

**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. 13041**

**APPLICATION OF ENERQUEST RESOURCES, L.L.C. FOR APPROVAL OF A  
WATERFLOOD PROJECT AND QUALIFICATION OF THE PROJECT AREA  
FOR THE RECOVERED OIL TAX RATE PURSUANT TO THE ENHANCED  
OIL RECOVERY ACT, LEA COUNTY, NEW MEXICO.**

**CASE NO. 13042**

**APPLICATION OF ENERQUEST RESOURCES, L.L.C. FOR STATUTORY  
UNITIZATION, LEA COUNTY, NEW MEXICO.**

ORDER NO. R-1 1980

**ORDER OF THE DIVISION**

**BY THE DIVISION:**

These cases came on for hearing at 8:15 a.m. on March 27, 2003, at Santa Fe, New Mexico, before Examiner William V. Jones.

NOW, on this 9th day of July, 2003, the Division Director, having considered the record and the recommendations of the Examiner,

**FINDS THAT:**

(1) Due public notice has been given, and the Division has jurisdiction of these cases and the subject matter.

(2) In Case No. 13042, EnerQuest Resources, L.L.C. ("EnerQuest"), seeks to statutorily unitize 920 acres, more or less, located in portions of Sections 29 through 32, Township 18 South, Range 39 East, NMPM, Lea County, New Mexico, for the purpose of instituting a waterflood project within the East Hobbs-San Andres Pool to be called the East Hobbs (San Andres) Unit.

(3) In Case No. 13041, EnerQuest seeks approval to institute a waterflood project within the area proposed to be statutorily unitized by the injection of water into the San Andres formation, East Hobbs-San Andres Pool, initially through four injection wells. EnerQuest further seeks procedures for the administrative approval of additional injection wells in succeeding phases of operation.

(4) Cases 13041 and 13042 were consolidated at the hearing for the purpose of testimony.

(5) EnerQuest initially filed applications for statutory **unitization** and for a waterflood project on February 26, 2002. On April 12, 2002, the "Key Family Group" and on April 29, 2002, "Lynx Operating Company", both being or representing working interest owners, filed motions to dismiss based on **EnerQuest's** failure to make a good faith effort to secure voluntary participation in unit operations. At that time, EnerQuest's proposed tract participation formula consisted of Acreage (20%) + Useable Wellbores (20%) + Last 12 Month Production (30%) + Estimated Ultimate Recovery (30%). At that time EnerQuest had the majority interest in nine of the twelve tracts, with tracts 3, 7, and 8 being controlled by others.

(6) By Order R-11781 issued June 7, 2002, in Cases No. 12845 and 12846, the Division found EnerQuest had not made a good faith effort to secure voluntary unitization as required by the provisions of the Statutory Unitization Act, and the Division dismissed both cases.

(7) The proposed Unit Area contains twelve separate tracts owned by approximately forty-three different working interest owners. As of December 2, 2002, EnerQuest had purchased additional interests and owned majority interests in eleven of the twelve tracts in the proposed unit, tract 3 being still controlled by David H. Arrington.

(8) By February 14, 2003, EnerQuest had completed modifications on the proposed Unit Agreement and the Unit Operating Agreement and on March 4, 2003, again filed application for statutory unitization. On March 18, 2003, EnerQuest made application pursuant to New Mexico Oil Conservation Division Rule 30 [19.15.1.30 NMAC] to qualify its proposed East Hobbs (San Andres) Unit for the recovered oil tax rate as authorized by the Enhanced Oil Recovery Act [7-29A-1 through 7-29A-5, NMSA 1978 as amended].

(9) The proposed Unit Area consists of 920 acres, more or less, of State and Fee Leases located in Lea County, New Mexico, described as follows:

**TOWNSHIP 18 SOUTH, RANGE 39 EAST, NMPM**

Section 29: SW/4, SW/4 NW/4  
Section 30: S/2, S/2 N/2  
Section 31: N/2 N/2  
Section 32: N/2 NW/4

(10) The proposed vertical extent of the Unitized Formation is that interval extending from 50 feet above the top of the San Andres formation to a point 50 feet below the base of the P-5 marker in the San Andres formation. This interval specifically occurs between 4451 feet and 4637 feet in the density-neutron log dated June 26, 1997, for the Carrie O. Davis Well No. 5 (API No. 30-025-34013) located 1310 feet from the South line and 330 feet from the West line of Section 29, Township 18 South, Range 39 East, NMPM, Lea County, New Mexico.

(11) The applicant presented the following testimony via two expert witnesses:

(a) EnerQuest has been purchasing interests in this proposed unit area since 1996 and prepared a waterflood feasibility study in the fall of 2000. Following the Division order signed on June 7, 2002 dismissing the first proposal to unitize, EnerQuest continued to purchase working interests, conducted three working interest owner meetings and seven technical committee meetings, negotiated with other working interest owners and came up with a new plan in late 2002.

(b) As part of the waterflood feasibility study, all logs and cores were analyzed, and permeability, effective porosity, bulk volume oil and water were mapped for every well. The conclusion was reached that the best San Andres intervals to waterflood would be the P2 through P4 zones. The P1 zone is assumed to be subject to edge water drive and would not greatly benefit from waterflood operations. Statistics from these P2 through P4 zones were gathered and used in a model to predict recovery. EnerQuest Exhibits 10 and 11 show structure and isopach data indicating the highest P2b structure and the thickest P2b through P5 reservoir rock is in the center of the proposed unit.

(c) EnerQuest predicts the secondary to primary ratio for the P2 through P4 zones at 5 to 1, but did not have available ultimate primary production numbers specifically for the separate zones. EnerQuest discounted the influence of ultimate primary recovery on waterflood economics and is not using this as a parameter in the calculation of tract participation percentages. In the words of its witness, "production that occurred in the past has no relationship to what's going to occur in the future."

(d) EnerQuest's new and simplified tract participation formula consists solely of: Acreage (2.5%) + Last 12 Months Production (97.5%). EnerQuest's total working interest in the proposed unit under the formula presented to the Division on May 16, 2002, was 49.44% and under this latest new formula is 48.10%.

(e) As of the hearing date, the owners of 88% of the working interest and over 67% of the royalty interest have committed to the unit or balloted to support the unit. EnerQuest anticipates obtaining the necessary 75% of the royalty interest owners.

(f) The waterflood would be initiated with four injection wells and be implemented rapidly in phases until the entire unitized area is swept by injection wells. Injection wells are predicted to inject an average of 500 barrels of water per day at 600-psi surface injection pressure and no fresh makeup water is planned. The fresh water interval in this area consists only of the Ogallala fresh water sands located from 50 to 200 feet deep. Active and plugged and abandoned wells have adequate cement to isolate the injection interval and to protect fresh water.

(g) EnerQuest is proposing a 200% **nonparticipation** penalty, although it was not specified where this penalty is mentioned in the Unit Operating Agreement.

(h) The ultimate San Andres primary recovery from the unitized interval is estimated at 7 million barrels of oil. Anticipated additional capital expenditures of \$7 million to install the waterflood will result in recovery of an additional 8.8 million barrels of oil with total net present value of \$73 million. The total San Andres secondary to primary ratio is 1.2 to 1.

(12) The State of New Mexico owns the minerals in the 80-acre tract 10 and has the acreage leased for 12.5% royalty. All remaining tracts in this proposed unit are fee owned, and all tracts are leased. The State Land Office has not opposed this proposed unit, but has also not presented a letter of support to the Division.

(13) The Key Family Group, consisting at this time of Julie Ann Hopkins Trust, Mark Collver Hopkins Trust, Kite Royalty C., LLC, and White Star Royalty, LLC, made entry by way of letter from counsel to the Division for purposes of preserving the right to *de novo* hearing. The group did not express specific support for or opposition to the proposed Unit agreement. The schedule of ownership supplied by EnerQuest shows the Key Family Group members owning working interests in Tracts 4, 5, and 6.

(14) The following parties are all in favor of forming a unit for purposes waterflood operations and enhanced recovery, but they are all opposed to the tract participation parameters as presented in the proposed unit agreement by EnerQuest. These parties all consist of royalty **and/or** overriding royalty owners, and none has working interests in the proposed unit.

(a) Lavita Joy Cain Sullivan wrote a letter to the Division on March 23, 2003, with concern for the proposed participation factor for Tract 12 and the proposed method of determining all participation parameters. This latest method results in a Tract 12 participation factor of 2.053069, as contrasted to the factor of 9.218341, which was proposed prior to the May 2002 Division hearing. Ms. Sullivan was not present at the hearing and was not represented at the hearing by legal counsel, but her letter purported to represent owners totaling 13.18% revenue interest in tract 12.

(b) Lowe Partners, LP through legal counsel presented a letter from James R. Small of Small **GeoServices**, Inc. to the Division written March 25, 2003. In this letter, Mr. Small objected to the proposed formula for tract participation, in particular the 97.5% emphasis on current production levels. Mr. Small pointed out that the wells on his minerals are approximately 40 years old and currently at low production levels but have significant cumulative production. Mr. Small did not specify in his letter the acreage or tracts his minerals are under, but the schedule of ownership supplied by EnerQuest shows James R. Small to own an overriding royalty in Tracts 1, 2, 9, 10, and 11.

(c) Lowe Partners, LP, owner of a 4.25% overriding royalty interest in tract 10, and Rocket Oil and Gas Company, LP, owner of a 10% revenue interest in tract 11, both appeared at the hearing represented by legal counsel.

(15) Opposition groups led by Lowe Partners, LP, presented the following testimony from an expert witness:

(a) The high percentage of working interest owners signing the proposed EnerQuest unit agreement can be attributed to EnerQuest's purchasing controlling interests in most tracts.

(b) Most of the wells were drilled and have produced since the 1950's, and the latest drilling has been in 1997. The older wells and the edge wells have basically produced most of their primary recovery already and are at the economic limit. A few, newer wells in the center of the proposed unit are still producing at top allowable.

(c) The proposed unitized interval includes the entire San Andres, which is the P1 through P5 zones, and these zones should all be included in the proposed waterflood and future tertiary recovery plans and in the calculations for tract parameters.

(d) The uppermost San Andres zone is the P1, and it has also been the most prolific producing zone. The primary production likely can be attributed 90% to the P1 zone and 10% to the P2 through P4 zones, although past production volumes from these zones cannot be easily separated or determined. All tracts have produced from the P1, but at least six tracts have no wells completed in the P2 through P4 zones.

(e) The primary production mechanism for the P1 is more likely to be solution gas drive than edge water drive as proposed by EnerQuest. The higher recovery for this zone can be attributed to better reservoir quality rather than a separate drive mechanism. Solution gas drive would be more in line with other San Andres recovery mechanisms seen elsewhere in the Permian Basin.

(f) The future secondary performance under unitized operations can be predicted by the total primary production from the entire San Andres interval. The overall secondary to primary recovery ratio is probably close to 1 to 1. The P1 has significant remaining recoverable secondary reserves, and wells completed in this interval should have a high participation percentage.

(g) The opponents agreed that optimum recovery and profits depend on the early onset of secondary unitized operations. However, they are willing to delay the unit until participation parameters can be agreed upon.

(h) To be more equitable, tract participation should be two tiered, with a participation percentage for remaining primary then a second participation percentage for post primary production based in part on ultimate primary. The participation parameters proposed by Lowe Partners, LP are as follows:

Phase I: Last 12 Months Production (97.5%) + Acreage (2.5%)  
(Phase I would last until total remaining primary I  
is produced.)  
Phase II: Estimated Ultimate Recovery (97.5%) + Acreage (2.5%)

(16) The unitized management, operation and development of this proposed secondary recovery project will substantially increase the ultimate recovery of oil and gas from this pool and delays in implementing this project are detrimental to ultimate recovery from this reservoir.

(17) The Division finds that EnerQuest has made substantial progress toward the goal of unitization and has diligently made a good faith effort to secure voluntary unitization from all working interest owners.

(18) All parties objecting to this latest participation formula are solely royalty or overriding royalty owners. However, objections were from owners in a variety of tracts and were all focused on the lack of consideration given in the latest formula to ultimate primary production from each tract.

(19) The Division finds that the decision by EnerQuest to exclude the P1 San Andres zone as an injection target and in all calculations is a major point of disagreement between owners in this proposed unit. EnerQuest theorized that the P1 zone has already been "swept" by an edge water drive, but did not present specific detailed evidence at the hearing that this is the case. Production records as presented on EnerQuest Exhibit 12 indicate that water is encountered as wells are deepened beyond the P1 zone, and overall water saturations are sometimes significant within the entire San Andres interval to be unitized. EnerQuest testified that this entire San Andres interval, including the P1 zone, has future tertiary recovery potential.

(20) The Division finds that adequate evidence was not presented by EnerQuest to support its assertion that "production that occurred in the past has no relationship to what's going to occur in the future."

(21) The Statutory Unitization Act (NMSA 1978 Sections 70-7-1, *et seq.*, as amended) provides (in Section 70-7-6.A(6)) that before the Division can grant an application for statutory unitization, the Division must find, *inter alia*, "that the participation formula contained in the unitization agreement allocates the produced and saved unitized hydrocarbons to the separately owned tracts in the unit area on a fair, reasonable and equitable basis."

(22) The Division finds the participation formula as proposed by Lowe Partners, L.P., to be unfair, unreasonable and inequitable. Under this proposed formula, tracts in the center of the unit higher on structure with higher pore volume would be given less participation percentage in Phase II than tracts on the perimeter of the proposed unit.

(23) The Division finds the simplified one-phase participation formula contained in EnerQuest's proposed unitization agreement also does not allocate hydrocarbons to the separately owned tracts in the unit on a fair, reasonable and equitable basis.

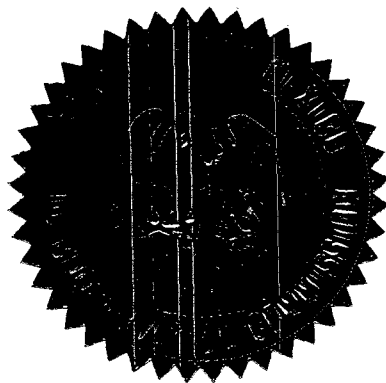
(24) These two applications as presented should be denied.

**IT IS THEREFORE ORDERED THAT:**

(1) The application of EnerQuest Resources, L.L.C. in Case No. 13042 for statutory unitization of 920 acres located in portions of Sections 29 through 32, Township 18 South, Range 39 East, NMPM, Lea County, New Mexico, and the application of EnerQuest Resources, L.L.C. in Case No. 13041 to institute a waterflood project within the area proposed to be unitized in the East Hobbs-San Andres Pool are hereby denied.

(2) Jurisdiction is hereby 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 hereinabove designated.



SEAL

STATE OF NEW MEXICO  
OIL CONSERVATION DIVISION

*Lori Wrotenbery*

LORI WROTENBERY  
Director