

NMOCD Artesia

Form 3160-5
(June 2015)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

FORM APPROVED
OMB No. 1004-0137
Expires: January 31, 2018

SUNDRY NOTICES AND REPORTS ON WELLS
Do not use this form for proposals to drill or to re-enter an abandoned well. Use Form 3160-3 (APD) for such proposals.

SUBMIT IN TRIPLICATE - Other instructions on page 2

1. Type of Well <input type="checkbox"/> Oil Well <input checked="" type="checkbox"/> Gas Well <input type="checkbox"/> Other		7. If Unit of CA/Agreement, Name and/or No. NM - 72392
2. Name of Operator Vanguard Operating, LLC		8. Well Name and No. LODEWICK FEDERAL COM 1
3a. Address 5847 San Felipe, Suite 3000 Houston, Texas 77057	3b. Phone No. (include area code) (832) 377-2243	9. API Well No. 3000561111
4. Location of Well (Footage, Sec., T., R., M., or Survey Description) 1980 FSL, 1980 FEL, J-08-05S-25E		10. Field and Pool or Exploratory Area PECOS SLOPE, ABO
		11. Country or Parish, State CHAVES, NM

12. CHECK THE APPROPRIATE BOX(ES) TO INDICATE NATURE OF NOTICE, REPORT OR OTHER DATA

TYPE OF SUBMISSION	TYPE OF ACTION			
<input type="checkbox"/> Notice of Intent	<input type="checkbox"/> Acidize	<input type="checkbox"/> Deepen	<input type="checkbox"/> Production (Start/Resume)	<input type="checkbox"/> Water Shut-Off
<input checked="" type="checkbox"/> Subsequent Report	<input type="checkbox"/> Alter Casing	<input type="checkbox"/> Hydraulic Fracturing	<input type="checkbox"/> Reclamation	<input type="checkbox"/> Well Integrity
<input type="checkbox"/> Final Abandonment Notice	<input type="checkbox"/> Casing Repair	<input type="checkbox"/> New Construction	<input type="checkbox"/> Recomplete	<input checked="" type="checkbox"/> Other
	<input type="checkbox"/> Change Plans	<input type="checkbox"/> Plug and Abandon	<input type="checkbox"/> Temporarily Abandon	
	<input type="checkbox"/> Convert to Injection	<input type="checkbox"/> Plug Back	<input type="checkbox"/> Water Disposal	

13. Describe Proposed or Completed Operation: Clearly state all pertinent details, including estimated starting date of any proposed work and approximate duration thereof. If the proposal is to deepen directionally or recompleat horizontally, give subsurface locations and measured and true vertical depths of all pertinent markers and zones. Attach the Bond under which the work will be performed or provide the Bond No. on file with BLM/BIA. Required subsequent reports must be filed within 30 days following completion of the involved operations. If the operation results in a multiple completion or recompleat in a new interval, a Form 3160-4 must be filed once testing has been completed. Final Abandonment Notices must be filed only after all requirements, including reclamation, have been completed and the operator has detennined that the site is ready for final inspection.)

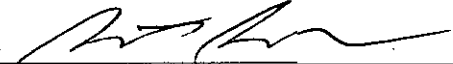
This is notification of Change of Operator on the above referenced well.
Vanguard Operating, LLC, as new operator, accepts all applicable terms, conditions, stipulations and restrictions concerning operations conducted on this lease or portion of lease described.
Bond Coverage: BLM Bond File No. NMB000797, Surety Bond No. B006616
Bond Coverage Roswell Field Office: BLM Bond File No. NMB000857, Surety Bond No. B007133
Change of Operator Effective: October 5, 2015
Former Operator: LRE Operating, LLC

NM OIL CONSERVATION
ARTESIA DISTRICT

MAY 09 2016

Accepted for record
NMOCD

RECEIVED
**SEE ATTACHED FOR
CONDITIONS OF APPROVAL**

14. I hereby certify that the foregoing is true and correct. Name (Printed/Typed) Britt Pence		Title Executive Vice President, Operations
Signature 		Date 10-5-2015

THE SPACE FOR FEDERAL OR STATE OFFICE USE

Approved by /S/ DAVID R. GLASS	PETROLEUM ENGINEER	Date MAR 25 2016
Conditions of approval, if any, are attached. Approval of this notice does not warrant or certify that the applicant holds legal or equitable title to those rights in the subject lease which would entitle the applicant to conduct operations thereon.	Office ROSWELL FIELD OFFICE	

Title 18 U.S.C Section 1001 and Title 43 U.S.C Section 1212, make it a crime for any person knowingly and willfully to make to any department or agency of the United States any false, fictitious or fraudulent statements or representations as to any matter within its jurisdiction.

(Instructions on page 2)

Vanguard Operating, LLC
Change of Operator
Conditions of Approval

1. Tank battery must be bermed/diked (must be able to contain 1 1/2 times the volume of the largest tank).
2. Submit for approval of water disposal method.
3. Submit updated facility diagrams as per Onshore Order #3
4. This agency shall be notified of any spill or discharge as required by NTL-3A.
5. All outstanding environmental issue must be addressed within 90 days.
6. Install legible well sign on location with operator name, well name and number, lease number, unit number, 1/4 1/4, section, township, and range. NMOCD requires the API number on well signs.
7. Subject to like approval by NMOCD.
8. All Reporting to ONRR (OGOR Reports) must be brought current within 30 days of this approval including any past history.
9. If this well is incapable of producing in paying quantities submit NOI to plug and abandon this well or obtain approval to do otherwise within 90 days.
10. Submit plan for approval of well operations for all TA/SI wells within 30 days of this approval to change operator.
11. If not in place acquire operating rights on this lease within 30 days with BLM office in Santa Fe, NM.

Rule 34 was largely driven with O&G Industry Support. The following is musing on my part alone on this subject and in no way represents any official OCD philosophy or plan. Merely a citizen's thoughts.

Around this time last year the recycling rule became active.

The OCD, in Districts I and II (SE New Mexico), saw about 10 applications for facilities/containments almost as soon as the Rule became active.

Then the commodity price had the bottom fall out. A massive decrease in new wells being drilled.

This being the case, the incentive for producers to use recycling facilities/containments has nominally gone away.

In fact, in the last nine months or so, in SE New Mexico, the "production" of recycled water out of the facilities/containments approaches zero. So, does that imply there is no "market" for recycled water when there are no significant drilling plans (multiple wells) for a particular area? Is the "market" slim enough that costs indicate it is more economical for producers to continue with purchasing usable water, and then using SWD wells to dispose of produced water? If this is true, it begs several questions. With the understanding that SWD's for disposal may have a limited life. Seismicity issues, lack of usable formations and impact on oil production being a few issues with SWD's that need to be assessed. Potential decreased availability and functionality of SWD's may contribute to answering this question of "market" need.

As I understand data via Martha and the PRRC at Tech, there is an amount of water being injected into SWD's far exceeding 100,000 acre feet per year. So using 42 gallons per barrel (oil industry), and one acre foot equaling something in the area of 325,000 gallons of water. Or one acre foot at about 7,700 barrels. In other words, a lot of water. These are just range of thought numbers, but it is a lot of water.

How does one see "profit" or "re-use" in this water, assuming, as mentioned above, the anticipated uses for the recycled produced water in Part 34 are not extant at this time? Commercial use? Industrial use? Consumer use?

So, with assumed costs associated:

With transport of water to and then from a recycling facility/containment, "cleaning" the water, lots of infrastructure needs here, disposing of solids associated with this cleaning, upkeep of facility/containment, financial assurance aspects, ultimate facility/containment closure expenditures and other costs...

Can a market for this water be found/created? Can money be made on the selling side and/or can money be seen on the saving of costs side of the ledger? Is there a market outside the oil patch proper for this water? Not only for a company, but for the State. Meaning not just money, but other tangible gains. Such as, say, cleaning the water sufficient for release into the Pecos, meeting downstream legal requirements for flow in the river, which might then save the need to divert other waters, or to pump ground water to put in the Pecos to meet these downstream needs? Might save a lot of ground water for other uses that would become tangible fiscally for the State. Can we find a WIN-WIN situation? It will take support and effort from municipal, State, populist groups, researchers and industry.

This is a several year's long process. And I suspect there is no ONE answer. Data sets are benign, using the data brings it to life.