

**BEFORE THE OIL CONSERVATION DIVISION
EXAMINER HEARING MAY 2, 2019**

CASE No. 20440

VASALY 001F WELL



**STATE OF NEW MEXICO
DEPARTMENT OF ENERGY, MINERALS AND NATURAL RESOURCES
OIL CONSERVATION DIVISION**

**APPLICATION OF HILCORP ENERGY
COMPANY FOR AN EXCEPTION TO THE
WELL DENSITY REQUIREMENTS OF THE
SPECIAL RULES AND REGULATIONS FOR
THE BLANCO-MESAVERDE GAS POOL,
SAN JUAN COUNTY, NEW MEXICO.**

CASE NO. 20440

AFFIDAVIT OF BRAD PEARSON IN SUPPORT OF CASE NO. 20440

I, Brad Pearson, being of lawful age and duly sworn, declare as follows:

1. My name is Brad Pearson. I work for Hilcorp Energy Company ("Hilcorp") as a Landman.
2. I have previously testified before the New Mexico Oil Conservation Division as an expert witness in petroleum land matters. My credentials as a petroleum landman have been accepted by the Division and made a matter of record.
3. I am familiar with the application filed by Hilcorp in this case, and I am familiar with the status of the lands in the subject areas.
4. None of the affected parties in this case has indicated opposition, and therefore I do not expect any opposition at the hearing.
5. Hilcorp seeks an exception to the well density requirements of Rule I.B of the Special Rules and Regulations of the Blanco-Mesaverde Gas Pool to permit it to complete and simultaneously produce three Mesaverde gas wells in the same quarter section and two wells in the same quarter-quarter section, for a total of five Mesaverde gas wells within the same standard 320-acre, more or less, spacing and proration unit.

6. The Blanco-Mesaverde Gas Pool is governed by Special Rules and Regulations which provide for 320-acre spacing and proration units on which as many as four wells may be drilled. The Special Rules therefore limit the number of wells in a spacing unit to four and the number of wells in a half section within a spacing unit to two. The Special Rules also provide that well density exceptions can be approved only after notice and hearing.

7. Hilcorp is the operator of a standard 320-acre, more or less, spacing and proration unit in the Blanco-Mesaverde Gas Pool comprised of the N/2 of Section 22, Township 30 North, Range 11 West, San Juan County, New Mexico, in which the following four wells are currently completed and producing:

- a. Vasaly Com 001 Well (API No. 30-045-09387) Sec. 22, T30N, R11W (Unit A);
- b. Fuller 003 Well (API No. 30-045-26626), Sec. 22, T30N, R11W (Unit C);
- c. Vasaly Com 001M Well (API No. 30-045-31684), Sec. 22, T30N, R11W, (Unit D);
and
- d. Vasaly Com 001N Well (API No. 30-045-35141), Sec. 22, T30N, R11W, (Unit B).

8. Hilcorp proposes to simultaneously dedicate and produce the following well within the same standard spacing and proration unit, at the following location:

- a. **Vasaly Com 001F** (API No. 30-045-34803), Sec. 22, T30N, R11W (Unit C).

9. This will be the fifth well within the same spacing unit with two wells in the same quarter-quarter section and three wells in the same quarter section, exceeding well density limits imposed by the Special Rules.

10. Hilcorp therefore requests that the Division enter an order granting an exception to the well density requirements of Rule 1.B of the Special Rules and Regulations of the Blanco-

Mesaverde Pool to authorize Hilcorp to simultaneously dedicate and produce the **Vasaly Com 001F** (API No. 30-045-34803) within the N/2 of Section 22, Township 30 North, Range 11 West, permitting the total number of wells dedicated and producing within this spacing and proration unit to five, with two wells in the same quarter-quarter section and three wells in the same quarter section.

11. The proposed simultaneous dedication of the **Vasaly Com 001F**, which is currently producing in the Dakota formation, within the Blanco-Mesaverde is part of Hilcorp's strategy to use existing wells completed in other zones to economically target development of incremental Mesaverde gas reserves in areas where there is not adequate gas drainage.

12. The Division has pre-approved downhole commingling the Dakota formation with the Blanco-Mesaverde Gas Pool.

13. Pursuant to the Special Rules and Division precedent, Hilcorp provided notice to all Division-designated operators in offsetting 320-acre spacing units. Where Hilcorp is the operator, Hilcorp identified all working interest owners in offsetting spacing units as affected parties requiring notice. In some offsetting spacing units, Hilcorp may own 100% of the working interest, in which case there are no affected parties to notice.

14. **Exhibit A-1** is an overview map identifying the location of the subject Blanco-Mesaverde Gas Pool spacing unit, in the green outline, within the N/2 of Section 22, Township 30 North, Range 11 West, to which the well will be simultaneously dedicated.

15. Exhibit A-1 also identifies the locations of the existing Mesaverde wells as gray circles, as well as the **Vasaly Com 001F** as a gray triangle.

16. Exhibit A-1 also depicts the notice area comprised of the offsetting spacing units, which is the area within the red dashed line surrounding the subject spacing unit outlined in green. In this case, Hilcorp is the operator of the offsetting spacing units within the notice area.

17. **Exhibit A-2** identifies the affected parties within the offsetting spacing units who are required to be noticed. I provided a list of all affected parties requiring notice to Holland & Hart LLP. All parties were locatable.

18. To the best of my knowledge, the addresses used to provide notice are valid and correct addresses which have been recently used by Hilcorp and at which mail has been received by the notice parties.

19. Exhibits A-1 and A-2 were prepared by me or under my direction and supervision.

FURTHER AFFIANT SAYETH NAUGHT.

Bradly W. Pearson
Brad Pearson

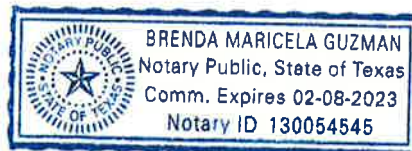
STATE OF TEXAS)
COUNTY OF Harris)

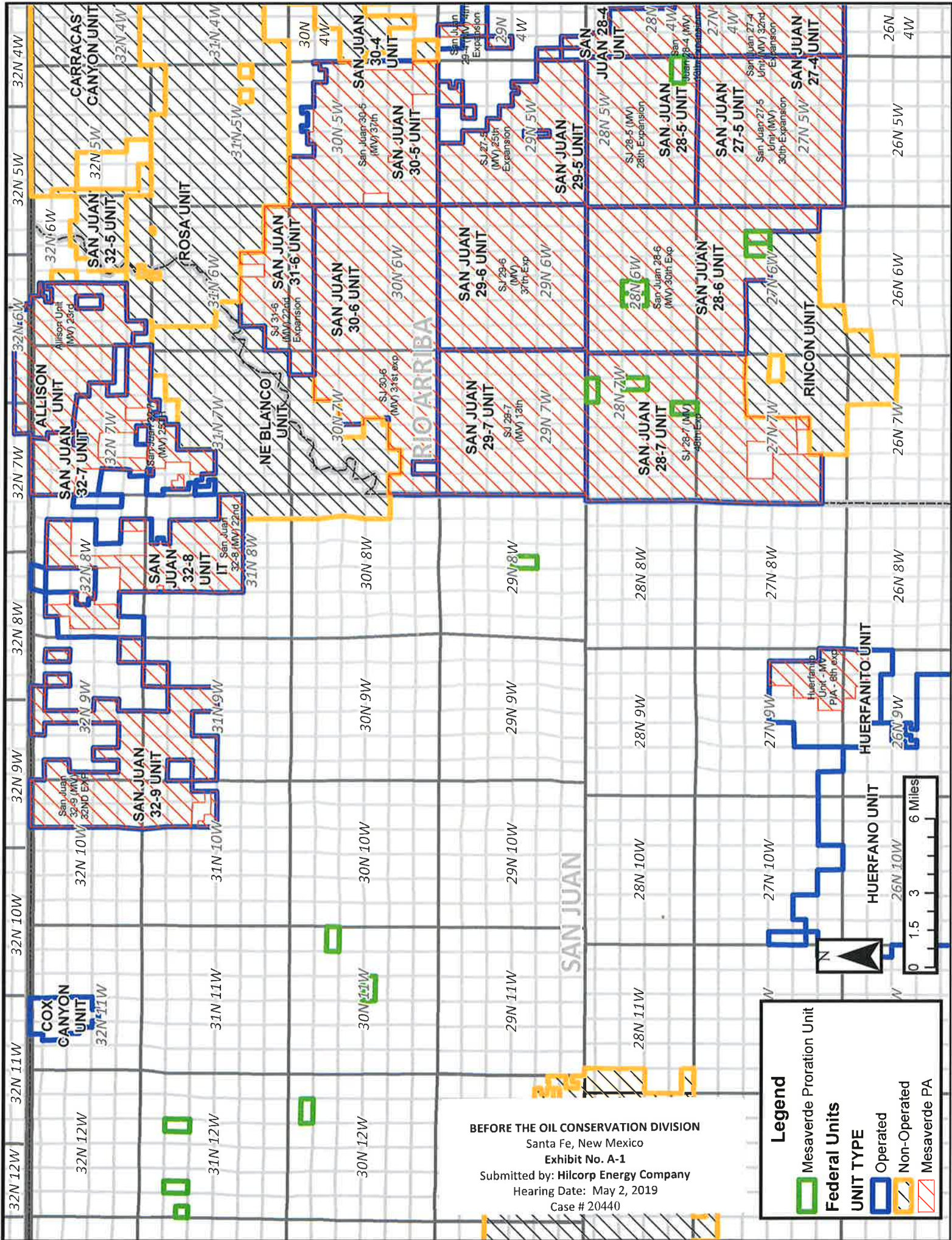
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Brad Pearson.

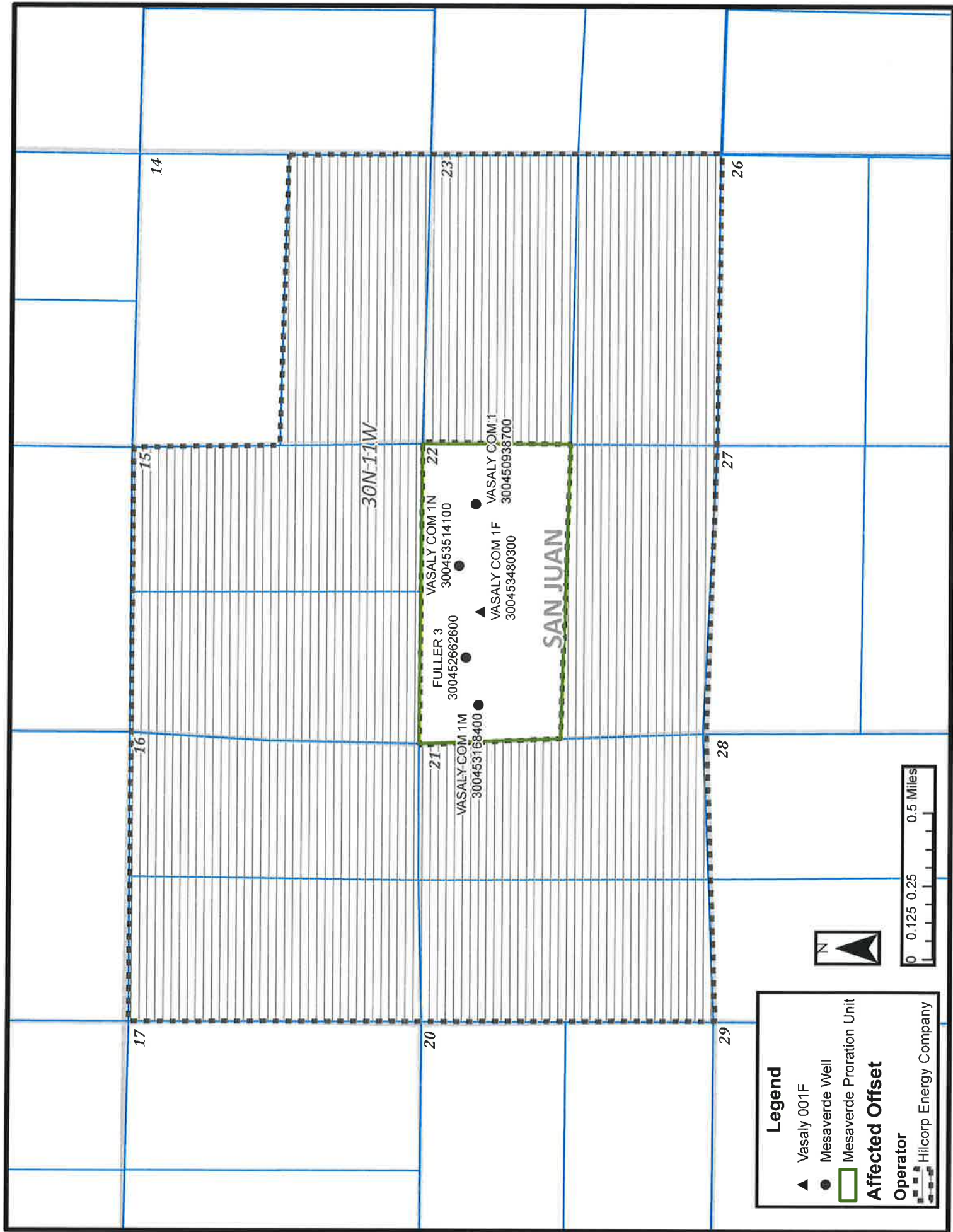
[Signature]
NOTARY PUBLIC

My Commission Expires:

02/08/2023







Vasaly Com 1F

Name	Address	City	State	Zip Code	Remarks	Offset Drillblock
HILCORP ENERGY COMPANY	1111 TRAVIS	HOUSTON	TX	77002	OFFSET OPERATOR	All around

Name	Address	City	State	Zip Code	Remarks	Offset Drillblock
HILCORP ENERGY COMPANY	1111 TRAVIS	HOUSTON	TX	77002	OFFSET OPERATOR	All around

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CASE NO. 20440

AFFIDAVIT OF TYLER TEYKL IN SUPPORT OF CASE NO. 20440

Tyler Teykl, being of lawful age and duly sworn, declare as follows:

1. My name is Tyler Teykl. I work for Hilcorp Energy Company ("Hilcorp") as a reservoir engineer.
2. I have previously testified before the New Mexico Oil Conservation Division as an expert in reservoir engineering. My credentials as a reservoir engineer have been accepted by the Division and made a matter of record.
3. I am familiar with the application filed by Hilcorp in this case and have conducted an engineering study of the subject area and of the Blanco-Mesaverde Gas Pool.
4. As with Hilcorp's prior applications for well density exceptions in the Blanco-Mesaverde Gas Pool, I used a decline curve analysis of existing wells to estimate ultimate recoveries for the subject spacing unit under the existing well density. I then compared the estimated ultimate gas recoveries against log-derived volumetric calculations for the original gas in place with the cumulative gas production in the spacing unit. Using this approach, we identified areas, including the subject spacing unit, that have substantial remaining recoverable

gas and lower-than-expected gas recoveries where additional well bores or well completions are necessary to adequately drain remaining gas reserves.

5. Exhibit C-1 contains information relating to the subject spacing unit and the **Vasaly Com 001F** (API No. 30-045-34803) within the N/2 of Section 22, Township 30 North, Range 11 West, which is the well Hilcorp proposes for simultaneous dedication within the Blanco-Mesaverde Gas Pool in this application. It is currently producing within the Dakota formation. It will be the third Mesaverde completion in the quarter section in the spacing unit. I anticipate that it will help drain the area to the southeast.

6. Exhibit C-2 is a basin-wide map reflecting Hilcorp's calculations for original gas in place across the Blanco-Mesaverde Gas Pool. The warmer colors represent areas where there is more original gas in place. The cooler colors indicate areas where there is less original gas in place. The red star indicates the location of the subject well in an area where we calculate moderately high volumes of original gas in place.

7. Exhibit C-3 is a map depicting the calculated estimated ultimate recovery (EUR) from the Blanco-Mesaverde Gas Pool and drainage radius. The larger radius circles reflect wells with higher EURs and larger drainage areas. The red star identifies the location of the subject well where there is relatively low EURs and the drainage radii are smaller.

8. Exhibit C-4 is a map depicting calculated remaining recoverable gas. The cooler colors indicate areas where there is relatively less remaining recoverable gas. The warmer colors reflect areas where there is relatively more remaining recoverable gas. The red star identifies the location of the subject well in an area where we calculate that there is relatively considerable remaining recoverable gas and relatively low EURs under the existing well density.

9. Exhibit C-5 is a table that supports this volumetric analysis. The first column titled "Volumetric OGIP" reflects the calculated volumetric original gas in place on a quarter section, section, and nine-section area basis around the subject spacing unit. The column titled "Section Equivalent OGIP" shows the estimated gas in place to show that the estimates are consistent across the area. The column titled "CTD/RF%" shows the cumulative gas production to date on a quarter section, section, and nine-section area basis and the calculated recovery factor. The column titled "Remaining GIP" shows the estimated remaining gas in place on a quarter section, section, and nine-section area basis. The last column titled "EUR/RF%" shows the estimated ultimate gas recovery and recovery factor calculated on a quarter section, section, and nine-section area basis.

10. I would expect recovery factors of approximately 70-80% in a gas pool of this type. The relatively low recovery factors in Exhibit C-5 indicate that that is area is not being sufficiently drained by the existing wells in the subject spacing unit under the existing well density and that additional well bores, or completions, are necessary to adequately drain the Blanco-Mesaverde Gas Pool in this area.

11. Approval of Hilcorp's application is therefore necessary to drain unrecovered gas reserves that will otherwise be left in place under the existing well density.

12. Exhibit C-6 is a well bore diagram for the subject well. It provides the most current information known regarding the status and construction of the well, as well as the location and condition of cement within the wellbore. Hilcorp will separately seek administrative approval from the Division's Aztec District Office for authorization to recompleting this well in advance of undertaking any recompletion operations.

13. In my opinion, granting this application will not impair the Blanco-Mesaverde Gas Pool, and will be in the interest of conservation, the prevention of waste and will protect correlative rights.

14. Exhibits C-1 through C-6 were prepared by me or under my direction and supervision.


FURTHER AFFIANT SAYETH NAUGHT.


Tyler Teykl

STATE OF TEXAS)

COUNTY OF Harris)

SUBSCRIBED and SWORN to before me this 27th day of April, 2019 by Tyler Teykl.

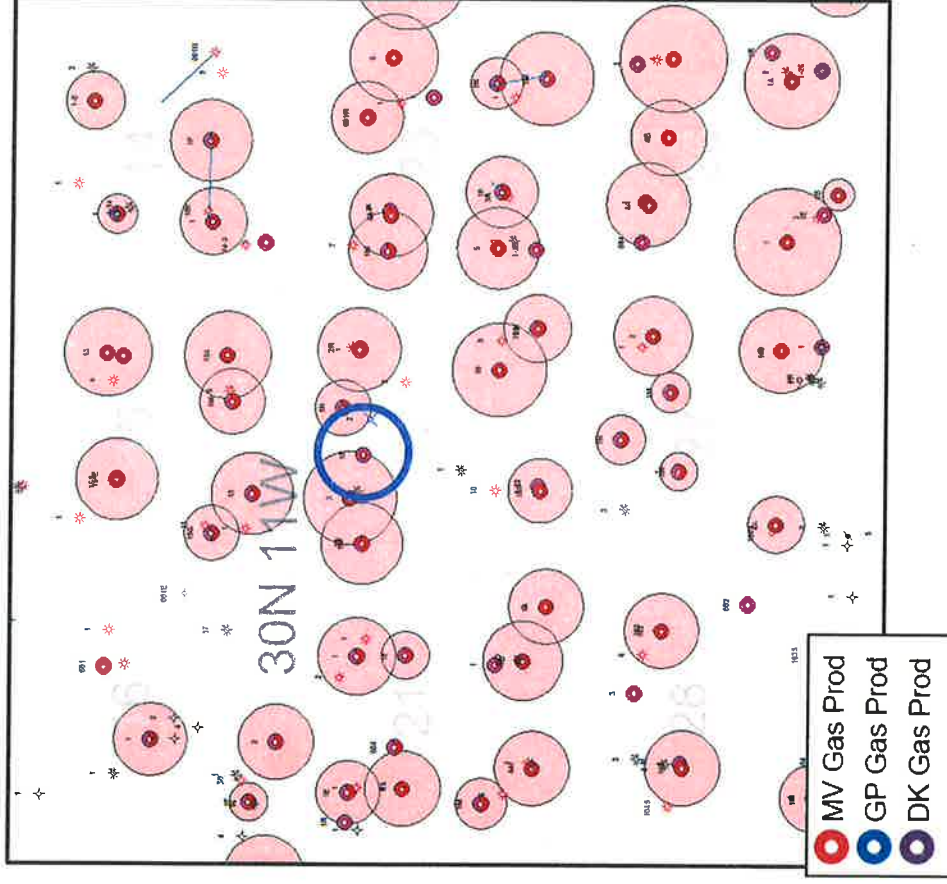

NOTARY PUBLIC

My Commission Expires:

02/08/2023



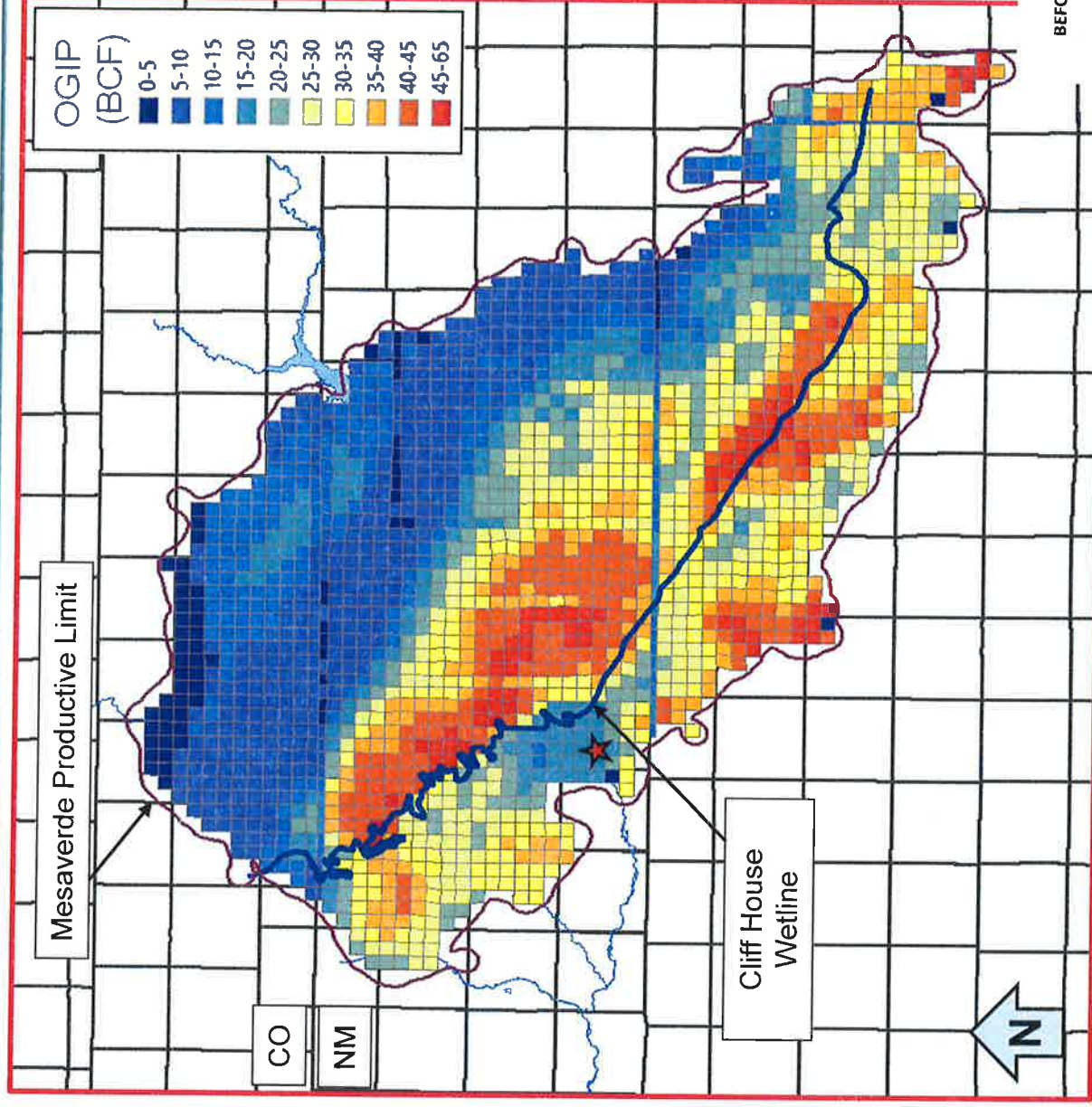
Vasaly Com 1F



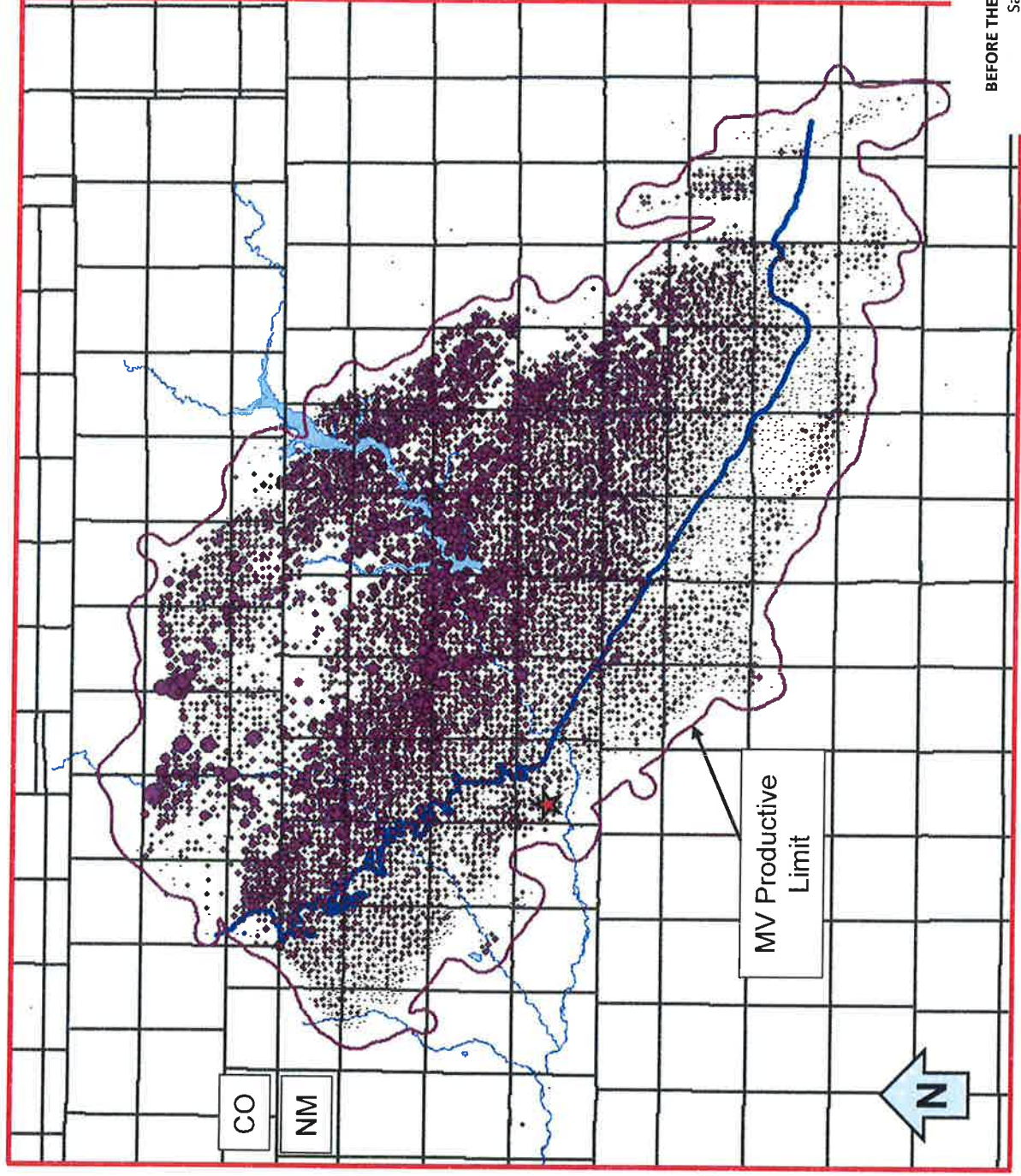
Well Specifics

- NW22 30-11 3004534803 2009 drill
- 3rd MV completion in 1/4 section
- 860' from nearest MV producer
- Help drain area to the southeast
- Complete MV in 1-2 stages

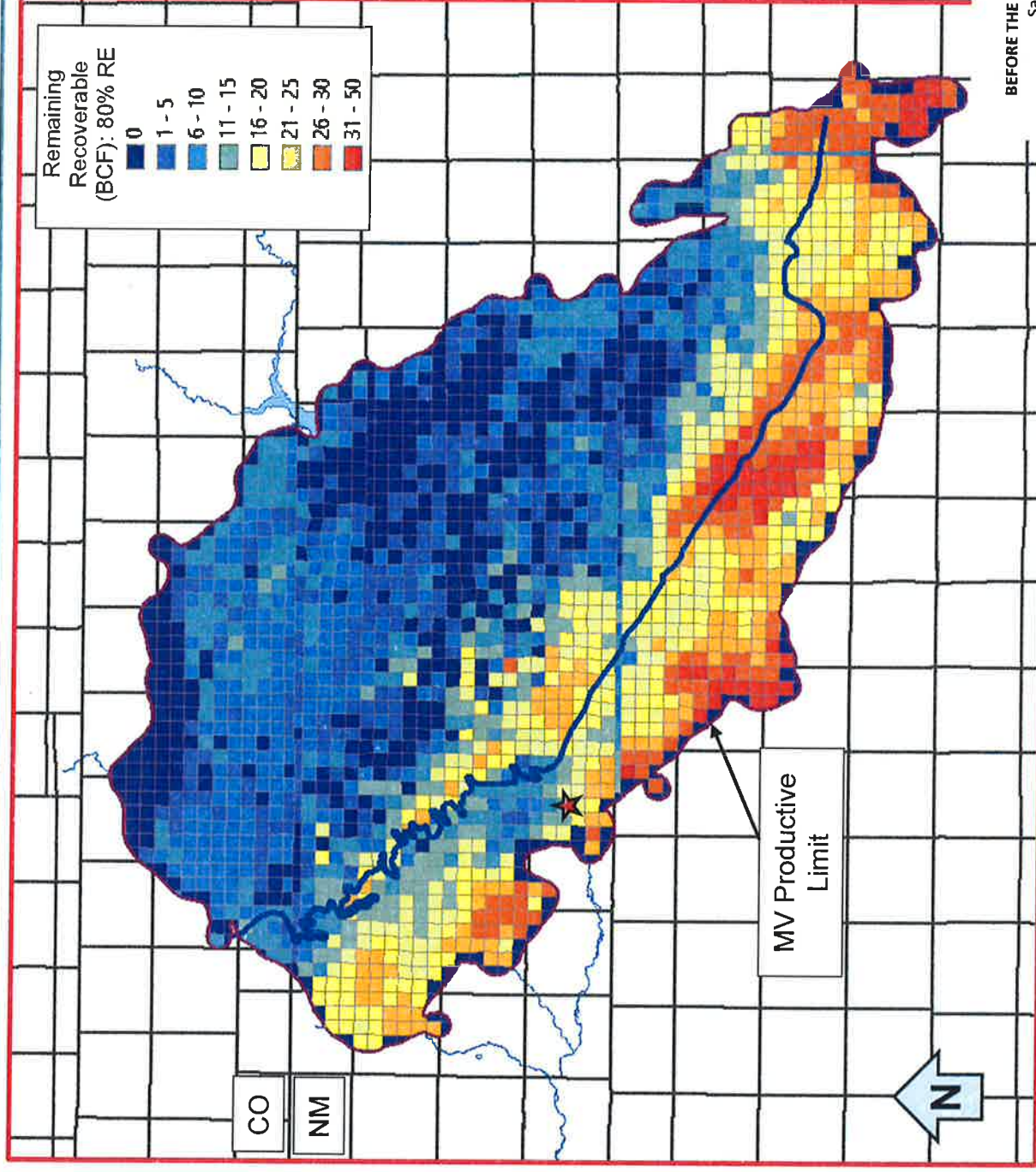
MV Original Gas In Place



MV EUR and Drainage Radius



MV Remaining Recoverable Gas



Vasaly Com 1F



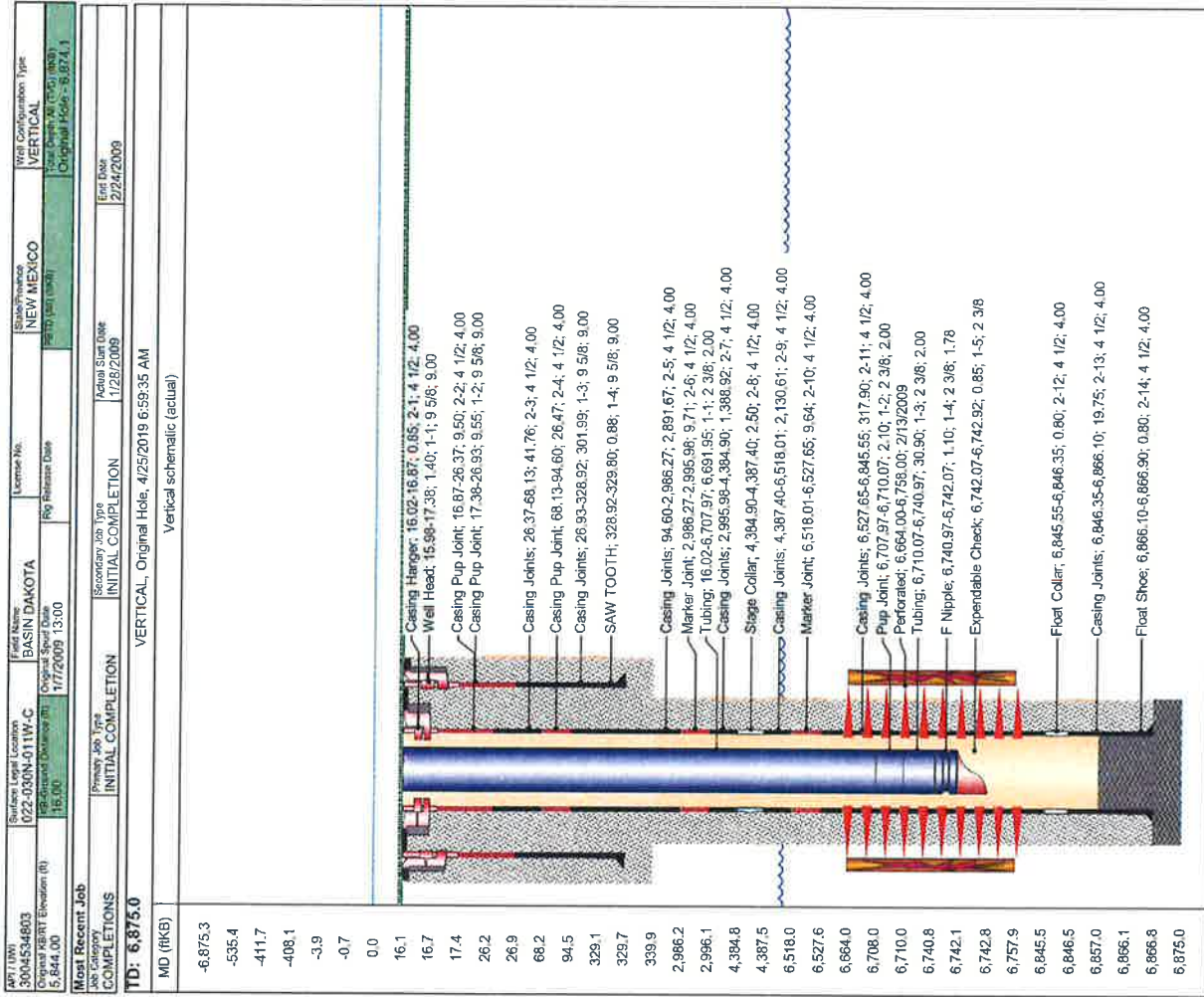
Reference Area	Volumetric OGIP	Section Equivalent OGIP	CTD / RF%	Remaining GIP	EUR / RF%
Qtr Section	7.57 Bcf	30.3 Bcf	2.1 Bcf / 28%	5.47 Bcf	4.74 Bcf / 63%
Section	27.9 Bcf	27.9 Bcf	6 Bcf / 22%	21.9 Bcf	10.8 Bcf / 39%
9 Section	270 Bcf	30 Bcf	42 Bcf / 16%	228 Bcf	73 Bcf / 27%

- Remaining Gas in Place in Quarter Section of 5.47 Bcf
- Cumulative Recovery Factor to Date 28% and 22% in the Quarter Section and Section, respectively
- Considerable gas remaining in area with opportunity to recover additional volumes utilizing existing wellbore

Vasaly Com 1F



Well Name: VASALY COM #1F



BEFORE THE OIL CONSERVATION DIVISION

Santa Fe, New Mexico

Exhibit No. C-6

Submitted by: Hilcorp Energy Company

Hearing Date: May 2, 2019

Case # 20440