EXXON COMPANY, U.S.A.
POST OFFICE BOX 1600 • MIDLAND, TEXAS 79702

PRODUCTION DEPARTMENT
MIDCONTINENT DIVISION

L. H. BYRD
MANAGER

September 22, 1978

DHC # 262
Due — 10/16/78

Re: Downhole Commingling
F. F. Hardison "B" No. 10
Wantz Abo and Drinkard Pools
Lea County, New Mexico

Oil Conservation Commission
New Mexico Energy and Minerals Department
P. O. Box 2088
Santa Fe, New Mexico 87501

Attention: Mr. Joe D. Ramey

Gentlemen:

We respectfully request administrative authority to downhole commingle the Wantz Abo and Drinkard Pools in our F. F. Hardison "B" No. 10 located in Unit A, Section 34, T-21-S, R-37-E, Lea County, New Mexico. Attached in support of this request is the information required for downhole commingling as specified in Statewide Rule 303-C. The offset operators have been notified of this request by a copy of this letter and supporting data. List of offset operators is attached.

Yours very truly,

L. H. Byrd

HNR/slc

Attachment

cc: Oil Conservation Commission, Santa Fe, New Mexico
Oil Conservation Commission, Hobbs, New Mexico
All offset operators

Bottom pf 7580'

List of Offset Operators
F. F. Hardison "B" No. 10
Wantz Abo and Drunkard Pools
Lea County, Texas

AMOCO Production Company
P. O. Box 3092
Houston, Texas 77001

Atlantic Richfield Company
P. O. Box 1610
Midland, Texas 79702

Gulf Oil Company
P. O. Box 670
Hobbs, New Mexico 88240

Mobil Oil Corporation
P. O. Box 1800
Hobbs, New Mexico 88240

Moranco
P. O. Box 1860
Hobbs, New Mexico 88240

INFORMATION REQUIRED FOR DOWN-HOLE COMMINGLING

(A) Operator: Exxon Company, U.S.A.
1700 West Broadway
Andrews, Texas 79714

(B) F. F. Hardison "E" No. 10
Unit A, Section 34, T-21-S, R-37-E,
Lea County, New Mexico

(C) Completion Pools: Wantz-Abo
Drinkard

These pools are currently being commingled so there is no Commission Order number which authorizes a dual completion.

(D) Productivity test on Form C-116 is attached.

(E) The well's completion history is attached.

(F) Bottom hole pressures have not been measured.

(G) The fluid from these two pools has been commingled previously and there has been no indication of incompatibility.

(H) Value of oil from both zones is the same.

Offset Operators: Marathon
Gulf
Amoco
Mobil
Arco
Moranco

W.T.Mayne:hct
September 6, 1978

Company: Exxon Co. USA | Pool: Drinkard - Abo | County: LEA

Address: 1700 W. Broadway, Andrews, Texas 79714 | TYPE OF TEST - (X) | Scheduled ☐ | Completion ☐ | Special ☐ Potential Test

LEASE NAME	WELL NO.	LOCATION U	S	T	R	DATE OF TEST	STATUS	CHOKE SIZE	TBG. PRESS.	DAILY ALLOWABLE	LENGTH OF TEST HOURS	PROD. DURING TEST WATER BBLS.	GRAV. OIL	OIL BBLS.	GAS M.C.F.	GAS - OIL RATIO CU.FT. B
F.F. Hardison "B"	10	A	34	21	37	8-29-78		—	0		24	1	39.9	7	16	1086C

No well will be assigned an allowable greater than the amount of oil produced on the official test.

During gas-oil ratio test, each well shall be produced at a rate not exceeding the top unit allowable for the pool in which well is located by more than 25 percent. Operator is encouraged to take advantage of this 25 percent tolerance in order that well can be assigned increased allowables when authorized by the Commission.

Gas volumes must be reported in MCF measured at a pressure base of 15.025 psia and a temperature of 60° F. Specific gravity base will be 0.60.

Report casing pressure in lieu of tubing pressure for any well producing through casing.

Mail original and one copy of this report to the district office of the New Mexico Oil Conservation Commission in accordance with Rule 201 and appropriate pool rules.

NMOCC (2) FILE

I hereby certify that the above informati is true and complete to the best of my kno ledge and belief.

D L Clemmer
(Signature)
UNIT HEAD
~~ADMINISTRATIVE SUPERVISOR~~
REVENUE & REGULATORY ACCTG.
9-18-78
(Date)

F. F. HARDISON "B" 10
ANDREWS DISTRICT
DRILLING REPORT

DATE	REMARKS
6/22/78	Drilled to TD 7679'. Set 176 joints 7" casing at 7665', cemented with 2140 sacks, bumped plug. Circulated 50 sacks to surface, now nippling down blow out preventer.
6/23/78	Released rig at 11:00 A.M. 6/22/78.
6/24/78	Moved in and rigged up to log well, ran GR-NL, rigged down loggers. Moved in and rigged up well servicing unit. Nipped up blow out preventer, tested, flange would not hold. Started picking up 3½" N-80 frac tubing.
6/25/78	Finished picking up frac tubing, shut down.
6/26/78	Shut in.
6/27/78	Tested blow out preventer to 1500#, held O.K. Perforated 7" casing 7372-7580', 52 shots. Ran Baker lok-set packer, on/off tool with 1.5 profile nipple, 50 joints 3½" frac tubing in hole, tested to 7000#, shut in.
6/28/78	Finished running 3½" frac tubing in hole, tested to 7000#. Preparing to acidize and frac, shut in.
6/29/78	Rigged up acidizing truck. Circulated hole with 275 barrels lease crude and spotted 8 barrels 15% HCl across perforations. Set packer at 7298' and pressured annulus to 500 psi. Formation broke at 4000 psi. Acidized perforations with 82 barrels 15% NE clay-controlled HCl and 80 ball sealers. No ball action observed. Maximum injection pressure 5100 psi, average injection rate 5 barrels per minute, instant shut in pressure 4500 psi, 10 minute shut in pressure 3700 psi. Gelled 55,000 gallons lease crude. Pressured annulus to 500 psi. Started and pumped 55 barrels pad at 12 barrels per minute at 5000 psi. Shut down and ran packer through perforations. Repressured annulus to 1000#. Started and pumped 40 barrels pad at 12 barrels per minute at 5800 psi. Shut down and consulted district engineering. Started and pumped 40 barrels pad, pumped 202 barrels gelled crude with 1/2 lb. per gallon 20-40 mesh sand. Pumped 357 barrels gelled crude with 3/4 lb. per gallon 20-40 mesh sand. Pumped 431 barrels gelled crude with 1 lb. per gallon 20-40 sand. Flushed with 75 barrels, maximum pressure 6500 psi, average injection pressure 5800 psi, instant shut in pressure 4800, 10 minute and 15 minute pressure 4400 psi. Maximum rate 15 barrels per minute, average injection rate 13 barrels per minute, total load 1395 barrels gelled oil and 155 barrels water. Total sand 33,600 lbs.

DATE	REMARKS
6/30/78	Opened well after 15 hours shut in, tubing pressure 2900#. Set tubing plug in on/off tool at 7300', unlatched from on/off tool. Now laying down 3½" frac tubing.
7/ 1/78	Finished laying down frac tubing. Ran 237 joints 2-3/8" tubing in hole. Removed tubing plug in on/off tool. Opened well after 48 hours shut in, had 2675#. Opened on ¼" choke, flowed 18 barrels load oil in 45 minutes and died. Shut in.
7/ 2/78	Opened well on 3/4" choke after 13 hours shut in, tubing pressure 1800#. Bled off in 10 minutes, started flowing. Flowed 31 barrels load oil in 2 hours and died. Ran swab, swabbed 7 hours and recovered 114 barrels load oil, fluid level 6500' from surface. Shut in.
7/ 3/78	Shut in for Sunday.
7/ 4/78	Opened well on 3/4" choke after 37 hours shut in, tubing pressure 2100#. Bled down in 10 minutes and recovered 5 barrels load oil and died. Ran swab, fluid level 2000' from surface. Swabbed 7 hours and recovered 48 barrels load oil, fluid level 7300' from surface. Fluid entering hole 400' per hour. Last 3 hours swabbing recovered 4 barrels load oil. Shut in.
7/ 5/78	Shut in.
7/ 6/78	Unseated packer. Displaced oil in hole with 10# brine. Pulled tubing and packer out of hole. Set cast iron bridge plug on wireline at 7325' with 35' cement on top, shut in.
7/ 7/78	Moved in rigged up to perforate. Perforated Drinkard and Abo 6336-7146', total 141 shots.
7/ 8/78	Ran in hole with bridge plug, packer, 2-7/8" workstring, flapper valve, 2-7/8" hydril. Tested tubing to 6000 psi, bridge plug would not set, shut in.
7/ 9/78	Trip out of hole to change bridge plug and packer. Ran in hole and set bridge plug at 7170', packer at 7092'. Pressure tested bridge plug and packer, held O.K. Spotted acid across perforations, reset packer at 7070' to proceed with stage 1 of K-1 frac. Stage 1: Pumped 80 barrels received communication, maximum pressure 6400 psi, average injection rate 5 barrels per minute. Stage 2: Reset packer at 6950', pumped 114 barrels, communicated, maximum

DATE	REMARKS
7/ 9/78 Cont'd.	pressure 6300#, average injection rate 5 barrels per minute. Stage 3: Reset packer at 6870', pumped 5 barrels, communicated. Stage 4: Reset packer at 6650', pumped remaining acid and K-1 pad from previous stages plus Stage 4. Dropped 1 block 250# benzoic acid flakes and 250# rock salt. Flushed with 2000 gallons brine, maximum pressure 6800 psi, average injection rate 8 barrels per minute. Instant shut in pressure 3200 psi, 15 minute shut in pressure 3100 psi. No communication, shut in.
7/10/78	Stage 5: Reset bridge plug at 6600', packer at 6420', pumped as per procedure. Dropped 125# benzoic acid flakes and 125# rock salt. Flushed with brine, maximum pressure 6600 psi, average injection rate 12.2 barrels per minute, instant shut in pressure on vacuum, no communication. Stage 6: Set bridge plug at 6430', packer at 6300', held 1000# on tubing-casing annulus, pumped as procedure with 7,000 gallons K-1 pad, flushed with brine, maximum pressure 6400 psi, average injection rate 11.8 barrels per minute, instant shut in pressure 1300 psi, 15 minute shut in pressure on vacuum. Released packer, flushed annulus with brine. Reset bridge plug at 7170', packer at 6637', shut in.
7/11/78	Abo: 14 hour shut in tubing pressure 100 psi. Made 6 swab runs, well kicked off. Flowed total 220 barrels load in 10 hours. Flowing tubing pressure 300 psi on 3/4" choke, 60% water cut.
7/12/78	Flow test recovered 3 barrels after 15 hours, 50% water. Killed well with 40 barrels brine, pulled packer. Pumped 150 barrels down tubing-casing annulus to kill Drinkard. Retreived bridge plug, pulled and laid down 170 joints 2-7/8" tubing, shut in.
7/13/78	Killed well, pulled and laid down remainder of workstring. Changed rams and blow out preventer. Picked up Baker packer, ran and tallied 2-3/8" tubing to 6600', shut in.
7/14/78	Worked on wellhead equipment, shut in.
7/15/78	Installed new wellhead. Ran and set plug in Abo string. Picked up and ran short string, flanged up wellhead. Abo zone: Bottom Hole Assembly: Baker lok-set packer, on/off tool with 1.56" profile nipple set at 6602', 1 joint 2-3/8" tubing, seating nipple. Drinkard zone: Bottom Hole Assembly: Baker tool anchor set at 6300', 1 joint tubing, seating nipple.

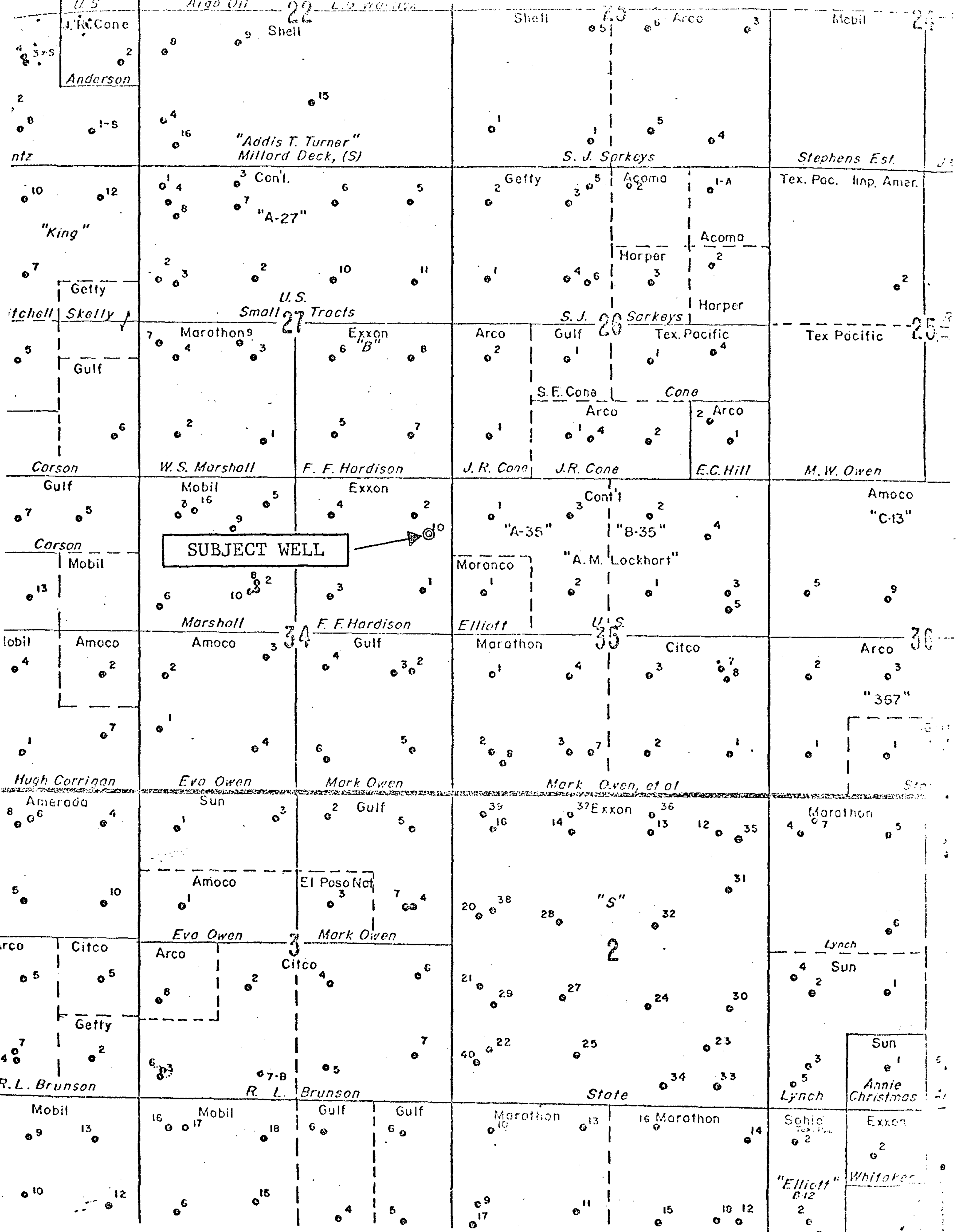
DATE	REMARKS
7/16/78	Retreived plug, rigged down and moved out. Hooked up flow-line, rigged up swab unit. Now swabbing Abo. Recovered 90 barrels water, 16 barrels oil. Shut in. 679 barrels load water to recover.
7/17/78	Tubing pressure on Abo 500#, tubing pressure on Drinkard 105#, casing pressure 140#. Abo: Swabbed fluid level 5000' from surface, recovered 104 barrels fluid (19 barrels oil, 85 barrels load water). Fluid level scattered from surface. Good flow of gas. Shut in. 594 barrels load water to recover.
7/18/78	Drinkard: Shut in pressure 180#, casing pressure 205#. Abo: Tubing pressure 500#, recovered 73 barrels fluid, 52 barrels oil, 21 barrels load water. 573 barrels load water to recover.
7/19/78	Abo: Shut in tubing pressure 630#. Opened on 24/64" choke flowed 10 barrels oil in 1½ hours. Rigged up to swab, swabbed 9 hours. Starting fluid level 6500', recovered total 44 barrels oil, 40 barrels load water. At end no solid fluid level. Heavy gas flow. Left well open on 24/64" choke, shut in. Drinkard: 130# shut in tubing pressure, 260# casing pressure.
7/20/78	Abo: Flowed total 81 barrels in 24 hours. 38 barrels oil, 43 barrels water on 24/64" choke. Flowing in heads. Drinkard: Started swabbing, starting fluid level 4500', recovered total 94 barrels water, shut in.
7/21/78	Abo: 24 hour flow test recovered 5 barrels oil, 36 barrels load water. Flowing in heads. Drinkard: Shut in tubing pressure 175 psi, blew down in 15 minutes. No fluid recovered. Started swabbing, starting fluid level 3600'. Swabbed 36 barrels oil, 44 barrels water, no solid fluid level left in hole at end. Shut in.
7/22/78	Abo: Swabbed 4 hours, recovered 29 barrels oil, 61 barrels water, 24 hours. Drinkard: Shut in tubing pressure 240 psi, bled down. Started swabbing, starting fluid level at 4700', recovered 16 barrels oil, 31 barrels water. At end good gas flow, shut in.
7/23/78	Abo: Swabbed and flow tested recovered 9 barrels oil, 32 barrels water in 24 hours. Swabbed 6 hours, 330 barrels load water to recover. Drinkard: Shut in tubing pressure 400 psi, casing pressure 570 psi, bled down. Swabbed 4 hours recovered 3 barrels oil, 13 barrels water. 807 barrels load water to recover.

DATE	REMARKS
7/24/78	Abo: Swabbed and flow tested recovered 16 barrels oil, 14 barrels water in 24 hours. Swabbed 6 hours. 316 barrels load water to recover. Drinkard: Shut in tubing pressure 120#, casing pressure 200#. Bled down, swabbed 4 hours recovered 11 barrels oil, 34 barrels load water. 794 barrels load water to recover.
7/25/78	Abo: Opened well after 15 hours shut in, tubing pressure 600#. 24/64" choke, flowed by heads for 3 hours recovered 11 barrels oil, 1 barrel water and died. Swabbed 3 hours recovered 17 barrels oil, 5 barrels water. Swabbed dry. 310 barrels load water to recover. Shut in. Drinkard: Opened well after 15 hours shut in tubing pressure 150#, casing pressure 375#. Bled off tubing pressure, swabbed 3 hours recovered 18 barrels oil, 9 barrels load water. Swabbed dry. 785 barrels load water to recover. Rigged down swab unit, shut in.
7/26/78	Shut in, preparing to place well on pump.
7/27/78	Shut in, preparing to place well on pump.
7/28/78	Shut in, waiting to install pumping unit and place well on pump. Drinkard: 202 barrels load oil to recover; Abo: 107 barrels load oil to recover.
7/29/78	Shut in, now setting pumping unit.
7/30/78	Set pumping unit. Now connecting up electric equipment.
7/31/78	Shut in.
8/ 1/78	Moved in rigged up well servicing unit preparing to run pump and rods in Drinkard.
8/2/78	Ran 2" x 1¼" pump, 173 3/4", 74 7/8" rods in hole, rigged down. Now connecting up electric equipment.
8/ 3/78	Finished connecting up electric equipment, now on pumping test (Drinkard). Abo: Opened well, tubing pressure 1100#. Flowed 6 hours recovered 30 barrels load oil, 30 barrels load water and died. 61 barrels load oil to recover, 310 barrels load water to recover, shut in.

DATE	REMARKS
8/ 4/78	Drinkard: 24 hour pump test recovered 34 barrels load oil, 86 barrels load water. 168 barrels load oil to recover, 699 barrels load water to recover, 9½ strokes per minute, 144" stroke length.
8/ 5/78	Abo: Dead. Drinkard: 24 hour pump test recovered 19 barrels load oil, 21 barrels load water, 149 barrels load oil to recover, 678 barrels load water to recover.
8/ 6/78	Drinkard: 24 hour pump test recovered 27 barrels load oil, 14 barrels load water, 122 barrels load oil to recover, 664 barrels load water to recover.
8/ 7/78	Drinkard: 24 hour pump test recovered 8 barrels load oil, 28 barrels load water, 114 barrels load oil to recover, 636 barrels load water to recover. Abo: Dead on 8/5 and 8/6.
8/ 8/78	Abo: Dead. Drinkard: 24 hour pump test recovered 13 barrels load oil, 15 barrels load water, 101 barrels load oil to recover and 621 barrels load water to recover.
8/ 9/78	Abo: Dead. Drinkard: 24 hour pump test recovered 10 barrels load oil, 12 barrels load water, 91 barrels load oil to recover and 609 barrels load water to recover, testing.
8/10/78	Abo: Dead. Drinkard: 24 hour pump test recovered 8 barrels load oil, 8 barrels load water, 83 barrels load oil to recover and 601 barrels load water to recover, testing.
8/11/78	Abo: Dead. Drinkard: 24 hour pump test recovered 13 barrels load oil, 12 barrels load water, 70 barrels load oil to recover and 589 barrels load water to recover, testing. Gas 62 MCF/D.
8/12/78	Abo: Dead. All load oil recovered. Drinkard: 24 hour pump test recovered 5 barrels load oil, 3 barrels load water, 65 barrels load oil to recover, 586 barrels load water to recover.
8/13/78	Abo: Dead. Drinkard: pumping unit shut down, failed to flow, moved in rigged up well servicing unit, preparing to pull rods and tubing.

DATE	REMARKS
8/14/78	No report.
8/15/78	Pulled rods and pump out of hole. Pulled short string of tubing and laid down long string. Preparing to run tubing and rods in hole.
8/16/78	Finished laying down long string. Ran tubing in hole. Now preparing to run pump and rods. Used 75 barrels brine to kill well.
8/17/78	Ran pump and rods in hole. Rigged down pulling unit. Now on pumping test.
8/18/78	Well did not pump.
8/19/78	24 hour pump test recovered 3 barrels load oil, 8 barrels load water. 62 barrels load oil to recover.
8/20/78	24 hour pump test recovered 16 barrels load oil, 0 barrels water. 46 barrels load oil to recover.
8/21/78	24 hour pump test recovered 4 barrels load oil, 1 barrel load water. 42 barrels load oil to recover.
8/22/78	24 hour pump test recovered 6 barrels load oil, 1 barrel load water. 36 barrels load oil to recover.
8/23/78	24 hour pump test recovered 6 barrels load oil, 0 barrels water. 30 barrels load oil to recover. Reading on chart: 4" line, 1" plate, spring 100, differential 100, red 3.0, blue (static) 6.0. Gas rate 103.7 MCF.
8/24/78	24 hour flow test recovered 4 barrels load oil, 0 barrels water. 26 barrels load oil to recover. Testing.
8/25/78	24 hour flow test recovered 6 barrels load oil, 0 barrels load water. 20 barrels load oil to recover.
8/26/78	24 hour flow test recovered 5 barrels load oil, 0 barrels load water. 15 barrels load oil to recover.
8/27/78	24 hour flow test recovered 6 barrels load oil, 0 barrels load water. 9 barrels load oil to recover.
8/28/78	24 hour flow test recovered 4 barrels load oil, 0 barrels load water. 5 barrels load oil to recover.

DATE	REMARKS
8/29/78	24 hour pump test recovered 5 barrels load oil, 0 barrels load water. All load oil recovered.
8/30/78	24 hour potential pump test recovered 7 barrels oil, 1 barrel water. 4" x 3/4" plate, spring 100, differential 100, differential 3.8, static 6.2. Gas rate 76 MCFGPD. F.R.W. 8-30-78.



SUBJECT WELL
Anderson
J. R. Cone
Shell
"Addis T. Turner"
Millord Deck, (S)
S. J. Sarkeys
Arco
Mobil
Stephens Est.
"King"
Con't.
"A-27"
Getty
Acoma
Harper
Tex. Pac.
Imp. Amer.
Skelly
Gulf
U.S.
Small Tracts
Marathon
Exxon
"B"
Tex. Pacific
S.E. Cone
Cone
Carson
W. S. Marshall
F. F. Hardison
J.R. Cone
E.C. Hill
M. W. Owen
Amoco
"C-13"
"A-35"
"B-35"
"A. M. Lockhart"
Moranco
Marshall
Elliott
Citco
"367"
Hugh Corrigan
Eva Owen
Mark Owen
Mark Owen, et al
Amerada
Sun
El Paso Nat
"S"
Lynch
R. L. Brunson
State
Annie Christmas
Sohio
"Elliott" B-12
Whitaker
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WELL BORE SKETCH

DATE: 9-6-78

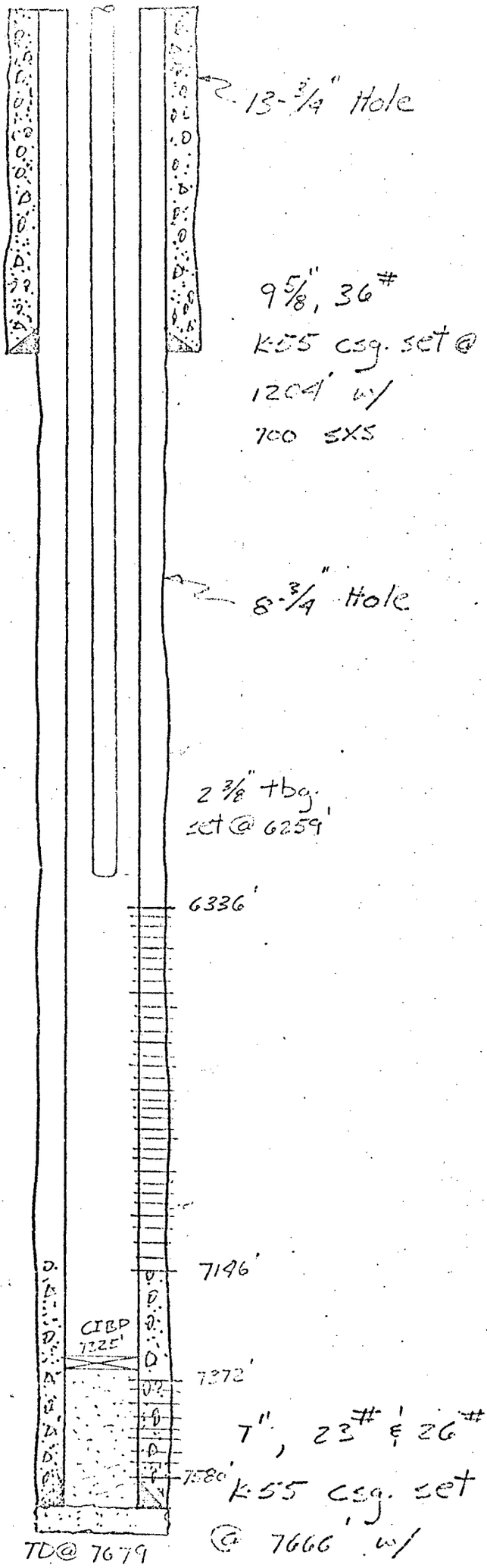
FIELD/POOL NAME: BDT, Drinkard & Ab

LEASE NAME/WELL #: FF Hardison "B" #10

R.D.B. ELEV. 3401' ZERO PT. 3389' FT. ABOVE 12'

ELEV. GND. LEVEL: 3389'

BOTTOM HOLE ARRANGEMENT:



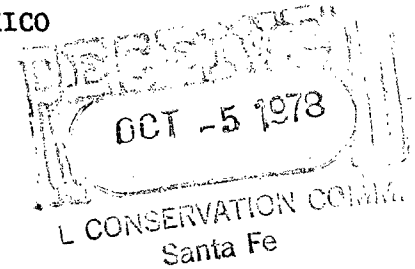
WORKOVER HISTORY

OIL CONSERVATION COMMISSION
Hobbs DISTRICT

OIL CONSERVATION COMMISSION
BOX 2088
SANTA FE, NEW MEXICO

DATE September 29, 1978

RE: Proposed MC _____
Proposed DHC X
Proposed NSL _____
Proposed SWD _____
Proposed WFX _____
Proposed PMX _____



Gentlemen:

I have examined the application dated _____

for the Exxon Corporation F. F. Hardison "B" #10-A 34-21-37
Operator Lease and Well No. Unit, S-T-R

and my recommendations are as follows:

O.K.----J.S.

Yours very truly,

Jerry Sexton