Pyote Water Solutions LLC and Pyote SWD II LLC ("Receiver, et al." or "Pyote").

(9) No other parties appeared or indicated opposition to this case.

(10) Applicant appeared at the hearing through counsel and presented testimony from a geologist and engineer as follows:

- (a) The Bone Spring formation in the vicinity of the Willow Lake Com Well No. 1 consists of at least three sands or siltstones listed from shallowest to deepest as the first Bone Spring Sand, the second Bone Spring Sand, and then the Harkey Sand. The Harkey Sand is vertically bounded by lower permeable carbonates and is located below the second Bone Spring Sand and above the third Bone Spring Sand. These Bone Spring sands vary in thickness, but are correlative and found throughout this area of Eddy County.
- (b) The Bone Spring formation has produced oil and associated gas from vertical wells located within two miles of the subject SWD well, and the Bone Spring sands are now targets for horizontal drilling in the broader area.

- (c) The application for disposal into the Bone Spring formation was for depths from approximately 7184 feet to approximately 8850 feet. The completed depth intervals have never been provided to the Division, and these perforation depths were not supplied to Applicant after request to Pyote. Applicant's best assumption is that the most permeable sands of the Bone Spring formation are the intervals being used for disposal.
  - (d) The current operator of the subject SWD well has not reported disposal pressures to the Division on form C-115 more than the default number of zero. The disposal rate has recently averaged approximately 1800 barrels of produced water per day.
  - (e) Applicant believes that disposal of produced waters into the permitted Bone Spring disposal interval of the subject SWD well is adversely affecting offsetting horizontally drilled Bone Spring producing wells.
  - (f) The Matador operated Tiger 14 24S 28E RB Well No. 124H (API No. 30-015-43012) located just northeast of the subject SWD well is one of the better Bone Spring producing wells and has begun to exhibit uncharacteristically high water cuts.
  - (g) The Occidental Permian LTD operated Stent 21 Federal Com Well No. 2H (API No. 30-015-41221) [the Stent well] is located approximately one mile west of the subject SWD well and was cited by Applicant as the well most adversely affected to date by disposal into the subject SWD well.
  - (h) The Stent well is producing from the second Bone Spring Sand and has a lower oil cut than similar wells, and this oil cut has been decreasing with time, which is also unusual. The abnormally low oil cut cannot be explained with variations in geology, completion, or wellbore orientation. The water production rate from this well seems to be related to the rate of injection into the subject SWD well. The water chemistry in this well, specifically the chloride concentration, is not characteristic of analogous wells producing from the second Bone Spring Sand.
- (11) The receiver appeared at the hearing through counsel and presented testimony from an engineer as follows:
- (a) The variation in water production volumes and variation in well performance from the Bone Spring is normal within a three mile area and not necessarily the result of disposal into the Willow Lake Com Well No. 1.
  - (b) The water to liquid ratio (water cut) behavior over time of the Stent well is not out of line with other producers in this general area. Other wells located much further away from the subject SWD well also exhibit increasing water to liquid ratios.

(c) The poor performance of the Stent well is most likely due to the dramatically smaller than normal hydraulic fracture treatment done during completion of the well.

(d) In the subject SWD well, the actual disposal interval is not necessarily the perforated disposal interval and could only be determined by an injection survey such as a spinner log. The current operator was not the operator who perforated this well, and the perforation records and other completion records may not be available.

(e) The subject SWD well is necessary for production in this area, and cancelling this disposal permit would result in hardship on surrounding producers.

(12) OXY and KFOC did not present witnesses at the hearing but reiterated support of Mewbourne's application through appearance documents and statements at the hearing through counsel.

(13) Counsel for the receiver further argued that the permit for disposal into this well could not be cancelled without proper notice to the surface owner and to the United States Bureau of Land Management and to other affected parties.

The Division concludes as follows:

(14) Notice for cancellation of this disposal permit was adequate and argument for inadequate notice of the request to revoke this permit is not reflective of existing Division rules. The notice rules cited by the receiver apply only to an application for issuance of a permit, not for cancellation of a permit.

(15) The completion records of the Bone Spring formation in the subject SWD well were not supplied to the Division by the previous operator as required in Division Rules. The operator has had adequate time to verify total depth of this well, the perforations, the disposal interval taking fluid, and the packer setting depth. None of those information items were obtained by operator or used in this case for purposes of defense.

(16) The receiver could not explain the inadequate reporting or abnormally low disposal pressures or verify that a pressure limiting device was installed near the well and operating to prevent disposal at pressures higher than allowed in the disposal permit.

(17) The record in this case indicates that disposal into a gross Bone Spring interval has most likely affected offsetting production in specific sands at least one mile away. The Division has in other cases found that injected fluids were capable of traveling distances over one mile or were at least affecting the formation pressure in wells at distances over one mile.

(18) Owners of oil and gas within the Bone Spring formation have made argument that this disposal is detrimental and wasteful. The weight of the evidence

presented supports that this general area in Eddy County is a viable target for development of the Bone Spring formation since the advent of horizontal drilling and improved completion practices in the Bone Spring formation.

(19) The disposal interval into the Bone Spring formation as approved in Administrative Order SWD-744 is into a producing or productive interval. Any disposal into the Bone Spring formation through perforations in the subject SWD well is causing waste of oil and associated gas in the surrounding wells and surrounding, undrilled sands.

(20) The application of Mewbourne Oil Company to revoke administrative permit SWD-744 should be approved to prevent waste and protect correlative rights.

(21) Because of the current obligations for produced water disposal in this area and to allow time for diverting disposal waters, Pyote should be granted one month to notify all customers and to cease disposal into this well.

**IT IS THEREFORE ORDERED THAT:**

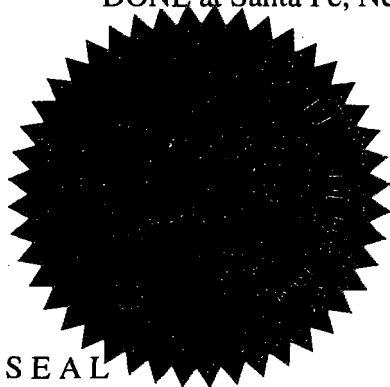
(1) Pursuant to the application of Mewbourne Oil Company, Administrative Order SWD-744 with its authority for injection is hereby revoked.

(2) The Division designated operator (or David Baker as appointed receiver) of the Willow Lake Com Well No. 1 (API No. 30015-21499), the subject SWD well, is hereby ordered to cease disposal into this well prior to April 1, 2017 at which time Administrative Order SWD-744 shall no longer be in effect.

(3) Any disposal into the subject SWD well after April 1, 2017 will be considered as a violation by the operator (and by David Baker as receiver) of the New Mexico Underground Injection Control program and the federal Safe Drinking Water Act. Further disposal will also be considered a knowing and willful violation of a Division order.

(4) Jurisdiction of this case 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 designated above.



SEAL

STATE OF NEW MEXICO  
OIL CONSERVATION DIVISION

Handwritten signature of David R. Catanach.

DAVID R. CATANACH  
Director