NM OIL CONS COMMISSION Drawer DD Artesia, NM 88210 dst

Form 3160-5 UNITED STATES FORM APPROVED (December 1989) Budget Bureau No. 1004-0135 DEPARTMENT OF THE INTERIOR Expires: September 30, 1990 BUREAU OF LAND MANAGEMENT 5. Lease Designation and Serial No. NM 04421 SUNDRY NOTICES AND REPORTS ON WELLS 6. If Indian, Allottee or Tribe Name Do not use this form for proposals to drill or to deepen or reentry to a different reservoir. Use "APPLICATION FOR PERMIT-" for such proposals 7. If Unit or CA, Agreement Designation RECEIVED SUBMIT IN TRIPLICATE I. Type of Weil NE Square Lake Unit Oil Weil ■ Other Injection well 8. Well Name and No. Evergreen Operating Corporation 9. API Weil No. 3. Address and Telephone No. 30-015-87356 80202ARTESIO39FFISS4-0400 1512 Larimer Street, Suite 1000, Denver, CO 10. Field and Pool, or Exploratory Area 4. Location of Well (Footage, Sec., T., R., M., or Survey Description) NE Square Lake 1650' FSL, 2310' FWL 11. County or Parish, State Sec. 3-T16S-R31E Eddy, NM 12. CHECK APPROPRIATE BOX(s) TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA TYPE OF SUBMISSION TYPE OF ACTION Notice of Intent Abandonment Change of Plans 515 Recompletion **New Construction** Plugging Back Non-Routine Fracturing Water Shut-Off Final Abandonment Notice Altering Casing Conversion to Injection Shut-in (Note: Report results of multiple completion on Well Completion or Recompletion Report and Log form.) 13. Describe Proposed or Completed Operations (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work. If well is directionally drilled, give subsurface locations and measured and true vertical depths for all markers and zones pertinent to this work.)\* This well was approved for a SI status as per the attached Sundry Notice. Evergreen requests that this well remain in a SI status until a full evaluation. as shown in the attached plan of development, has been completed. APPROVED FOR 12 MONTH PERIOD 6/16/95 ENDING 14. I hereby certify that the foregoing is true and correct Stephanie J. Basey Petroleum Engineer 6/13/94 (This space for Federal or State office use) Petroleum Engineer Orig. Signed by Shannon J. Shaw . if anv require

Title 18.11.S.C. Section 1001, makes it a crime for any person knowingly and willfully to make to any department or agency of the United States any false, flettious or fraudulent statements or representations as to any matter within its jurisdiction.

# OPERATOR'S COPY

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I. Type of Well

# UNITED STATES DEPARTMENT OF THE INTERIOR BUREAU OF LAND MANAGEMENT

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## SUNDRY NOTICES AND REPORTS ON WELLS

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Use "APPLICATION FOR PERMIT—" for such proposals

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	NE Square	Lake	Unit
	S. Well Name and No.		
	NE Square	Lake	#3
ı	9. API West No.	•	

Evergreen Operating Corporation

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Injection well

30-015-87356 0. Final and Pool, or Experience

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NE Square Lake

1650' FSL, 2310' FWL, Sec. 3-T16S-R31E

Eddy. NM

CHECK APPROPRIATE BOX(s) TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA

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This well will be shut in December 31, 1993.

An evaluation of procedures and expenses required to bring this unit back to economic levels is currently underway.

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ACCEPTED FOR RECORD	· <del></del>	
FEB 10 1994	· <u>:</u>	
CARLSBAD, NEW MEXICO		

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Signed Stohame Dawy	तक Petroleum Engineer	<u>12/29/93</u>
(This sound for Founds or State office uses		
- Please submit plan to eithe	r PIA, perform casing in	tegrity test to TA,

or return well to injection no later than 9/1/94. soshow

## NE SQUARE LAKE UNIT PLAN OF DEVELOPMENT T16S-R31E EDDY AND LEA COUNTIES, NM

# OPERATED BY: EVERGREEN OPERATING CORPORATION

#### **OBJECTIVE:**

Evaluation of the entire field to determine feasibility of bringing this unit back to full waterflood status by obtaining individual well data required for a reservoir study.

#### CURRENT UNIT STATUS:

The #9 and #30 are being worked on now. The #30 has just been re-fraced and the #9 is being flowtested. The only operating injection well is the #21.

## TESTING AND INFORMATION OBTAINED FROM DRILLING #30 IN 9/93:

- While drilling the #30 well, we ran a mud log from 2800' to 3741'. This log shows drilling rate, lithology and hydrocarbon shows on 10 foot intervals. Hydrocarbon shows were observed in the following intervals:
  - 2968' to 3016'
  - 3529' to 3538'
  - 3618' to 3741'

The mud log also describes the core taken from 3657'-3701' on a foot-by-foot basis.

- 73% of a 60' Premier Sand core was recovered from 3657' to 3701'.
- A CNL/GR/Caliper log was run from surface to TD.
- A DLL/ML/GR log was run from 2600' to TD.
- Foot-by-foot core analysis gave us the following information:
  - Two permeability measurements, one relative to air and one taking into account the Klinkenberg Effect.
  - Porosity measurements.
  - Oil and water saturations.
  - Sample description.
- Relative permeability and capillary pressure evaluations were done at core depths of 3659.5', 3665.4', 3689.0', 3692.1' and 3695.3'. Conclusions of this analysis show that:
  - Relative permeability determinations indicate this reservoir may have mixed wettability properties with an average mobility ratio of 1.78 for water displacing oil.
  - Very little additional oil will be recovered after water breakthrough.
  - Injection of produced water should recover an average of 37% of OOIP.
  - Mercury injection capillary pressure curves suggest that greater than 75% of the pore volume space should have been originally occupied by oil.
- A complete fluid analysis was done on both produced water and oil.

# Plan of Development Page two

- A five day pressure build-up test immediately following perforating showed a reservoir pressure of 2,580 psig. This reservoir pressure was 1,380 psi higher than our records show the original reservoir pressure to be.
- The first frac screened out after pumping only 358 bbls of Viking II-30 and 12,300 lbs of 12/20 sand.
- Due to low production levels, #30 was shut in on February 1, 1994 and a second build-up test was done. After 17 days, the pressure had built up to only 2,287 psig. This test took 12 days longer to build up to 300 psi less than the final build-up pressure from the previous test.
- The #30 was re-fraced on 6/1/94 and is currently flowing up the casing at 30# casing pressure and 60 BFPD with a 5-15% oil cut.

#### TENTATIVE PLANS FOR NEXT 12 MONTHS:

- Produce the #30 until stabilized production rates are achieved (or a maximum of three months) to obtain prewaterflood information.
- Work over the #9 to evaluate whether to move on a pumping unit, re-frac or plug.
- Reinstate injection into the 3 injection wells surrounding the #30 while monitoring pressure and production rates from the #30 to obtain post-waterflood information.
- Evaluate and upgrade surface equipment as necessary.
- Evaluate infill drilling sites.
- Evaluate recompleting the #31.

### LONG-TERM PLANS:

- Evaluate, recomplete and bring on all current wells, one five-spot at a time, if economically feasible.
- Drill infill wells as economically feasible.
- Return unit to economic production levels.