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BEFORE THE
OIL CONSERVATION DIVISION
Santa Fe, New Mexico

Case Nos. 12112 and 12113 Exhibit No. 10

Submitted by: GP II Energy, Inc.

Hearing Date: February 4, 1999

North Square Lake Unit

Eddy County, New Mexico

Infill Redevelopment and Waterflood Study

Prepared for

G P II Energy Inc.

Lee Engineering
Midland, Texas
December 1998

SQUARE LAKE PROJECT
Enhanced Waterflood Feasibility Study

INTRODUCTION

GP II Energy, Inc. proposes forming the North Square Lake Unit located in Eddy County, New Mexico. It is proposed to unitize this unit from the surface to the base of the San Andres. The proposed unit will encompass nearly 6200 acres. Currently the proposed unit contains 65 active producers making 150 BOPD, 600 BWPD and 33 MCFPD. The current remaining reserves for these wells are 367 MBO. Future development of this unit consists of drilling 115 new producers, 6 new injectors and converting 147 producers to injection. This work will increase the recoverable reserves for this area by 11,722 MBO. The proposed North Square Lake Unit (NSLU) consolidates two waterfloods formerly operated by Anadarko and Yates Petroleum as wells as incorporating some offset adjacent acreage. These floods are mostly drilled on 40 acre well spacing. The main producing horizons are the Premier and Lovington sands at a depth of 3,500 feet, but other sands such as the Metex are open in some wells.

The proposed NSLU will downspace these waterfloods to 20 acres/well. Devon has already successfully downspaced their Grayburg-Jackson flood directly south of the G P II Energy, Inc acreage to 20 acre spacing.

This report examines the feasibility and merit of this project.

CONCLUSIONS

1. The proposed NSLU should be as successful as the Devon infill drilling program directly to the south of this acreage.

2. The NSLU and Devon Unit have similar primary and secondary reserves.

	NSLU	Devon
Primary reserves/well	35 MBO	40 MBO
Current EUR/well	73 MBO	74 MBO
Ultimate Primary	5,389 MBO	2,937 MBO
Ultimate Prim. + Sec.	12,867 MBO	8,045 MBO
Secondary/Primary Ratio	1.4	1.7

3. The Original Oil in Place is difficult to precisely ascertain due to the lack of log and core data. Based on the very limited amount of data available, an estimate of the OOIP has been made. The OOIP for both the Premier and Lovington Sands is approximately 90,240 MBO.

4. The current 40 acre flood will only recover 14.2 % of the Original Oil in Place (OOIP) from the two main pay zones, the Premier and the Lovington. This is a low waterflood recovery. The NSLU project should recover an additional 11,722 MBO or 13.0 % of the OOIP. The current low recovery is due to the early inefficient completion techniques.

5. The estimated reserves per 20 acre Devon infill well is 75 MBO without conversions. The NSLU infill wells are expected to recover 64 MBO/well without conversions. The estimated 64 MBO/well may be conservative based on the Zephyr ZQ No. 1, located in Section 32 of the NSLU acreage. This well drilled in 1984 will produce over 70 MBO without offset conversions, and is an example of what could be expected from a 20 acre infill well. The new wells are assumed to recover an additional 38 MBO once the flood pattern is collapsed.

6. The Premier sand is the dominate pay zone based on the Zephyr well and the isopach maps. The Premier and Lovington sands are widespread, but the porosity varies within these intervals across the field. The attached cross section demonstrates the discontinuity which would benefit from infill drilling.

7. The acreage on the west side of the NSLU has a wide spaced flood pattern and will benefit from tighter spacing.

8. This project will involve drilling 115 new producers, drilling 6 new injectors and converting 147 wells. This project will cost 34430 M$, recover 11,722 MBO, generate over 136,095 M$ in undiscounted net cash income and yield a ROR of 32.85 %.

RECOMMENDATIONS

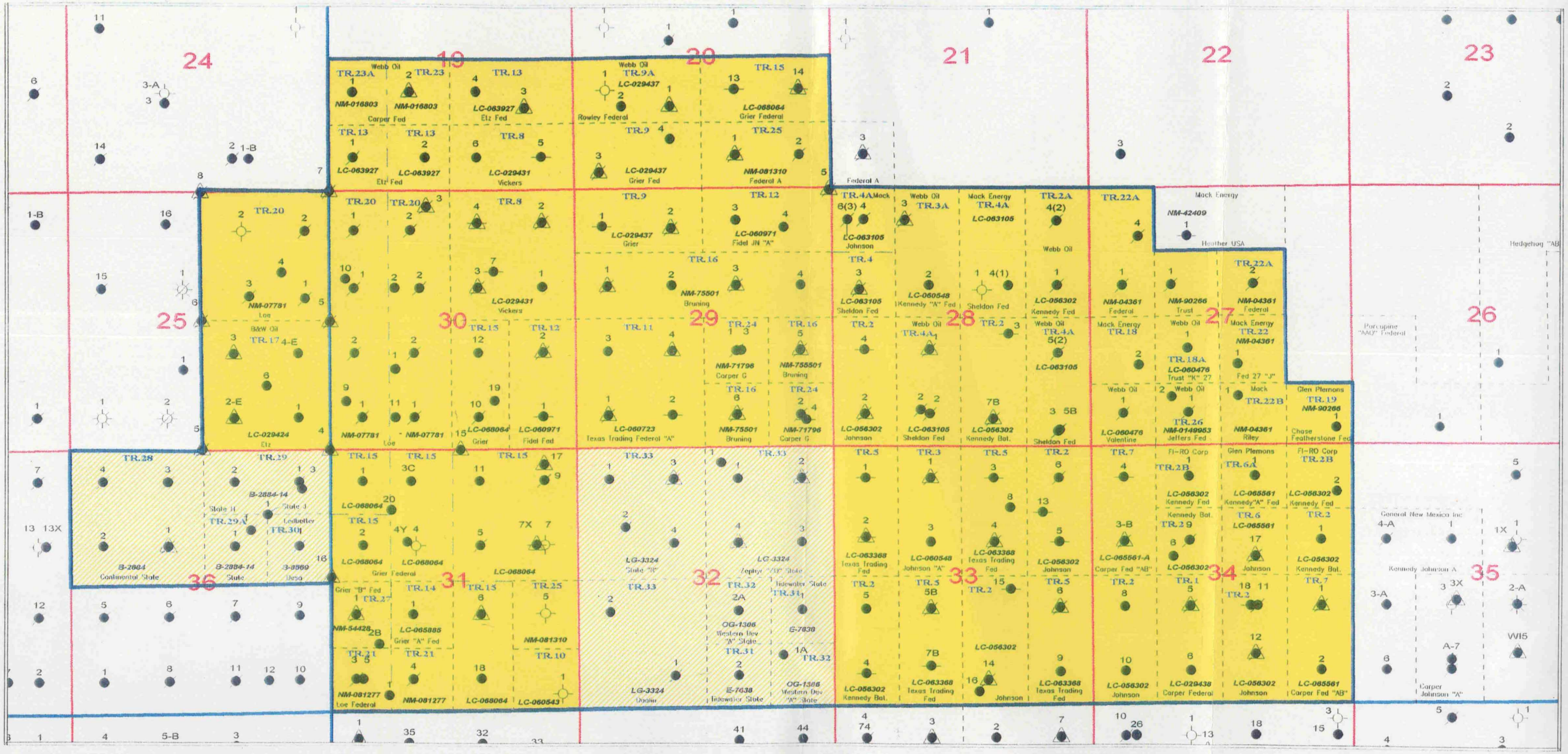
1. Unitize the project area and start drilling 20 acre infill wells, beginning in the thicker portions of the reservoir.

2. Redrill the P&A'ed 40 acre wells immediately surrounding the new 20 acre infill wells. Based on the Devon flood, these replacement wells could IP at 40 to 50 BOPD. These redrills should be produced for four to six months to recoup a portion of the capital costs.

3. Convert and redrill the surrounding wells to support the following existing 20 acre wells:

Grier #20	NW/4 Section 31 T-16-S R-31-E
Grier #2-B	SW/4 Section 31 T-16-S R-31-E
State J #1	NE/4 Section 36 T-16-S R-30-E

4. Complete any productive zones not currently open to insure vertical conformance of the flood.



Scale 1:24000.

1000. 0. 1000. 2000. 3000. 4000. 5000. feet

0.2 0. 0.2 0.4 0.6 0.8 1. miles

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LEGEND

- Active Oil Well
- Inactive Oil Well
- Abandoned Oil Well
- Active Injector Well
- Inactive Injector Well
- Abandoned Injector Well

UNIT OUTLINE \ STATE LEASES

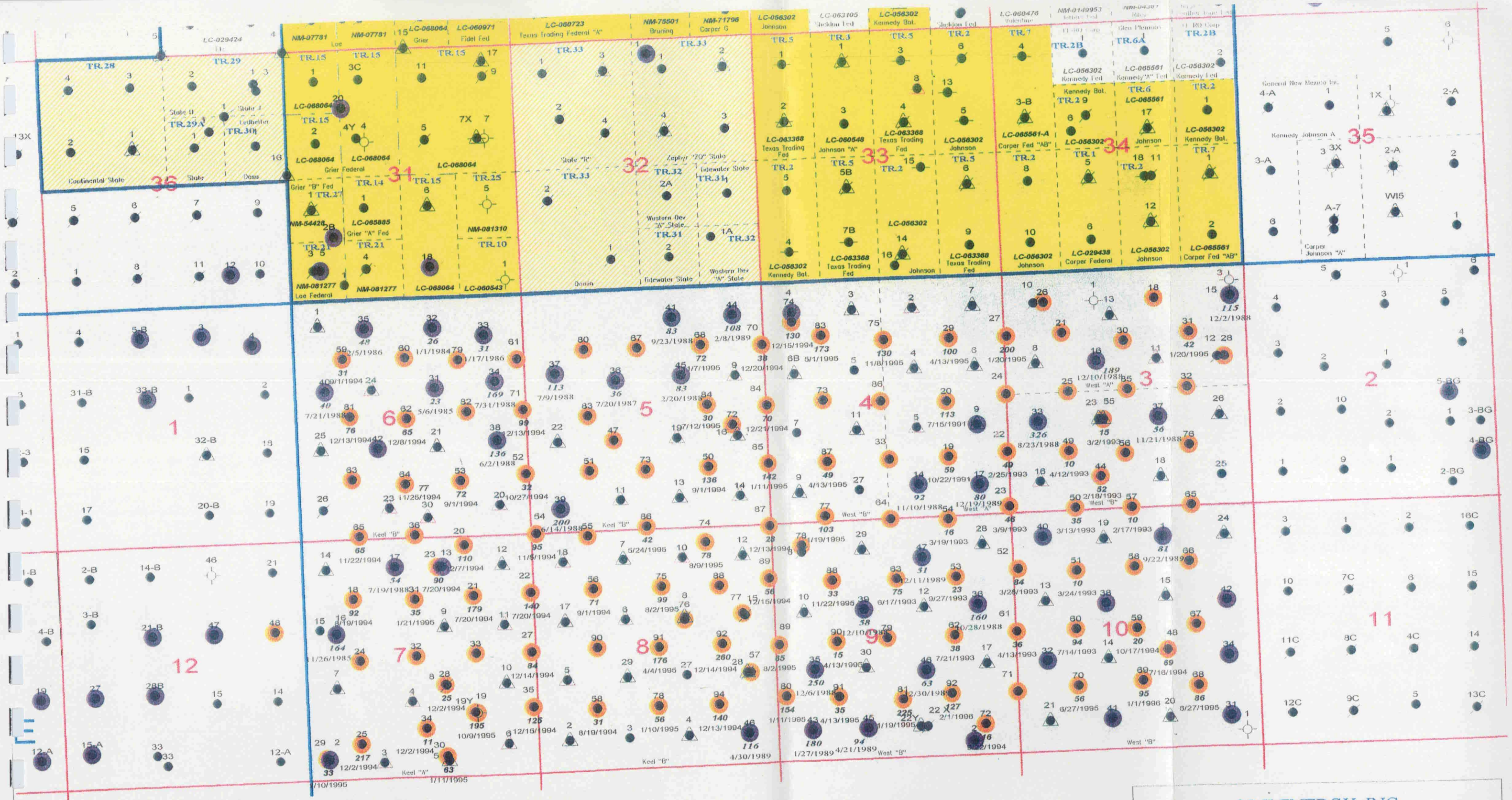
UNIT OUTLINE \ FEDERAL LEASES

GP II ENERGY INC.

PROPOSED NORTH SQUARE LAKE
UNIT BOUNDARY
EDDY COUNTY, NEW MEXICO

MANNY SIRGO	SCALE 1"=2000'	11/18/98

EXHIBIT B



LEGEND

- Active Oil Well
- Inactive Oil Well
- Abandoned Oil Well
- Active Injector Well
- Inactive Injector Well
- Abandoned Injector Well
- Devon Injector Conversions
- 1980 COMPLETIONS
- POST 1990 COMPLETIONS

Scale 1:24000.

1000. 0. 1000. 2000. 3000. 4000. 5000. feet

0.2 0. 0.2 0.4 0.6 0.8 1 miles

GP II ENERGY, INC.

SQUARE LAKE FIELD
EDDY COUNTY, NEW MEXICO
INITIAL POTENTIAL MAP (1980'S & 1990'S)

MANNY SIRGO		11/11/98
UNITS=BO\d	SCALE: 1"=2000'	