

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

**APPLICATION OF MANZANO LLC FOR
APPROVAL OF A PERMANENT PRESSURE
MAINTENANCE PROJECT,
LEA COUNTY, NEW MEXICO.**

CASE NO. 24927

MANZANO LLC'S NOTICE OF SUPPLEMENTAL EXHIBITS

In accordance with the technical examiner's request at the November 21, 2024 hearing in this matter, Manzano LLC submits the following supplemental exhibits:

1. Linear Plot of Oil and Gas Production by Month for the Rag Mama 30 19 Fee #1H well (Exhibit A-9);
2. Linear Plot of Monthly Gas – Oil Ratio for the Rag Mama 30 19 Fee #1H well (Exhibit A-10);
3. Oil in Place Calculations for the Project Area (Exhibit A-11); and
4. Self-Affirmed Statement of Mike Hanagan (Exhibit C).

Respectfully submitted,

HINKLE SHANOR, LLP

/s/ Dana S. Hardy _____

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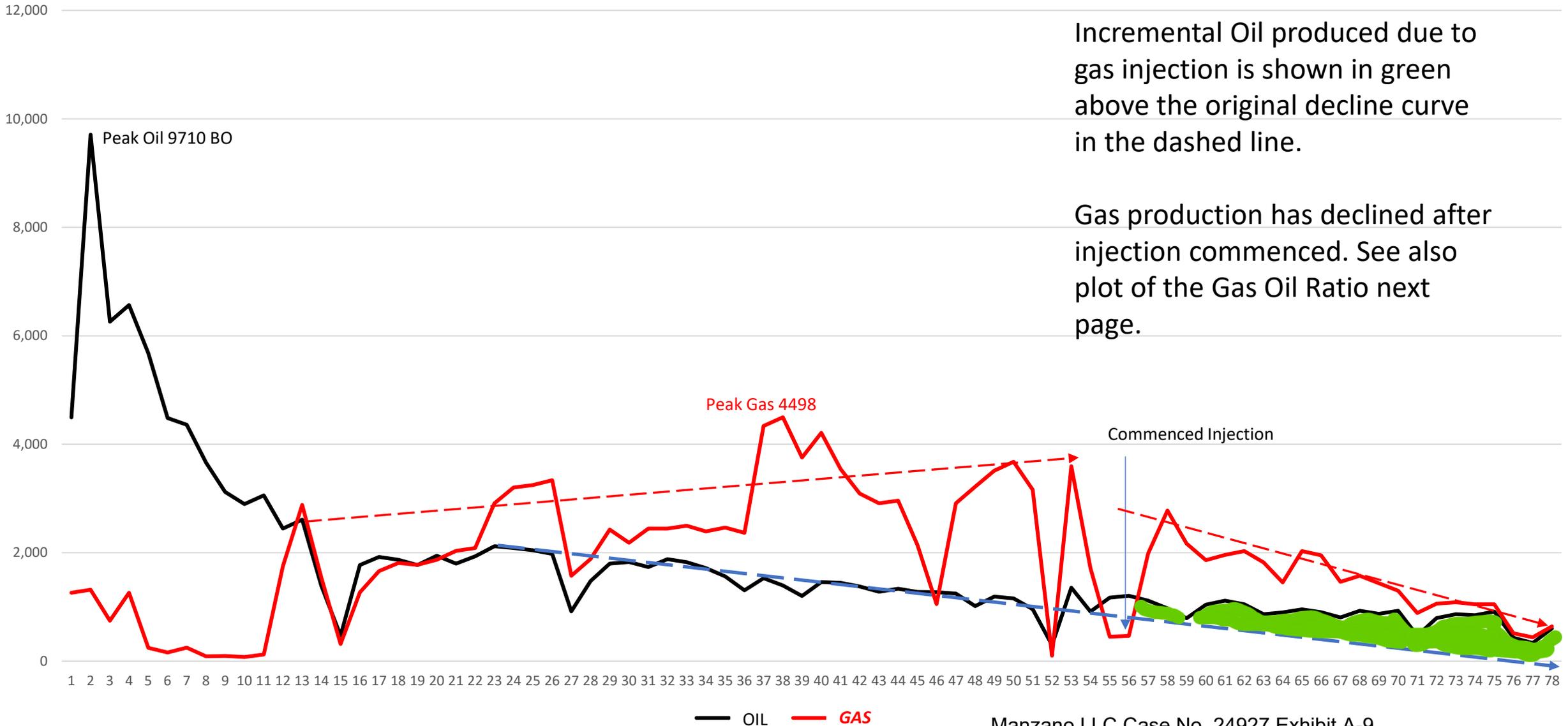
dhardy@hinklelawfirm.com

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Counsel for Manzano LLC

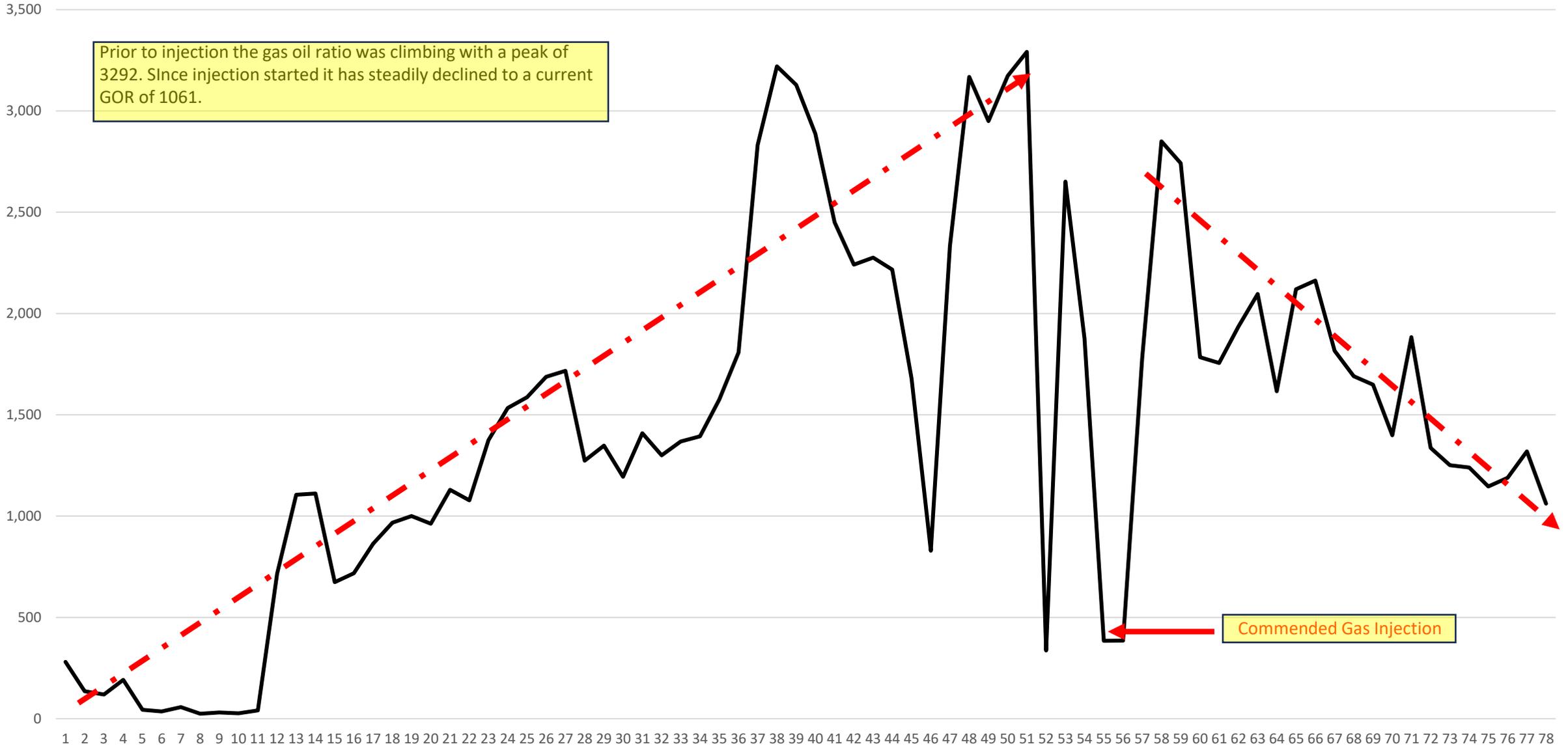
LINEAR PLOT OF OIL AND GAS PRODUCTION BY MONTH
Manzano LLC Rag Mama 30 19 Fee #1H
API# 3002544067



Incremental Oil produced due to gas injection is shown in green above the original decline curve in the dashed line.

Gas production has declined after injection commenced. See also plot of the Gas Oil Ratio next page.

LINEAR PLOT OF THE MONTHLY GAS OIL RATIO Manzano, LLC Rag Mama Fee 30 19 #1H



Oil in Place Calculations Vince Project Area

The Project area is Section 30 SE/4, E2NE/4, and Section 19 E2SE/4, all of Township 9 South, Range 35 East. It contains 240 acres with an average of 9 PhiH of San Andres reservoir. It contains 2160 acre-feet of pore volume.

The Rag Mama Fee 30 19 #1H has produced 141,122 barrels of oil. It has produced 833,136 BW including load recovery of 102,053 Barrels. So net formation water produced is 731,083 barrels. Taking out the load, oil is 16.2% and formation water is 83.8% of total fluid produced.

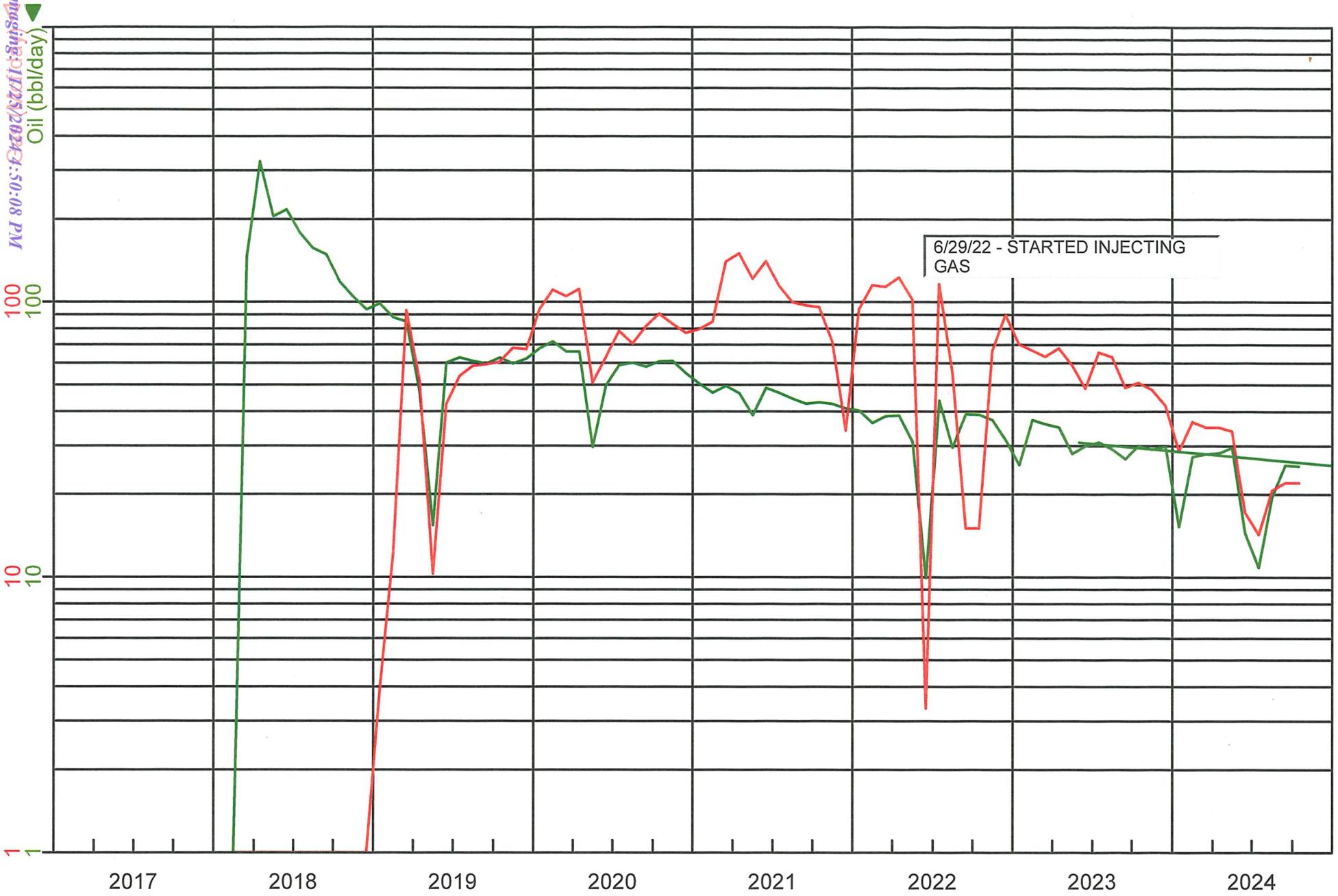
Assuming a 20% irreducible water saturation, then in place calculations for the project area are as follows:

Irreducible Water in Place = $7758 \times 2160 \text{ acre-ft} \times 20\% = 3,351,456 \text{ BW}$.

Water in Place = $7758 \times 2160 \times 83.8\% \times 80\% = 11,234,080$. We have produced 731,083 BW or 6.5% of the water in place.

Oil in Place = $7758 \times 2160 \text{ acr-ft} \times 80\% \times 16.2\% = 2,171,743 \text{ BO}$. Using a Bo of 1.1, after shrinkage, oil at the surface is 1,974,312 BO. The oil produced to date (141,122 BO) is 7.1% recovered of the oil in place in the project area.

The decline curve (next page) of the Rag Mama Fee 30 19 #1H shows the well prior to injection would have produced 162,910 barrels of oil. With injection the decline flattened out (following page) and it is now forecast to produce 210,400 barrels of oil. Injection of gas into the San Andres in the Vince BGH #1 will result in the recovery of 47,490 barrels of incremental oil in the Project Area.



Hist Oil Cum: 142.39 Mbbbl

Oil Rem: 68.00 Mbbbl

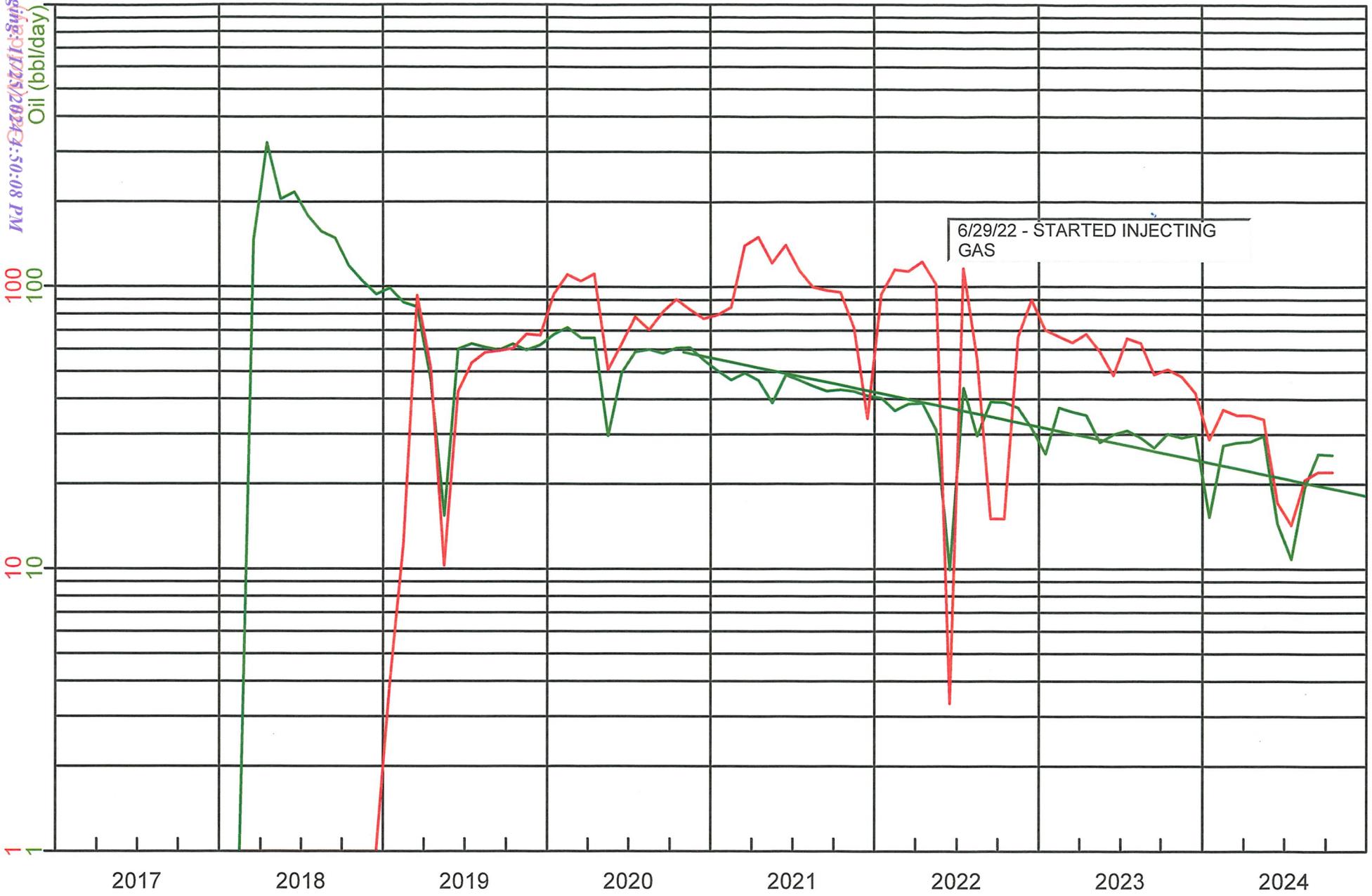
Oil EUR: 210.40 Mbbbl WITH INJECTION

141.97 MMcf

0.68 MMcf

142.65 MMcf

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Hist Oil Cum: 142.39 Mbbbl
Oil Rem: 20.52 Mbbbl
Oil EUR: 162.91 Mbbbl

WITHOUT INJECTION

141.97 MMcf
0.68 MMcf
142.65 MMcf

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SELF-AFFIRMED STATEMENT OF MIKE HANAGAN

1. I am the Operations Manager for Manzano LLC (“Manzano”). I am over 18 years of age, am competent to provide this Self-Affirmed Statement, and have personal knowledge of the facts herein. I have previously testified before the New Mexico Oil Conservation Division (“Division”), and my credentials as an expert in drilling operations were accepted and made a matter of record.

2. I am familiar with the Application in this case and with the matters pertaining to the Application.

3. Manzano seeks an order approving the Jenkins San Andres Pressure Maintenance Project (“Project”) as a permanent pressure maintenance project for the injection of produced gas through the Vince BGH #1 well into the San Andres formation in Section 30, Township 9 South, Range 35 East, Lea County, New Mexico.

4. On March 22, 2022, the Division entered Order No. R-22076 approving the Project as a pilot project.

5. Ordering Paragraph 10 requires that the Vince BGH No. 1 Well (“Well”) be “equipped with a pressure control device or acceptable substitute that will limit the maximum surface injection pressure to no more than 950 psi for produced gas.”

6. The Well is equipped with a high pressure kill switch on the gas injection compressor with a pressure transducer that will shut off the compressor anytime that the tubing pressure gets to

900 psi, thereby limiting the maximum surface injection pressure to less than 950 psi. In addition, as per paragraph 13, the Casing-Tubing Annulus is filled with inert packer fluid and a 1000# liquid filled gauge is attached to the annulus in order to detect any packer, tubing or casing leak.

7. I understand this Self-Affirmed Statement will be used as written testimony in this case. I affirm that my testimony above is true and correct and is made under penalty of perjury under the laws of the State of New Mexico. My testimony is made as of the date next to my signature below.



Mike Hanagan

11-25-2024
Date