

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:

CORRECTED  
API NUMBER

APPLICATION OF VPR OPERATING, LLC FOR APPROVAL OF A  
WATERFLOOD PROJECT IN THE SAWYER WEST FIELD, LEA COUNTY,  
NEW MEXICO

CASE NO. 14494  
ORDER NO. R-13302

ORDER OF THE DIVISION

BY THE DIVISION:

This case came on for hearing at 8:15 a.m. on June 24, 2010 at Santa Fe, New Mexico before Examiner Richard Ezeanyim.

NOW, on this 2<sup>nd</sup> day of August, 2010 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) VPR Operating, LLC ("VPR" or "applicant"), seeks approval of a pilot waterflood project for secondary recovery in the Sawyer West Field, Slaughter zone of the San Andres formation comprising the following lands in Lea County, New Mexico:

Township 9 South, Range 37 East, NMPM

Section 27: NW/4 NW/4, SW/4 NW/4, E/2 NW/4, and NE/4

Section 28: N/2 N/2, S/2 N/2, and S/2

(3) The waterflood project area would initially consist of the following six currently producing wells to be converted to injection wells in a five-spot pattern design.

Well Name & No.	API No.	Location	Perforations (ft)
SFPRR Well No.18	30-025-25341	Sec. 28, 1980' FSL, 660' FEL, Unit I	4934 - 5004
SFPRR Well No.12	30-025-23894	Sec. 27, 1980' FSL, 660' FEL, Unit I	4954 - 5006
SFPRR Well No. 17	30-025-25340	Sec. 27, 1980' FSL, 1980' FWL, Unit K	4963 - 5023
SFPRR Well No. 3	30-025- <del>27518</del> <sup>3</sup>	Sec. 28, 660' FSL, 660' FEL, Unit P	4933 - 4992
SFPRR Well No. 19	30-025-25342	Sec. 27, 660' FSL, 660' FEL, Unit P	4958 - 5016
SFPRR Well No. 13	30-025-23951	Sec. 27, 1980' FSL, 660' FWL, Unit L	4974 - 5000

(4) The proposed vertical extent of the waterflood is that productive interval underlying the Lease Area within the San Andres formation as completed in the wells extending from a minimum perforated depth of 4,933 feet to a maximum depth of 5,023 feet.

(5) The applicant notified all affected parties as defined in Division Rule 19.15.26.8.B(2) NMAC of the intent to conduct the pilot waterflood project. The lands in the project area are all fee lands. Mr. Michael Harton and Mr. David Bilbrey objected to VPR conducting this pilot waterflood project on the basis that the project does not adequately protect groundwater or surface estate. The objection was later dropped.

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

(7) VPR Operating, LLC appeared at the hearing through counsel and the witnesses for VPR presented the following testimony.

(a) This is a lease waterflood project because the Sawyer Field is not yet unitized. However, if the pilot project is successful, the Sawyer Field will be unitized and the unit will be developed for full secondary recovery operations.

(b) The lands involved in the project area are all fee lands. VPR owns eighty-five (85%) percent working interest and one other partner owns fifteen

(15%) percent; however, VPR represents one-hundred (100%) percent of the working interest in the project area.

(c) VPR wishes to begin the waterflood project by initially converting six current producers to injectors as described in Finding Paragraph No. 3 above. The waterflood project area may be expanded in the future if favorable performance is achieved to warrant such expansion.

(d) The waterflood project is designed to be on a five-spot pattern. The injection zone is stratigraphic and continuous, and is suitable for implementing the waterflood project.

(e) The applicant requests that further applications involving the waterflood project be approved administratively.

(f) The depth of fresh water in the area is approximately 270 feet. The fresh water is protected because all the injection wells are constructed such that the surface casing is set at 400 feet with cement circulated to the surface.

(g) There are no faults or hydrologic conduits that connect the injection zone to any fresh water zone. Due to the low water production from this lease, additional "make-up" water will be obtained from the San Andres formation. The waterflood project will be on a closed loop system.

(h) VPR believes that the waterflood project will be economically viable, because based on the cost-benefit analysis of the recoverable oil in the project area, the discounted return on investment is approximately \$4 to \$1 invested.

(i) All the wells within the half-mile area of review (AOR) are producing wells. There are no plugged and abandoned wells within the area of review.

**The Division concludes that:**

(8) The proposed waterflood within the project area is feasible and should result in the recovery of additional oil and gas that would not otherwise be recovered.

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

(10) An examination of all wellbores within one half-mile of the proposed injection wells indicates that there is no Area of Review (AOR) remedial cementing work required prior to implementing this project.

(11) The proposed injection operation will not pose any threat to protectable

underground sources of drinking water.

(12) The proposed waterflood project will prevent waste, protect correlative rights, and should be approved.

**IT IS THEREFORE ORDERED THAT:**

(1) VPR Operating, LLC (“VPR”) is hereby approved to implement a pilot waterflood project for secondary recovery operations in the Slaughter zone of the San Andres formation from approximately 4,933 feet to 5,023 feet, and comprising the following lands in Lea County, New Mexico.

**Township 9 South, Range 37 East, NMPM**

Section 27: NW/4 NW/4, SW/4 NW/4, E/2 NW/4, and NE/4

Section 28: N/2 N/2, S/2 N/2, and S/2

(2) VPR Operating, LLC. is granted approval to utilize the following six (6) currently producing wells which will be converted to injection wells for injection of water through perforations from 4,933 feet to 5,023 feet within the San Andres formation for the pilot waterflood project.

Well Name & No.	API No.	Location	Perforations (ft)
SFPRR Well No.18	30-025-25341	Sec. 28, 1980' FSL, 660' FEL, Unit I	4934 - 5004
SFPRR Well No.12	30-025-23894	Sec. 27, 1980' FSL, 660' FEL, Unit I	4954 - 5006
SFPRR Well No. 17	30-025-25340	Sec. 27, 1980' FSL, 1980' FWL, Unit K	4963 - 5023
SFPRR Well No. 3	30-025- <del>25518</del> <sup>3</sup>	Sec. 28, 660' FSL. 660' FEL, Unit P	4933 - 4992
SFPRR Well No. 19	30-025-25342	Sec. 27, 660' FSL, 660' FEL, Unit P	4958 - 5016
SFPRR Well No. 13	30-025-23951	Sec. 27, 1980' FSL, 660' FWL, Unit L	4974 - 5000

(3) The Division Director may administratively authorize additional injection wells within the lease as provided in Division Rule 19.15.26.8.F(3) NMAC.

(4) VPR Operating, LLC is hereby designated the operator of the Lease Waterflood Project

(5) The operator shall ensure that all available electric logs run on wells within this lease including temperature surveys and cement bond logs are available on the Division's online imaging system. Logs not appearing on this system shall be copied and provided to the Hobbs district office for scanning.

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

(7) Injection into these wells shall be accomplished through 2-3/8 inch plastic-lined tubing installed in a packer located within 100 feet of the uppermost injection perforations. 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 determine leakage in the casing, tubing, or packer.

(8) The injection wells or pressurization systems shall be equipped with a pressure control device or acceptable substitute that will limit the surface injection pressure to 987 psi.

(9) The Division Director may administratively authorize a pressure limitation in excess of the above upon a showing by the operator that such higher pressure will not result in the fracturing of the injection formation or confining strata or damage to the reservoir. Such showing shall be accomplished with adequate Step-Rate-Test.

(10) After installation of the injection tubing prior to commencing injection operations, and at least once every five years thereafter, the operator shall pressure test the casing from the surface to the packer-setting depth to assure casing integrity.

(11) The unit operator shall give 72 hours advance notice to the supervisor of the Division's Hobbs District Office of the date and time (i) injection equipment will be installed, and (ii) the mechanical integrity pressure test will be conducted on the approved injection wells, so that these operations may be witnessed.

(12) The unit operator shall immediately notify the supervisor of the Division's Hobbs District office of any failure of the tubing, casing or packer in the injection wells or the leakage of water, oil or gas from or around any nearby producing or plugged and abandoned well, and shall promptly take all steps necessary to correct such failure or leakage.

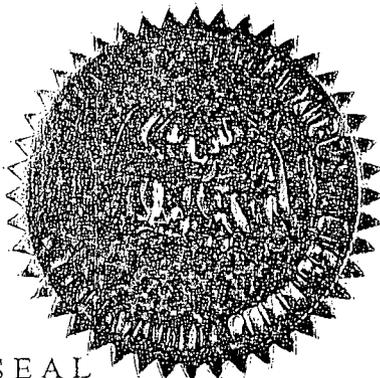
(13) The unit operator shall conduct injection operations in accordance with Division Rules 19.15.26.8 NMAC through 19.15.26.15 NMAC, and shall submit monthly progress reports in accordance with Division Rules 19.15.26.13 NMAC and 19.15.7.24 NMAC.

(14) The injection authority granted herein for these wells shall terminate one year after the date of this order if the unit operator has not commenced injection operations into at least one of the wells; provided, however, the Division, upon written request postmarked or received prior to the one-year deadline, may grant an extension for good cause. Further, one year after injection operations into the wells has ceased, the authority to inject shall terminate *ipso facto*.

(15) This order does not relieve the operator of responsibility should its operations cause any damage or threat of damage to protectable fresh water, human health or the environment, nor does it relieve the operator of responsibility for complying with applicable Division rules or other federal, state or local laws or regulations.

(16) Jurisdiction of this case is retained for the entry of such further orders as the Division may deem necessary for the prevention of waste and/or protection of correlative rights or upon failure of the operator to conduct operations (i) to protect fresh water or (ii) in a manner consistent with the requirements of this order, whereupon the Division may, after notice and hearing, terminate the injection authority granted herein, or without notice or hearing in case of emergency, subject to the provisions of NMSA 1978 Section 70-2-23.

DONE at 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 "Mark E. Fesmire".

MARK E. FESMIRE, P.E.  
Acting Director