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

IN THE MATTER OF CASE 12003 BEING REOPENED PURSUANT TO THE PROVISIONS OF DIVISION ORDER NO. R-11053-A, REGARDING SPECIAL POOL RULES AND REGULATIONS FOR THE FEATHERSTONE-BONE SPRINGS POOL, LEA COUNTY, NEW MEXICO.

CASE NO. 12003
ORDER NO. R-11053-A

AFFIDAVIT OF DONNIE BROWN

STATE OF NEW MEXICO }
} ss.
COUNTY OF CHAVEZ }

Donnie Brown, being first duly sworn, upon oath states:

1. I am a resident of Roswell, New Mexico. I am a petroleum engineer employed by Manzano Oil Corporation ("Manzano") in Roswell, New Mexico. I am familiar with the subject matter of the above-referenced case which is pending before the New Mexico Oil Conservation Division, and testified before the New Mexico Oil Conservation Commission ("the Commission"), in the proceedings in that case which were held before that agency on November 16, 1998.

2. I have personal knowledge of all facts stated in this affidavit, and all facts herein, are true and correct.

3. In Case No. 12003, which was heard by the Commission on November 16,

BEFORE THE OIL CONSERVATION DIVISION
Santa Fe, New Mexico
Case No. 12003 Exhibit No. 4
Submitted by: Manzano Oil Corporation
Hearing Date: January 20, 2000

1998, Manzano, as the applicant, sought special pool rules and regulations for the Featherstone-Bone Springs Pool, including provisions for 80-acre spacing and special well location requirements.

4. Prior to Order No. R-11053-A, the Featherstone-Bone Springs Pool was governed by Division Rule 104, which mandates development on standard 40-acre spacing and proration units. Manzano sought special pool rules establishing 80-acre spacing and special well location requirements because its Appleseed Federal Well No. 1 (**API No. 30-025-20377**) is capable of draining in excess of a 40-acre spacing unit.

5. At the November 16, 1998 hearing, I presented testimony and exhibits demonstrating that the Appleseed Federal Well No. 1 is capable of draining more than a 40-acre spacing unit.

6. Attached hereto as Exhibit "4-A" is a chart reflecting the oil production rate over time for the Appleseed Federal Well No. 1. This exhibit was presented at the November 16, 1998 hearing. This exhibit reflects the fact that, based upon the production from the well at that time at the time of the November 16, 1998 hearing, Manzano expected the ultimate recovery from the well to be approximately 123,526 barrels of oil. The decline curve of 12.26% is based on my review of production data from the Scharb-Bone Springs Pool, a Bone Springs pool located approximately seven miles to the north of the Appleseed Federal Well No. 1. At the time of the November 16, 1998 hearing, Manzano had limited production data from the Appleseed well after its recompletion in the Bone Spring Carbonate formation.

The decline curve is projected off of the initial production data available at that time.

7. Attached hereto as Exhibit "4-B" is a chart reflecting the same projected decline curve as is reflected in Exhibit 4-A, with the production from the recompleted Appleseed Federal Well No. 1 also plotted from initial completion in May, 1998, through December of 1999.

8. The Appleseed Federal Well No. 1 has outperformed my initial projections. Attached hereto as Exhibit "4-C" is an updated version of Exhibit 4-A. Reflected on Exhibit 4-C is the projected oil production rate over time for the Appleseed Federal Well No. 1, based on actual production from the well through January 1, 2000. At a current production rate of 60 barrels of oil per day, 23 MCF of gas per day, and 8 barrels of water per day, the well has so far produced 39,763 barrels of oil. As is reflected on Exhibit 4-C, the actual production from the well exceeds my initial estimates of the well's potential.

9. At the time of the November 16, 1998 hearing, I presented evidence demonstrating that the Appleseed Federal Well No. 1 is capable of draining more than 40 acres. Attached hereto as Exhibit "4-D" is a summary of my projections for the Appleseed Federal Well No. 1 at the time of the November 16, 1998 hearing. At that time, based on my review of the characteristics of the Appleseed Federal Well No. 1, I estimated a 47.19% primary recovery was likely if the well were to be produced based on a 40-acre spacing unit, and a 23.59% recovery would be possible if the well were to be produced on a 80-acre spacing unit. Typical primary recovery from a carbonate reservoir such as this is from 17%

to 25%. Therefore, the conclusion is that the Appleseed Federal Well No. 1 is draining more than 40 acres.

10. The actual production from the Appleseed Federal Well No. 1 confirms that continuing to produce the well based on 80-acre spacing will avoid the waste of hydrocarbons. Attached hereto as Exhibit "4-E" is an updated summary of my projections for the well. Based on the characteristics of the well, and the actual production from the well, which has exceeded my initial estimates. The well would recover 64.87% of the original oil in place if the areal drainage was 40 acres and 32.43% of the original oil in place if the drainage was 80 acres. Therefore, based on typical primary recoveries for those types of carbonate reservoirs, it is much more likely to be draining 80 or more acres.

11. Finally, the gas-oil ratio from the Appleseed Federal Well No. 1 demonstrates that the well is not showing signs of depletion to date. In a depleting reservoir being produced by solution gas drive, the gas-oil ratio increases as the reservoir pressure decreases. To date, the gas-oil ratio has remained constant at approximately 500 cubic feet per barrel. This information is reflected on Exhibit 4-F hereto.

12. The special pool rules established in Order No. R-11053-A have resulted in a more efficient production of hydrocarbons from the Appleseed Federal Well No. 1. I urge the Division to make those special pool rules permanent, as such action is in the best interest of conservation, will prevent waste of hydrocarbons, and will protect correlative rights.

FURTHER AFFIANT SAYETH NAUGHT.

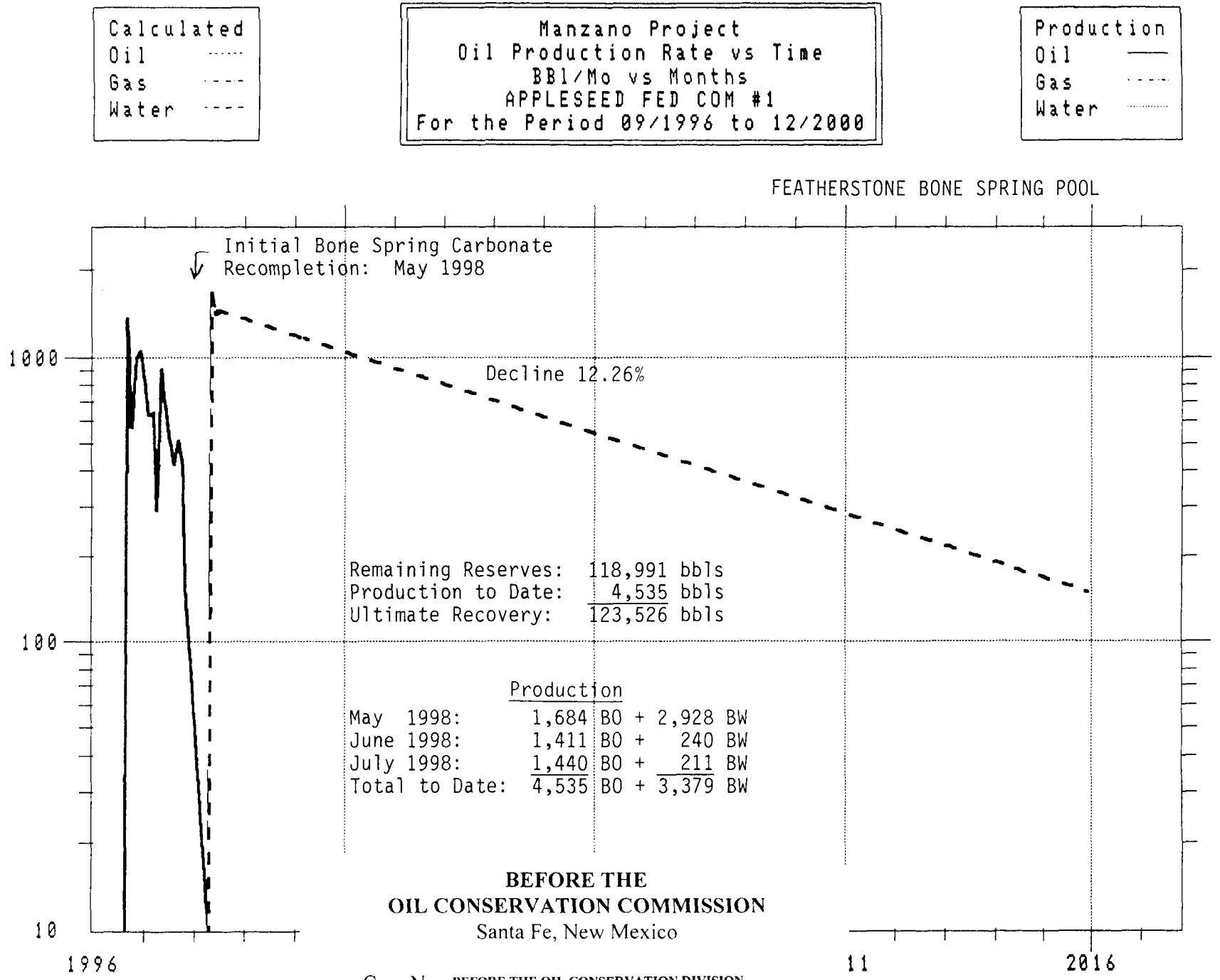
Donnie Brown

SUBSCRIBED AND SWORN TO before me this 19th day of January, 2000, by Donnie Brown.

Notary Public

My commission expires:

August 22 - 2000

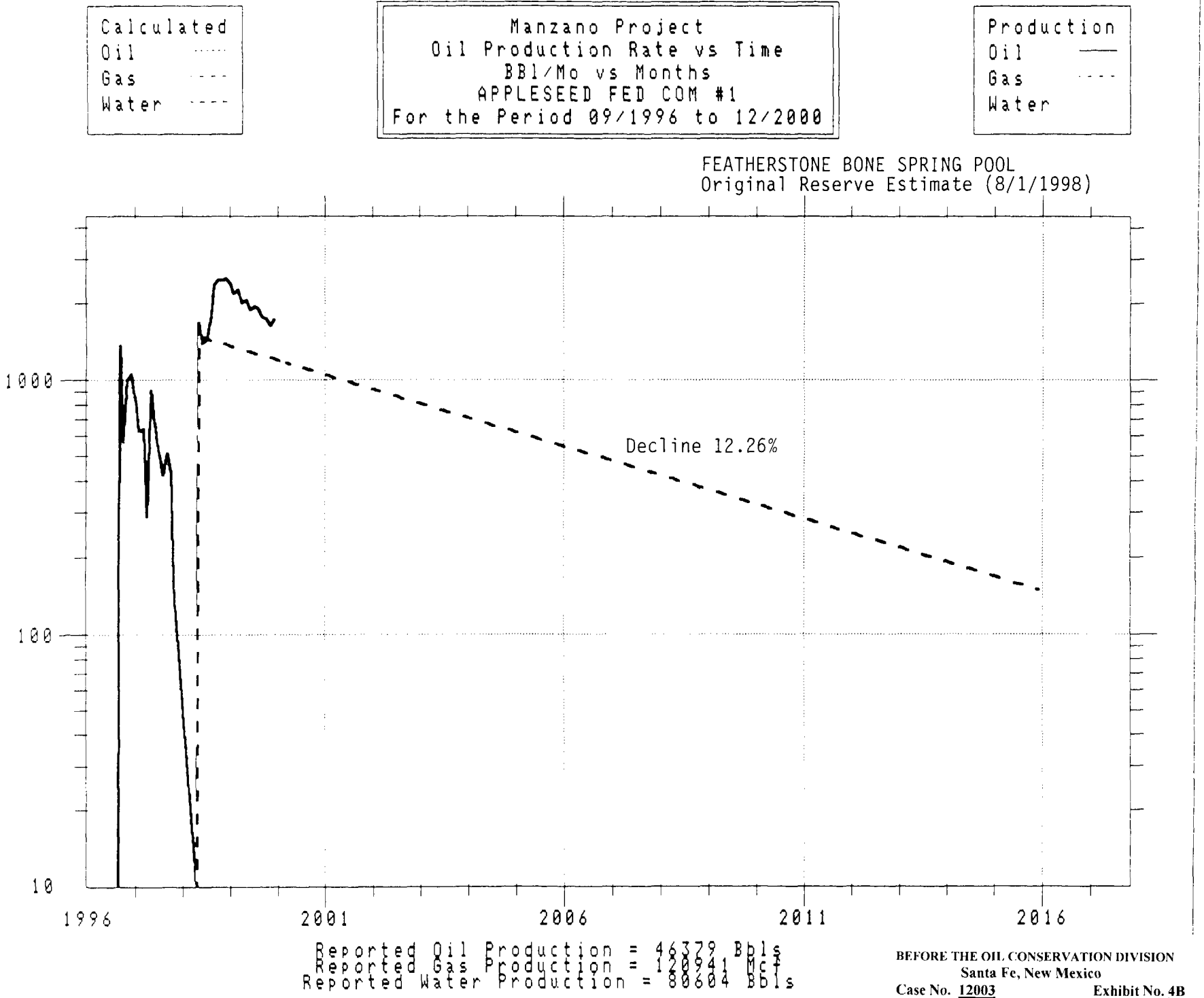


BEFORE THE
OIL CONSERVATION COMMISSION
Santa Fe, New Mexico

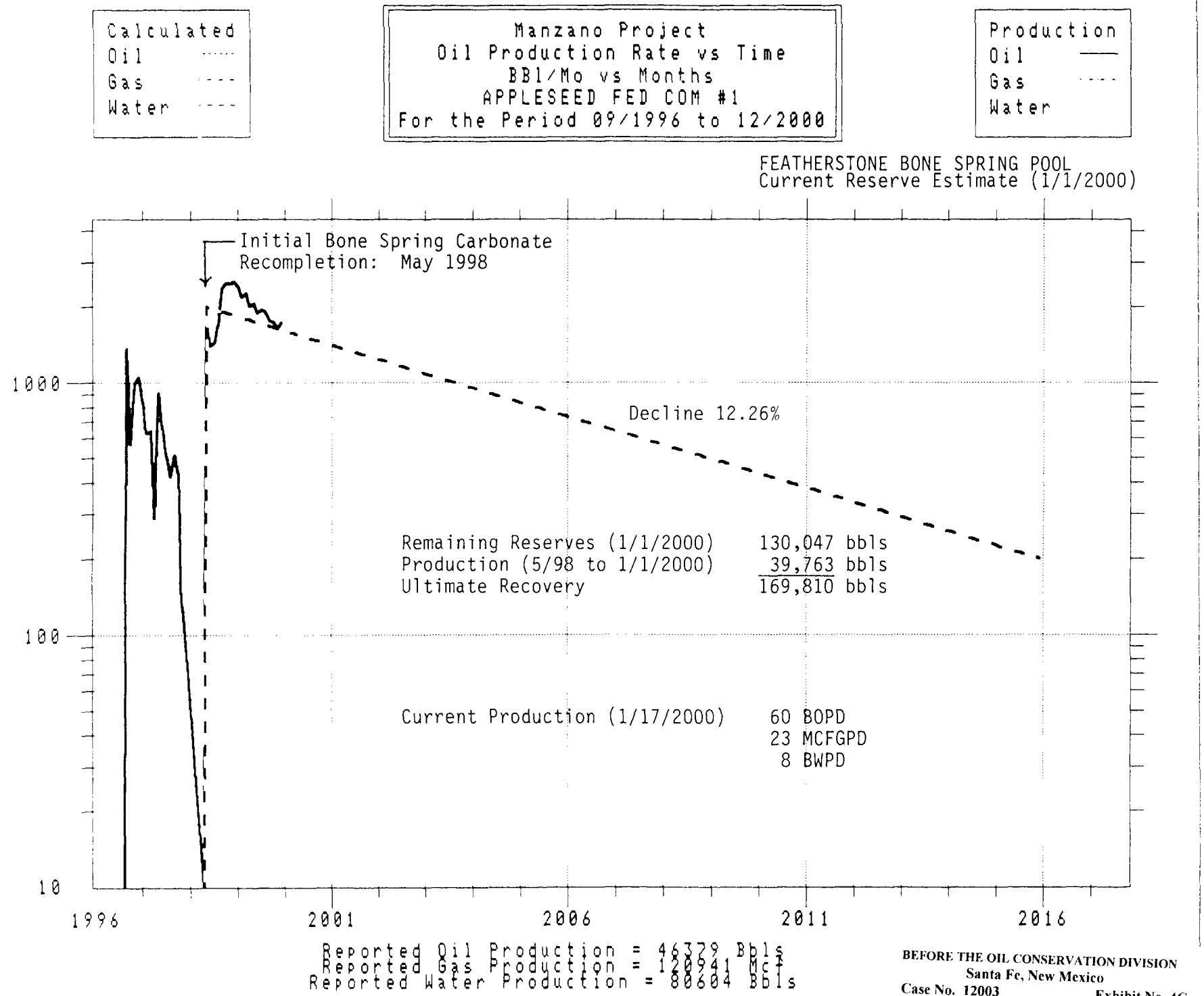
Case No

BEFORE THE OIL CONSERVATION DIVISION
Santa Fe, New Mexico
Case No. 12003 **Exhibit No. 4A**
Subr **Submitted by: Manzano Oil Corporation**
Hearing Date: January 20, 2000

Hear.



BEFORE THE OIL CONSERVATION DIVISION
Santa Fe, New Mexico
Case No. 12003 Exhibit No. 4B
Submitted by: Manzano Oil Corporation
Hearing Date: January 20, 2000



BEFORE THE OIL CONSERVATION DIVISION
Santa Fe, New Mexico
Case No. 12003 Exhibit No. 4C
Submitted by: Manzano Oil Corporation
Hearing Date: January 20, 2000

MANZANO OIL CORPORATION

APPLESEED FEDERAL #1
Section 17, T20S, R35E
Lea County, New Mexico

A. Data:

Completion Interval:	Bone Spring Carbonate 10,448-466'
Current Production:	50 BOPD + 11 BSWPD
Sweet Crude Oil:	33° API Gravity
Bottom Hole Pressure:	4600 psi
Bottom Hole Temperature:	155° F
Formation Volume Factor:	1.3562
Gas - Oil Ratio:	700 cu.ft. per bbl
Net Pay:	22'
Porosity:	8%
Water Saturation:	35%
Type of Drive:	Solution Gas Drive

B. Percent Recovery vs Areal Drainage:

Areal Drainage Acres	Original Oil In Place, Bbls	Recovered by Decline, Bbls	% Recovery Primary
40	261,770	123,526	47.19
80	523,541	123,526	23.59

C. Scharb Bone Spring - Sections 5-8, T19S, R35E:

Spacing:	80 acres
Primary Recovery:	13,700,000 bbls from 44 wells 311,400 bbls/well
Average Gross Pay:	50'
Average Recovery per well based on 22' net pay:	(311,400 bbls/well) (22'/50') = 137,000 bbls/well

BEFORE THE
OIL CONSERVATION DIVISION
Santa Fe, New Mexico

(BEFORE THE OIL CONSERVATION DIVISION
Santa Fe, New Mexico
Case No. 12003 Exhibit No. 4D
Su Submitted by: Manzano Oil Corporation
Hearing Date: January 20, 2000

MANZANO OIL CORPORATION

APPLESEED FEDERAL #1
Section 17, T20S, R35E
Lea County, New Mexico

Revised 1/1/2000

A. Data:

Completion Interval:	Bone Spring Carbonate 10,448-466'
Current Production:	50 BOPD + 11 BSWPD
Sweet Crude Oil:	33° API Gravity
Bottom Hole Pressure:	4600 psi
Bottom Hole Temperature:	155° F
Formation Volume Factor:	1.3562
Gas - Oil Ratio:	700 cu.ft. per bbl
Net Pay:	22'
Porosity:	8%
Water Saturation:	35%
Type of Drive:	Solution Gas Drive

B. Percent Recovery vs Areal Drainage:

Areal Drainage Acres	Original Oil In Place, Bbls	Recovered by Decline, Bbls	% Recovery Primary
40	261,770	169,810	64.87
80	523,541	169,810	32.43

C. Scharb Bone Spring - Sections 5-8, T19S, R35E:

Spacing:	80 acres
Primary Recovery:	13,700,000 bbls from 44 wells 311,400 bbls/well
Average Gross Pay:	50'
Average Recovery per well based on 22' net pay:	(311,400 bbls/well) (22'/50') = 137,000 bbls/well

BEFORE THE
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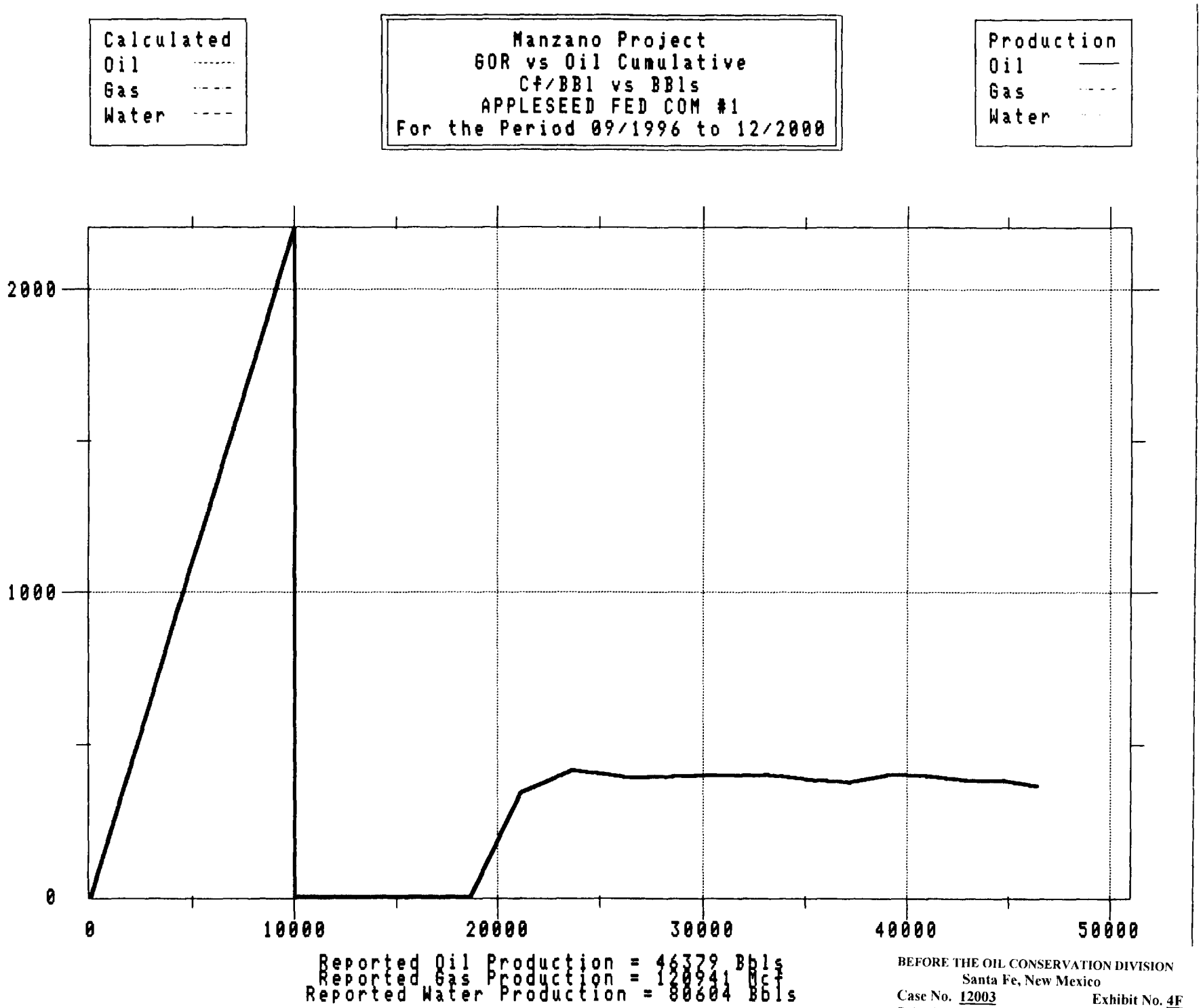

Reported Oil Production = 46379 Bbls
Reported Gas Production = 120941 Mcf
Reported Water Production = 80604 Bbls

BEFORE THE OIL CONSERVATION DIVISION
Santa Fe, New Mexico
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