

State of New Mexico
Energy, Minerals and Natural Resources Department

Michelle Lujan Grisham
Governor

Sarah Cottrell Propst
Cabinet Secretary

Todd E. Leahy, JD, PhD
Deputy Secretary

Adrienne Sandoval, Director
Oil Conservation Division



Administrative Order SWD-1881
June 17, 2019

**ADMINISTRATIVE ORDER
OF THE OIL CONSERVATION DIVISION**

Pursuant to the provisions of Division Rule 19.15.26.8(B) NMAC, Judah Oil LLC (the “operator”) seeks an administrative order for its Shinnery Oak SWD Well No. 3 (the “proposed well”) with a location of 3312 feet from the South line and 1014 feet from the West line, Lot 13/ Unit letter E of Section 2, Township 21 South, Range 28 East, NMPM, Eddy County, New Mexico, for the purpose of commercial disposal of produced water.

THE DIVISION DIRECTOR FINDS THAT:

The application has been duly filed under the provisions of Division Rule 19.15.26.8(B) NMAC and satisfactory information has been provided that affected parties have been notified. The applicant has presented satisfactory evidence that all requirements prescribed in Division Rule 19.15.26.8 NMAC have been met and the operator is in compliance with Division Rule 19.15.5.9 NMAC.

Application for Disposal in Devonian and Silurian Formations: Due to the potential for the projected injection volume of the proposed well to impact an area greater than the one-half mile radius applied in Division Form C-108 and Division rule, the applicant has provided the following supplementary information:

1. Notification following Division Rule 19.15.26.8(B) NMAC for a radius of one mile from the surface location of the proposed well;
2. An expanded Area of Review for wells penetrating the disposal interval for a radius of one mile from the surface location of the proposed well; and
3. A map which shows the potential of induced-seismic events associated with the disposal activities for the predicted service life of the proposed well.

IT IS THEREFORE ORDERED THAT:

The applicant, Judah Oil LLC (OGRID 245872), is hereby authorized to utilize its Shinnery Oak SWD Well No. 3 (API 30-015-45535) with a location of 3312 feet from the South line and 1014 feet from the West line, Lot 13/ Unit letter E of Section 2, Township 21 South, Range 28 East, NMPM, Eddy County, for disposal of oil field produced water (UIC Class II only) through open-hole completion into an interval consisting of the Devonian and Silurian formations from approximately 13400 feet to approximately 14310 feet. Injection will occur through internally-

coated, 5.5-inch or smaller tubing and a packer set within 100 feet of the top of the disposal interval. This order does not allow disposal into:

1. The Woodford Shale and formations above the lower contact of the Woodford Shale;
2. Formations below the Silurian formations including the Montoya formation and the Ellenburger formation (lower Ordovician); and
3. Any lost circulation intervals directly on top and obviously connected to these formations.

Prior to commencing disposal, the operator shall submit mudlog and geophysical logs information, to the Division's District geologist and Santa Fe Engineering Bureau, showing evidence agreeable that only the permitted formation is open for disposal including a summary of depths (picks) for contacts of the formations which the Division shall use to amend this order for a final description of the depth for the injection interval. If significant hydrocarbon shows occur while drilling, the operator shall notify the Division's District II and the operator shall be required to receive written permission prior to commencing disposal.

The operator shall circulate to surface the cement for the surface and intermediate casings.

If cement does not circulate on any casing string, the operator shall run a cement bond log (CBL) or other log to determine top of cement and shall notify the Artesia District with the top of cement on the emergency phone number prior to continuing with any further cement activity with the proposed well. If cement did not tie back in to next higher casing shoe, the operator shall perform remedial cement action to bring cement, at a minimum, 200 feet above the next higher casing shoe.

Applicant shall take all necessary steps to ensure the protection of the Capitan Reef, including but not limited to the revised wellbore diagram approved by District II on May 10, 2019.

The operator shall run a CBL (or equivalent) for the 7^{-5/8}-inch liner to demonstrate placement cement and the cement bond with the tie-in with 9^{5/8}-inch casing string. The operator shall provide a copy of the CBL to the Division's District II prior to commencing disposal.

Prior to commencing disposal, the operator shall obtain a bottom-hole pressure measurement representative of the open-hole completion. This information shall be provided with the written notice of the date of commencement of disposal.

IT IS FURTHER ORDERED THAT:

The operator shall take all steps necessary to ensure that the disposed water enters only the approved disposal interval and is not permitted to escape to other formations or onto the surface. This includes the completion and construction of the well as described in the application and, if necessary, as modified by the District Supervisor.

After installing tubing, the casing-tubing annulus shall be loaded with an inert fluid and equipped with a pressure gauge or an approved leak detection device in order to determine leakage

in the casing, tubing, or packer. The casing shall be pressure tested from the surface to the packer setting depth to assure casing integrity.

The well shall pass an initial mechanical integrity test ("MIT") prior to initially commencing disposal and prior to resuming disposal each time the disposal packer is unseated. All MIT procedures and schedules shall follow the requirements in Division Rule 19.15.26.11(A) NMAC. The Division Director retains the right to require at any time wireline verification of completion and packer setting depths in this well.

Without limitation on the duties of the operator as provided in Division Rules 19.15.29 and 19.15.30 NMAC, or otherwise, the operator shall immediately notify the Division's District II 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 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.

If the disposal well fails a MIT or if there is evidence that the mechanical integrity of said well is impacting correlative rights, the public health, any underground sources of fresh water, or the environment, the Division Director shall require the well to be shut-in within 24 hours of discovery and the operator shall redirect all disposal waters to another facility. The operator shall take the necessary actions to address the impacts resulting from the mechanical integrity issues in accordance with Division Rule 19.15.26.10 NMAC, and the well shall be tested pursuant to Rule 19.15.26.11 NMAC prior to returning to injection.

The wellhead injection pressure on the well shall be limited to **no more than 2680 psi**. In addition, the disposal well or system shall be equipped with a pressure limiting device in workable condition which shall, at all times, limit surface tubing pressure to the maximum allowable pressure for this well.

The Director of the Division may authorize an increase in tubing pressure upon a proper showing by the operator of said well that such higher pressure will not result in migration of the disposed fluid from the target formations. Such proper showing shall be demonstrated by sufficient evidence including but not limited to an acceptable step-rate test.

The operator shall notify the supervisor of the Division's District II office of the date and time of the installation of disposal equipment and of any MIT so that the same may be inspected and witnessed. The operator shall provide written notice of the date of commencement of disposal to the Division's District II office. The operator shall submit monthly reports of the disposal operations that includes number of days of operation, injection volume, and injection pressure on Division Form C-115, in accordance with Division Rules 19.15.26.13 and 19.15.7.24 NMAC.

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.

The Division may revoke this injection order after notice and hearing if the operator is in violation of Rule 19.15.5.9 NMAC.

The disposal authority granted herein shall terminate one (1) year after the effective date of this order if the operator has not commenced injection operations into the proposed well. One year after the last date of reported disposal into this well, the Division shall consider the well abandoned, and the authority to dispose will terminate *ipso facto*. The Division, upon written request mailed by the operator prior to the termination date, may grant an extension thereof for good cause.

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.

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, terminate the disposal authority granted herein.



ADRIENNE SANDOVAL
Director

AS/mam

cc: Oil Conservation Division – Artesia District Office
Well file 30-015-45535

Attachment: C-108 well completion diagram

WELLBORE SCHEMATIC

WELL: Shinnery Oak SWD #3

PROSPECT: Devonian SWD

JUDAH OIL, LLC

GL ELEV : 3322'
RKB ELEV : 3350.5'

Surface Hole Location : 3312' FSL & 1014' FWL
Sec. 2, TWP 21-S, RGE 28-E
Eddy County, NM
API 30-015-45535

Formation Tops	MW (PPG)	Directional and BHA Details	CASING DIAGRAM	Depth (MD)	Hole	Casing & Cement Details 30" Conductor @ ± 120'	Notes
	8.4-8.6 FW ↓	• Hold vertical		280'	28-1/2" ↓	Surf. Csg Cmt: (50% OH excess) Tail: 300' critical Total Sacks Cement: 360 24", 186.2#, X-60, T&C	
Anhy - 627 Yates - 1280 Capitan Reef - 1640	9.8-10.0 Sat. Brine ↓	• Hold vertical		1,650'	22" ↓	Int. 1 Csg Cmt: (50% OH excess) Lead: Circulate to surface Tail: 300' critical Total Sacks Cement: 1180 18-5/8", 114#, Q-125, Hunting Seal-Lock Flush	
Delaware - 3110	8.4-8.6 FW ↓	• Hold vertical		3,300'	17-1/2" ↓	Int. 2 Csg Cmt: (40% OH excess) Lead: Circulate to surface Tail: 20% critical Total Sacks Cement: 1500 (2 stg) 13-3/8", 68#, J-55, BTC	• DV Tool @ 1440' with 2-stage Cement Job
Bone Spring - 6270 Wolfcamp - 9668	8.7-9.2 Cut Brine ↓	• Hold vertical		9,720'	12-1/4" ↓	Int. 3 Csg Cmt: (40% OH excess) Lead: 3,100' Tail: 8,700' Total Sacks Cement: 2100 (min TOC at 50 ft above Capitan Reef) 9-5/8", 40#, P-110HC, BTC	
Penn - 10502 Strawn - 10818 Morrow - 11648 Mississippi - 12320 Woodford - 13252 Devonian - 13360	9.5-12 Mud ↓	• Hold vertical		13,640'	8-3/4" ↓	Prod Csg Cmt: Lead: 9,220' Tail: 12,640' (10% OH excess, subject to change based on fluid caliper) Total Sacks Cement: 250 Liner Hanger 7-5/8", 33.7#, P-110HC, USS Liberty FJM, 9,220' - TD Liner	
Fusselman - 13645 Montoya - 14320	8.4-8.5 FW ↓	• Hold vertical		TD 14,310'	6-1/2" ↓	Tubing: Permanent Packer @ 13,540' (Packer must be set within 100' of casing shoe) 5-1/2", 20#, P-110IC, BTC, IPC	

PWS 5-10-19