



RAILROAD COMMISSION OF TEXAS

HEARINGS DIVISION

OIL AND GAS DOCKET NO. 8A-0306138

**THE APPLICATION THE APPLICATION OF CAZADOR OPERATING, LLC TO
CONSIDER UNITIZATION AND SECONDARY RECOVERY AUTHORITY FOR THE
PROPOSED MIRAGE WATERFLOOD UNIT, MIRAGE (STRAWN) FIELD, SCURRY
COUNTY, TEXAS**

HEARD BY: Karl Caldwell – Technical Examiner
Kristi M. Reeve – Administrative Law Judge

HEARING DATE: November 2, 2017
RECORD CLOSED: December 14, 2017
CONFERENCE DATE: January 23, 2018

APPEARANCES:

REPRESENTING:

APPLICANT:

Cazador Operating, LLC

George C. Neale
Rick Johnston, P.E.
Scott Panthaky
Zack Sledge

EXAMINERS' REPORT AND RECOMMENDATION

STATEMENT OF THE CASE

Cazador Operating, LLC ("Cazador") requests Commission authority for unitization of the proposed Mirage Waterflood Unit and approval of secondary recovery operations on the Unit. Notice of the application was published in the Snyder Daily News, a newspaper of general circulation published in Scurry County, for four consecutive weeks: August 24th and 31st, and September 7th and 14th, 2017. Notice of the application and notice of the hearing were served on the working interest owners, royalty interest owners, surface owner, offset operators, and overriding royalty interest owners. A Unit Agreement has so far been ratified by 94.98% of the working interest owners, and is in the process of being ratified by the royalty interest owners, currently with 76.58% approval. The application is unopposed and the Technical Examiner and

Administrative Law Judge (collectively "Examiners") recommend approval of the application.

DISCUSSION OF THE EVIDENCE

The proposed Mirage Waterflood Unit ("Unit") is located in the Mirage (Strawn) Field in Scurry County, Texas. There are two operators of wells in the Mirage (Strawn) Field, Cazador and King Operating Corporation. Cazador is the only operator of wells on the Unit acreage and will be the Unit Operator. The proposed Unit is composed of 13 tracts of land covering 1,280 gross acres. There are no state-owned lands in the proposed Unit.

Notice of the application was published in the *Snyder Daily News*, a newspaper of general circulation published in Scurry County, on August 24th and 31st, and on September 7th and 14th, 2017. Notice of the application and notice of the hearing were served on the working interest owners, royalty interest owners, surface owner, offset operators, and overriding royalty interest owners. A Unit Agreement has so far been ratified by 94.98% of the working interest owners, and is in the process of being ratified by the royalty interest owners, currently with 76.58% approval.

The Unit Agreement contains no provision regarding the field rules. The existing field rules for the Mirage (Strawn) Field provide for 467' lease line spacing, 1,200' between well spacing, and 80-acre base proration units with optional 40-acre units. The top allowable is 121 BOPD with an allowable gas-oil ratio of 2,000 cubic feet per barrel. Cumulative production for the Mirage (Strawn) Field through June 2017 is 1.015 MMBO and 3,514 MMCFG. Cumulative production for the Mirage (Strawn) Field for the wells contained in the proposed unitized area through June 2017 is 750 MBO and 2,807 MMCFG.

The proposed unitized formation, as defined in the Unit Agreement, means the subsurface portion of the Unit Area commonly known as the Mirage Field, Scurry County, Texas. More specifically, the stratigraphic interval or its correlative equivalent between the log depths of 7,340' and 7,360' in the O.T. Richardson No. 1 Well, API (42-415-33233), located 2,173' from the north line and 1,150' from the east line of Section 65, Block 3 of the H&GN CO Survey, Scurry County, Texas, as shown on the Halliburton Spectral Density Dual Spaced Neutron Log run on May 2, 1993.

It is Cazador's position that when you get thinner than about 7 feet net pay in the Strawn Sand that it seeks to unitize and waterflood, you end up with a well with very limited production. For this reason, Cazador has focused on the acreage that has 7 feet of net pay or more. In doing so, the proposed Unit incorporates almost all of the area inside of the 7-foot contour isopach map as shown on Cazador Exhibit No. 2.

Cazador's expert petroleum engineering witness believes that a reasonable expectation for production from secondary recovery will be roughly equal to 100% of the primary recovery, or, another 750 MBO. However, in calculating the estimated project economics, Cazador's expert petroleum engineering witness used a conservative estimate, a 50% secondary recovery factor. Even then, the value of the oil to be recovered as a result of the unitization and secondary recovery is approximately \$14,000,000, based on an oil price of \$50 per barrel. Since the estimated cost to implement the secondary recovery project is \$1,000,000, the cost of the proposed project does not exceed the value of additional reserves to be recovered.

The participation formula for each tract in the Unit, as stated in the Unit Agreement, is as follows: twenty five percent (25%) based on surface acres, determined by the surface acres contained by each tract divided by total surface acres contained within the Unit area; and seventy five percent (75%) based on the cumulative production from the unitized formation in each tract as of February 1, 2016. Cazador's expert petroleum engineering witness concluded that this formula fairly ascribes a higher basis to tracts with higher primary production amounts, and thus is a reasonable and equitable participation formula. The formula considers the acreage contributed to the unit, and then more heavily weighs the participation based on cumulative primary production. The rationale is that primary production correlates to the thickness of the productive interval and hydrocarbon pore volume.

FINDINGS OF FACT

1. Notice of the application was published in the *Snyder Daily News*, a newspaper of general circulation published in Scurry County, on August 24th and 31st, and on September 7th and 14th, 2017. Notice of the application and notice of the hearing were served on the working interest owners, royalty interest owners, surface owner, offset operators, and overriding royalty interest owners.
2. The proposed Unit is composed of 13 tracts of land covering 1,280 gross acres.
3. The proposed unitized formation, as defined in the Unit Agreement, means the subsurface portion of the Unit Area commonly known as the Mirage Field, Scurry County, Texas, described as that stratigraphic interval or its correlative equivalent between the log depths of 7,340' and 7,360' in the O.T. Richardson No. 1 Well, API (42-415-33233), located 2,173' from the north line and 1,150' from the east line of Section 65, Block 3 of the H&GN CO Survey, Scurry County, Texas, as shown on the Halliburton Spectral Density Dual Spaced Neutron Log run on May 2, 1993.

4. Cazador has focused on the acreage that has 7 feet of net pay or more in the Strawn Sand that it seeks to unitize and waterflood. Less than about 7 feet net pay would yield a well with very limited production.
5. At the time of the hearing, the Unit Agreement had been ratified by 94.98 percent of the working interest owners, and was in the process of being ratified by the royalty interest owners, with 76.58 percent approval.
6. Secondary recovery operations are expected to result in the recovery of at least an estimated 375 MBO, which would otherwise go unrecovered.
7. The total estimated cost to implement the secondary recovery project is approximately \$1,000,000. The value of the oil to be recovered as a result of the unitization and secondary recovery is approximately \$14,000,000, based on an oil price of \$50 per barrel. The cost of the proposed project does not exceed the value of additional reserves to be recovered.
8. The participation formula for the Unit is stated in the Unit Agreement as follows: "[T]wenty five percent (25%) based on surface acres being determined by the surface acres contained by each tract divided by total surface acres contained within the Unit area; and seventy five percent (75%) based on the cumulative production from the unitized formation in each tract as of February 1, 2016."
9. The proposed secondary recovery project will not be successful unless the area is unitized.
10. The Unit agreement was voluntarily executed by all parties affixing their signatures thereto and no person has been compelled or required to enter into the agreement. The Unit Agreement binds only those persons who have executed it, their heirs, successors, assigns and legal representatives. The rights of all owners of interests in the field will be protected under the operation of the Unit, regardless of whether an owner signed the Unit Agreement.
11. The owners of interests in the oil and gas under each tract of land within the area reasonably defined by development have been given an opportunity to enter into the Unit on the same yardstick basis as owners of interests in the oil and gas under the other tracts in the Unit.
12. The proposed injection program will move hydrocarbons across lease lines, and unitization is necessary in order to protect the correlative rights of the various interest owners.

13. The unitization agreement is necessary to accomplish the purposes of establishing a Unit to effect secondary recovery operations for water injection and to operate cooperative facilities necessary thereto. Other available or existing methods or facilities for secondary recovery operations are inadequate for the purpose of secondary recovery.
14. The Unit Agreement does not provide, either directly or indirectly, for the cooperative refining or marketing of crude petroleum, distillate, condensate, or gas, or any by-product thereof.
15. The Unit Agreement is subject to all valid orders, rules and regulations of the Railroad Commission.
16. The Unit Agreement contains no provision regarding the field rules, nor does it limit the amount of production of oil and gas from the unitized area. The Unit Agreement does not release the operator from his obligation to reasonably develop lands or leases as a whole.
17. The Unit Agreement is a voluntary agreement entered into for the purpose of conducting secondary recovery operations.
18. The Unit Agreement does not provide for the location of wells.
19. There are no state-owned lands in the proposed Unit.
20. The Unit Agreement is in the interest of public welfare as being reasonably necessary to prevent waste and to promote conservation.
21. The reservoir described in the Unit Agreement is identified as a single reservoir for Commission purposes and is a suitable reservoir for a secondary recovery project.
22. The proposed Unit contains only the acreage reasonably necessary to accomplish the proposed secondary recovery project.
23. Production will be separately measured for wells on tracts for which 100% sign-up was not achieved.
24. Cazador agreed, that, pursuant to the provisions of Texas Government Code §2001.144(a)(4)(A), this Final Order shall be effective on the date a Master Order relating to this Final Order is signed.

CONCLUSIONS OF LAW

1. Resolution of the subject application is a matter committed to the jurisdiction of the Railroad Commission of Texas. Tex. Nat. Res. Code § 81.051.
2. All notice requirements have been satisfied. 16 Tex. Admin. Code § 1.45.
3. Applicant's proposed secondary recovery project satisfies all of the requirements set out in Tex. Nat. Res. Code Ann. §§101.001-052.
4. Approval of the proposed unit agreement for secondary recovery operations is in the public interest and is necessary to prevent waste and to promote the conservation of oil or gas or both.
5. Pursuant to §2001.144(a)(4)(A), of the Texas Government Code, and the agreement of the applicant, this Final Order is effective when a Master Order relating to this Final Order is signed on January 23, 2018.

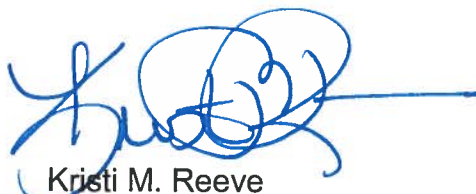
EXAMINERS' RECOMMENDATION

Based on the above findings of fact and conclusions of law, the Examiners recommend approval of the proposed Mirage Waterflood Unit and secondary recovery operations project as set out in the attached order.

Respectfully submitted,



Karl Caldwell
Technical Examiner

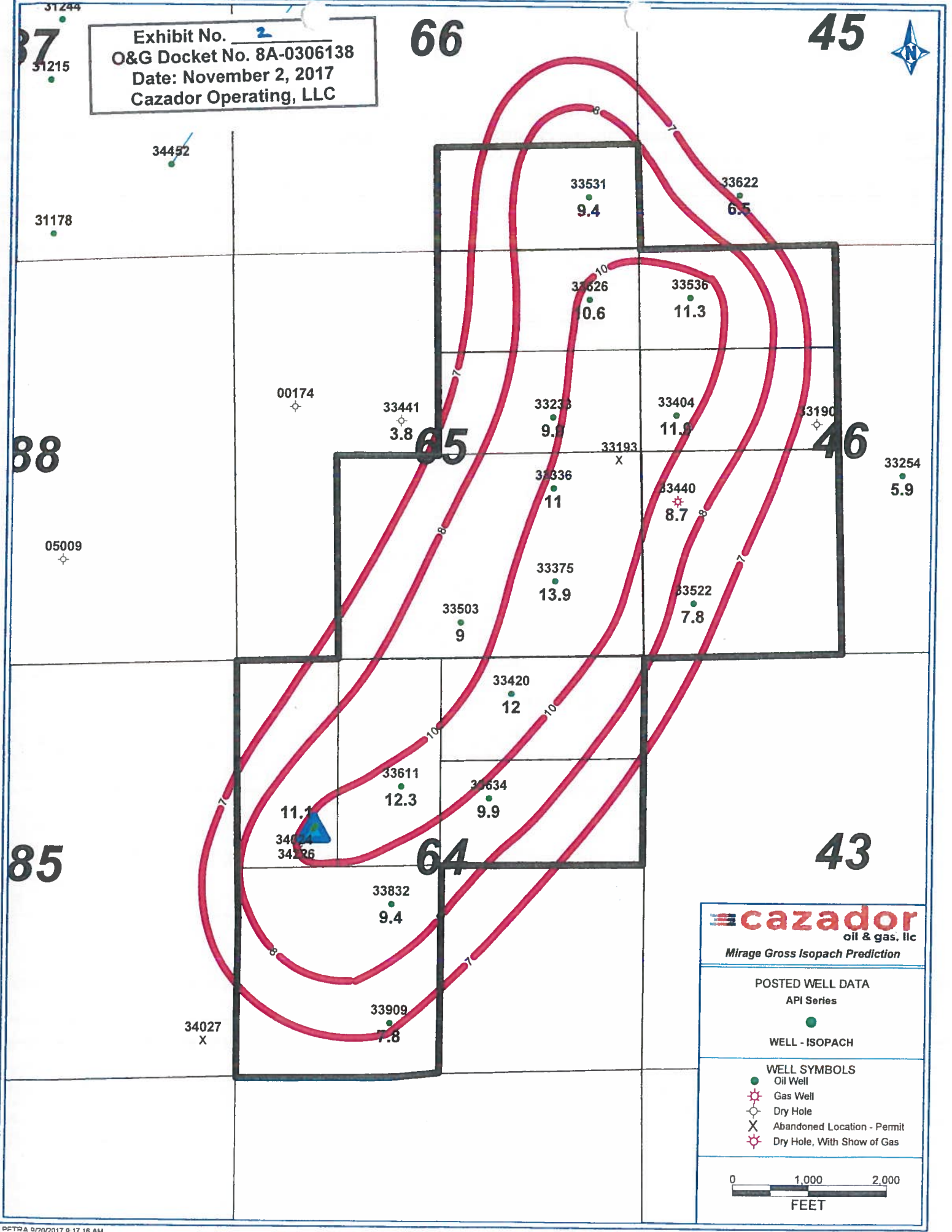


Kristi M. Reeve
Administrative Law Judge

Exhibit No. 2
 O&G Docket No. 8A-0306138
 Date: November 2, 2017
 Cazador Operating, LLC

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cazador
 oil & gas, llc

Mirage Gross Isopach Prediction

POSTED WELL DATA

API Series

● WELL - ISOPACH

WELL SYMBOLS

- Oil Well
- ⊛ Gas Well
- Dry Hole
- ⊗ Abandoned Location - Permit
- ⊛ Dry Hole, With Show of Gas

