

June 1, 2000

OIL AND GAS DOCKET NO. 08-0224602

---

**THE APPLICATION OF RUST OIL CORPORATION TO CONSIDER UNITIZATION AND SECONDARY RECOVERY AUTHORITY FOR THE COWDEN RANCH "656" (CISCO) UNIT, AND TO CONSIDER THE UNIT AS AN ENTITY FOR DENSITY PURPOSES, COWDEN (CISCO) FIELD, ECTOR COUNTY, TEXAS**

---

**Heard by:** Margaret Allen, Technical Examiner  
Mark Helmueller, Hearings Examiner

**Procedural History**

Application filed: April 13, 2000  
Hearing held: May 31, 2000

**Appearances**

	Representing
H. Flip Whitworth	Rust Oil Corporation
Walter Mensch	
C.B. Rust	
William D. Bacheller	

**EXAMINERS' REPORT AND RECOMMENDATION**

**STATEMENT OF THE CASE**

Rust Oil Corporation ("Rust") is seeking Commission approval of its unitization agreement and of its plan for secondary recovery in the Cowden Ranch "656" (Cisco) Unit, Cowden (Cisco) Field, Ector County, Texas. Rust is also seeking to have the Commission treat this unit as an Entity for Density purposes.

**DISCUSSION OF THE EVIDENCE**

The Cowden (Cisco) Field was discovered in 1955, and has had numerous producing wells. Texaco began a waterflood in this field in 1965 but abandoned the waterflood as unsuccessful in the early 1980s. Cumulative production from the entire Cowden (Cisco) Field is 6,200,00 barrels of oil and 6.5 BCF of gas. The field rules require wells to be 560 feet from the nearest lease line and 1120 feet apart, and to be located on 80-acre proration units.

In 1984, Rust began drilling wells on the northern end of the previous unit and encountered good production in some of its new wells. Rust drilled at least two wells within Texaco's prior unit but production from these wells has not been as good as from Rust's wells just to the north. Further geologic study indicates a fault separates the prior unit and the proposed unit. Rust believes there is another fault along the western edge of its proposed unit that separates wells within the proposed unit

from wells just to the west that are producing from the same correlative formation. Cumulative production from the five wells in the proposed unit is estimated to be 794,000 barrels of oil.

The northern and eastern edge of reservoir in the proposed unit is formed by a pinchout of the porosity within the Cisco section. Some of the acreage deemed productive in this reservoir, along the eastern side and to the northwest, will not be included within the unit. There are no producing Cisco wells on this excluded acreage which will probably be flooded by the secondary operations. Rust has a lease on this acreage, but the lease's mineral interest owner declined to put this lease in the unit. Apart from this lease excluded at the request of the mineral interest owner, all of the acreage thought productive in this small reservoir compartment of the Cowden (Cisco) Field will be within the proposed unit. The excluded lease and all of the mineral interest leases within the proposed 410-acre unit are owned by the Cowden family.

The type log, from the Cowden Ranch "56" Well No. 2, shows the unitized interval to be between 8930 and 8976 feet in the Cisco formation. Cross sections show the Cisco has lenticular but interconnected porosity across the proposed unit. The productive Cisco was deposited in long-shore bars and the stratigraphic reservoir was created by secondary dissolution took occurred along the side of a structural high. The applicant believes that Texaco's waterflood failed because its design did not account for the stratigraphic variability within the Cisco. Rust is modeling its waterflood to account for this stratigraphic complexity and its model indicates that a CO<sub>2</sub> WAG project on this reservoir may eventually be economic.

The reservoir dips to the east, but there is no known water contact down structure. The reservoir has a depletion drive and relatively good permeability at 40 md. Porosity is 15%, water saturation is 30% and the pay thickness is 20 feet. Current daily production from the five wells in the proposed unit is about 170 barrels of oil, and the reservoir pressure is probably less than 1000 psi. Remaining primary production is estimated to be 1,069,000 barrels and the expected secondary recovery is an incremental 731,000 barrels of oil.

The preliminary injection plan is to convert one producing well to injection and drill two new injection wells. There are several infill locations that will be drilled if the waterflood is successful. Four of the infill wells will be located closer than 1120 feet to existing wells. Treating the unit as an entity for density purposes will prevent unnecessary Rule 37 exceptions for these wells. All infill wells will still have to be at least 560 feet from the nearest lease line and the unit density cannot exceed one well per 80 acres, without further exceptions.

The estimated net revenue of \$12,795,000 from the secondary oil will exceed the \$1,870,000 capital cost of the project. The participation formula for the four tracts in the unit will be based 50% on net acre-feet and 50% on the surface area of the tracts. All of the mineral interest and 91% of the working interest have signed the unit agreement. All four tracts still have unsigned interest to date and the production from each tract will be allocated by monthly production tests.

The interests of all owners in the field, whether or not they sign the unit agreement, will be protected. The State of Texas owns no royalty interest in any of the tracts. It is necessary to unitize the acreage in order to conduct an effective waterflood. The persons entering into the unit own interests in the unit and the unit agreement is voluntarily entered into to establish pooled units for a secondary recovery operation. The unit agreement does not bind any interest owner who does not execute it. No one was compelled to enter into the unit agreement.

The unit agreement is subject to all valid rules, orders and regulations of the Railroad Commission. The agreement does not provide for the location of wells nor does the agreement relieve Rust from its obligation to develop reasonably the leases in the unit. The agreement does not anticipate the use of dry gas in the reservoir. Nor does the unit agreement limit the amount of production from the unit properties. The unit agreement does not provide for cooperative refining or marketing of crude petroleum or its by-products. The agreement does not restrict any of the rights which persons now have to pool or unitize. The unit agreement does not attempt to set different field rules, and the operator has made a separate application to adopt rules for the field as a whole.

### **FINDINGS OF FACT**

1. Notice of these hearings was issued to all interest owners within the unit and to offset operators entitled to notice on April 19, 2000.
2. Notice of the unitization hearing was published in the Odessa American, a newspaper of general circulation in Ector County, on April 24, and May 1, 8 and 15, 2000.
3. The proposed unit includes four tracts, covering 410 acres, and is sufficiently large to operate an efficient secondary recovery project.
4. The unit is separated from other wells carried in the Cowden (Cisco) Field by small faults to the south and west.
5. The proposed Unit covers all of the productive wells in this small reservoir compartment on the north end of the Cowden (Cisco) Field.
6. Only acreage that can reasonably be considered productive and that has been reasonably defined by development is included within the unit.
7. There are now five producing wells and preliminary plans are to convert one producing well to injection and to drill two new injection wells.
8. Current field rules require wells to be located 560 feet from the nearest lease line and 1120 feet apart, with maximum density of one well per 80 acres.
9. Several infill producing wells are planned and four of these will require between-well Rule 37 exceptions unless the proposed unit is treated as an entity for density purposes.
10. The Cisco reservoir has lenticular but interconnected pay in the proposed unit, and has a depletion drive.
11. Cumulative production from the wells in the proposed unit is 794,000 BO, the estimated remaining primary production is 1,069,000 BO, and the estimated secondary recovery is 731,000 BO.
12. The State of Texas owns no royalty interest in any of the tracts.

13. The waterflood project will not be successful unless the area is unitized; waterflood operations will sweep hydrocarbons across lease lines.
14. The proposed injection project is expected to produce a reasonable profit: the value of the anticipated additional recovery from the reservoir by means of the secondary recovery program will more than offset the cost of the proposed secondary recovery operation.
15. The rights of the owners of all interests in the field whether or not they join the unit will be protected under the operation of this unit.
16. The owners of interest in the oil and gas under each tract of land within the area reasonably defined by development and capable of inclusion in a contiguous unit have been given an opportunity to enter the unit on the same yardstick basis as the owners of interest in the oil and gas under the other tracts in the unit.
17. To date, 91% of the working interest ownership and 100% of the royalty interest ownership have signed or ratified the unit agreement.
18. Such agreement does not bind any interest owner who does not execute the agreement.
19. No one was compelled to enter into the unit agreement; the owners of interests not desiring to enter the unit on the yardstick basis may continue to participate in production from the field on an independent basis governed by Commission rules and by the provision of the individual lease contract.
20. The persons entering into the unit own or control production, leases, royalty or other interest in the Cowden (Cisco) Field.
21. The unit agreement is subject to all valid rules, orders and regulations of the Railroad Commission.
22. The unit agreement does not attempt to contain the field rules for the area or field.
23. The unit agreement does not limit the amount of production.
24. The unit agreement does not provide for cooperative refining or marketing of crude petroleum or its by-products.
25. The agreement was voluntarily entered into to establish pooled units to conduct secondary recovery operations.
26. The unit agreement does not restrict the rights which persons now have to make and enter into unitization and pooling agreements.
27. Such agreement does not provide for the location of wells.

28. The unit agreement does not relieve Rust Oil Corporation from its obligation to develop reasonably its leases committed to the unit.
29. There are no other existing alternate methods or facilities available that are adequate for the purpose of secondary recovery; the unitization agreement is necessary to accomplish the purposes set forth in Section 101.011 of the Texas Natural Resources Code, specifically the establishment of pooled units necessary to effect secondary recovery operations for oil or gas.
30. The unit agreement is in the interest of public welfare as reasonably necessary to prevent waste and promote conservation.
31. The injection fluid will be brackish water from the Santa Rosa Formation.
32. Production from any tract with unsigned interests will be tested monthly and reported separately to the Commission.

#### **CONCLUSIONS OF LAW**

1. Proper notice of this application and hearing was provided in accordance with all applicable regulatory statutes and rules.
2. All things have occurred or have been accomplished to afford the Commission the opportunity to consider and decide this matter.
3. Consideration of a secondary recovery program that will prevent the waste of otherwise recoverable hydrocarbon resources is a matter properly within the statutory jurisdiction of the Commission.
4. Approval of the proposed secondary waterflood injection program will foster conservation and prevent waste by providing for the recovery of hydrocarbons that would not otherwise be recovered.
5. The application complies with Chapter 101 of the Texas Natural Resources Code.
6. Because waterflood operations will sweep hydrocarbons across lease lines, a unit agreement is necessary to protect the correlative rights of working interest owners and royalty interest owners.

#### **EXAMINERS' RECOMMENDATION**

Based on the above findings of fact and conclusions of law, the examiners recommend the approval of the requested unitization and secondary recovery project. The Cowden Ranch "656" (Cisco) Unit should be treated as an Entity for Density purposes to allow suspension of the between-well spacing requirement of the field rules.

Respectfully submitted,

Margaret Allen  
Technical Hearings Examiner

Mark Helmueller  
Legal Examiner

Date of Commission action: July 11, 2000

Exhibits

1. Location map
2. Plat of the unit
3. Type log
4. North-south cross section
5. East-west cross section
6. Productive limits
7. Proration schedule
8. Reservoir data sheet
9. Graph of field production
10. Graph of lease production
11. Graph of production allocation to wells in proposed unit
12. Graph of projected recovery
13. Economics
14. Potential infill locations
15. Map of County
16. Unit agreement
17. Sign up percentage
18. Publishers affidavit