

VII (4)

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# RESULT OF WATER ANALYSES

TO: Area Engineer  
P.O. Box 1065, Eunice, NM

LABORATORY NO. 185248  
SAMPLE RECEIVED 1-17-85  
RESULTS REPORTED 1-21-85

COMPANY Texaco, Inc. LEASE Penrose "A" #67

FIELD OR POOL Langlie-Mattix

SECTION BLOCK SURVEY COUNTY Lea STATE NM

SOURCE OF SAMPLE AND DATE TAKEN:

- NO. 1 Recovered water - flowing from Penrose "A" #67. 1-17-85 SIMILAR WTR. TO BE DISPOSED  
NO. 2 Produced water - taken from Penrose "A" free water knockout. 1-17-85  
NO. 3 Produced water - taken from Penrose "B" free water knockout. 1-17-85  
NO. 4 Produced water - taken from Myers Langlie-Mattix transfer pump. 1-17-85

## REMARKS:

| CHEMICAL AND PHYSICAL PROPERTIES     |         |        |        |        |
|--------------------------------------|---------|--------|--------|--------|
|                                      | NO. 1   | NO. 2  | NO. 3  | NO. 4  |
| Specific Gravity at 60° F.           | 1.2072  | 1.0322 | 1.0204 | 1.0218 |
| pH When Sampled                      | 6.4     | 7.1    | 6.9    | 7.25   |
| pH When Received                     | 6.45    | 7.10   | 7.03   | 7.23   |
| Bicarbonate as HCO <sub>3</sub>      | 288     | 1,055  | 1,293  | 1,366  |
| Supersaturation as CaCO <sub>3</sub> | 4       | 5      | 15     | 20     |
| Undersaturation as CaCO <sub>3</sub> |         |        |        |        |
| Total Hardness as CaCO <sub>3</sub>  | 88,000  | 11,600 | 6,200  | 7,300  |
| Calcium as Ca                        | 670     | 572    | 820    | 840    |
| Magnesium as Mg                      | 20,977  | 2,471  | 1,008  | 1,264  |
| Sodium and/or Potassium              | 90,653  | 11,606 | 7,892  | 9,106  |
| Sulfate as SO <sub>4</sub>           | 17,760  | 7,622  | 3,626  | 2,590  |
| Chloride as Cl                       | 188,911 | 19,885 | 13,139 | 16,512 |
| Iron as Fe                           | 12.1    | 0.13   | 0.08   | 0.29   |
| Barium as Ba                         | 0       | 0      | 0      | 0      |
| Turbidity, Electric                  | 115     | 12     | 9      | 37     |
| Color as Pt                          | 6       | 12     | 30     | 20     |
| Total Solids, Calculated             | 319,259 | 43,211 | 27,778 | 31,678 |
| Temperature °F.                      | 68      | 38     | 38     | 44     |
| Carbon Dioxide, Calculated           | 190     | 137    | 272    | 112    |
| Dissolved Oxygen, Winkler            | 0.0     | 0.0    | 0.0    | 0.0    |
| Hydrogen Sulfide                     | 0.0     | 438    | 525    | 800    |
| Resistivity, ohm-cm at 77° F.        | 0.043   | 0.185  | 0.270  | 0.243  |
| Suspended Solids                     |         | 98     | 73     | 220    |
| Filtrable Solids as mg/l             | 432     | 5.6    | 4.2    | 7.7    |
| Volume Filtered, ml                  | 165     | 4,000  | 4,000  | 4,600  |

Results Reported As Milligrams Per Liter

Additional Determinations And Remarks: The objective of this study is to evaluate the compatibility of the water from Penrose "A" #67 with each of the other individual waters. This evaluation was directed toward the water from Penrose "A" #67 being 50 percent or less of each of the other waters represented herein. We have identified only a single incompatibility in the above observation in the form of a slight amount of soluble iron in the Penrose "A" #67 water and hydrogen sulfide in each of the other waters. We would expect this to result in a moderately significant amount of iron sulfide on any mixture, but we suspect that the iron in the water from Penrose "A" #67 is likely due to corrosion and should decline with time. Therefore, we would

Form No. 3

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By

cc: District Engineer, Hobbs

Reviewed by Martin, N