Form 3160-5
(June 1990)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

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

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. 10

2. Name of Operator
Doyle Hartman

9. API Well No.
30-025-24789

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)
760' FSL & 1880' FEL (Unit O),
Section 20, T-24-S, R-37-E, N.M.P.M

11. County or Parish, State
Lea, NM

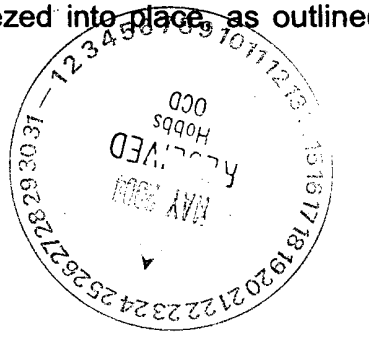
12. CHECK APPROPRIATE BOX(s) TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA

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. 10 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 2/26/02 and 3/15/02, a 4 1/2" O.D. flush-joint liner was installed in the Jack "A-20" No. 10 open-hole section, and squeezed into place, as outlined on pages 2 of 5 thru 5 of 5, attached hereto.



14. I hereby certify that the foregoing is true and correct
Signed [signature] Title Engineer Date 03/09/2004

(This space for Federal or State office use)
Approved by (ORIG. SGD.) DAVID R. GLASS Title PETROLEUM ENGINEER Date MAY 19 2004
Conditions of approval, if any:

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

GWW

Details of Completed Wellbore Repair Work

Moved in well service unit, on 2-26-02. Pulled and laid down 3/4" API Class "KD" rod string and 2 3/8" O.D. tubing. Ran and set 5 1/2" Model "C" RBP, at 116'. Pulled and laid down remaining 4 jts of 2 3/8" O.D. tubing. Rigged down and moved well service unit to side of location.

Moved in backhoe. Dug out around well. Rigged up welder. Replaced upper 6' of 8 5/8" O.D. surface casing. Sealed 8 5/8" x 5 1/2" casing annulus, by installing 8 5/8" x 5 1/2" x 1/2" welded steel seal ring. Installed 2" heavy-duty threaded tap on side of 8 5/8" O.D. surface casing.

Wrapped exposed casing and piping 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. Installed BOP.

Moved well service unit back onto well. Ran 4 jts of 2 7/8" O.D. tubing. Pulled and laid down 5 1/2" Model "C" RBP.

Ran 2 7/8" O.D. work string and 5 1/2" Model "C" packer. Set 5 1/2" Model "C" packer at 2782'. Shut in well. 15-hr SIP = 28.5 psi.

Hooked up Halliburton. Loaded 5 1/2" O.D. casing. Pressured 5 1/2" O.D. casing to 500 psi.

Squeeze cemented open-hole section, by pumping 1050 cu. ft. (800 sx) of cement slurry, consisting of 200 sx of API Class "C" cement containing 3% $CaCl_2$, followed by 600 sx of API Class "C" cement containing 2.5%$CaCl_2$. Pumped cement slurry at an average pump rate of 6.7 BPM. While pumping slurry, pump pressure increased from 762 psi to 2586 psi.

Displaced cement with 17.3 bbls of water. Staged to a final squeeze pressure of 1602 psi. Pulled 5 1/2" Model "C" packer.

Ran 530.45' bottom-hole drilling assembly, consisting of 4 3/4" mill-tooth bit and (18) 3 1/2" O.D. drill collars. Tagged cement at 2784'. Drilled 4 3/4" hole to 3107'. Pulled bottom-hole drilling assembly.

Ran 530.45' bottom-hole assembly equipped with 4 3/4" button bit. Hooked up air unit. Unloaded water from hole, to blowdown tank. Established circulation with foam. Drilled 4 3/4" hole to 3428'. Circulated hole clean and dry. Pulled bottom-hole drilling assembly.

Ran 549.63' string-mill assembly. Rotated and circulated 4 3/4" O.D. string-mill assembly, from 3015' to 3428'. Circulated hole clean and dry.

Made 5 trips into hole with 4 1/2" x 6 1/4" under reamer assembly. Under reamed hole, from 3000' to 3257', to a hole diameter of 6 1/4".

Ran 530.45' bottom-hole drilling and cleanout assembly. Cleaned out fill, from 3376' to 3428'. Circulated hole clean and dry. Pulled bottom-hole drilling and cleanout assembly.

Ran and set 4 1/2" O.D., 11.6 lb/ft, J-55, FJ liner, from 2762' to 3428'. Ran and set 5 1/2" Model "C" packer at 2584'. Loaded 5 1/2" O.D. casing. Pressured 5 1/2" O.D. casing to 500 psi.

Squeeze cemented 4 1/2" O.D. flush-joint liner into place, utilizing 1025 cu. ft. (780 sx) of cement slurry, consisting of 200 sx of API Class "C" cement containing 2% $CaCl_2$, 3 lb/sx Gilsonite, and 0.25 lb/sx Flocele, followed by 580 sx of API Class "C" cement containing 2.5% $CaCl_2$. Pumped cement slurry at an average pump rate of 11 BPM, with pump pressure climbing from 375 psi to 4517 psi.

Switched to water. After pumping 1 bbl of displacement, open hole locked up (0 BPM, at 4800 psi). Reversed remainder of cement slurry out of 2 3/8" tubing. Pulled 5 1/2" Model "C" packer.

Finished loading 5 1/2" O.D. casing. 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, by pumping down 8 5/8" x 5 1/2" casing annulus with 2800 cu. ft. (2120 sx) of cement slurry, consisting of 120 sx of API Class "C" cement containing 2.5% $CaCl_2$, followed by 2000 sx of API Class "C" cement containing 3% $CaCl_2$, 5 lb/sx Gilsonite, and 0.5 lb/sx Flocele. Pumped cement slurry at an initial rate of 6.4 BPM, at 636 psi. Final slurry rate was 12.2 BPM, at 520 psi. ISIP = 387 psi.

Filled 52" O.D. cellar can with 100 sx of API Class "C" cement containing 2.5% $CaCl_2$.

Ran 174.77' bottom-hole drilling assembly, consisting of 4 3/4" bit and (6) 3 1/8" O.D. drill collars. Drilled cement from 2584' to 2751'. Circulated hole clean. Pulled and laid down 2 7/8" O.D. work string and 4 3/4" bit.

Ran 2 3/8" O.D. tubing and 174.63' bottom-hole drilling assembly, consisting of 3 7/8" blade bit and (6) 3 1/8" O.D. drill collars. Drilled cement, from 2751' to 3428'. Circulated hole clean. Loaded hole with clean 2% KCl water. Pressure tested wellbore, from surface to 3428', to 2000 psi. Pressure held okay. Pulled and laid down 174.63' bottom-hole assembly.

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

Ran 2 3/8" O.D. tubing. Unloaded water from wellbore, to blowdown tank. Pulled 2 3/8" O.D. tubing.

Select-fire perforated Jalmat (Yates) gas zone with (24) 0.38" x 17" holes, with one shot each at:

2998	3033	3069	3124	3153
3005	3049	3093	3131	3158
3014	3051	3109	3135	3162
3018	3055	3114	3139	3167
3025	3059	3119	3149	

Ran 2 3/8" O.D. tubing and 4 1/2" Model "C" packer. Tested 2 3/8" O.D. tubing to 5000 psi, while running into hole. At 2766', 4 1/2" Model "C" packer would not move up or down. Backed off of packer. Pulled 2 3/8" O.D. tubing.

Ran bottom-hole fishing assembly consisting of spear, bumper sub, (6) 3 1/8" O.D. drill collars, and hydraulic jars. Pushed 4 1/2" Model "C" packer to 3428'. Stung into fish. Pulled and laid down 4 1/2" Model "C" packer and bottom-hole fishing assembly.

Ran 4 1/2" casing scraper, to 3426'. Pulled 4 1/2" casing scraper.

Ran 3 7/8" O.D. mill shoe, to 2900', to dress top of 4 1/2" O.D. liner. Pulled 3 7/8" O.D. mill shoe.

Ran 4 1/2" Model "C" packer to 3212'. Spotted 160 gal of 15% MCA acid. Raised and set 4 1/2" Model "C" packer at 2956'. Pumped 300 gal of 15% MCA acid down 2 3/8" O.D. tubing. Let acid soak for 30 minutes.

Acidized perfs, from 2998' to 3167' (24 holes), with an additional 4500 gal (total of 5000 gal) of 15% MCA acid, and 35 ball sealers, at an average treating rate of 4.2 BPM. Displaced acid with 15 bbls of flush. Maximum treating pressure = 3500 psi (on 2nd ballout).

Lowered and set 4 1/2" Model "C" packer at 3212'. Attempted to pressure test 4 1/2" O.D. liner, to 3000 psi, below 3212'. Pressure test was unsuccessful. Pulled 4 1/2" Model "C" packer.

Rigged up wireline truck. Set 4 1/2" CIBP at 3424'.

Ran into hole with 2 3/8" O.D. tubing. Pulled and laid down questionable 2 3/8" O.D. tubing string.

Picked up and ran new 2 3/8" O.D. tubing string, and 4 1/2" Model "C" packer. Set 4 1/2" Model "C" packer at 3221'. Pressure tested 4 1/2" O.D. liner, from 3221' to 3424', to 3000 psi. Pressure held okay. Pulled 4 1/2" Model "C" packer.

Ran and landed bottom of 2 3/8" O.D. tubing at 3331' RKB (103 jts @ 32.09'/jts + 1.1'SN + 18'A - 3'AGL + 10' KBC = 3331.1'). Ran 2" x 1 1/4" x 12' RHAC insert pump and 3/4" API Class "KD" rod string. Started pumping well and recovering load, at 7:15 P.M., CST, 3-15-02, at 8.3 Spm x 42" x 1 1/4".

Note: By virtue of the subject 4 1/2" O.D. flush-joint liner installation, and corresponding squeeze jobs, the low-pressure Jack "A-20" No. 10 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. M. 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	Item 2
T. 24 S., R. 37 E., NMPM	T. 24 S., R. 37 E., NMPM
Sec. 20: E½	Sec. 20: E½ (All formations except Seven Rivers - Queen interval)
Sec. 21: SW¼SW¼	Sec. 21: SW¼SW¼ (All formations except Seven Rivers - Queen interval)
Sec. 29: NE¼NE¼	Sec. 29: NE¼NE¼ (All formations except Seven Rivers - Queen interval)
Seven Rivers Queen interval only	Sec. 29: W½NE¼, SE¼NE¼, N½SE¼, SW¼SE¼ (All formations)
400.00 acres	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

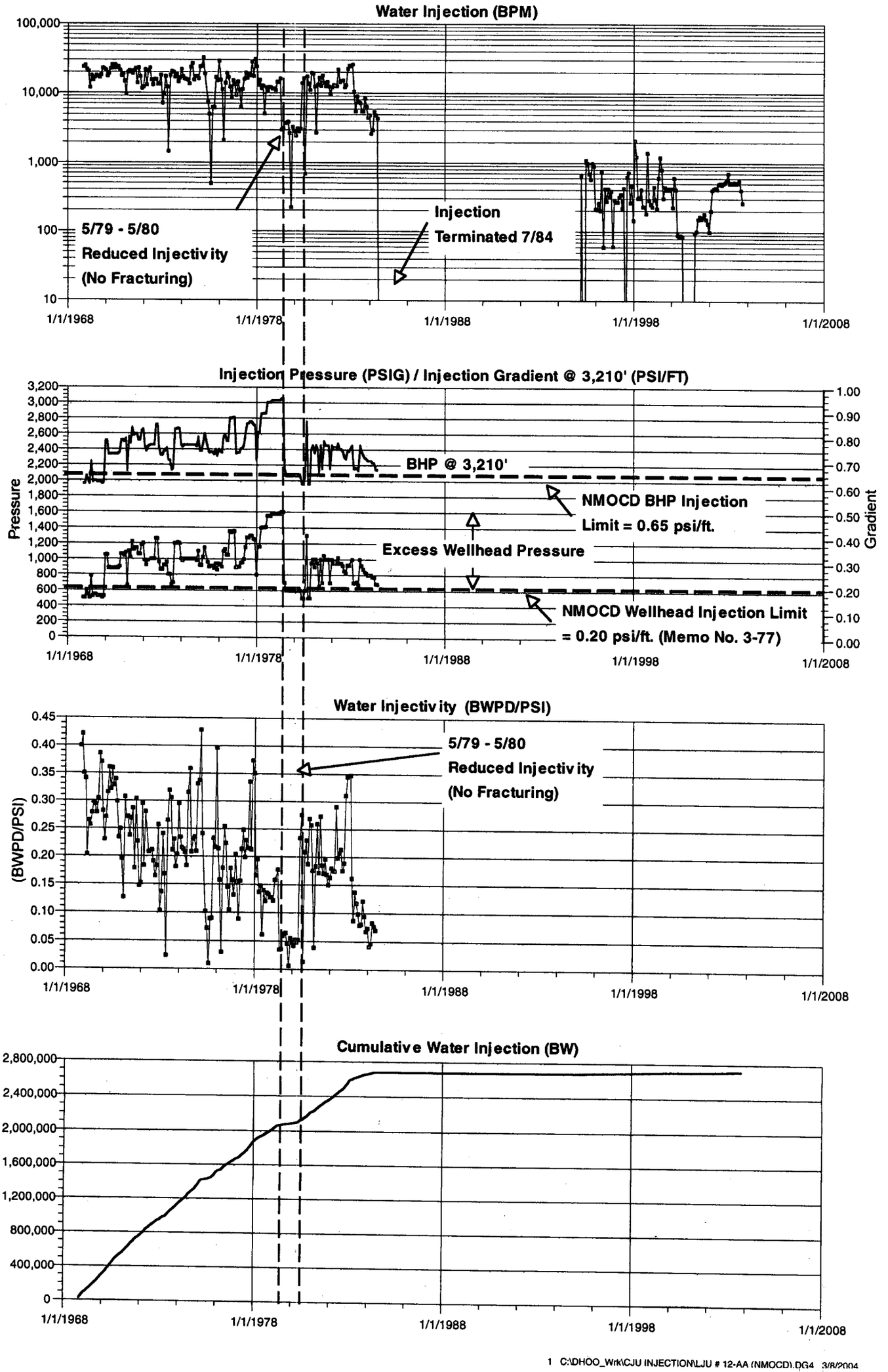
Opinion sent to you as a courtesy with the understanding that Conoco Inc. cannot be responsible if you should rely on same to your detriment.

LANGLIE JACK UNIT # 12

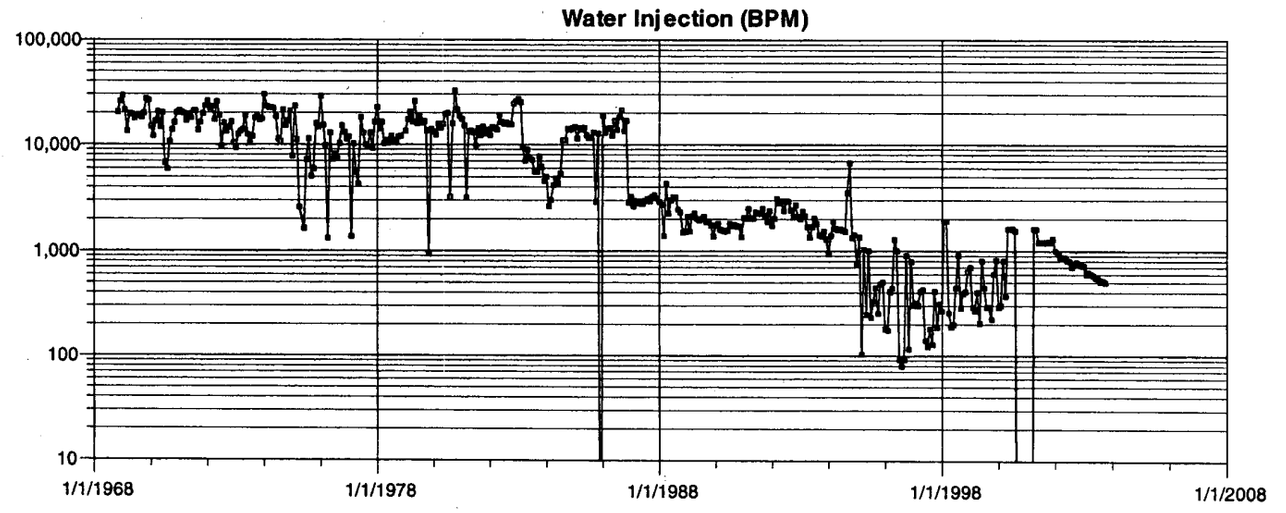
LANGLIE MATTIX (7R-Q)

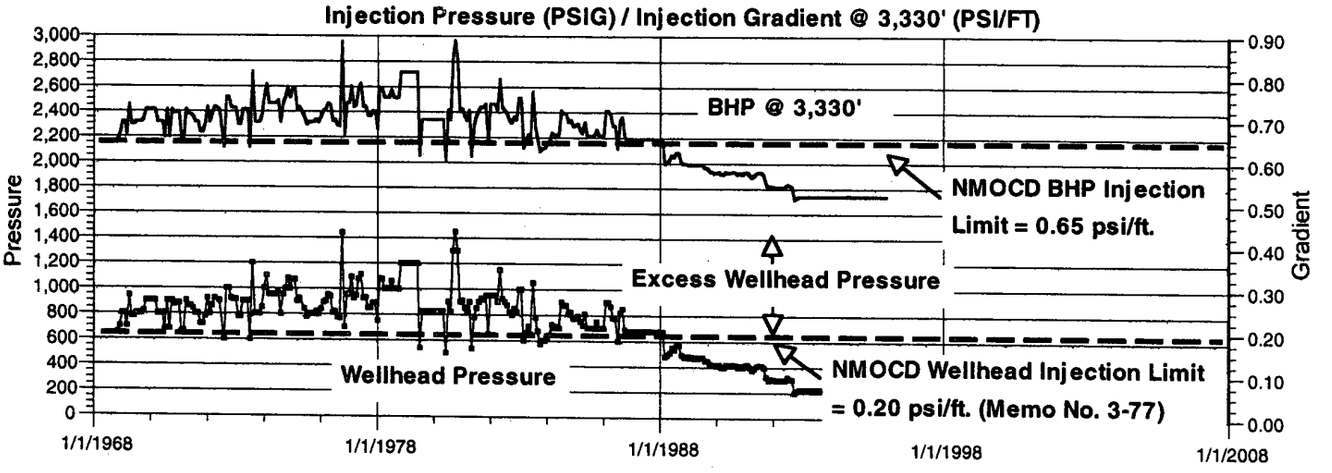
I - 20-24S-37E

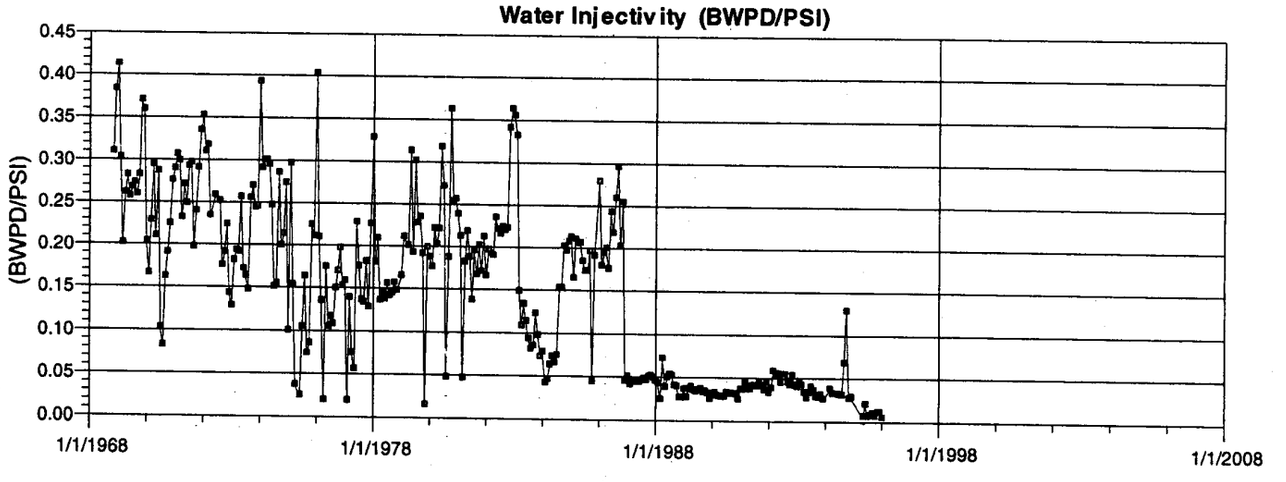
CONOCO INC. / SANTA FE EXPL. CO. / MCDONNOLD OPER. INC.

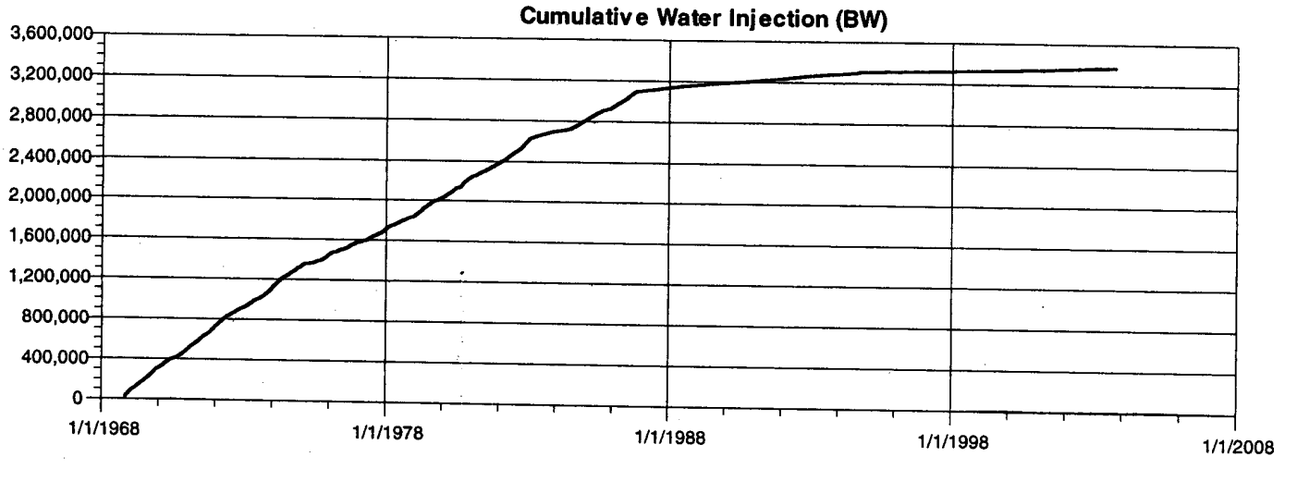


LANGLIE JACK UNIT # 14
LANGLIE MATTIX (7R-Q-GRB)
O- 20-24S-37E
MCDONNOLD OPERATING INC.









North

B

Structural Cross-Section

B'

South

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 @ 3160'

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

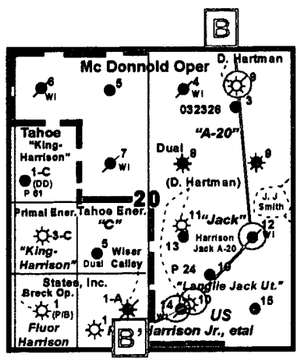
PBTD @ 3424'
NTD @ 3428'

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