

COMPANY HARPER OIL COMPANY

WELL *New Mex 13*  
MEDLIN STATE #1

TEST NO. 1

COUNTY

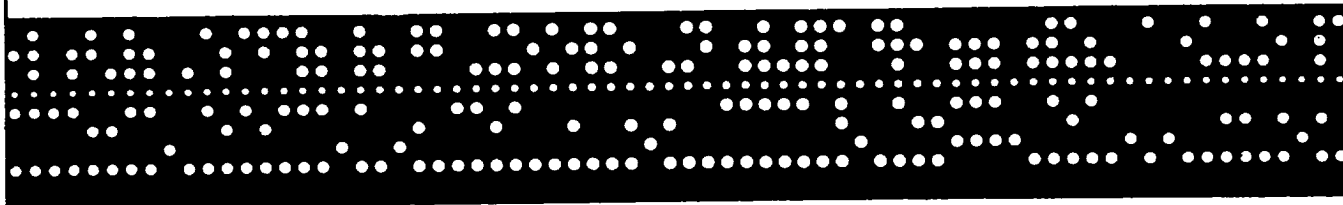
LEA

STATE NEW MEXICO

JOHNSTON

Schlumberger

computerized  
data  
analysis





**LTR**



**Job separation sheet**



## COMPUTERIZED DATA ANALYSIS

AUGUST 27, 1979

GENTLEMEN:

THE ENCLOSED TEST APPEARS TO BE A GOOD MECHANICAL DRILL STEM TEST DURING WHICH THE TOOLS DID FUNCTION PROPERLY. THE FORMATION PRODUCED ENOUGH RESERVOIR FLUID FOR PROPER IDENTIFICATION. RESERVOIR PRESSURE DRAWDOWN WAS SUFFICIENT AND ADEQUATE SHUT-IN BUILD-UPS DID OCCUR FOR RELIABLE QUANTITATIVE ANALYSIS. RESERVOIR PARAMETERS WERE CALCULATED BY THE MC KINLEY METHOD.

1. FLOW RATE: A FLOW RATE OF 39 BBL/S/DAY OF OIL WAS NOTED DURING THIS TEST, ASSUMING ALL RECOVERY WAS DISPLACED BY OIL.
2. RESERVOIR PRESSURE: EXTRAPOLATION OF THE INITIAL SHUT-IN PRESSURE BUILD-UP INDICATES A MAXIMUM RESERVOIR PRESSURE OF 3054 P.S.I.G. AT RECORDER DEPTH. EXTRAPOLATION OF THE FINAL SHUT-IN PRESSURE BUILD-UP INDICATES A MAXIMUM RESERVOIR PRESSURE OF 3073 P.S.I.G. AT RECORDER DEPTH. THE DIFFERENCE BETWEEN THE INITIAL AND FINAL SHUT-IN PRESSURE OF +19 P.S.I.G. IS INSIGNIFICANT.
3. PERMEABILITY: THE CALCULATED TRANSMISSIBILITY FACTOR OF 3.8 MD.-FT./CP. INDICATES AN AVERAGE EFFECTIVE PERMEABILITY TO OIL OF 0.19 MD. FOR THE REPORTED 12 FOOT NET INTERVAL. THE CALCULATIONS WERE BASED ON A MC KINLEY SLOPE OF 1882 P.S.I./LOG CYCLE OBTAINED FROM THE FINAL SHUT-IN BUILD-UP PLOT. IT WAS ASSUMED FOR THESE CALCULATIONS: (A) THE 47.9° API AT 60° F. OIL CONTAINED 216 CU.FT./BBL. OF ORIGINAL DISSOLVED GAS (B) VISCOSITY 0.60 CP. (C) FORMATION VOLUME FACTOR 1.13 BBL/BBL. THESE FIGURES WERE OBTAINED FROM THE AVAILABLE TECHNICAL LITERATURE.
4. WELL BORE DAMAGE: THE CALCULATED DAMAGE RATIO OF 0.44 INDICATES THAT NO WELL BORE DAMAGE IS PRESENT AT THE TIME AND CONDITIONS OF THIS TEST.
5. RADIUS OF INVESTIGATION: THE CALCULATED RADIUS OF INVESTIGATION OF THIS TEST IS 22 FEET BASED ON AN ASSUMED POROSITY OF 10%, COMPRESSIBILITY OF  $8.0 \times 10^{-6}$ , AND OTHER ASSUMPTIONS MADE IN NUMBER 3 ABOVE.
6. GENERAL COMMENTS: THE FORMATION EXHIBITS THE CHARACTERISTICS OF RELATIVELY LOW PERMEABILITY EFFECTIVE TO THE RESERVOIR FLUID AND INDICATES THE ABSENCE OF WELL BORE DAMAGE.

THE CONTOUR OF THE SHUT-IN BUILD-UP CURVES MAY BE THE EFFECT OF MORE THAN ONE PRODUCING ZONE IN THE TEST INTERVAL AND ALSO THE EFFECT OF A DECREASE IN TRANSMISSIBILITY AWAY FROM THE WELL BORE.

*Dennis Myren*  
DENNIS MYREN  
RESERVOIR EVALUATION  
DEPARTMENT

HARPER OIL COMPANY  
MEDLIN STATE #1; LEA COUNTY, NEW MEXICO  
TEST #1; 9930' TO 10015'  
SEC.17-T12S-R34E

FIELD REPORT # 19486 D

In making any interpretation, our employees will give Customer the benefit of their best judgment as to the correct interpretation. Nevertheless, since all interpretations are opinions based on inferences from electrical, mechanical or other measurements, we cannot, and do not guarantee the accuracy or correctness of any interpretations, and we shall not be liable or responsible, except in the case of gross or wilful negligence on our part, for any loss, costs, damages or expenses incurred or sustained by Customer resulting from any interpretation made by