N.M. Oil Cons. Division
1625 N. French Dr.
Hobbs, NM 88240

Form 3160-5
(June 1990)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

FORM APPROVED
Budget Bureau No. 1004-0135
Expires: March 31, 1993

SUNDRY NOTICES AND REPORTS ON WELLS

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

SUBMIT IN TRIPLICATE

5. Lease Designation and Serial No.
~~LC-032326A~~ NM-7486

6. If Indian, Allottee or Tribe Name

7. If Unit or CA, Agreement Designation

1. Type of Well
☐ Oil Well ☒ Gas Well ☐ Other

8. Well Name and No.
Jack A-20 No. 9

2. Name of Operator
Doyle Hartman

9. API Well No.
30-025-24803

3. Address and Telephone No.
500 N. Main St., Midland, TX 79701, (432) 684-4011

10. Field and Pool, or Exploratory Area
Jalmat (T-Y-7R)

4. Location of Well (Footage, Sec., T., R., M., or Survey Description)
660' FNL & 990' FEL (Unit A),
Section 20, T-24-S, R-37-E, N.M.P.M

11. County or Parish, State
Lea, 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
☒ Subsequent Report	☐ Recompletion	☐ New Construction
☐ Final Abandonment Notice	☐ Plugging Back	☐ Non-Routine Fracturing
	☐ Casing Repair	☒ Water Shut-Off (Zonal Isolation)
	☒ Installed 4 1/2" O.D. FJL.	☐ Conversion to Injection
	☒ Other Re-perforated and acidized Jalmat (Yates) gas zone	☐ Dispose Water

(Note: Report results of multiple completion on Well Completion or Recompletion Report and Log form.)

13. Describe Proposed or Completed Operations (Clearly state all pertinet 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 markders and zones pertinent to this work.)*

The Jack "A-20" No. 9 well was drilled and completed, by Conoco, in 1974, as an open-hole Jalmat gas well (over the Yates-Upper 7R interval). To make the wellbore useable, and simultaneously bring the wellbore into compliance with NMOCD Rule No. 106(c), by hydraulically isolating the low-pressure Jalmat (Yates) **gas zone,** from the upper portion of the Langlie Jack Unit 7R-Qn **water injection interval**, between 2/13/02 and 2/27/02, a 4 1/2" O.D. flush-joint liner was installed in the Jack "A-20" No. 9 open-hole section, and squeezed into place, as outlined on pages 2 of 4 thru 4 of 4, attached hereto.

OCD Hobbs MAY 2004 RECEIVED

14. I hereby certify that the foregoing is true and correct

Signed _____ Title Engineer Date 03/09/2004

(This space for Federal or State office use)

Approved by _____ Title _____ Date _____
Conditions of approval, if any:

ACCEPTED FOR RECORD
(ORIG. SGD.) DAVID R. GLASS
MAY 19 2004
DAVID R. GLASS
PETROLEUM ENGINEER

GWW

Title 18 U.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, fictitious or fraudulent statements or representations as to any matter within its jurisdiction.

*See Instruction on Reverse Side

Details of Completed Wellbore Repair Work

Tied pump truck to 8 5/8" O.D. surface casing. Pumped 10 bbls of water down 8 5/8" x 5 1/2" casing annulus, with water returns back to surface, on outside of 8 5/8" O.D. casing.

Moved in well service unit, on 2-13-02. Pulled and laid down rods and tubing. Ran and set 5 1/2" Model "C" RBP, at 2740'. Pulled 2 3/8" O.D. tubing. Moved well service unit to side of location.

Moved in backhoe. Dug out around well. Found (2) holes in 8 5/8" O.D. surface casing, approximately 4' below ground level. Found good cement-protected 8 5/8" O.D. casing approximately 9' below ground level.

Rigged up welder. Repaired 8 5/8" O.D. surface casing, by welding casing patches over defective sections of 8 5/8" O.D. casing. Pressured 5 1/2" O.D. casing to 500 psi. Tied pump truck to 8 5/8" O.D. casing. Pumped 28 bbls of water down 8 5/8" x 5 1/2" casing annulus. Observed no further leaks or returns back to surface.

Wrapped exposed 8 5/8" O.D. casing, with corrosion resistant tape. Installed 52" O.D. corrugated steel cellar can. Backfilled around cellar can. Installed B&M Oil Tool 5 1/2" x 2 3/8" x 3 1/2" 3000-psi Type MR tubinghead.

Moved well service unit back onto well. Picked up and ran into hole with 2 3/8" O.D. tubing. Rabbited 2 3/8" O.D. tubing, while running into hole. Found thin buildup of iron sulfide on inside of 2 3/8" O.D. tubing.

Hooked up air unit. Unloaded water from 5 1/2" O.D. casing, to blowdown tank. Pulled 2 3/8" O.D. tubing and 5 1/2" Model "C" RBP.

Ran 606' bottom-hole drilling assembly equipped with 4 3/4" button bit. Hit soft fill at 3118'. Hooked up foam unit. Drilled 4 3/4" hole to 3353'. Circulated hole clean and dry. Pulled bottom-hole drilling assembly.

Ran 241.93' bottom-hole assembly equipped with 4 1/2" x 6 1/4" under reamer. Under reamed hole, from 3129' to 3170', to a hole diameter of 6 1/4". Circulated hole clean and dry. Pulled and laid down under reamer.

Ran 492.29' string-mill assembly. Rotated 4 3/4" O.D. string-mill assembly, from 3170' to 3353'. Circulated hole clean and dry. Pulled and laid down 4 3/4" O.D. string mills.

Ran and landed 4 1/2" O.D., 11.6 lb/ft, J-55, FJ liner, from 2686'-3353'.

Ran and set 5 1/2" Model "C" packer, at 2523'. Squeeze cemented 4 1/2" O.D. liner into place, utilizing 1450 cu. ft. (1100 sx) of cement slurry, consisting of 900 sx of API Class "C" cement containing 2.5% $CaCl_2$, 2 lb/sx Gilsonite, and 0.25 lb/sx Flocele, followed by 200 sx of API Class "C" cement containing 2% $CaCl_2$, 2 lb/sx Gilsonite, and 0.25 lb/sx Flocele. Pumped cement at an average pump rate of 10.5 BPM and average pump pressure of 2300 psi. Displaced cement to 2543' (20' below 5 1/2" Model "C" packer). Staged to a final pressure of 2420 psi. Pulled 5 1/2" Model "C" packer. Pressured 5 1/2" O.D. casing to 1000 psi.

Tied Halliburton to 8 5/8" O.D. casing. Cemented upper portion of 5 1/2" O.D. casing string, by pumping down 8 5/8" x 5 1/2" casing annulus, with 2100 cu. ft. (1600 sx) of API Class "C" cement containing 3% $CaCl_2$, 3 lb/sx Gilsonite, and 0.25 lb/sx Flocele, at an average pump rate of 11 BPM, and average pump pressure of 680 psi. Minimum pump rate = 6 BPM, at 580 psi. ISIP = 140 psi. 5-min SIP = 40 psi.

Filled 52" O.D. corrugated steel cellar can with 70 sx of cement.

Ran 474.04' large-bore bottom-hole drilling assembly consisting of 4 3/4" bit and (16) 3 1/2" O.D. drill collars. Drilled hard cement, from 2515' to 2686' (top of 4 1/2" O.D. liner). Circulated hole clean. Pulled and laid down large-bore bottom-hole drilling assembly.

Ran 243.35' small-bore drilling assembly consisting of 3 7/8" blade bit and (8) 3 1/8" O.D. drill collars. Drilled hard cement to 3337'. Loaded hole with clean 2% KCl water. Pressure tested wellbore, from surface to 3337', to 2000 psi. Pressure held okay. Pulled bottom-hole drilling assembly.

Rigged up Schlumberger. Logged well with SAS-CNL-GR-CCL log and VDCBL-GR-CCL log.

Select-fire perforated Jalmat (Yates) gas zone with (26) 0.38" x 17" holes, with one shot each at:

2955	2988	3010	3043	3093	3121
2961	2996	3014	3046	3097	
2974	3000	3018	3053	3103	
2979	3003	3028	3060	3106	
2983	3006	3030	3089	3115	

Ran 4 1/2" Model "C" packer to 3141'. Pumped 150 gal of 15% MCA acid down 2 3/8" O.D. tubing. Allowed acid to fall and equalize. Raised and set 4 1/2" Model "C" packer at 2843'. Pumped an additional 550 gal of 15% MCA acid down 2 3/8" O.D. tubing. Let acid soak for one hour.

Acidized Jalmat (Yates) perfs, from 2955' to 3121' (26 holes), with an additional 5000 gal (total of 5700 gal) of 15% MCA acid and 38 ball sealers, at an average treating rate of 4.1 BPM and average treating pressure of 1400 psi. Maximum treating pressure = 3135 psi (at ballout, on 35th ball). ISIP = 159 psi. 30-sec SIP = 0 psi.

Lowered 4 1/2" Model "C" packer. Knocked off balls. Pulled and laid down 5 1/2" Model "C" packer.

Ran and landed 2 3/8" O.D. tubing at 3278' RKB (101 jts @ 32.14'/jt + (1) 6' Sub + 1.1'SN + 18'MA - 3'AGL + 10'KBC = 3278.2'). Ran 2" x 1 1/4" x 12' RHAC insert pump. Started pumping well, and recovering load, at 3:00 P.M., CST, 2-27-02.

Note: By virtue of the subject 4 1/2" O.D. flush-joint liner installation, and corresponding 1100 sx squeeze job, the low-pressure Jack "A-20" No. 9 Jalmat (Yates) gas zone is now effectively isolated from the underlying Langlie Jack Unit 7R-Qn water injection interval.

Langlie Jack Unit Unitized Interval: Seven Rivers-Queen

HOBBS DIVISION
AUG 13 '68

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT
DIVISION OF LANDS & MINERALS
PROGRAM MANAGEMENT & LAND OFFICE
P. O. Box 1449
Santa Fe, New Mexico 87501

IN REPLY REFER TO:
LC 032326(a)
NM 7486
Oil & Gas
4.70a

155733

August 14, 1968

DECISION

Lessee: W. N. Beauchamp, Ancillary Guardian of the Estate of William Howard Jack, an incompetent person, Annie May Kavanaugh, Abner M. Jack, Guy Jack, Jr., and Florence Jack Mayo

Base Lease: LC 032326(a) Exchange
Segregated Lease: NM 7486 Exchange
Leases Dated: December 1, 1957

Unit: Langlie Jack Unit
Unit No.: 14-08-0001-8910

Unit Effective: May 1, 1968

NOTED BY

Lease Segregated, PL 86-705, Sept. 2, 1960 (74 Stat. 784 Sec. 171)
Title 43 CFR Subpart 3127.4(c)

this should be 1968

Effective May 1, 1948) oil and gas lease LC 032326(a) was unitized in part as to the Seven Rivers - Queen interval. The committed land in the base lease is described in Item 1. The non-committed land in the segregated lease is described in Item 2:

e. 123

Lse. 155733

Item 1

T. 24 S., R. 37 E., NMPM
Sec. 20: E½
Sec. 21: SW¼SW¼
Sec. 29: NE¼NE¼
Seven Rivers
Queen interval only
400.00 acres

Item 2

T. 24 S., R. 37 E., NMPM
Sec. 20: E½ (All formations except Seven Rivers - Queen interval)
Sec. 21: SW¼SW¼ (All formations except Seven Rivers - Queen interval)
Sec. 29: NE¼NE¼ (All formations except Seven Rivers - Queen interval)
Sec. 29: W½NE¼, SE¼NE¼, N½SE¼, SW¼SE¼ (All formations)
640.00 acres

Abner M. Jack, Guy Jack., Jr. and Florence Jack Mayo are deceased. Satisfactory evidence of the final probate proceedings for these parties will be formally accepted as soon as the qualifications for the heirs are received.

Both leases are producing.

Fred E. Padilla, Chief
Branch of Oil and Gas

Distribution
Regional Oil & Gas Supvr. (4)
Accounts
Branch of Oil and Gas
Langlie Jack Unit File (3)

Unit Operator
Continental Oil Company
P. O. Box 460
Hobbs, New Mexico 88240

OPINION

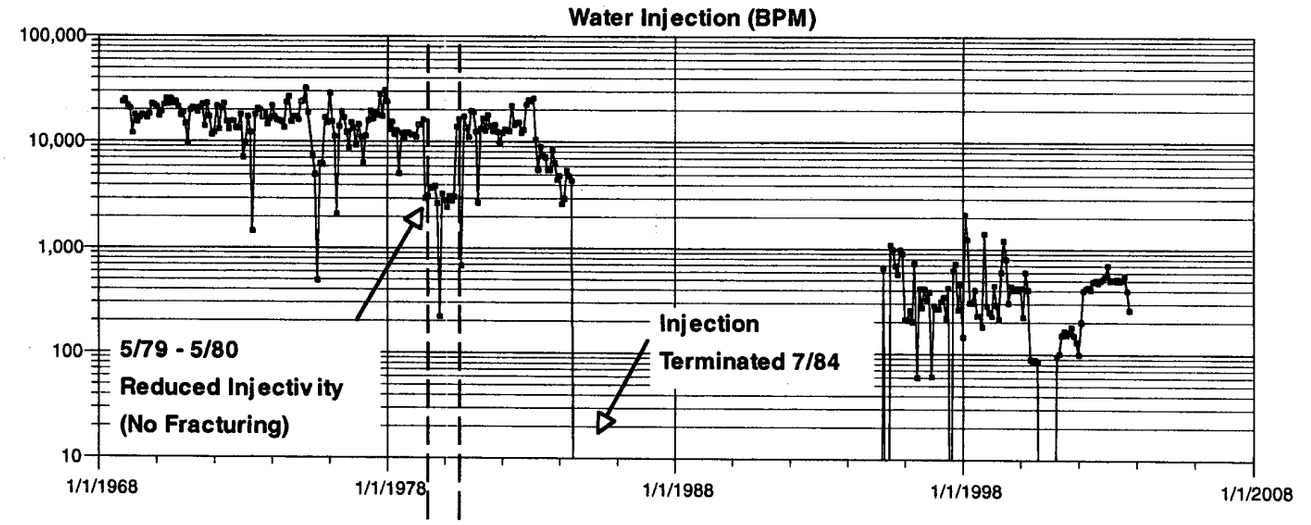
Opinion sent to you as a courtesy with the understanding that Conoco Inc. cannot be responsible if you should rely on same to your detriment.

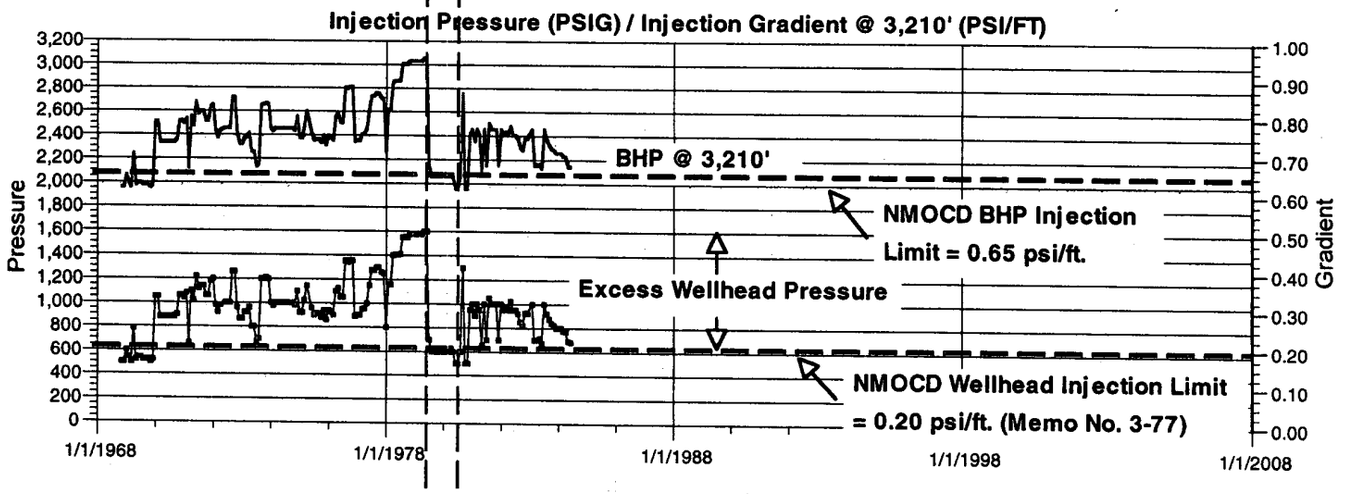
LANGLIE JACK UNIT # 12

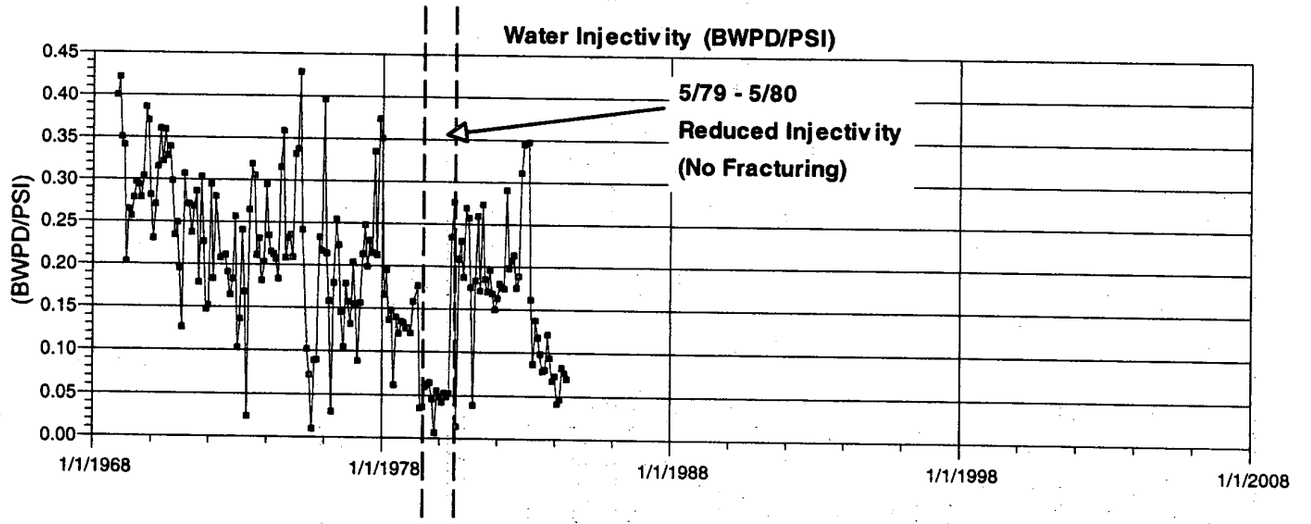
LANGLIE MATTIX (7R-Q)

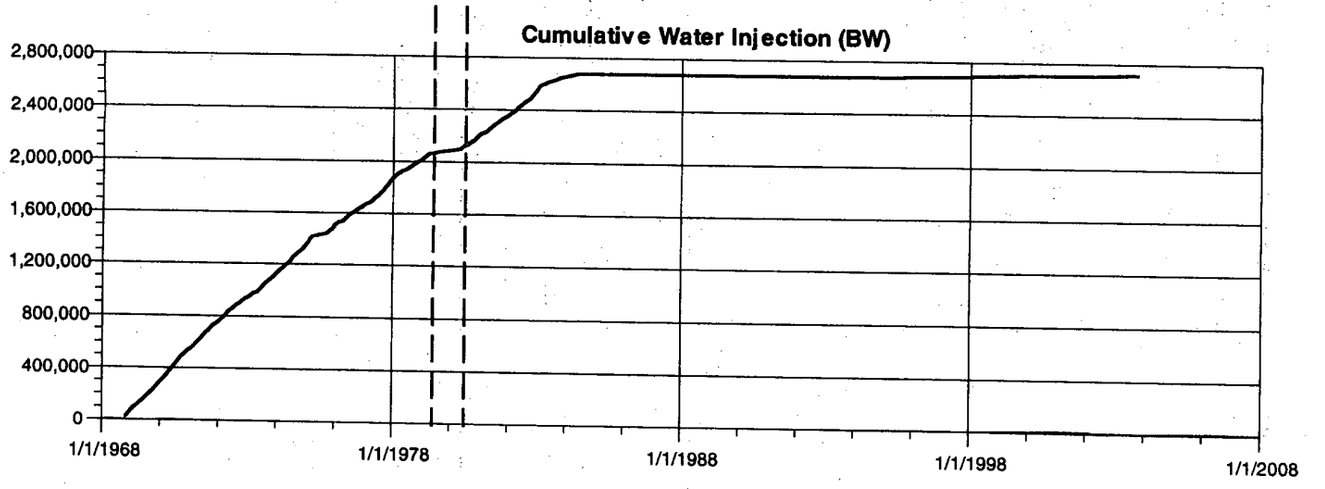
I - 20-24S-37E

CONOCO INC. / SANTA FE EXPL. CO. / MCDONNOLD OPER. INC.









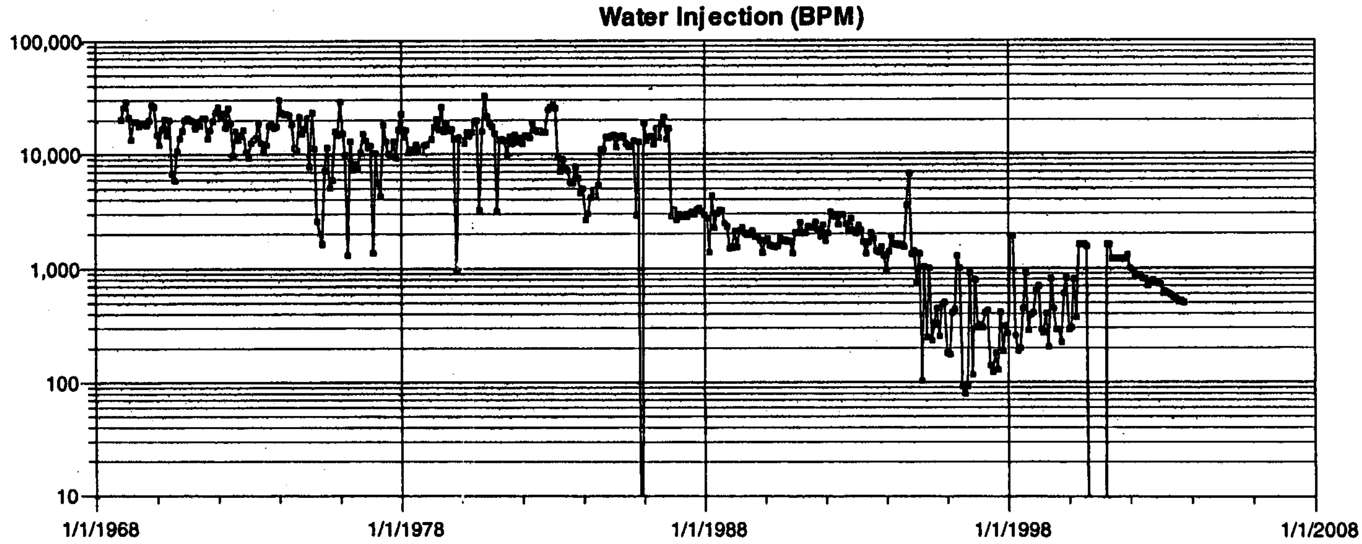
LANGLIE JACK UNIT # 14

LANGLIE MATTIX (7R-Q-GRB)

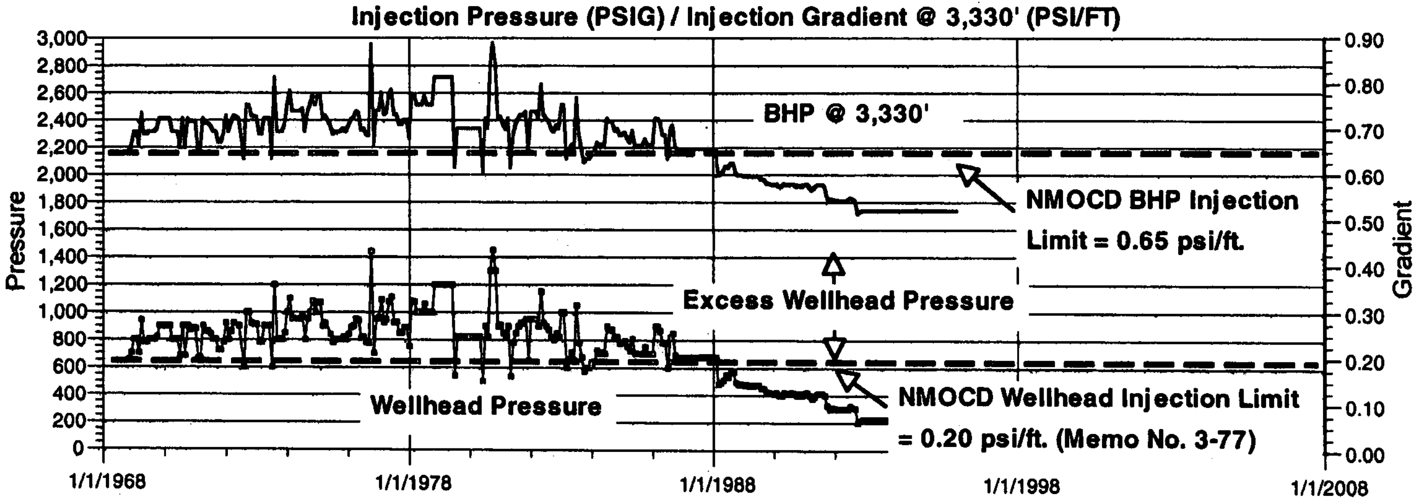
O- 20-24S-37E

MCDONNOLD OPERATING INC.

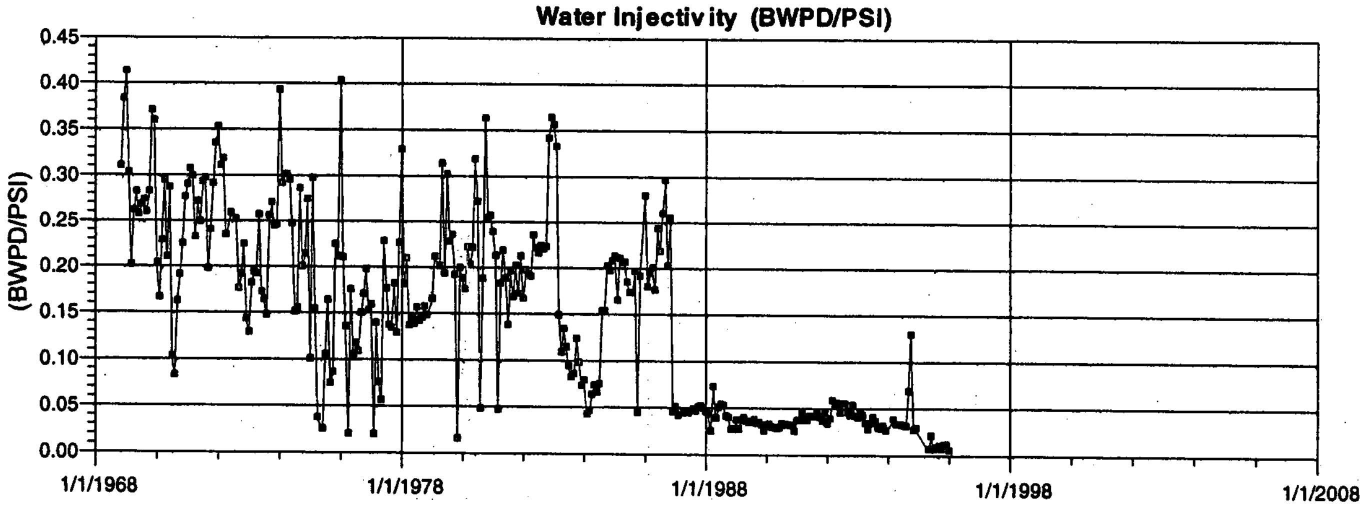
Water Injection (BPM)



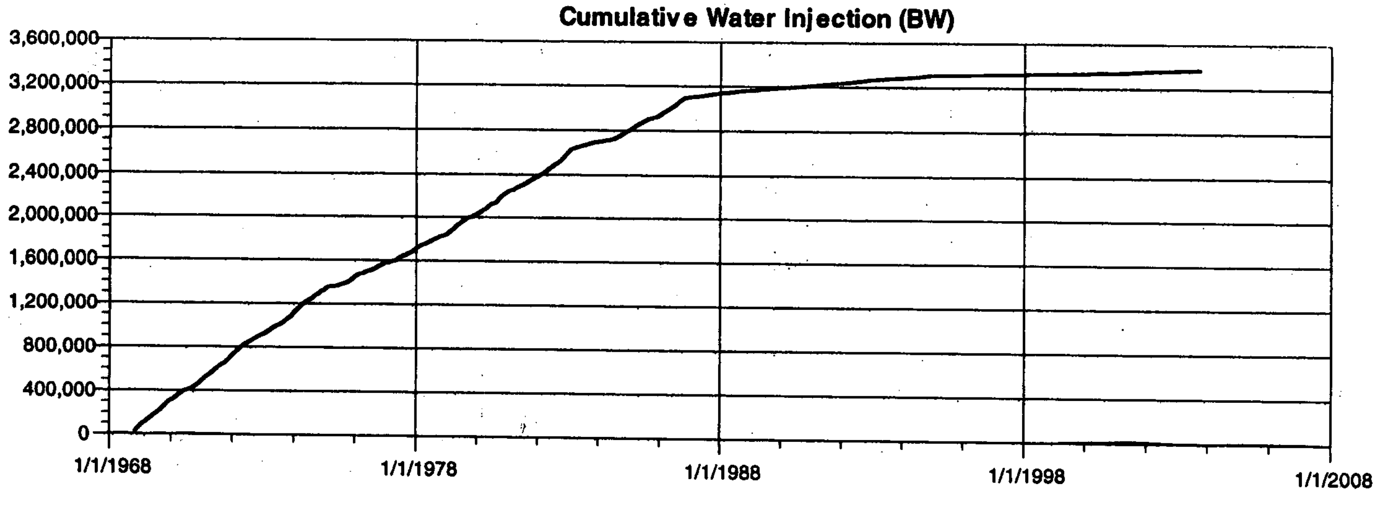
Injection Pressure (PSIG) / Injection Gradient @ 3,330' (PSI/FT)



Water Injectivity (BWPD/PSI)



Cumulative Water Injection (BW)



North

B

Structural Cross-Section

South

B'

Doyle Hartman
Jack "A-20" No. 9
A-20-24S-37E
Comp. Date: 7-30-74
Repair Date: 2-13-02 to 2-27-02

Mc Donald Operating, Inc.
Langlie Jack Unit No. 12
I-20-24S-37E
Comp. Date: 3-16-38
Water Injection Date: 10-06-68

Doyle Hartman
Jack "A-20" No. 10
O-20-24S-37E
Comp. Date: 8-07-74
Repair Date: 2-26-02 to 3-15-02

Mc Donald Operating, Inc.
Langlie Jack Unit No. 14
O-20-24S-37E
Comp. Date: 9-02-39
Water Injection Date: 10-07-68

+656'

Tansill

Yates

Seven Rivers

"CUQ" Mkr

Queen

Low Pressure Jalmat Yates Gas Interval

Langlie Jack Unit Seven Rivers-Queen Water Injection Interval

4 1/2" O. D., 11.6 lb/ft FJL @ 2686-3363' w/1100 sx

PBTD @ 3337'
NTD @ 3363'

RBP @ 3128'

Pkr @ 3159'

TD @ 3585'

5 1/2" O. D. csg @ 3210' w/425 sx
(65' below base of Yates interval)

Cum Water Injection = 2,717 MBW
at wellhead injection pressures ranging
from 200 psi to 900 psi in excess of
NMOCD Wellhead Injection Pressure Limit

4 1/2" O. D., 11.6 lb/ft FJL @ 2748-3428' w/ 760 sx

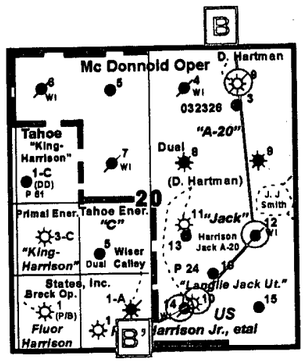
PBTD @ 3424'
NTD @ 3428'

Pkr @ 3296'

PBTD @ 3590'
TD @ 3593'

7" O. D. csg @ 3330' w/900 sx
(156' below base of Yates Interval)

Cum Water Injection = 3,368 MBW
at an average wellhead injection pressure of
230 psi in excess of
NMOCD Wellhead Injection Pressure Limit



DOYLE HARTMAN
Jack "A-20" Lease
E/2, Section 20
T-24-S, R-37-E
Lea County, New Mexico