SHELL NAVAJO
SE NW Sec 3-T41N-R28E APACHE 22

COUNTY Apache FIELD: East Boundary Butte LEASE NO. 14-20-603-226

Discovery well Oil & Gas Corp - (8-20-54)

WELL NAME Shell 2 Navajo A (Now MERRION & BAYLESS*) 8-1-74

LOCATION SE NW SEC 3 TWP 41N RANGE 28E FOOTAGE 1980' FNL 1980 FWL

STATUS ~~Oil Well~~ Producing TOTAL

ELEV 5297 GR 5307 KB SPUD DATE 7-7-54 COMP. DATE ~~12-8-54~~ 10-18-54 per compl. rept DEPTH 6339'

CONTRACTOR

CASING SIZE	DEPTH	CEMENT	LINER SIZE & DEPTH
10 3/4"	697'	320 Sx	NA
5 1/2"	4930'	350 sx	

DRILLED BY ROTARY x

DRILLED BY CABLE TOOL

PRODUCTIVE RESERVOIR

INITIAL PRODUCTION Gas Well 4540-85' and 4650-90' ~~Hermosa~~

FORMATION TOPS	DEPTHS	SOURCE L.L.	SOURCE E.L.	REMARKS
See Am Strat				* Purchased by Central Resources

ELECTRIC LOGS	PERFORATED INTERVALS	PROD. INTERVALS
Driller's Log; Micro;	4842-4854 4782-4806	
Latero; Section Gauge;	4767-4773 4745-4762	
Rotary Engineering	4650-4690 4540-4585	

SAMPLE LOG Am Strat

SAMPLE DESCRP. 1537

SAMPLE NO. T 377 P-[redacted]

CORE ANALYSIS

DSTs See Am Strat

REMARKS 10-12-67 Operator changed to Consolidated Oil & Gas. Humble furnished structural cross-section (comparative) log dated 11-10-56 ~~on 1-31-69. See log File #28. Workover request approved 2-23-72.~~ Never materialized. *Consolidated sold interest to Merrion & Bayless 8-1-74 covering permit #22,69,490,514,518

APP. TO PLUG

PLUGGING REP.

COMP. REPORT x

WATER WELL ACCEPTED BY

BOND CO. ~~Transfer has to~~ ~~United States Fidelity & Guaranty~~ - BIA BOND - filed in PIN 518 BOND NO. ~~010130-972-74~~ 77372

BOND AMT. $ 25,000 CANCELLED ~~12-1-77~~ 12/1/77 ORGANIZATION REPORT 1-19-68

FILING RECEIPT 11784 LOC. PLAT x WELL BOOK x PLAT BOOK x

API NO. DATE ISSUED 5-25-54 DEDICATION All

PERMIT NUMBER 22

(over)

ARIZONA
APACHE COUNTY
E. BOUNDARY BUTTE (W)

PETROLEUM INFORMATION DENVER CASPER
ROCKY MOUNTAIN OIL INFORMATION

Twp 41N-28E
Sect[illegible] 3
C SE[illegible]

OPR: Shell Oil Co.

WELL #: 2 E. Boundary Butte

ELEV: 5307 DF.

*TOPS: ~~XXX~~ Sample Log:

Kayenta 135	Shinarump 1550
Wingate 150	Moenkopi 1600
Chinle 640	Rico 1803
Coconino 1810	Hermosa 3757
	Paradox 4746
	Devonian 6092.

DSTS. & CORES:

Crd 4520-23, rec 2½' ls, dark grey to black. Crd 4523-26, rec 2' ls, dark gray to black, argillaceous. Crd 4526-39, rec 13' ls, as above. DST 4535-4601 (Upper Paradox) 2½ hrs, SI 1½ hrs, strong blow thruout, gas in 3 min @ rate 3450 MCFPD, rec 95' mud w/trace of distillate. FP 240-1325#, SIP 1390#, HP 2435#. DST 5190-5225, 2 hrs, 40 min, moderate blow to weak in 1½ hrs, gas in 1 hr, 40 min, SI 1 hr, 10 min, rec 3380' fluid 110' very gassy mud, 3260' gassy salt wtr, 10' very gassy mud, FP 195-1485#, SIP 1670#, HP 2725#. DST 4620-4707, 2½ hrs, light blow increased to strong, gas in 40 min, at rate of 100 MCFPD, rec 177' gassy mud, FP 105-135#, SIP (1½ hrs) 1515#, HP 2460#. DST 4973-5121, 2½ hrs, rec 3891' gassy wtr, 300' gassy mud, FP 1240-1770#, SIP (1 hr 10 min) 2040#. HP 2620#. DST 4974-5003, 2½ hrs, gas in 90 min, rec 370' total fluid of which 90' was gassy mud and 3680' wtr, FP 1285-1605#, SIP 1615#, HP 2580#. DST 5669-93, 2½ hrs, SI 1½ hrs, rec 90' G & OCM, 3330' wtr, 20' gassy mud, FP 190-1500#, SIP 1840#, HP 2995#. DST 5768-5873, 2 hrs, 50 min, SI 45 min, rec 180' watery mud, 90' gassy oily,

(Continued)

SPUD: 7-7-54 COMPL: 12-13-54
TD: 6339 PB: 4950, 4884, 4730
CSG: 10-3/4" @ 697 w/320
PERF: 5½" @ 4930
PROD. ZONE:
INIT. PROD: Flowed 3150 MCFG, 3.6 BO, 41 gty, 8.4 bbls salt wtr pumped thru 3/4 ck.

*For Electric Logs on Rocky Mountain Wells—Ask Us!

32 x [illegible]

SHELL OIL CO. #2 E. BOUNDARY BUTTE C SE NW 3-41N-28E, APACHE COUNTY, ARIZONA. CONTD. PAGE 2

watery mud, 690' muddy [redacted], 60' GCM, w/pinpoints of oil, FP 180-52[redacted] SIP 1925#, HP 3015#. DST 5945-6032, 2½ hrs, blow increasing to moderate in 3 min, moderate to strong, remaindr of test, rec 2250' GC salt water w/trace of oil, (1%) FP 525-1025#, SIP (70 min) 1970#, HP 2985#. DST 6250-6310, 2½ hrs, weak blow decreased to weak, rec 30' slightly GCM, FP 90-180#, SIP (70 min) 1485#, HP 3270#. PB 4950. DST 4740-4950, 2½ hrs, strong blow in 10 min, decreased after 20 min, to weak in 1 hr, increased to strong after 65 min, dead after 85 min, gas in 18 min, maximum blow 50 MCFPD, rec 960' fluid (540' very gassy oil, part blew out while pulling, 420' black sulfur wtr w/H2S odor, oil 38 gty) FP 825-1605#, SIP (70 min) 1590-1605#, HP 2505#. DST 4842-50, 3 hrs, 20 min, gas 2 min, rate 400 MCFPD, w/est 30 BOPD, 75% cut, SI 1½ hrs, rec 246' gassy wtr, 402' oil cut 1%, FP 635#, SIP 1485#, HP 2085#. DST 4782-4806, (Straddle) 3-1/4 hrs, SI 1 hr, rec 1830' slightly gassy wtr. FP 25-840#, SIP 1485#, HP 2080#. 6339 TD PB 4884. DST 4745-62, gas in 5 min, fluid 2 hrs, 40 min, flowed 8 BF, 2½ hrs, died. DST 4745-62, gas in 12 min, no fluid, died in 3½ hrs. Swbd 109 BF, 10½ hrs, cut 47% 35 gty oil, Swbd rate 250 BFPD (132 BO) DST 4745-73, 12 hrs, gas (Inflammable) 8 hrs, fluid 45 min, flowed gas, oil and wtr, 3/8" ck, gas at rate 125 MCFPD, est 36 BF, 10-1/4 hrs, est 44% out, FP 1100#, SIP (2 hrs) 1470#, HP 2105#. Swbd 3 hrs, flowed gas w/large quantity of wtr, & trace of oil wtr decreased rapidly - gas at rate 3130 MCFPD. Flowed 2500 MCFGPD thru 3/8" ck w/12 BWPD w/trace of oil. Flowed 13 hrs at stabilized rate 2200 MCFPD, 32 BFPD, 64% wtr. PB 4730. Static Pressure 1100#.

"PARADOX GAS DISCOVERY - NEW FIELD" 2-10-55

STATE LAND DEPARTMENT
STATE OF ARIZONA

Form O & G 52

Form Prescribed Under Oil and Gas Conservation Act of 1951
WELL COMPLETION REPORT
(File in Duplicate)

Operator SHELL OIL COMPANY Field Wildcat - East Boundary Butte 2
Street 33 Richards Street Pool -
City Salt Lake City State Utah County Salt Lake County
Lease Name Tribal Lands 14-20-603-226 Well No. 2 Acres in lease 2352 G&SRB&M
Location 1980' N. and 1980' W of NW corner of
Sec. 3 Twp. 41 N. Rge. 28 E.
Elevation DF 5304.50' GR 5296' Electric Log Run To 6311' on September 22 19 54
Number of Crude Oil Producing Wells on this Lease, including this well 1 gas well
Has Authorization to Transport Oil or Gas from Well, Form O&G 57 been Filed? No

OFFICIAL COMPLETION GAUGE

Date Test Commenced 10-18, 1954 Hour 8:00 A.M. Date Test Completed 10-20, 1954 Hour 6:50 A.M.
Length of Test 47 Hours 20 Minutes
For Flowing Well:
Flowing pressure on Tbg. 752 lbs./sq.in.
Flowing pressure on csg. 875 lbs./sq.in.
Size tbg. 2 in. No. ft. run 4690'
Size choke 3/8 in. Type choke orifice
Length in. Shut in pressure 1515 @ 4670'
For Pumping Well:
Length of stroke used inches
Number of strokes per min.
Size of working barrel inches
Size tubing. in. No. ft. run
If flowing well, was this well flowed for the entire duration of this test without the use of swab or other artificial flow device? yes If jetted, used - cu. ft. gas per bbl. oil. Result of this test (bbls. oil per 24 hours). 2,200,000 cu./ft. (100% tank tables).
Gas-oil ratio of this well is (gas well) cu. ft. of gas per bbl. of oil.
Per cent water produced during this test water negligible.
Gravity of oil produced during this test (Corrected to A. P. I. 60°F.) 41° (minor amount)
Name of Pipe Line or other carrier None
If perforated: No. Shots 3 jet bullets From *4540' To 4690' Date Perforated 10-14-54
Date well Spudded July 7, 1954. Date Well Completed October 18, 1954
*Top Pay 4540' Ft. Total depth of well 6339 Ft. P.B.T.D. 4730'.

CASING LINER AND TUBING RECORD

String	Size	Wt./Ft.	Name and Type	Amount Ft.	Amount In.	Depth Set at	Perforated From	Perforated To
Casing	10 3/4"	40.5	-	697'		697'	-	-
Casing	5 1/2"	17.0	-	4930'		4930'	4842'	4854'
Tubing	2"	4.7	-	4690'		4690'	4782'	4806'
							4767'	4773'
							4745'	4762'
							4650'	4690'
							4540'	4585'

CEMENT AND TESTING RECORD

Size of Hole	String	Where Cement Placed	No. Sacks of Cement	Method Used	Pressure Applied in Testing	Hardness of Cement Drilled	Type of Cement
13 3/4"	Casing	697' (shoe)	320	displacement	800 psi	-	Construction
9" & 8 3/4"	Casing	4930' (shoe)	350	"	-	-	Construction

CHEMICAL OR SHOOTING RECORD BEFORE COMPLETION

Size	Chemical or	Quantity	Date	Depth From	Depth To
			See Attached		

AFFIDAVIT

I, J. J. Pickell, being first duly sworn on oath state that I have knowledge of the facts and matter herein set forth and that the same are true and correct.

STATE OF UTAH)
COUNTY OF SALT LAKE) SS

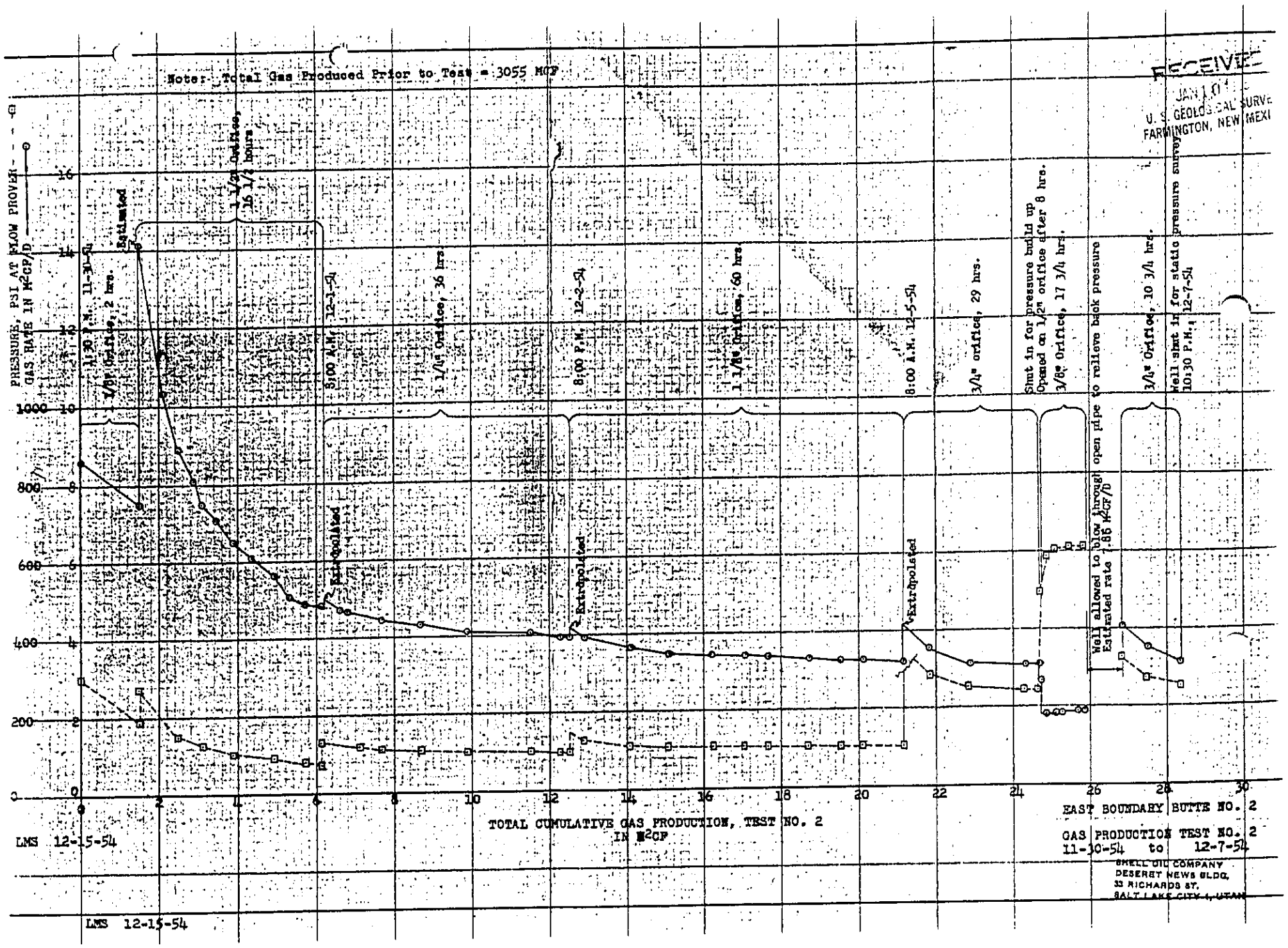
J. J. Pickell
Representative of Company

Subscribed and sworn to before me this 14th day of January 1955
Salt Lake County, Utah
My Commission expires: February 8, 1958
Residing in Salt Lake City, Utah

Notary Public

* See attached drilling report.

22 26



RECEIVED
JAN 1 0 1955
U. S. GEOLOGICAL SURVEY
FARMINGTON, NEW MEXICO

LMS 12-15-54

OPERATOR'S CERTIFICATE OF COMPLIANCE AND AUTHORIZATION TO TRANSPORT OIL OR GAS FROM LEASE

NAVAJO #2

Federal, State or Indian Lease Number, or lessor's name if fee lease	Field	Reservoir
Navajo 14-20-603-226	East Boundary Butte	Paradox
Survey or Sec-Twp-Rge	**County**	**State**
Section 3, T41N, R28E	Apache	Arizona

Operator
Merrion Oil & Gas Corporation

ADDRESS ALL CORRESPONDENCE CONCERNING THIS FORM TO:

Street	City	State
P. O. Box 840	Farmington	New Mexico 87499

Above named operator authorizes (name of transporter)
Giant Refining Company

Transporter's street address	City	State
P. O. Box 12999	Scottsdale	Arizona 85267

Field address
Red Mesa, Arizona

Oil, condensate, gas well gas, casinghead gas

To transport 100 % of the oil from said lease.

OTHER GATHERERS TRANSPORTING FROM THIS LEASE ARE AS FOLLOWS:

Name of gatherer	% transported	Product transported
Western Gas Resources	100	Gas

Indicate whether or not this certificate is for a new lease. If not a new lease, indicate whether or not it is a change of operator, change of lease name, change of gatherer, or a consolidation or subdivision of leases and give effective date of change.

Effective 9/01/95 --- change of gatherer from Meridian Oil, Inc.

The undersigned certifies that the rules and regulations of the State of Arizona Oil & Gas Conservation Commission have been complied with in drilling and producing operations on this lease, except as noted above, and that the above transporter is authorized to transport the above specified percentage of the allowable oil or gas produced from the above described property, and that this authorization will be valid until further notice or until cancelled by the State of Arizona Oil & Gas Conservation Commission.

CERTIFICATE: I, the undersigned, under the penalty of perjury, state that I am the Operations Manager of the Merrion Oil & Gas Corporation (company), and that I am authorized by said company to make this report; and that this report was prepared under my supervision and direction and that the facts stated therein are true, correct and complete to the best of my knowledge.

9/15/95
Date

Steven S. Dunn
Signature

Date approved: 9-18-95

STATE OF ARIZONA
OIL & GAS CONSERVATION COMMISSION

By: Steven L. Rauzi

Permit No. 22

SEP 1995
ARIZONA GEOLOGICAL SURVEY

STATE OF ARIZONA
OIL & GAS CONSERVATION COMMISSION
Operator's Certificate of Compliance & Authorization to Transport Oil or Gas from Lease
File Two Copies
Form No. 8

Distribution:
0+4 (BLM-Farmington,NM)
1 - (Arizona Oil & Gas)
1 - (BIA-Window Rock, AZ)

Form 3160-5
(June 1990)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

RECEIVED
BLM
93 JAN 21 AM 8:51
070 FARMINGTON, NM

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

1. Type of Well: ☐ Oil Well ☒ Gas Well ☐ Other
2. Name of Operator: Merrion Oil & Gas Corporation
3. Address and Telephone No.: P.O. Box 840, Farmington, NM 87499 (505) 327-9801
4. Location of Well (Footage, Sec., T., R., M., or Survey Description): 1980' FNL & 1980' FWL, Section 3, T41N, R28E

5. Lease Designation and Serial No.: 14-20-603-226
6. If Indian, Allottee or Tribe Name: Navajo Tribe
7. If Unit or CA, Agreement Designation: FIN 22
8. Well Name and No.: Navajo No. 2
9. API Well No.: 02-001-05020
10. Field and Pool, or Exploratory Area: East Boundary Butte
11. County or Parish, State: Apache, Arizona

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
	☐ Altering Casing	☐ Conversion to Injection
	☐ Other _____	☐ 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 pertinent 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 markers and zones pertinent to this work.)*

We request your approval for a temporary permit to transport water from the subject well to the Navajo No. 3 disposal well on Lease No. 14-20-603-413. The water is being transported through a 3" water line, as it has been for many years. Unfortunately, we recently discovered that a right-of-way was never filed on the line. A right-of-way application has been filed to replace the old water line with a new 3" plastic line. ~~We need the temporary permit to continue to use our current line until the new line can be approved and installed.~~

APPROVED
JAN 22 1993
~~AREA~~ DISTRICT MANAGER

14. I hereby certify that the foregoing is true and correct
Signed [signature] Title Reservoir Engineer Date 1/18/93

(This space for Federal or State office use)
Approved by _____ Title _____ Date _____
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.

32 x

OPERATOR'S CERTIFICATE OF COMPLIANCE AND AUTHORIZATION TO TRANSPORT OIL OR GAS FROM LEASE

#22

NAVAJO #2

Federal, State or Indian Lease Number, or lessor's name if fee lease	Field	Reservoir
Navajo 14-20-603-226	East Boundary Butte	Paradox
Survey or Sec-Twp-Rge	**County**	**State**
Section 3, T41N, R28E	Apache	Arizona

Operator
Merrion Oil & Gas Corporation

ADDRESS ALL CORRESPONDENCE CONCERNING THIS FORM TO:

Street	City	State
P. O. Box 840	Farmington	New Mexico 87499

Above named operator authorizes (name of transporter)
Meridian Oil, Inc.

Transporter's street address	City	State
P. O. Box 4289	Farmington	New Mexico 87499

Field address
Red Mesa, Arizona

Oil, condensate, gas well gas, casinghead gas

To transport 100 % of the oil from said lease.

OTHER GATHERERS TRANSPORTING FROM THIS LEASE ARE AS FOLLOWS:

Name of gatherer	% transported	Product transported
Western Gas Resources	100	gas

Indicate whether or not this certificate is for a new lease. If not a new lease, indicate whether or not it is a change of operator, change of lease name, change of gatherer, or a consolidation or subdivision of leases and give effective date of change.

Effective 8/92
Change of gatherer from El Paso Natural Gas Company

The undersigned certifies that the rules and regulations of the State of Arizona Oil & Gas Conservation Commission have been complied with in drilling and producing operations on this lease, except as noted above, and that the above transporter is authorized to transport the above specified percentage of the allowable oil or gas produced from the above described property, and that this authorization will be valid until further notice or until cancelled by the State of Arizona Oil & Gas Conservation Commission.

CERTIFICATE: I, the undersigned, under the penalty of perjury, state that I am the President of the Merrion Oil & Gas Corporation (company), and that I am authorized by said company to make this report; and that this report was prepared under my supervision and direction and that the facts stated therein are true, correct and complete to the best of my knowledge.

October 28, 1992
Date

T. Greg Merrion
Signature T. Greg Merrion

Date approved: 10-30-92

STATE OF ARIZONA
OIL & GAS CONSERVATION COMMISSION

By: Steven L. Rauzi

Permit No. 22

Distribution: O+1 (AOGCC)
1 (Well File)

OCT 1992
ARIZONA GEOLOGICAL SURVEY

STATE OF ARIZONA
OIL & GAS CONSERVATION COMMISSION
Operator's Certificate of Compliance & Authorization to Transport Oil or Gas from Lease
File Two Copies
Form No. 8

Distribution: 0+4 (BLM-Farmington), 1 - Well File
1 - Arizona OCD; 1 - 3IA (Window Rock, AZ)

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

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

AZ OIL & GAS
CONSERVATION COMMISSION
SEP 14 1992

2. Name of Operator
Merrion Oil & Gas Corporation

3. Address and Telephone No.
P. O. Box 840, Farmington, New Mexico 87499

4. Location of Well (Footage, Sec., T., R., M., or Survey Description)
1980' FNL & 1980' FWL
Section 3, T41N, R28E

5. Lease Designation and Serial No.
14-20-603-226

6. If Indian, Allottee or Tribe Name
Navajo Tribe

7. If Unit or CA, Agreement Designation
Permit 22

8. Well Name and No.
Navajo No. 2

9. API Well No.
020010502

10. Field and Pool, or Exploratory Area
East Boundary Butte

11. County or Parish, State
Apache, Arizona

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
	☐ Altering Casing	☐ Conversion to Injection
	☐ Other Acidize	☐ 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 pertinent 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 markers and zones pertinent to this work.)*

7/15/92 MIRU. Blow well dwn. Unseat pump. Hot water rods and casing. TOOH with rods and pump.

7/16/92 ND WH. NU BOP. TOOH with 2-3/8" tubing, tally out. RIH with 5-1/2" packer, set at 4440'.

7/17/92 RU Western and press tested casing to 500 psi - OK. Bled casing to 350 psi to monitor pressure. RU Western to tubing and pumped 2000 gals 15% HCl with additives displaced with 32 bbls produced water to overdisplace acid. Pumped acid away at a rate of .5 BPM (no pressure). Rig down. RUTS. 1st run fluid level at 3300'. Swabbed approx 60 bbls fluid. Cut 90% water and 10% fluid level, stabilized at 3600'.

7/18/92 Pressure tubing to 225 psi. Bled well off. Swab 1st run - FL @ 3300'. Made 6 swab runs. Well kicked off, flowed well 2 hours. Well would bring up a slug of fluid approx every 10 mins and unload for approx 3 mins. Rel packer and swabbed approx 40 bbls fluid.

7/20/92 TOOH with 5-1/2" packer. TIH with 2-3/8" production string, seating nipple at 4437'. Land tubing. ND BOP, NU WH. RUTS. Swabbed 35 bbls fluid. Rig down swab equipment. RIH with pump and rods. Space out pump. Hang rods on unit.

14. I hereby certify that the foregoing is true and correct
Signed Steven S. Dunn Title Operations Manager Date 9/03/92

(This space for Federal or State office use)
Approved by _____ Title _____ Date _____
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

Distribution
~~0+4~~ (BLM,Farmington)
1 - Well File ; 1-AO&GCD; 1-BIA-Window Rock,AZ

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

5. Lease Designation and Serial No.
14-20-603-226

6. If Indian, Allottee or Tribe Name
Navajo Tribe

7. If Unit or CA, Agreement Designation

SUBMIT IN TRIPLICATE

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

8. Well Name and No.
Navajo 2 P/N 22

2. Name of Operator
Merrion Oil & Gas Coproration

9. API Well No.

3. Address and Telephone No.
P. O. Box 840, Farmington, New Mexico 87499

10. Field and Pool, or Exploratory Area
East Boundary Butte

4. Location of Well (Footage, Sec., T., R., M., or Survey Description)
1980' FWL & 1980' FNL
Section 3, T41N, R28E

11. County or Parish, State
Apache, Arizona

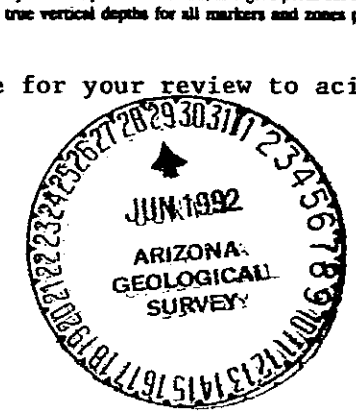
12. CHECK APPROPRIATE BOX(s) TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA

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
	☐ Altering Casing	☐ Conversion to Injection
	☐ Other Acidize	☐ 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 pertinent 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 markers and zones pertinent to this work.)*

Attached is a procedure for your review to acid stimulate the Navajo #2.



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

Signed Caprice P. Sharpe Title Petroleum Engineer Date 6/22/92

(This space for Federal or State office use)

Approved by SC Rauzi Title OGRA Date 6/29/92

Conditions of approval, if any: See letter of 6/29/92

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

Navajo #2
Acid Stimulation Procedure
SE/4, NW/4, Sec. 3, T41N, R28E

Prepared By: George F. Sharpe **June 22, 1992**

1.) MIRU blow down well. Hot oil rods and tbg.

2.) POOH w/ 112 3/4" and 66 7/8" rods, 2" x 1.5" x 16' RHAC pump.

3.) ND WH, NU BOPs. POOH w/ 143 jts. 2 3/8" tbg.

4.) RIH w 5 1/2" PKR on 2 3/8" tbg. Set @ ± 4450'. Press test backside to 500 psi.

5.) RU Western. Load hole w/ produced water. Hold press on backside. Pump 2000 gallons 28% HCl at 2000 psi max pressure. Displace to perfs w/ 19.5 Bbls and over displace with another 5 Bbls produced water. Once acid reaches perfs, displace as slow as possible (0.5 to 1.0 BPM).

6.) Swab back to cleanup. Release pkr. Make a few swab runs to recover load on the backside. POOH & lay down pkr.

7.) RIH w/ gas purge, mud anchor, perf'd sub, & SN on tbg. ND BOPs. NU Wellhead. RIH w/ rod's & pump. RDMOL.

8.) Test well for 48 hours venting gas through test meter. Hold 100 psi back pressure during test. SI well until sales gas line repaired and compressor installed.

Acid to Contain:
1 gal/1000 inhibitor
1 gal/1000 nonemulsifier
5 gal/1000 citric acid, iron sequestering
5 gal/1000 acetic acid, iron control

JUN 1992
ARIZONA GEOLOGICAL SURVEY

Approved_____ **Date**_____

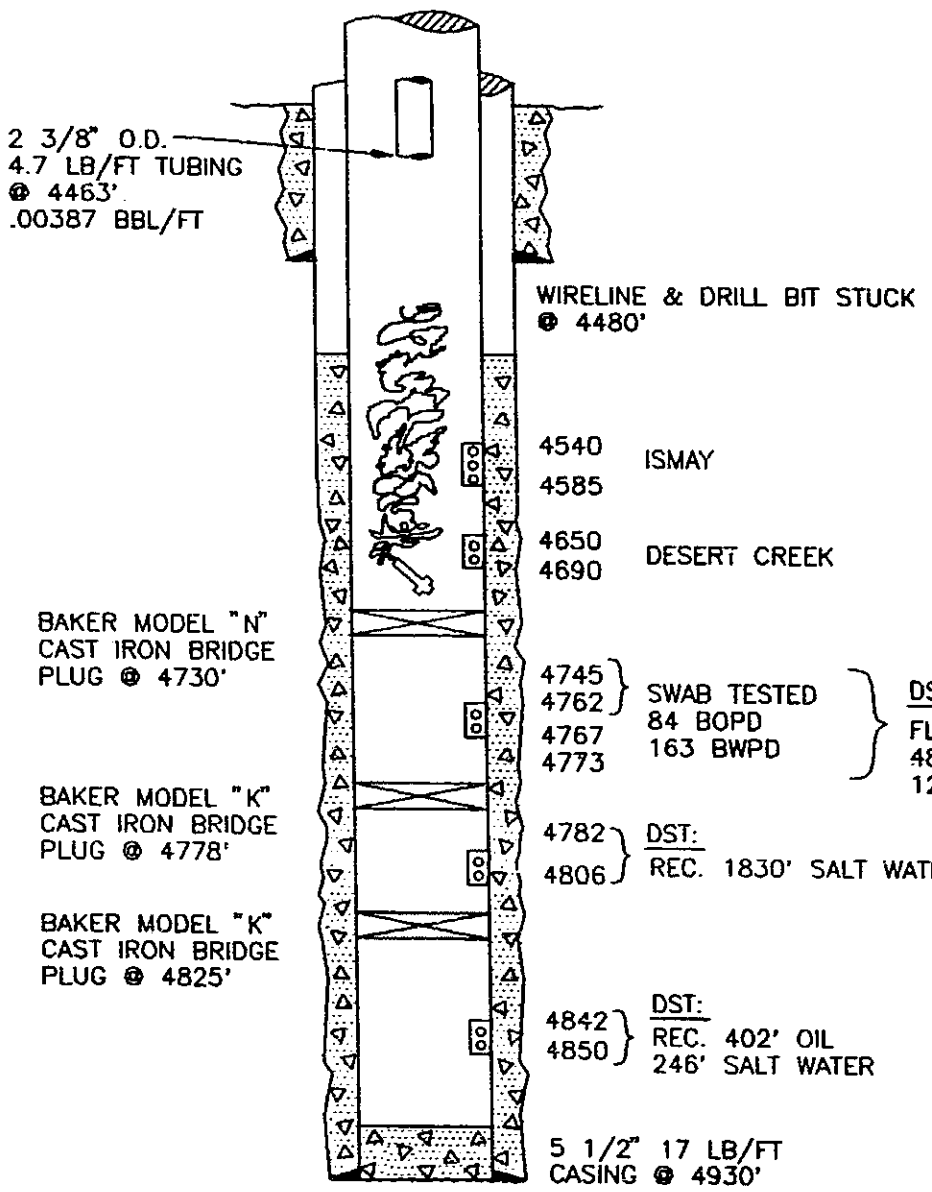
MERRION OIL AND GAS CORP.
WELLBORE SCHEMATIC

NAVAJO NO. 2

EAST BOUNDARY BUTTE FIELD

SE/4, NW/4
SECTION 3, T41N, R28E
APACHE COUNTY, ARIZONA

ENG: G.F.SHARPE DRFT: S.R.V.
DATE: 6--22--92



5 1/2" CAPACITY = .0232 BBL/FT

OPERATOR'S CERTIFICATE OF COMPLIANCE AND AUTHORIZATION TO TRANSPORT OIL OR GAS FROM LEASE

Federal, State or Indian Lease Number, or lessor's name if fee lease	Field	Reservoir
14-20-603-226	East Boundary Butte	Paradox
Survey or Sec-Twp-Rge	**County**	**State**
Sec 3, T41N, R28E	Apache	Arizona

Operator Merrion Oil & Gas Corporation

ADDRESS ALL CORRESPONDENCE CONCERNING THIS FORM TO:

Street	City	State
P. O. Box 840	Farmington	NM 87499

Above named operator authorizes (name of transporter)

Transporter's street address	City	State

Field address

Oil, condensate, gas well gas, casinghead gas

To transport % of the from said lease.

OTHER GATHERERS TRANSPORTING FROM THIS LEASE ARE AS FOLLOWS:

Name of gatherer	% transported	Product transported

Indicate whether or not this certificate is for a new lease. If not a new lease, indicate whether or not it is a change of operator, change of lease name, change of gatherer, or a consolidation or subdivision of leases and give effective date of change.

Well
Lease name change from "East Boundary Butte" #2 to "Navajo" #2.

The undersigned certifies that the rules and regulations of the State of Arizona Oil & Gas Conservation Commission have been complied with in drilling and producing operations on this lease, except as noted above, and that the above transporter is authorized to transport the above specified percentage of the allowable oil or gas produced from the above described property, and that this authorization will be valid until further notice or until cancelled by the State of Arizona Oil & Gas Conservation Commission.

CERTIFICATE: I, the undersigned, under the penalty of perjury, state that I am the Operations Manager of the Merrion Oil & Gas Corp. (company), and that I am authorized by said company to make this report; and that this report was prepared under my supervision and direction and that the facts stated therein are true, correct and complete to the best of my knowledge.

3/25/92
Date

Signature

Date approved:

STATE OF ARIZONA
OIL & GAS CONSERVATION COMMISSION

By:

Permit No. 22

STATE OF ARIZONA
OIL & GAS CONSERVATION COMMISSION
Operator's Certificate of Compliance & Authorization to Transport Oil or Gas from Lease
File Two Copies
Form No. 8

Form 3160-5
November 1983)
Formerly 9-331)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

SUBMIT IN TRIPLICATE* (Other instructions on reverse side)

Form approved.
Budget Bureau No. 1004-0135
Expires August 31, 1985

SUNDRY NOTICES AND REPORTS ON WELLS

(Do not use this form for proposals to drill or to deepen or plug back to a different reservoir. Use "APPLICATION FOR PERMIT—" for such proposals.)

1. OIL WELL ☐ GAS WELL ☒ OTHER

5. LEASE DESIGNATION AND SERIAL NO.: Navajo Tribal 14-20-603-226

6. IF INDIAN, ALLOTTEE OR TRIBE NAME: Navajo

7. UNIT AGREEMENT NAME:

2. NAME OF OPERATOR: Merrion Oil & Gas Corporation

8. FARM OR LEASE NAME: East Boundary Butte

3. ADDRESS OF OPERATOR: P. O. Box 840, Farmington, NM 87499

9. WELL NO.: 2

4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements.* See also space 17 below.) At surface: 1980' FWL & 1980' FNL, Sec 3, T41N-R28E

10. FIELD AND POOL, OR WILDCAT: East Boundary Butte

11. SEC., T., R., M., OR BLK. AND SURVEY OR AREA: Sec 3, T41N, R28E

14. PERMIT NO.

15. ELEVATIONS (Show whether DF, RT, GR, etc.): 5403.5 DF, 5296 GR

12. COUNTY OR PARISH: Apache

13. STATE: AZ

16. Check Appropriate Box To Indicate Nature of Notice, Report, or Other Data

NOTICE OF INTENTION TO:				SUBSEQUENT REPORT OF:			
TEST WATER SHUT-OFF	☐	PULL OR ALTER CASING	☐	WATER SHUT-OFF	☐	REPAIRING WELL	☐
FRACTURE TREAT	☐	MULTIPLE COMPLETE	☐	FRACTURE TREATMENT	☐	ALTERING CASING	☐
SHOOT OR ACIDIZE	☐	ABANDON*	☐	SHOOTING OR ACIDIZING	☐	ABANDONMENT*	☐
REPAIR WELL	☐	CHANGE PLANS	☐				
(Other)		Test Well	☒	(Other)			

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

17. DESCRIBE PROPOSED OR COMPLETED OPERATIONS (Clearly state all pertinent 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 markers and zones pertinent to this work.)*

Received verbal approval from Duane Spencer to vent gas from the subject well for 2 additional days.

AZ OIL & GAS
CONSERVATION COMMISSION
MAY 7 1991

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

SIGNED T. Greg Merrion TITLE Executive Vice President DATE 5/6/91

T. Greg Merrion

(This space for Federal or State office use)

APPROVED BY _____ TITLE _____ DATE _____

CONDITIONS OF APPROVAL, IF ANY:

cc: 6 BLM, Fmg
1 Well File
1 State of Arizona

*See Instructions on Reverse Side

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.

Form 3160-5
November 1983)
Formerly 9-331)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

SUBMIT IN TRIPLICATE* (Other instructions on reverse side)

Form approved.
Budget Bureau No. 1004-0135
Expires August 31, 1985

SUNDRY NOTICES AND REPORTS ON WELLS

(Do not use this form for proposals to drill or to deepen or plug back to a different reservoir. Use "APPLICATION FOR PERMIT—" for such proposals.)

1. OIL WELL ☐ GAS WELL ☒ OTHER

2. NAME OF OPERATOR: Merrion Oil & Gas Corporation

3. ADDRESS OF OPERATOR: P. O. Box 840, Farmington, NM 87499

4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements.* See also space 17 below.) At surface: 1980' FWL & 1980' FNL, Sec 3, T41N-R28E

14. PERMIT NO.

15. ELEVATIONS (Show whether DF, RT, GR, etc.): 5403.5 DF, 5296 GR

5. LEASE DESIGNATION AND SERIAL NO.: Navajo Tribal 14-20-603-226

6. IF INDIAN, ALLOTTEE OR TRIBE NAME: Navajo

7. UNIT AGREEMENT NAME:

8. FARM OR LEASE NAME: East Boundary Butte

9. WELL NO.: 2

10. FIELD AND POOL, OR WILDCAT: East Boundary Butte

11. SEC., T., R., M., OR BLK. AND SURVEY OR AREA: Sec 3, T41N, R28E

12. COUNTY OR PARISH: Apache

13. STATE: AZ

16. Check Appropriate Box To Indicate Nature of Notice, Report, or Other Data

NOTICE OF INTENTION TO:				SUBSEQUENT REPORT OF:			
TEST WATER SHUT-OFF	☐	PULL OR ALTER CASING	☐	WATER SHUT-OFF	☐	REPAIRING WELL	☐
FRACTURE TREAT	☐	MULTIPLE COMPLETE	☐	FRACTURE TREATMENT	☐	ALTERING CASING	☐
SHOOT OR ACIDIZE	☐	ABANDON*	☐	SHOOTING OR ACIDIZING	☐	ABANDONMENT*	☐
REPAIR WELL	☐	CHANGE PLANS	☐	(Other) Testing of Well			☒
(Other)				(NOTE: Report results of multiple completion on Well Completion or Recompletion Report and Log form.)			

17. DESCRIBE PROPOSED OR COMPLETED OPERATIONS (Clearly state all pertinent 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 markers and zones pertinent to this work.)*

Flow tested the subject well for 4 days. See attached report for test results.

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

SIGNED T. Gregg Merrion TITLE Exec. VP DATE 5/6/91

(This space for Federal or State office use)

APPROVED BY _____ TITLE _____ DATE _____
CONDITIONS OF APPROVAL, IF ANY:

cc: 6 BLM, Fmg
1 Well File
1 State of Arizona

*See Instructions on Reverse Side

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.

EBB NAVAJO NO. 2

April 8, 1991

Put on test. Install Kimray back pressure valve, set at 125 psig. Well on. Tbg pressure flowing 155 psig; Csg 500 psig. 1.000 plate, 1000# spring. All fluid going to storage tanks. Gas venting.

April 9, 1991 Day No. 1

Test. Flowing pressure: Tbg 125 psig; Csg 390 psig. Shut-In pressure: Csg 490 psig. Flowed 16 hrs with a piston.

Production: Oil: 27.5 BOPD; H_2O: 27.5 BWPD; Fluid: 55 BPD.

April 10, 1991 Day No. 2

Production: Oil: 22 BOPD; H_2O: 16.5 BWPD; Fluid: 38.5 BPD; Gas: 3.4 static, 10 differential, 1.000 plate = Instantaneous Gas Rate: 638 MCFD; 24 hr Rate: 421 MCFD.

April 11, 1991 Day No. 3

Flowed 41.25 Bbls fluid; 24.75 Bbls oil; 19.25 Bbls H_2O; 350 Estimated MCFD; Csg: 370 psig; SI Csg: 490 psig.

April 12, 1991 Day No. 4

Flowed 38 Bbls fluid; 19 Bbls oil; 19 Bbls H_2O; 350 Estimated MCFD; Csg: 370 psig; SI Csg: 490 psig. Test completed.

Form 3160-5
(November 1983)
Formerly 9-331)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

SUBMIT IN TRIPLICATE* (Other instructions on reverse side)

Form approved.
Budget Bureau No. 1004-0135
Expires August 31, 1985

SUNDRY NOTICES AND REPORTS ON WELLS

(Do not use this form for proposals to drill or to deepen or plug back to a different reservoir. Use "APPLICATION FOR PERMIT—" for such proposals.)

5. LEASE DESIGNATION AND SERIAL NO.: Navajo Tribal 14-20-603-226

6. IF INDIAN, ALLOTTEE OR TRIBE NAME: Navajo

1. OIL WELL ☐ GAS WELL ☒ OTHER

7. UNIT AGREEMENT NAME:

2. NAME OF OPERATOR: Merrion Oil & Gas Corporation

8. FARM OR LEASE NAME: East Boundary Butte

3. ADDRESS OF OPERATOR: P. O. Box 840, Farmington, NM 87499

9. WELL NO.: 2

4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements.* See also space 17 below.) At surface: 1980' FWL & 1980' FNL, Sec 3, T41N-R28E

10. FIELD AND POOL, OR WILDCAT: East Boundary Butte

11. SEC., T., R., M., OR BLK. AND SURVEY OR AREA: Sec 3, T41N, R28E

14. PERMIT NO.:

15. ELEVATIONS (Show whether DF, RT, GR, etc.): 5403.5 DF, 5296 GR

12. COUNTY OR PARISH: Apache

13. STATE: AZ

16. Check Appropriate Box To Indicate Nature of Notice, Report, or Other Data

NOTICE OF INTENTION TO:				SUBSEQUENT REPORT OF:			
TEST WATER SHUT-OFF	☐	PULL OR ALTER CASING	☐	WATER SHUT-OFF	☐	REPAIRING WELL	☐
FRACTURE TREAT	☐	MULTIPLE COMPLETE	☐	FRACTURE TREATMENT	☐	ALTERING CASING	☐
SHOOT OR ACIDIZE	☐	ABANDON*	☐	SHOOTING OR ACIDIZING	☐	ABANDONMENT*	☐
REPAIR WELL	☐	CHANGE PLANS	☐				
(Other)		Test Well	☒	(Other)			

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

17. DESCRIBE PROPOSED OR COMPLETED OPERATIONS (Clearly state all pertinent 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 markers and zones pertinent to this work.)*

Received verbal approval from Duane Spencer to vent gas from the subject well for 2 additional days.

AZ OIL & GAS CONSERVATION COMMISSION
MAY 7 1991

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

SIGNED T. Greg Merrion TITLE Executive Vice President DATE 5/6/91

T. Greg Merrion

(This space for Federal or State office use)

APPROVED BY _____ TITLE _____ DATE _____

CONDITIONS OF APPROVAL, IF ANY:

cc: 6 BLM, Fmg
1 Well File
1 State of Arizona

*See Instructions on Reverse Side

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.

Form 3160-5
November 1983)
Formerly 9-331)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

SUBMIT IN TRIPLICATE (Other instructions on reverse side)

Form approved.
Budget Bureau No. 1004-0135
Expires August 31, 1985

SUNDRY NOTICES AND REPORTS ON WELLS

(Do not use this form for proposals to drill or to deepen or plug back to a different reservoir. Use "APPLICATION FOR PERMIT—" for such proposals.)

1. OIL WELL ☐ GAS WELL ☒ OTHER

5. LEASE DESIGNATION AND SERIAL NO.: Navajo Tribal 14-20-603-226

6. IF INDIAN, ALLOTTEE OR TRIBE NAME: Navajo

7. UNIT AGREEMENT NAME:

2. NAME OF OPERATOR: Merrion Oil & Gas Corporation

8. FARM OR LEASE NAME: East Boundary Butte

3. ADDRESS OF OPERATOR: P. O. Box 840, Farmington, NM 87499

9. WELL NO.: 2

4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements.* See also space 17 below.) At surface: 1980' FWL & 1980' FNL, Sec 3, T41N-R28E

10. FIELD AND POOL, OR WILDCAT: East Boundary Butte

11. SEC., T., R., M., OR BLK. AND SURVEY OR AREA: Sec 3, T41N, R28E

14. PERMIT NO.

15. ELEVATIONS (Show whether DF, RT, GR, etc.): 5403.5 DF, 5296 GR

12. COUNTY OR PARISH: Apache

13. STATE: AZ

16. Check Appropriate Box To Indicate Nature of Notice, Report, or Other Data

NOTICE OF INTENTION TO:				SUBSEQUENT REPORT OF:			
TEST WATER SHUT-OFF	☐	PULL OR ALTER CASING	☐	WATER SHUT-OFF	☐	REPAIRING WELL	☐
FRACTURE TREAT	☐	MULTIPLE COMPLETE	☐	FRACTURE TREATMENT	☐	ALTERING CASING	☐
SHOOT OR ACIDIZE	☐	ABANDON*	☐	SHOOTING OR ACIDIZING	☐	ABANDONMENT*	☐
REPAIR WELL	☐	CHANGE PLANS	☐	(Other) Testing of Well			X
(Other)				(NOTE: Report results of multiple completion on Well Completion or Recompletion Report and Log form.)			

17. DESCRIBE PROPOSED OR COMPLETED OPERATIONS (Clearly state all pertinent 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 markers and zones pertinent to this work.)*

Flow tested the subject well for 4 days. See attached report for test results.

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

SIGNED T. Dee Merrion TITLE Exec. VP DATE 5/6/91

(This space for Federal or State office use)

APPROVED BY _____ TITLE _____ DATE _____

CONDITIONS OF APPROVAL, IF ANY:

cc: 6 BLM, Fmg
1 Well File
1 State of Arizona

*See Instructions on Reverse Side

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 [illegible] statements or representations as to any matter within its jurisdiction.

EBB NAVAJO NO. 2

April 8, 1991

Put on test. Install Kimray back pressure valve, set at 125 psig. Well on. Tbg pressure flowing 155 psig; Csg 500 psig. 1.000 plate, 1000# spring. All fluid going to storage tanks. Gas venting.

April 9, 1991 Day No. 1

Test. Flowing pressure: Tbg 125 psig; Csg 390 psig. Shut-In pressure: Csg 490 psig. Flowed 16 hrs with a piston.

Production: Oil: 27.5 BOPD; H_2O: 27.5 BWPD; Fluid: 55 BPD.

April 10, 1991 Day No. 2

Production: Oil: 22 BOPD; H_2O: 16.5 BWPD; Fluid: 38.5 BPD; Gas: 3.4 static, 10 differential, 1.000 plate = Instantaneous Gas Rate: 638 MCFD; 24 hr Rate: 421 MCFD.

April 11, 1991 Day No. 3

Flowed 41.25 Bbls fluid; 24.75 Bbls oil; 19.25 Bbls H_2O; 350 Estimated MCFD; Csg: 370 psig; SI Csg: 490 psig.

April 12, 1991 Day No. 4

Flowed 38 Bbls fluid; 19 Bbls oil; 19 Bbls H_2O; 350 Estimated MCFD; Csg: 370 psig; SI Csg: 490 psig. Test completed.

Navajo #2

TO TRANSPORT OIL OR GAS FROM LEASE

Federal, State or Indian Lease Number, or lessor's name if fee lease	Field	Reservoir
Navajo 14-20-603-226	East Boundry Butte	Paradox
Survey or Sec-Twp-Rge	**County**	**State**
Sec 3, T41N, R28E	Apache	Arizona

Operator
Merrion Oil & Gas Corporation

ADDRESS ALL CORRESPONDENCE CONCERNING THIS FORM TO:

Street	City	State
P. O. Box 840	Farmington	NM

Above named operator authorizes (name of transporter)
Meridian Oil, Inc.

Transporter's street address	City	State
P. O. Box 4289	Farmington	NM

Field address
Red Mesa, AZ

Oil, condensate, gas well gas, casinghead gas

To transport 100% % of the oil from said lease.

OTHER GATHERERS TRANSPORTING FROM THIS LEASE ARE AS FOLLOWS:

Name of gatherer	% transported	Product transported
Merrion Oil & Gas / El Paso Natural	100%	gas

Indicate whether or not this certificate is for a new lease. If not a new lease, indicate whether or not it is a change of operator, change of lease name, change of gatherer or a consolidation or subdivision of leases and give effective date of change.

The undersigned certifies that the rules and regulations of the State of Arizona Oil & Gas Conservation Commission have been complied with in drilling and producing operations on this lease, except as noted above, and that the above transporter is authorized to transport the above specified percentage of the allowable oil or gas produced from the above described property, and that this authorization will be valid until further notice or until cancelled by the State of Arizona Oil & Gas Conservation Commission.

CERTIFICATE: I, the undersigned, under the penalty of perjury, state that I am the Vice President of the Merrion Oil & Gas Corporation (company), and that I am authorized by said company to make this report; and that this report was prepared under my supervision and direction and that the facts stated therein are true, correct and complete to the best of my knowledge.

9-25-90
Date

T. Greg Merrion
Signature T. Greg Merrion

Date approved: 10-5-90

STATE OF ARIZONA
OIL & GAS CONSERVATION COMMISSION

By: Steven L. Ramos

Permit No. 22

cc: Well File
AZ; OCD - 2

STATE OF ARIZONA
OIL & GAS CONSERVATION COMMISSION
Operator's Certificate of Compliance & Authorization to Transport Oil or Gas from Lease
File Two Copies
Form No. 8

SUNDRY NOTICES AND REPORTS ON WELLS

1. Name of Operator: Merrion Oil & Gas Corporation

RECEIVED
JUL 1 1985
O & G CONS. COMM.

2. OIL WELL [X] GAS WELL [ ] OTHER [ ] (Specify)

3. Well Name "Navajo 3-3" well # 2 P/N = 22

Location SW/SW, 330' FSL and 520' FWL

Sec. 3 Twp. 41N Rge. 28E County Apache, Arizona.

4. Federal, State or Indian Lease Number, or lessor's name if fee lease 14-20-603-226

5. Field or Pool Name East Boundary Butte

6. Check Appropriate Box to Indicate Nature of Notice, Report, or Other Data

NOTICE OF INTENTION TO:				SUBSEQUENT REPORT OF:			
TEST WATER SHUT-OFF	[ ]	PULL OR ALTER CASING	[ ]	WATER SHUT-OFF	[ ]	MONTHLY PROGRESS	[ ]
FRACTURE TREAT	[ ]	DIRECTIONAL DRILL	[ ]	FRACTURE TREATMENT	[ ]	REPAIRING WELL	[ ]
SHOOT OR ACIDIZE	[ ]	PERFORATE CASING	[ ]	SHOOTING OR ACIDIZING	[ ]	ALTERING CASING	[ ]
REPAIR WELL	[ ]	CHANGE PLANS	[ ]			ABANDONMENT	[ ]
(OTHER) Change of Oil Transporter			[ ]	(OTHER)			[ ]

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

7. DESCRIBE PROPOSED OR COMPLETED OPERATIONS (Clearly state all pertinent 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 markers and zones pertinent to this work.)

Please change the transporter of oil from Conoco Inc, Surface Transportation to:

The Mancos Corporation
P. O. Box 1320
Farmington, New Mexico 87499

Effective 7/1/85.

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

Signed [signature] Title Operations Manager Date 6/27/85

Permit No. 22

STATE OF ARIZONA
OIL & GAS CONSERVATION COMMISSION
Sundry Notices and Reports On Wells
File Two Copies
Form No. 25

32 x

SUNDRY NOTICES AND REPORTS ON WELLS

RECEIVED
NOV 5 1984
O & G CONS. COMM.

1. Name of Operator Merrion Oil & Gas Corporation

2. OIL WELL ☐ GAS WELL ☒ OTHER ☐ (Specify)

3. Well Name Navajo Tribe No. 1

Location 1980 feet from the South line and 980 feet from the East line.

Sec 4 Twp 41N Rge 28S County Apache Arizona.

4. Federal, State or Indian Lease Number, or lessor's name if fee lease 14-20-603-413

5. Field or Pool Name East Boundary Butte

6. Check Appropriate Box to Indicate Nature of Notice, Report, or Other Data

NOTICE OF INTENTION TO:				SUBSEQUENT REPORT OF:			
TEST WATER SHUT-OFF	☐	PULL OR ALTER CASING	☐	WATER SHUT-OFF	☐	MONTHLY PROGRESS	☐
FRACTURE TREAT	☐	DIRECTIONAL DRILL	☐	FRACTURE TREATMENT	☐	REPAIRING WELL	☐
SHOOT OR ACIDIZE	☐	PERFORATE CASING	☐	SHOOTING OR ACIDIZING	☐	ALTERING CASING	☐
REPAIR WELL	☐	CHANGE PLANS	☐			ABANDONMENT	☐
(OTHER) Change of transporter			☐	(OTHER)			☐

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

7. DESCRIBE PROPOSED OR COMPLETED OPERATIONS (Clearly state all pertinent 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 markers and zones pertinent to this work.)

We are changing the transporter of oil from the Permian Corporation, Post Office Box 1702, Farmington, New Mexico 87499 to:

Conoco Inc. Surface Transportation
555 17th Street, 9th Floor
Denver, Colorado 80202

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

Signed [signature] Title Operations Manager Date 11/01/84

Permit No.

STATE OF ARIZONA
OIL & GAS CONSERVATION COMMISSION
Sundry Notices and Reports On Wells
File Two Copies
Form No. 25

OIL CONSERVATION COMMISSION

WELL LOCATION AND ACREAGE DEDICATION PLAT

RECEIVED
MAR 2 1982
O & G CONS. COMM.

Form C-102
Supersedes C-128
Effective 1-1-65

All distances must be from the outer boundaries of the Section.

Operator	Lease	Well No.
Merrion and Bayless	(Shell) Navajo	2

Unit Letter	Section	Township	Range	County
F	3	41N	28E	Apache County, Arizona

Actual Footage Location of Well:
1980 feet from the North line and 1980 feet from the West line

Ground Level Elev.	Producing Formation	Pool	Dedicated Acreage:
5296 GR	Ismay	East Boundary Butte	640 Acres

1. Outline the acreage dedicated to the subject well by colored pencil or hachure marks on the plat below.

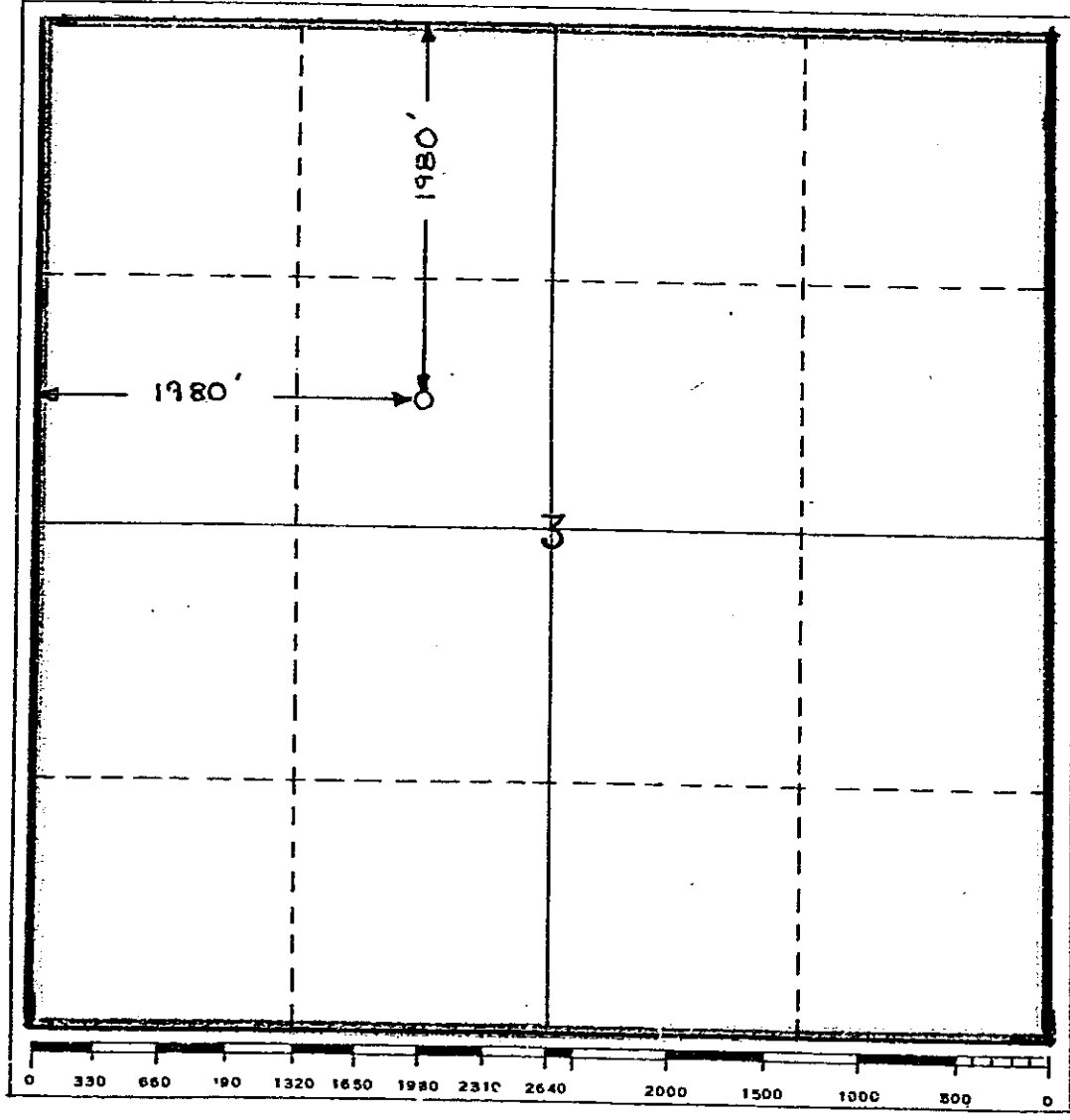
2. If more than one lease is dedicated to the well, outline each and identify the ownership thereof (both as to working interest and royalty).

3. If more than one lease of different ownership is dedicated to the well, have the interests of all owners been consolidated by communitization, unitization, force-pooling. etc?

☐ Yes ☐ No If answer is "yes," type of consolidation _____

If answer is "no," list the owners and tract descriptions which have actually been consolidated. (Use reverse side of this form if necessary.) _____

No allowable will be assigned to the well until all interests have been consolidated (by communitization, unitization, forced-pooling, or otherwise) or until a non-standard unit, eliminating such interests, has been approved by the Commission.



CERTIFICATION

I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief.

Name: J. Gregory Merrion

Position: Co-Owner

Company: Merrion & Bayless

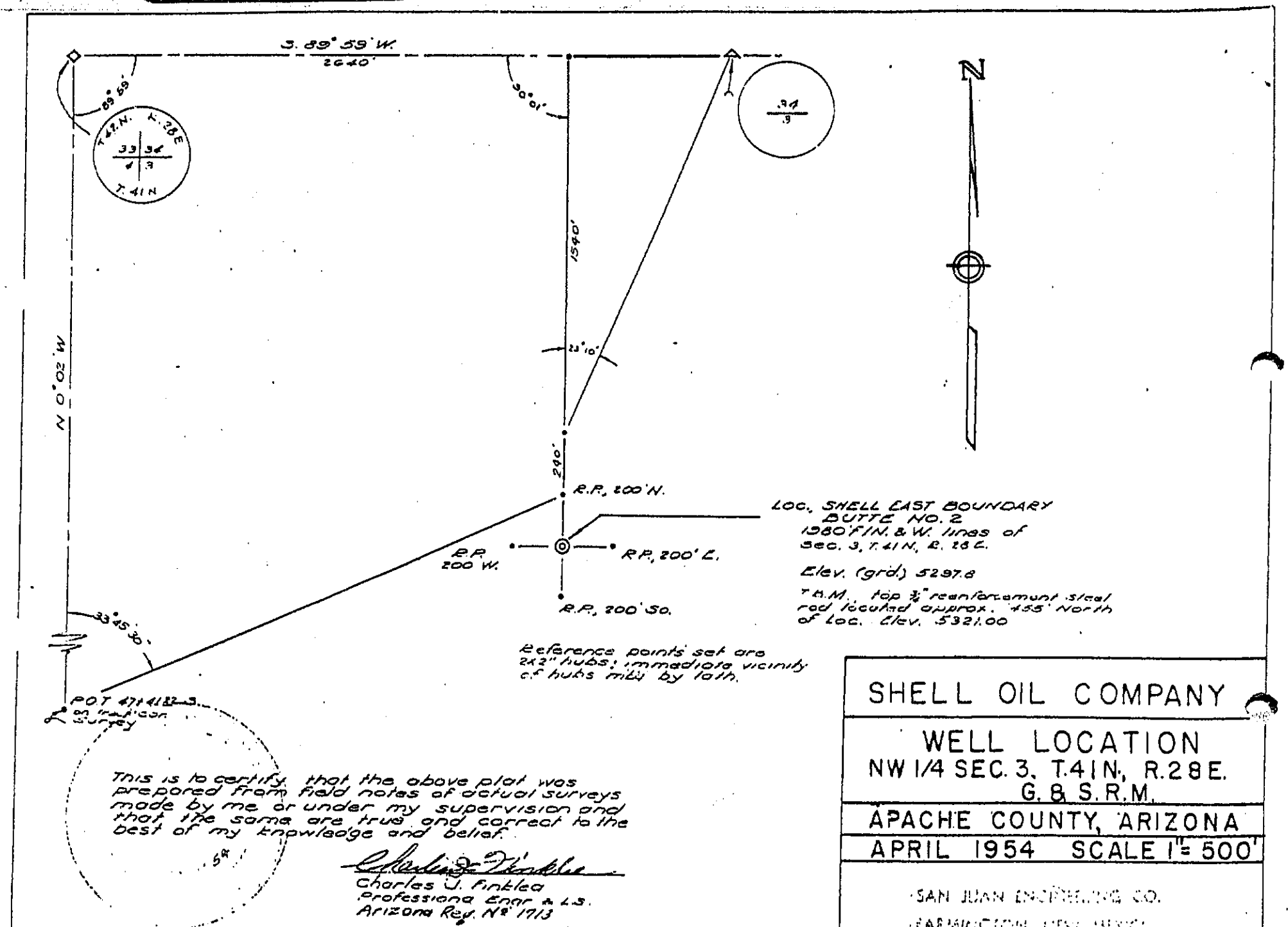
Date: 2/26/82

I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by me or under my supervision, and that the same is true and correct to the best of my knowledge and belief.

Date Surveyed: April, 1954

Registered Professional Engineer and/or Land Surveyor

Certificate No.



Loc. SHELL EAST BOUNDARY BUTTE NO. 2
1980' F.N. & W. lines of
Sec. 3, T. 41 N., R. 28 E.

Elev. (grd.) 5297.8

T.M.: top ¾" reinforcement steel rod located approx. 455' North of Loc. Elev. 5321.00

Reference points set are 2x2" hubs; immediate vicinity of hubs mkd by lath.

This is to certify that the above plat was prepared from field notes of actual surveys made by me or under my supervision and that the same are true and correct to the best of my knowledge and belief.

Charles J. Finklea
Professional Engr. & L.S.
Arizona Reg. No. 1713

SHELL OIL COMPANY

WELL LOCATION
NW 1/4 SEC. 3, T. 41 N., R. 28 E.
G. & S. R. M.
APACHE COUNTY, ARIZONA
APRIL 1954 SCALE 1" = 500'

SAN JUAN ENGINEERING CO.
FARMINGTON, NEW MEX.

Z16-090

BOUNDARY BUTTE, EAST
(GAS)

Located in Northern Apache County, near the Utah State line in Township 41 North, Range 28 East, on the north flank of the Black Mesa Basin.

DISCOVERY DATA

Shell Oil Company No. 2 East Boundary Butte, Sec. 3, - 41 N - 28 E completed December 8, 1954.

Exploration Method: Seismograph.
Total Depth: 6339 ft; PBD 4730.
Casing: 10-3/4 to 697 ft.; 5½ to 4930 ft.
Producing Zone: Hermosa, perfs at 4540 - 85 ft., 4650 - 90 ft.
Elevation: 5296 (gr) T/pay 4540.
Initial Flow: 3,150 MCF gas per day.

GEOLOGICAL NOTES

Field is located on a structural anticline. Deepest test in the vicinity is Humble Oil No. 1 Navajo, 4-41 N-28E, which drilled to a total depth of 6382 feet in the Pre-Cambrian.

Shell's discovery found 150 feet of Hermosa pay and tested 38-gravity oil in the Upper Paradox.

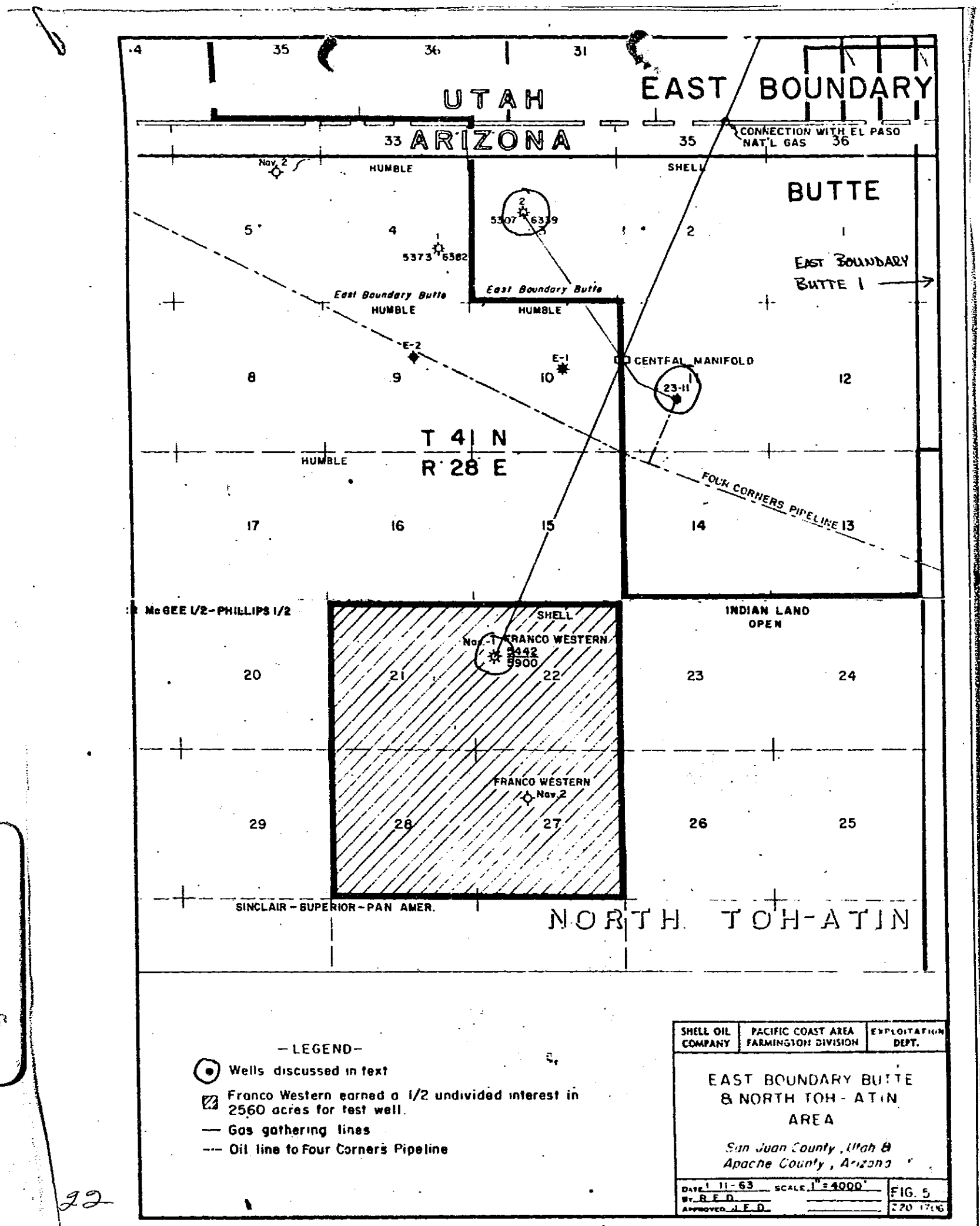
Formation Record (Shell No. 2 East Boundary Butte):

Kayenta	135
Wingate	150
Chinle	640
Shinarump	1555
Moenkopi	1600
Cutler Rico	1803
Hermosa	3757
Paradox	4746
Molas	5347
Leadville	5492
Guray	5637
Elbert	5787
Devonian	6092
Cambrian	6325

DEVELOPMENT - PRODUCTION

This field includes 3 wells, currently shut in. Reported production in 1955 was 122,116 MCF gas plus 750 barrels of condensate.

Excerpts from: Oil and Gas in theFour Corners
Compiled and Edited by Paul J. Kuhn
Published by National Petroleum Bibliography
Amarillo, Texas


UTAH
EAST BOUNDARY
ARIZONA
CONNECTION WITH EL PASO NAT'L GAS
BUTTE
HUMBLE
SHELL
Nav. 2
5307 6339
5373 6382
East Boundary Butte
EAST BOUNDARY BUTTE 1
E-2
E-1
CENTRAL MANIFOLD
23-11
T 41 N
R 28 E
FOUR CORNERS PIPELINE
McGEE 1/2-PHILLIPS 1/2
INDIAN LAND
OPEN
FRANCO WESTERN
No.-1
9442
9900
Nav.2
SINCLAIR-SUPERIOR-PAN AMER.
NORTH TOH-ATIN
-LEGEND-
Wells discussed in text
Franco Western earned a 1/2 undivided interest in 2560 acres for test well.
Gas gathering lines
Oil line to Four Corners Pipeline
SHELL OIL COMPANY
PACIFIC COAST AREA FARMINGTON DIVISION
EXPLOITATION DEPT.
EAST BOUNDARY BUTTE & NORTH TOH-ATIN AREA
San Juan County, Utah & Apache County, Arizona
DATE 1-11-63
SCALE 1" = 4000'
BY R.E.D.
APPROVED J.F.D.
FIG. 5

OPERATOR'S CERTIFICATE OF COMPLIANCE AND AUTHORIZATION TO TRANSPORT OIL OR GAS FROM LEASE

Federal, State or Indian Lease Number, or lessor's name if fee lease: 16-20-603-226	Field: East Boundary Butte	Reservoir: Paradox
Survey or Sec-Twp-Rge: Sec. 23 T41N, R28E	County: Apache	State: Arizona

Operator: J. Gregory Merrion and Robert L. Bayless

ADDRESS ALL CORRESPONDENCE CONCERNING THIS FORM TO:

Street: P.O. Box 507	City: Farmington	State: New Mexico 87401

Above named operator authorizes (name of transporter): Permian Corporation

Transporter's street address: P.O. Box 1183	City: Houston	State: Texas 77001

Field address: Petroleum Plaza Building Farmington, New Mexico 87401

Oil, condensate, gas well gas, casinghead gas

To transport 100% of the Oil from said lease.

OTHER GATHERERS TRANSPORTING FROM THIS LEASE ARE AS FOLLOWS:

Name of gatherer	% transported	Product transported
Merrion & Bayless	100	Gas

Indicate whether or not this certificate is for a new lease. If not a new lease, indicate whether or not it is a change of operator, change of lease name, change of gatherer, or a consolidation or subdivision of leases and give effective date of change.

Change of operator and change of gatherers.

The undersigned certifies that the rules and regulations of the State of Arizona Oil & Gas Conservation Commission have been complied with in drilling and producing operations on this lease, except as noted above, and that the above transporter is authorized to transport the above specified percentage of the allowable oil or gas produced from the above described property, and that this authorization will be valid until further notice or until cancelled by the State of Arizona Oil & Gas Conservation Commission.

CERTIFICATE: I, the undersigned, under the penalty of perjury, state that I am the Co-Owner of the Merrion & Bayless (company), and that I am authorized by said company to make this report; and that this report was prepared under my supervision and direction and that the facts stated therein are true, correct and complete to the best of my knowledge.

October 24, 1974
Date

J. Gregory Merrion
Signature

Date approved: 10-29-74

STATE OF ARIZONA
OIL & GAS CONSERVATION COMMISSION

By: W. Allen

Permit No.

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OCT 29 1974
O & G Cons. Comm.

STATE OF ARIZONA
OIL & GAS CONSERVATION COMMISSION
Operator's Certificate of Compliance & Authorization to Transport Oil or Gas from Lease
File Two Copies
Form No. 8

DESIGNATION OF OPERATOR

Navajo Tribe Oil & Gas Mining Lease Contract No.

The undersigned is the record holder of Lease: 14-20-603-226
(Number or name of lease and description of entire lease acreage) in Apache County, Arizona: All of Sections 1, 2 & 3 in Township 41 North, Range 28 East, G&SRM and All of Fractional Sections 34, 35 & 36 in Township 42 North, Range 28 East, G&SRM

and hereby designates J. Gregory Merion and Robert L. Bayless

Name: 205 Petroleum Center Bldg.,
Farmington, New Mexico

Address:

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SEP 30 1974
O & G CONS. COMM.

as his operator and local agent, with full authority to act in his behalf in complying with the terms of the lease and all regulations, whether Federal, Indian, State, or local, applicable thereto and on whom may be served written or oral instructions in securing compliance with all the applicable lease terms, and rules and regulations of the Oil and Gas conservation Commistion, State of Arizona, with respect to:

(Describe only the acreage to which this designation applies)

Same as above (entire lease acreage)

It is understood that this designation of operator does not relieve the lessee of responsibility for compliance with the terms of the lease and with all the applicable rules and regulations of the Oil and Gas Conservation Commission, State of Arizona. It is understood that this designation of operator does not constitute an assignment of any interest in the lease.

In case of default on the part of the designated operator, the record holder of the lease remains primarily responsible for and will make full and prompt compliance with all applicable lease terms, the rules and regulations of the Oil and Gas Conservation Commission, State of Arizona, or orders of other appropriate regulatory governmental agencies.

The lessee agrees promptly to notify all proper authorities and appropriate regulatory governmental agencies on any change in the designated operator.

The designated operator agrees to promptly notify all proper authories of any change of his address during the period in which this designation of operator is in force.

September 27, 1974
(Date)

Consolidated Oil & Gas, Inc.
Lessee Vice-President

(Date)

Designated Operator

(If this Designation of Operator applies to a State of Arizona Oil and Gas Lease, copy of this designation of operator must be filed with the State Land Department.)

SUNDRY NOTICES AND REPORTS ON WELLS

2. Operator Consolidated Oil & Gas, Inc.

OIL WELL ☐ GAS WELL ☒ OTHER ☐ (Specify)

3. Well Name (Shell) Navajo No. 2

Location 1980' FWL and 1980' FNL

Sec. 3 Twp. 41N Rge. 28E County Apache, Arizona.

4. Federal, State or Indian Lease Number, or lessor's name if fee lease

Navajo Tribal 14-20-603-226

5. Field or Pool Name East Boundary Butte

6. Check Appropriate Box to Indicate Nature of Notice, Report, or Other Data

NOTICE OF INTENTION TO:				SUBSEQUENT REPORT OF:			
TEST WATER SHUT-OFF	☐	PULL OR ALTER CASING	☐	WATER SHUT-OFF	☐	MONTHLY PROGRESS	☐
FRACTURE TREAT	☐	DIRECTIONAL DRILL	☐	FRACTURE TREATMENT	☐	REPAIRING WELL	☐
SHOOT OR ACIDIZE	☒	PERFORATE CASING	☐	SHOOTING OR ACIDIZING	☐	ALTERING CASING	☐
REPAIR WELL	☐	CHANGE PLANS	☐			ABANDONMENT	☐
(OTHER) Recomplete	☒			(OTHER)			☐

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

7. DESCRIBE PROPOSED OR COMPLETED OPERATIONS (Clearly state all pertinent 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 markers and zones pertinent to this work.)

On or about March 15, 1972, move in workover unit. Tubing is plugged tightly with paraffin and limited gas is produced from casing. Kill well and pull tubing. Drill out bridge plug at 4,730' below perfs. 4,540-85' and 4,650-90' KB to test perfs. 4,745-73'. Run tubing and packer and test lower perfs. If necessary, acidize lower perfs. If lower perfs. are not commercially productive, set a bridge plug at 4,720'. If zone is commercial, install pumping equipment and produce well.

Presently completed zone is non-economical.

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FEB 23 1972
O & G CONS. COMM.

APPROVED
By W E Allen
Date 2-23-72

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

Signed Wayne Rogers Title Area Prod. Mgr. Date February 16, 1972

Permit No. 22

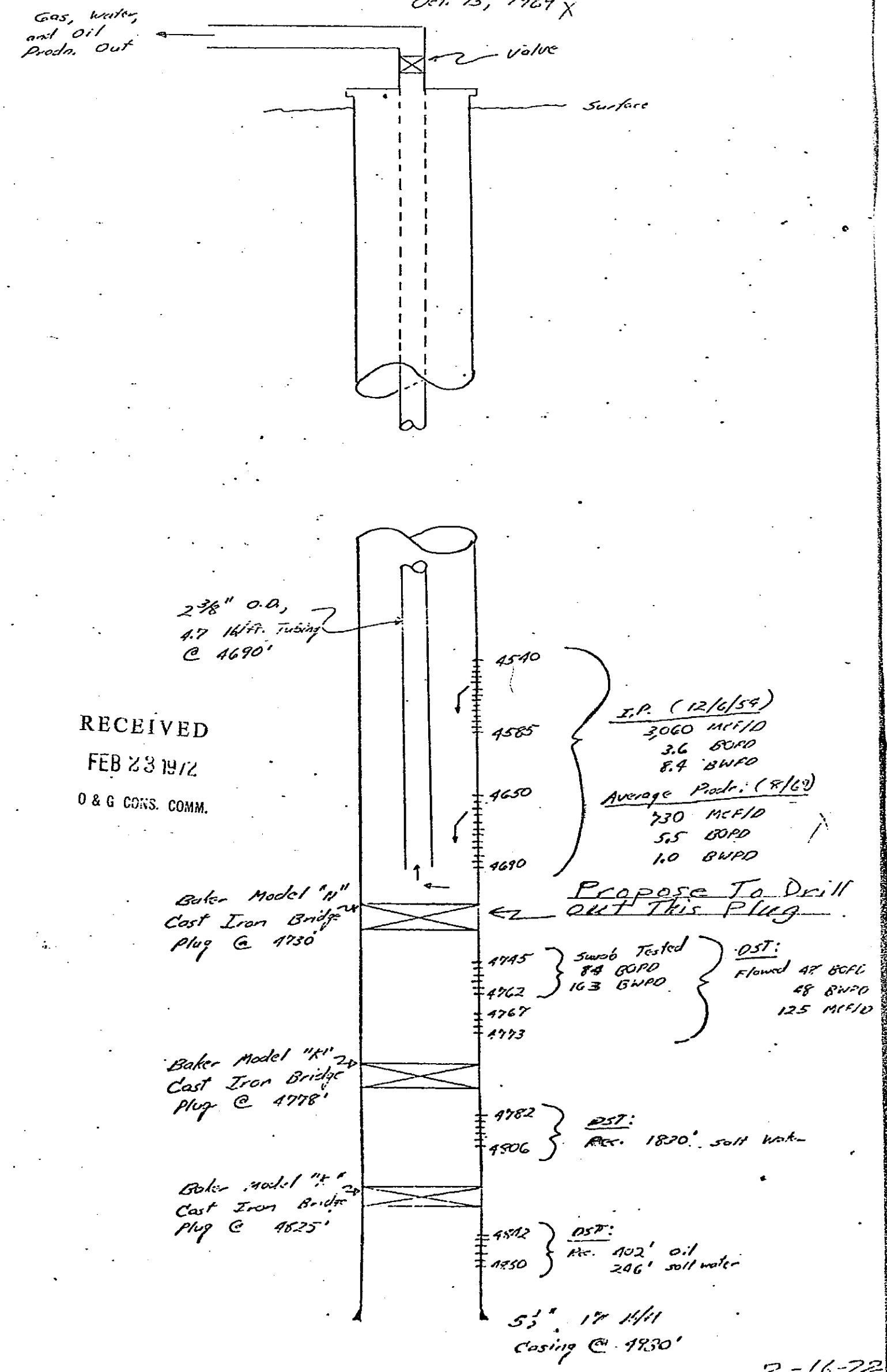
STATE OF ARIZONA
OIL & GAS CONSERVATION COMMISSION
Sundry Notices and Reports On Wells
File Two Copies
Form No. 25

1. Name of

2. Op

Sketch of Existing Completion Equipment

Consolidated (Shell) No. 2 Hiwap
SE/4, NW/4, Sect. 3, T 4 N, R 28 E
East Boundary Battle Field, Apache Co., Ariz.
Oct. 15, 1969 X



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FEB 23 1972
O & G CONS. COMM.

2-16-72

November 18, 1970

Memo from John Bannister
Executive Secretary

Memo to Humble #3 Navajo (413)
SW/4 SE/4 Section 4-T41N-R28E
Apache County
Our File #515

Consolidated (Shell) Navajo Tribal #2
SE/4 NW/4 Section 3-T41N-R28E
Apache County
Our File #22

Dave Smink, Consolidated, called this morning and advised that he had received a PI card on the Humble Navajo #3 well. The card indicated, and apparently this has been confirmed by BLM records held by Phil McGrath, that the Humble perforations between 4669' and 4682' were temporary for testing purposes only and were not intended as permanent features.

I advised Mr. Smink that we had requested current information on the status of this well from both Humble and Merrion and Bayless; and, as soon as we have up to date information, we will contact him.

I also advised Mr. Smink that insofar as our records currently reveal, there is no violation by the Humble well. I told him that if a "situation" does exist as revealed by later additional information filed with the Commission, a solution could be to call a meeting between interested parties and the Commission in Denver; and, if this were not satisfactorily concluded, that Consolidated could, of course, at any time request a Commission hearing.

SUNDRY NOTICES AND REPORTS ON WELLS

1. Name of Operator: Consolidated Oil & Gas, Inc.

2. OIL WELL ☐ GAS WELL ☒ OTHER ☐ (Specify)

3. Well Name: (Shell) Navajo No. 2

Location: 1980' FWL and 1980' FNL

Sec. 3 Twp. 41N Rge. 28E County: Apache, Arizona.

4. Federal, State or Indian Lease Number, or lessor's name if fee lease: Navajo Tribal 14-20-603-226

5. Field or Pool Name: East Boundary Butte

6. Check Appropriate Box to Indicate Nature of Notice, Report, or Other Data

NOTICE OF INTENTION TO:				SUBSEQUENT REPORT OF:			
TEST WATER SHUT-OFF	☐	PULL OR ALTER CASING	☐	WATER SHUT-OFF	☐	MONTHLY PROGRESS	☐
FRACTURE TREAT	☐	DIRECTIONAL DRILL	☐	FRACTURE TREATMENT	☐	REPAIRING WELL	☐
SHOOT OR ACIDIZE	☐	PERFORATE CASING	☐	SHOOTING OR ACIDIZING	☐	ALTERING CASING	☐
REPAIR WELL	☐	CHANGE PLANS	☐			ABANDONMENT	☐
(OTHER) Multiple complete			☒	(OTHER)			☐

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

7. DESCRIBE PROPOSED OR COMPLETED OPERATIONS (Clearly state all pertinent 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 markers and zones pertinent to this work.)

On or about September 22, 1969, move in workover unit. Circulate and kill well with field salt water. Run 4-3/4" bit and drill out bridge plug @ 4730' (below current completion intervals @ 4540-85 and 4650-90). With tubing and packer, swab-test existing perforations 4745-62 and 4767-73.

If commercial oil production from perforations 4745-62 and 4767-73 is indicated, multicomplete well for dual gas and oil production by setting tubing with packer at approximately 4730'. Gas production (flowing) to be through annulus, oil production (pumping) to be through tubing.

If oil production is not indicated, return well to its present state (flowing gas production through tubing) by setting a bridge plug at approximately 4730'.

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SEP 15 1969
STATE O & G
CONS. COMM.

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

Signed: D. E. Smink Title: Petroleum Engineer Date: 9/11/69

D. E. Smink

STATE OF ARIZONA
OIL & GAS CONSERVATION COMMISSION
Sundry Notices and Reports On Wells
File Two Copies
Form No. 25

Permit No. 22

SUNDRY NOTICES AND REPORTS ON WELLS

1. Name of Operator Consolidated Oil & Gas, Inc.

2. OIL WELL ☐ GAS WELL ☒ OTHER ☐ (Specify)

3. Well Name (Shell) Navajo No. 2

Location 1980' FWL and 1980' FNL

Sec. 3 Twp. 41N Rge. 28E County Apache, Arizona.

4. Federal, State or Indian Lease Number, or lessor's name if fee lease

Navajo Tribal 14-20-603-226

5. Field or Pool Name East Boundary Butte

6. Check Appropriate Box to Indicate Nature of Notice, Report, or Other Data

NOTICE OF INTENTION TO:				SUBSEQUENT REPORT OF:			
TEST WATER SHUT-OFF	☐	PULL OR ALTER CASING	☐	WATER SHUT-OFF	☐	MONTHLY PROGRESS	☐
FRACTURE TREAT	☐	DIRECTIONAL DRILL	☐	FRACTURE TREATMENT	☐	REPAIRING WELL	☐
SHOOT OR ACIDIZE	☐	PERFORATE CASING	☐	SHOOTING OR ACIDIZING	☐	ALTERING CASING	☐
REPAIR WELL	☐	CHANGE PLANS	☐			ABANDONMENT	☐
(OTHER) Multiple complete	☒			(OTHER)			☐

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

7. DESCRIBE PROPOSED OR COMPLETED OPERATIONS (Clearly state all pertinent 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 markers and zones pertinent to this work.)

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If commercial oil production from perforations 4745-62 and 4767-73 is indicated, multicomplete well for dual gas and oil production by setting tubing with packer at approximately 4730'. Gas production (flowing) to be through annulus, oil production (pumping) to be through tubing.

If oil production is not indicated, return well to its present state (flowing gas production through tubing) by setting a bridge plug at approximately 4730'.

RECEIVED
SEP 15 1969
STATE O & G
CONS. COMM.

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

Signed D. E. Smink Title Petroleum Engineer Date 9/11/69

D. E. Smink

STATE OF ARIZONA
OIL & GAS CONSERVATION COMMISSION
Sundry Notices and Reports On Wells
File Two Copies
Form No. 25

Permit No. 22

ARIZONA OIL AND GAS CONSERVATION COMMISSION

DELIVERABILITY TEST REPORT

Type Test	Test Date	Well Name
☐ Initial ☒ Annual ☐ Special	6-10-69	Shell

Company	Connection	Permit No.
Consolidated Oil & Gas	El Paso Natural Gas	File 22

Pool	Formation	Unit
East Boundary Butte	Hermosa Paradox	

Completion Date	Total Depth	Plug Back TD	Elevation	Farm or Lease Name
10-18-54	6339	4730	5307 KB	Navajo

Csg. Size	Wt.	d	Set At	Perforations:	Well No.
5.500	17.00	4.892	4930	From 4540 To 4690	2

Tbg. Size	Wt.	d	Set At	Perforations:	¼ — ¼ Sec. Twp. Rge.
2.375	4.70	1.995	4690	From Open To Ended	SE NW 3 41N 28E

Type Well — Single — Bradenhead — G.G. or G.O. Multiple	Packer Set At	County
Single	None	Apache

Producing Thru	Reservoir Temp. °F	Mean Annual Temp. °F	Baro. Pres. — P_a	State
Tubing	@ ?	60	12.0	Arizona

L.	H	Gg.	% CO_2	% N_2	Prover	% He	Meter Run	Taps
4690	4690	0.695	4.79-	7.97--	----	--	x	Flanged

	FLOW DATA				TUBING DATA		CASING DATA		
NO.	Prover Line Size X Choke Orifice Size	Press. p.s.i.g.	Diff. h_w	Temp. °F	Press. p.s.i.g.	Temp. °F	Press. p.s.i.g.	Temp. °F	Duration of Flow
SI					685		780		4 days
1.	3" x 1.250				460		480		24 hrs.

NO.	Coefficient (24-Hour)	$\sqrt{h_w P_m}$	Pressure P_m	Flow Temp. Factor Ft.	Gravity Factor Fg	Super Compress. Factor, Fpv	Rate of Flow Q. Mcfd
1.		From integration of chart					944

NO.	P_r	Temp. °R	T_r	Z
1.				

P_d 396 (1)
P_d^2 156,816
P_c 792 P_c^2 627,264

Gas Liquid Hydrocarbon Ratio _____ Mcf/bbl.
A.P.I Gravity of Liquid Hydrocarbons _____ Deg.
Specific Gravity Separator Gas _____
Specific Gravity Flowing Fluid _____
Critical Pressure _____ p.s.i.a. _____ p.s.i.a.
Critical Temperature _____ R _____ R
Pf _____ Pf^2 _____

NO.	P_t	P^2	$P_c^2 - P_t^2$	P_w	P_w^2	$P_c^2 - P_w^2$	P_s	P_s^2	$P_f^2 - P_s^2$
1.				492					

$$\left[\frac{P_c^2 - P_d^2}{P_c^2 - P_w^2}\right] = \left[\frac{470,448}{385,200}\right] = 1.2213$$

$$\text{Log}\left[\frac{P_c^2 - P_d^2}{P_c^2 - P_w^2}\right] = \_\_\_\_\_$$

$$\left[\frac{P_c^2 - P_d^2}{P_c^2 - P_w^2}\right]^n = 1.1848$$

$$n\,\text{Log}\left[\frac{P_c^2 - P_d^2}{P_c^2 - P_w^2}\right] = \_\_\_\_\_$$

$$\text{Deliv.} = Q\left[\frac{P_c^2 - P_d^2}{P_c^2 - P_w^2}\right]^n = 1,118$$

Deliv 1,118 Mcfd
n 0.85
OGCC Approval 7-10-68
(Source of n)

(1) Assumed Pd = 50% Pc
Calculated by:
Ewell N. Walsh, P. E., President
Walsh Engineering & Production Corp.

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AUG 6 1969
STATE O & G
CONS. COMM.

CERTIFICATE: I, the undersigned, under the penalty of perjury, state that I am the Production Superintendent of the Consolidated Oil & Gas (company), and that I am authorized by said company to make this report; and that this report was prepared under my supervision and direction and that the facts therein are true, correct and complete to the best of my knowledge.

Date August 5, 1969

Signature Leo Cass

STATE OF ARIZONA OIL & GAS CONSERVATION COMMISSION
Deliverability Test Report
Form No. 20 (File two copies)

State Arizona County Apache Field East Boundry Butte

Loc C SE NW 3-41N-28E. Date (old) ?

Operator Shell Oil Company Well No. 2 Unit

Depth 4842 - 4850' Formation Hermosa

Resistivity 0.21 @ 68 °F pH ? Sp. Gr. ? @ ? °F

Total Solids PPM By Evap. 39,720 By Calc. 36,634

How Sampled DST No.12 - Chloride as NaCl 33,475 PPM.

Remarks

WATER ANALYSIS CARD CAR-PRO-1075

State Arizona County Apache Field East Boundry Butte.

Loc. C SE NW 3-41N-28E Date (old)

Operator Shell Oil Company Well No.2-Unit

Depth 4740 - 4950' Formation Hermosa

Resistivity 0.56 @ 68 °F pH ? Sp. Gr. ? @ ? °F

Total Solids PPM By Evap. 15,152 By Calc. 13,875

How Sampled DST No.11 - Chloride as NaCl 8,443

Remarks Quebracho colored

Organic matter present.

WATER ANALYSIS CARD CAR-PRO-1075

State Arizona County Apache Field East Boundry Butte.

Loc. C SE NW 3-41N-28E. Date October 16, 1954

Operator Shell Oil Company Well No.2 Unit

Depth 4745 - 4774' Formation Hermosa

Measured Resistivity 0.21 @ 68 °F pH 7.1 Sp. Gr. @ °F

Calc. 0.19

Total Solids PPM By Evap. 39,452 By Calc. 38,010

How Sampled Casing test No.14 - NaCl Equivalent 37,241 PPM.

Remarks Clear water. - Chem lab report No.1-161

WATER ANALYSIS CARD CAR-PRO-1075

State Arizona County Apache Field East Boundry Butte

Loc. C SE NW - 3-41N-28E. Date (old)

Operator Shell ? Well ?

Depth 4782 - 4806' Formation Hermosa formation.

Resistivity 0.37 @ 68 °F pH ? Sp. Gr. ? @ ? °F

Total Solids PPM By Evap. 23,555 By Calc. 22,242

How Sampled Casing test No. 13 - Chloride as NaCl 17,644

Remarks Clear water.

Organic matter present.

WATER ANALYSIS CARD CAR-PRO-1075

State Arizona County Apache Field East Boundry Butte

Loc. 6-41N-29E. Date (old)

Operator Shell Oil Company Well No. 1

Depth 4884 - 4976' Formation Pennsylvanian

Resistivity 0.12 @ 68 °F pH ? Sp. Gr. ? @ ? °F

Total Solids PPM By Evap. 70,840 By Calc. 68,333

How Sampled by DST - Chloride as NaCl 69,258 PPM

Remarks Clear water

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WATER ANALYSIS PATTERN
MEQ/UNIT

Cl HCO SO_4 CO_3

Na Ca Mg Fe

	PPM	MEQ
Na	15,393	582.60
Ca	980	48.90
Mg	297	24.41
SO_4	1,057	21.99
Cl	21,200	597.24
CO_3	-	-
H_2S		
H_2CO_3	2,200	36.08

WATER ANALYSIS PATTERN
MEQ/UNIT

Cl HCO SO_4 CO_3

Na Ca Mg Fe

PPM MEQ

Na Ca Mg SO_4 Cl CO_3 H_2S H_2CO_3

WATER ANALYSIS PATTERN
MEQ/UNIT

Cl HCO_3 SO_4 CO_3

Na Ca Mg Fe

MEQ PPM

Na Ca Mg SO_4 Cl CO_3 H_2S H_2CO_3

WATER ANALYSIS PATTERN
MEQ/UNIT

Cl HCO_3 SO_4 CO_3

Na Ca Mg Fe

MEQ PPM

Na Ca Mg SO_4 Cl CO_3 H_2S H_2CO_3

PPM MEQ

Na
Ca
Mg
SO_4
Cl
CO_3

WATER ANALYSIS PATTERN
MEQ/UNIT

Na Ca Mg Fe

Cl HCO_3 SO_4 CO_3

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STATE O &
CONS. COMM.

[redacted]

Y-Chrono

July 28, 1969

Memo to Files 32
22
69

Franco Western Oil Navajo #1
Shell Oil Navajo #2
Shell Oil Navajo #23-11

Mr. Leo Case, Consolidated Oil & Gas, Inc, Called this date. He informed this office that he has tested the captioned wells and sent the information to Red Walsh in Farmington. He telephoned Red Walsh this date and Mr. Walsh said he does have the forms with the test information on them but has not had time to mail them to this office. He will ~~XX~~ mail the forms to us when he finishes with them.

jf

[redacted]

11 22

32 × 1

ARIZONA OIL AND GAS CONSERVATION COMMISSION

DELIVERABILITY TEST REPORT

Type Test: [x] Initial [ ] Annual [ ] Special			Test Date: 8-13-68	Well Name: Shell
Company: Consolidated Oil & Gas	Connection: El Paso Natural Gas			Permit No.: File 22
Pool: E. Boundary Butte	Formation: Hermosa Paradox			Unit:
Completion Date: 10-18-54	Total Depth: 6339	Plug Back TD: 4730	Elevation: 5307 KB	Farm or Lease Name: Navajo
Csg. Size: 5.500 / Wt.: 17.00 / d: 4.892 / Set At: 4930		Perforations: From 4540 To 4690		Well No.: 2
Tbg. Size: 2.375 / Wt.: 4.70 / d: 1.995 / Set At: 4690		Perforations: From Open To Ended		¼ — ¼ Sec. Twp. Rge.: SE NW 3 41N 28E
Type Well — Single — Bradenhead — G.G. or G.O. Multiple: Single		Packer Set At: None		County: Apache
Producing Thru: Tubing	Reservoir Temp. °F: @ ?	Mean Annual Temp. °F: 60	Baro. Pres. — P_a: 12.0	State: Arizona

L	H	Gg.	% CO_2	% N_2	Prover	% He	Meter Run	Taps
4690	4690	0.695	4.79-	7.97--	----	--	x	Flanged

	FLOW DATA				TUBING DATA		CASING DATA		
NO.	~~Prover~~ Line Size X ~~Orifice~~ Orifice Size	Press. p.s.i.g.	Diff. h_w	Temp. °F	Press. p.s.i.g.	Temp. °F	Press. p.s.i.g.	Temp. °F	Duration of Flow
SI					537		860		4 days
1.	3" x 1.250				661	90	724	--	24 hrs.

NO.	Coefficient (24-Hour)	$\sqrt{h_w P_m}$	Pressure P_m	Flow Temp. Factor Ft.	Gravity Factor Fg	Super Compress. Factor, Fpv	Rate of Flow Q. Mcfd
1.		From integration of charts					917

NO.	P_r	Temp. °R	T_r	Z
1.				

P_d 436 (1)
P_d^2 190,096
P_c 872 P_c^2 760,384

Gas Liquid Hydrocarbon Ratio ____ Mcf/bbl.
A.P.I Gravity of Liquid Hydrocarbons ____ Deg.
Specific Gravity Separator Gas ____
Specific Gravity Flowing Fluid ____
Critical Pressure ____ p.s.i.a. ____ p.s.i.a.
Critical Temperature ____ R ____ R
Pf ____ Pf^2 ____

NO.	P_t	P^2	$P_c^2 - P_t^2$	P_w	P_w^2	$P_c^2 - P_w^2$	P_s	P_s^2	P_f^2
1.				736					

$\left[\frac{P_c^2 - P_d^2}{P_c^2 - P_w^2}\right] = \left[\frac{570,288}{218,688}\right] = 2.608$

Log $\left[\frac{P_c^2 - P_d^2}{P_c^2 - P_w^2}\right] =$ ____

$\left[\frac{P_c^2 - P_d^2}{P_c^2 - P_w^2}\right]^n = 2.258$

n Log $\left[\frac{P_c^2 - P_d^2}{P_c^2 - P_w^2}\right] =$ ____

Deliv.=Q $\left[\frac{P_c^2 - P_d^2}{P_c^2 - P_w^2}\right]^n = 2,071$

Deliv. 2,071 Mcfd
n 0.85
OGCC Approval 7-10-68
(Source of n)
(1) Assumed Pd = 50% Pc
Calculated by:
Ewell N. Walsh, P. E., President
Walsh Engineering and Production Corporation

RECEIVED
OCT 9 1968
STATE O & G
CONS. COMM.

CERTIFICATE: I, the undersigned, under the penalty of perjury, state that I am the Prod. Superintendent of the Consolidated Oil & Gas, Inc., and that I am authorized by said company to make this report; and that this report was prepared under my supervision and direction and that the facts therein are true, correct and complete to the best of my knowledge.

Date October 6, 1968

Signature Les Cook

STATE OF ARIZONA OIL & GAS CONSERVATION COMMISSION
Deliverability Test Report
Form No. 20 (File two copies)

Memo: File
From: J. Lambert

9-12-68
1:25 p.m.--Time

Re: Shell #2 Navajo
T41N, R28E, G & SRM
Sec. 3: SE/4 NW/4
Apache County, Arizona
Permit #22

Shell #23-11 Navajo
T41N, R28E, G & SRM
Sec. 11: NE/4 SW/4
Apache County, Arizona
Permit #69

Franco Wyoming #1 Navajo
T41N, R28E, G & SRM
Sec. 22: SW/4 NW/4
Apache County, Arizona
Permit #32

Mr. Case, Consolidated Oil and Gas, called this date. He states that each of the captioned wells were tested on July 7, and the information is in the hands of Red Walsh, Farmington. Mr. Case feels that the delay in reporting is due to secondary information needed by Mr. Walsh on the Franco Wyoming #1 Navajo well. He indicates that we should expect to receive these tests in a reasonable period of time.

9L

O.K.

OPERATOR CERTIFICATE OF COMPLIANCE AND AUTHORIZATION TO TRANSPORT OIL OR GAS FROM LEASE

Federal, State or Indian Lease Number, or lessor's name if fee lease	Field	Reservoir
Navajo Tribal 14-20-603-226	East Boundary Butte	Undesignated-Upper Hermosa
Survey or Sec-Twp-Rge	**County**	**State**
3, T41N-R28E	Apache	Arizona

Operator

Consolidated Oil & Gas, Inc.

ADDRESS ALL CORRESPONDENCE CONCERNING THIS FORM TO:

Street	City	State
4150 East Mexico Avenue	Denver	Colorado 80222

Above named operator authorizes (name of transporter)

Four Corners Pipeline Co. (oil) and El Paso Natural Gas (gas)

Transporter's street address	City	State
P. O. Box 1588	Farmington	New Mexico

Field address

Same

Oil, condensate, gas well gas, casinghead gas

To transport 100 % of the oil and gas from said lease.

OTHER GATHERERS TRANSPORTING FROM THIS LEASE ARE AS FOLLOWS:

Name of gatherer	% transported	Product transported

Indicate whether or not this certificate is for a new lease. If not a new lease, indicate whether or not it is a change of operator, change of lease name, change of gatherer, or a consolidation or subdivision of leases and give effective date of change.

Change of Operator 10-12-67 - (Form 25 filed)

The undersigned certifies that the rules and regulations of the State of Arizona Oil & Gas Conservation Commission have been complied with in drilling and producing operations on this lease, except as noted above, and that the above transporter is authorized to transport the above specified percentage of the allowable oil or gas produced from the above described property, and that this authorization will be valid until further notice or until cancelled by the State of Arizona Oil & Gas Conservation Commission.

CERTIFICATE: I, the undersigned, under the penalty of perjury, state that I am the Production Manager of the Consolidated Oil & Gas, Inc. (company), and that I am authorized by said company to make this report; and that this report was prepared under my supervision and direction and that the facts stated therein are true, correct and complete to the best of my knowledge.

January 22, 1968
Date

Wayne Rogers
Signature

Date approved: Jan 24, 1968

STATE OF ARIZONA
OIL & GAS CONSERVATION COMMISSION

By: John W Bannester

Permit No. 22

RECEIVED
JAN 24 1968
STATE OF ARIZONA
CONS. COMM.

STATE OF ARIZONA
OIL & GAS CONSERVATION COMMISSION
Operator's Certificate of Compliance & Authorization to Transport Oil or Gas from Lease
File Two Copies
Form No. 8

16

U. DRY NOTICES AND REPORTS ON WE

1. Name of Operator CONSOLIDATED OIL & GAS, INC.

2. OIL WELL ☐ GAS WELL [X] OTHER ☐ (Specify)

3. Well Name East Boundary Butte 7, Well No. 2

Location Southeast of the Northwest Quarter Section

Sec. 3 Twp. 41 North Rge. 28 East County Apache, Arizona.

4. Federal, State or Indian Lease Number, or lessor's name if fee lease Navajo Tribal 14-20-603-226

5. Field or Pool Name East Boundary Butte (Bluff Reservoir)

6. Check Appropriate Box to Indicate Nature of Notice, Report, or Other Data

NOTICE OF INTENTION TO:				SUBSEQUENT REPORT OF:			
TEST WATER SHUT-OFF	☐	PULL OR ALTER CASING	☐	WATER SHUT-OFF	☐	MONTHLY PROGRESS	☐
FRACTURE TREAT	☐	DIRECTIONAL DRILL	☐	FRACTURE TREATMENT	☐	REPAIRING WELL	☐
SHOOT OR ACIDIZE	☐	PERFORATE CASING	☐	SHOOTING OR ACIDIZING	☐	ALTERING CASING	☐
REPAIR WELL	☐	CHANGE PLANS	☐			ABANDONMENT	☐
(OTHER)	☐			(OTHER) Documentation of Change of Operator	X		

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

7. DESCRIBE PROPOSED OR COMPLETED OPERATIONS (Clearly state all pertinent 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 markers and zones pertinent to this work.)

Effective 7:00 a.m., October 12, 1967, the Operator of the above-described property changed to Consolidated Oil & Gas, Inc., from Shell Oil Company.

Address: Consolidated Oil & Gas, Inc.
4150 East Mexico Avenue
Denver, Colorado 80222

RECEIVED
JAN 5 1968
STATE O & G
CONS. COMM.

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

Signed Joe A. Larkin Title Production Accountant Date January 3, 1968

Permit No. 32

STATE OF ARIZONA
OIL & GAS CONSERVATION COMMISSION
Sundry Notices and Reports On Wells
File Two Copies
Form No. 25

17

RESERVOIR PRESSURE REPORT

Operator: Shell Oil Company	Address: Post Office Box 1200, Farmington, New Mexico
Field: East Boundary Butte	County: Apache
	Date: April 1963

Producing Formation	Oil Gradient	Water Gradient	Initial Completion*	Special*	General Survey*	Datum Plane	Gas Gravity
Lower Bluff & Desert Creek	--	--	32 B/D 64% cut & 2200 MCF/D	X	(Press. Buildup)	760 plus Sea	0.702

Lease	Well No.	Oil (O) or Gas (G)	Date Tested	Shut-in Time	Shut-In Tubing Pressure	Bomb Test Data: Test Depth	Bomb Test Data: B.H. Temp.	Bomb Test Data: Observed Pressure	Sonic Instrument Test Data: Prod. Test (Bbls per Day): Oil / Gas (MCF/D)	Sonic Instrument Test Data: Prod. Test (Bbls per Day): Water	Sonic Instrument Test Data: Liquid Level	Sonic Instrument Test Data: Liquid Gradient	Sonic Instrument Test Data: Wt. of Liquid Column	Sonic Instrument Test Data: Wt. of Gas Column	Sonic Instrument Test Data: Casing Pressure	Pressure At Datum
East Boundary Butte #7	2	G	3-24 to 3-28-63	68-1/3 --		4547	109	1373	557							1373

RECEIVED APR 15 1963 STATE O & G CONS. COMM.

* Designate type of report by "x".

CERTIFICATE: I, the undersigned, under the penalty of perjury, state that I am the Div. Prod. Supt. of the Shell Oil (company), and that I am authorized by said company to make this report; and this report was prepared under my supervision and direction and that the facts stated therein are true, correct and complete to the best of my knowledge.

APR 10 1963
Date

Signature Joe E. Dozier, Jr.

STATE OF ARIZONA
OIL & GAS CONSERVATION COMMISSION

Reservoir Pressure Report

Form No. P-12 File two copies

Authorized by Order No. 4-6-59

Effective April 6, 1959

32 x

INSTRUCTIONS FOR RUNNING AND REPORTING BOTTOM HOLE PRESSURES

This report shall be mailed, in duplicate, not later than the 15th day of the month immediately following the month in which the tests were made. All bottom hole pressure tests reported herein shall be made by a person qualified by both training and experience to make such tests.

1. Oil gradient shall be in pounds per square inch per foot.

2. Water gradient shall be in pounds per square inch per foot.

3. Datum plane shall be in feet plus or minus sea level.

4. Gas gravity shall be determined from an analysis of the casinghead gas.

5. Date Tested—Enter in this column the month and day on which the bottom hole pressure test was made.

6. Shut-in Time—Shall be reported accurately to nearest hour. The well tested shall have produced its normal daily rate of production or allowable within the 24-hour period immediately preceding the time at which it was shut in. (Any deviations shall be certified to on this report)

7. Test Depth—Shall be reported in feet as the lowest point to which the bomb was run and shall be reported in feet plus or minus sea level.

8. Bottom Hole Temperature—Shall be reported in degrees Fahrenheit as determined at test depth by either a recording or maximum reading thermometer.

9. Observed Pressure—Shall be reported as the pressure in pounds per square inch gauge observed at test depth before any necessary temperature correction has been made.

10. Production Test—The oil and water reported shall be from a representative production test immediately preceding the time at which the well was shut in.

11. Fluid Level—The fluid level reported shall be in feet above the datum plane.

12. Fluid Gradient—Shall be in pounds per square inch per foot and shall be representative of both the oil and water gradient where the well produces water as well as oil.

13. Weight of Oil Column shall be in pounds per square inch.

14. Weight of Gas Column shall be in pounds per square inch.

15. Casing Pressure—Shall be reported as the pressure in pounds per square inch gauge.

16. Datum Pressure—
    (a) In the case of bomb measurements, this pressure shall be the observed pressure after the corrections for reservoir temperature and for the difference between test depth and datum plane have been made.
    (b) In the case of sonic measurements, this pressure shall be determined from the weight of the fluid column plus the weight of any gas present above the fluid column plus casinghead pressure after proper corrections are made for temperature.

Calibration—The subsurface pressure instrument shall be calibrated against a dead weight tester both prior and subsequent to the dates at which all tests reported hereon are made, and in no case shall this time exceed a period of one month. The prior and subsequent calibrations shall not disagree by more than one per cent (1%). The dead-weight tester used for the calibration shall be approved by the State of Arizona Oil & Gas Conservation Commission

Form No. P-12

Form 23-55(1-56)

OIL CONSERVATION COMMISSION

~~BOX 697~~

~~120 EAST CHACO~~
3500 N. Central Avenue
~~AZTEC, NEW MEXICO~~
Phoenix, Arizona

NOTICE OF GAS CONNECTION

DATE November 26, 1962

THIS IS TO NOTIFY THE OIL CONSERVATION COMMISSION THAT CONNECTION FOR THE PURCHASE OF GAS FROM

THE Shell Oil Company ✓
OPERATOR

East Boundary Butte * (LEASE) | "A" (WELL UNIT) | 35-42-28 (S-T-R)

Undesignated (POOL) | El Paso Natural Gas Company (NAME OF PURCHASER)

WAS MADE ON November 16, 1962 (DATE), FIRST DELIVERY November 16, 1962 (DATE)

* This is a central delivery point, measuring gas from #2 East Boundary Butte-Navajo Lease #7 located Sec. 3-41N-28E and #23-11 Navajo Tribal-Navajo Lease #8, located Sec. 11-41N-18E.

\- (INITIAL POTENTIAL)

El Paso Natural Gas Company
PURCHASER

R. M. Rodriguez
REPRESENTATIVE

Chief Dispatcher
TITLE

CC: TO OPERATOR Denver and Farmington
~~OIL CONSERVATION COMMISSION - SANTA FE~~
F. N. WOODRUFF - EL PASO
B. D. ADAMS

FILE

22

OPERATOR'S CERTIFICATE OF COMPLIANCE AND AUTHORIZATION TO TRANSPORT OIL OR GAS FROM LEASE

Lease	Field	Reservoir
East Boundary Butte No. 7	East Boundary Butte	Bluff & Desert Creek
Survey or Sec-Twp-Rge	**County**	**State**
See reverse side	Apache	Arizona

Operator
Shell Oil Company

ADDRESS ALL CORRESPONDENCE CONCERNING THIS FORM TO:

Street	City	State
805 West Municipal Drive	Farmington	New Mexico

Above named operator authorizes (name of transporter)
El Paso Natural Gas Company

Transporter's street address	City	State
P. O. Box 1492	El Paso	Texas

Field address
P. O. Box 990, Farmington, New Mexico

Oil, condensate, gas well gas, casinghead gas

To transport 100 % of the gas well gas from said lease.

OTHER GATHERERS TRANSPORTING FROM THIS LEASE ARE AS FOLLOWS:

Name of gatherer	% transported	Product transported
None		

Indicate whether or not this certificate is for a new lease. If not a new lease, indicate whether or not it is a change of operator, change of lease name, change of gatherer, or a consolidation or subdivision of leases and give effective date of change.

This Certificate is for a new lease. On well, Shell East Boundary Butte No. 2, is the only well on the subject lease. Emergency authorization granted November 7, 1962, and confirmed by letter of same date from Mr. John K. Petty, Petroleum Geologist, Oil and Gas Commission.

The undersigned certifies that the rules and regulations of the State of Arizona Oil & Gas Conservation Commission have been complied with in drilling and producing operations on this lease, except as noted above, and that the above transporter is authorized to transport the above specified percentage of the allowable oil or gas produced from the above described property, and that this authorization will be valid until further notice or until cancelled by the State of Arizona Oil & Gas Conservation Commission.

CERTIFICATE: I, the undersigned, under the penalty of perjury, state that I am the Division Production Superintendent of the Shell Oil Company (company), and that I am authorized by said company to make this report; and that this report was prepared under my supervision and direction and that the facts stated therein are true, correct and complete to the best of my knowledge.

11-9-62
Date

Signature Joe E. Dozier, Jr.

Date approved:
January 2, 1963

By: [signature]
Executive Secretary

Commissione 's Number: 1

File No.

STATE OF ARIZONA OIL & GAS CONSERVATION COMMISSION
Operator's Certificate of Compliance & Authorization to Transport oil or Gas from Lease
Form No. P-17 File three copies
[redacted]
Effective [redacted], 19[redacted]

Navajo Lease 14-20-603-226
22

Section-Township-Range

Sections 1, 2, 3, T. 41 N., R. 28 E., and Fractional Sections 34, 35, 36, T. 42 N., R. 28 E., G. & S.R.M.

SHELL OIL COMPANY - NAVAJO TRIBAL #2

Location: 1980' NL and 1980' WL of Section 3, T. 41 N., R. 28 E., Apache County

Elevation: 5307'

Commenced: May, 1954
Completed: September, 1954

FORMATION RECORD

From	To	Total Feet	Formation
0	1530	1530	Navajo, Kayenta, Wingate, Chinle
1530	1660	130	Shinarump
1660	1808	148	Moenkopi
1808	3757	1949	Cutler-Rico
3757	5347	1590	Hermosa
5347	5510	163	Molas
5510	5668	158	Leadville
5668	5790	122	Ouray
5790	6093	303	Elbert
6093	6325	232	Undifferentiated Devonian
6325	-		Cambrian

TD 6339'

2/58

22

ROTARY ENGINEERING & MFG. CO. INC.
701 SOUTH PECOS TELEPHONE 4-6631
MIDLAND, TEXAS

22

CORE ANALYSIS TABULAR DATA

COMPANY SHELL OIL CO | WELL EAST BOUNDRY BUTTE NO 2 | FIELD WC
COUNTY APACHE | STATE ARIZONA | DATE 8-24-54 | DLB-RASCO ANALYST
FORMATION HERMOSA | TYPE ANALYSIS CONVENTIONAL P. & P. | JOB NO. 951
REMARKS CORE NO. 3 & 4

SAMPLE NUMBER	DEPTH				POROSITY %	PERMEABILITY M. D.	TOTAL WATER SATURATION % P. V.	RESIDUAL OIL SATURATION % P. V.	PROBABLE PRODUCTION	REMARKS
	CORE NO. 3	4526'-4551'		15 1/2' REC.						
1	4528				1.5	< .1				V/ SHLY LS
2	4531				3	< .1				
3	4536				2.3	< .1				ARGILL LS
4	4539				5	< .1				P.P, SMALL VUGS
	CORE NO. 4	4551'-4601'		49' REC.						
1	4558'				3	< .1				
2	4565				5.7	< .1				SHLY IN PART
3	4570				5.8	< .1				SL/ FRACT.
4	4575				1.6	< .1				V/ SILTY
5	4578				5.	< .1				SILTSTONE
6	4584				3.8	< .1				SHLY LS
7	4590				4.7	< .1				INTERXLN POR.
8	4597				4.8	< .1				"

ALL CUTS NOT AVAILABLE FOR ANALYSIS
PLUGS NOT RUN ON ZONES OF 1' OR LESS THAT WERE BLEEDING OIL

22

32 x 8

[redacted] ENGINEERING & MF[redacted] CO. INC.

701 SOUTH PECOS — TELEPHONE 4-6631

MIDLAND, TEXAS

#22

CORE ANALYSIS TABULAR DATA

COMPANY SHELL | WELL EAST BOUNDRY BUTTE NO. 2 | FIELD WILDCAT

COUNTY APACHE | STATE ARIZONA | DATE 8-21-54 | UNIT 41 ANALYST

FORMATION HERMOSA | TYPE ANALYSIS CONVENTIONAL P&P. | JOB NO. 951

REMARKS CORE WEATHERED SEVERAL DAYS BEFORE ANALYSIS

SAMPLE NUMBER	DEPTH CORE NO. 5	POROSITY %	PERMEABILITY M. D.	TOTAL WATER SATURATION % P. V.	RESIDUAL OIL SATURATION % P. V.	PROBABLE PRODUCTION	REMARKS
1	4603	3.1	<.1	NOT	RUN	—	TAN ARGILL. LS.
2	4608	8.33	<.1	"	"		TAN FX ARGILL LS SILTY SS PARTINGS
3	4613	2.9	<.1				TAN ARGILL LS
4	4617	7.19	<.1				TAN ARGILL LS.
5	4622	4.6	<.1				TAN ARGILL LS.
6	4627	4.3	<.1				TAN OOL LS. TR. PIN POINT PORO.
7	4632	5.4	<.1				TAN OOL LS. TR PP-INTER XLN. POR.
8	4637	5.0	<.1				TAN FX FOSS LS.
9	4643	6.2	<.1				TAN FX FOSS LS W/ PP-INTERXLN POR.
10	4648	4.4	<.1				TAN FN-MED XLN LS.

POROSITY SLIGHTLY HIGHER THAN TRUE POROSITY OF UNWEATHERED CORE DUE TO THE ARGILL. CHARACTER OF THE LS.

22

32 x

RECEIVED
JAN 17 1955
STATE LAND
DEPT.

DITCH SAMPLES

Examined by Turnbow 25 to 63
_____ to _____

Well #1
Field or Area East Boundary Butts

FROM	TO	%	SHOWS UNDERLINED — SAMPLES LAGGED (NOT)
25	80	100	Sandstone, buff to light red, fine grained, well sorted, with few hematite grains.
80	120	100	Sandstone, as above, becoming white to buff.
120	140	50	Sandstone, as above.
		35	Sandstone, light purple, fine grained, well sorted, with some coarse well rounded frosted grains.
		15	Quartzite, white to purple, very cherty.
			Top Kayenta ± 135'
140	160	100	Sandstone, light purple, as above, with abundant frosted quartz grains, calcareous.
			Top Wingate ± 160'
160	180	80	Sandstone, orange-red, fine grained, well sorted.
		20	Sandstone, purple, as above.
180	200	100	Sandstone, bright orange-red, very fine grained, well sorted, calcareous.
200	220	100	Sandstone, as above.
220	260	100	Sandstone, red as above, with few medium grains subrounded to round, red staining, some chert grains, slightly calcareous.
260	300	100	Sandstone, as above, poorly consolidated, not calcareous, increased number of medium, frosted grains.
300	340	100	Sandstone, as above.
340	360	100	Sandstone, as above, light red.
360	380	95	Sandstone, as above.
		5	Sandstone, white, very fine, well sorted, with few fine grains.
380	440	100	Sandstone, bright orange-red, very fine, with red-stained sub-rounded to round frosted grains, some chert grains.
440	460	100	Sandstone, as above, white to light green mottling.
460	520	100	Sandstone, as above, no mottling.
520	630	100	Sandstone, as above.

22

DITCH SAMPLES

Examined by Turnbow 630 to 932
Knight ____ to ____
Murray

Well #1
Field or Area East Boundary Butte

SAMPLES LAGGED (NOT)

FROM	TO	%	SHOWS UNDERLINED
630	640	60	Sandstone, red, fine grained, well sorted.
		40	Sandstone, white to light green, very fine to fine grained, well sorted.
640	650	80	Siltstone, bright red with very fine sand grains, mottled green.
		20	Sandstone, as above.
650	670	100	Siltstone, as above.
670	690	100	Siltstone, bright red, well sorted, with some very fine sand, hard, tight, in part mottled green.
690	760	100	Siltstone, bright red, well sorted, very argillaceous, with some green mottling, calcareous.
760	770	100	Siltstone, as above, very clean and well sorted.
770	790	100	Siltstone, red to reddish-brown, argillaceous, very calcareous.
790	810	100	Siltstone, as above, well sorted.
810	830	100	Siltstone, dark to medium red, hard, very calcareous.
830	870	100	Siltstone, as above, mottled bright green, with limestone and quartzite pebbles, very calcareous.
870	880	80	Siltstone, as above.
		20	Shale, pink to light purple, with chert pebbles, calcareous.
880	890	100	Shale, pink to light purple, cherty, mottled gray-green to green, calcareous.
890	900	40	Shale, as above.
		30	Limestone, red, mottled gray-green, IVFA, very argillaceous.
		30	Microconglomerate, variegated red, purple, gray-green, composed of shale, limestone, and siltstone pebbles.
900	910	40	Conglomerate, as above.
		60	Siltstone, light brown to buff, very argillaceous, calcareous.
910	920	60	Siltstone, as above, becoming variicolored, very calcareous.
		40	Shale, orange-red, mottled buff, blocky.

29

32 × 8

DITCH SAMPLES

Examined by Turnbow 920 to 1330
Murray ___ to ___
Knight

Well #2
Field or Area East Boundary Butte #2

FROM	TO	%	SHOWS UNDERLINED	SAMPLES LAGGED (NOT)
920	950	100	Shale, as above, becoming siliceous.	
950	970	100	Siltstone, pink to bright red, very cherty, with chert fragments, calcareous.	
970	980	70	Siltstone, as above.	
		30	Siltstone, brown-red, well sorted, with some green mottling, in part siliceous, in part calcareous.	
980	1010	100	Siltstone, brown-red, as above.	
1010	1020	100	Siltstone, light brown to buff, very siliceous, slightly calcareous, some chert fragments.	
1020	1090	100	Siltstone, brown red to buff, siliceous, calcareous.	
1090	1110	100	Siltstone, light red to light brown, very calcareous.	
1110	1130	100	Siltstone, light brown to buff, very siliceous, calcareous, mottled purple.	
1130	1140	100	Shale, light brown, silty, slightly calcareous, partly mottled light green.	
1140	1150	100	Siltstone, light brown-red, calcareous.	
1150	1160	100	Shale, light red to red brown, mottled light green, silty, calcareous, hard.	
1160	1170	100	Limestone, light red to pink, I-III VF-MA, argillaceous, with veins of red and green shale.	
1170	1200	100	Shale, orange brown, red brown, mottled green, silty, calcareous, in part mottled ochre.	
1200	1220	100	Shale, as in 1170-1200.	
1220	1240	100	Shale, as above, with rare gray and brown-red pellets.	
1240	1250	100	Shale, light red, soft, granular, very calcareous.	
1250	1280	100	Shale, brown-red, purple, light green, in part mottled green, calcareous.	
1280	1300	100	Shale, light red, mottled white, very soft, very calcareous, some gray limestone pellets.	
1300	1320	100	Shale, red, mottled green and purple, soft and smooth, calcareous.	
1320	1330	40	Shale, purple, smooth, calcareous.	
		60	Shale, red, brown-red, purple, mottled green, calcareous.	

DITCH SAMPLES

Examined by Knight 1330 to 1420
Murray ___ to ___

Well #2
Field or Area East Boundary Butte

FROM	TO	%	SHOWS UNDERLINED SAMPLES LAGGED (NOT)
1330	1350	100	Shale, light red, mottled green, calcareous to very calcareous, with abundant brown and gray pellets.
1350	1370	100	Shale, red, orange-red, purple, mottled light green to green, very calcareous with pellets.
1370	1380	60	Shale, variegated purple, green, red, calcareous.
		40	Shale, light red, brown, orange, calcareous.
1380	1390	60	Shale, light orange-red.
		40	Shale, medium purple, calcareous.
1390	1400	100	Shale, red to purple-red, mottled green, calcareous with abundant clear chert fragments.
1400	1410	100	Limestone, medium purple, I VFA, argillaceous.
1410	1420	100	Limestone, as above, in part mottled green.

DITCH SAMPLES

Examined by Knight 1420 to 1590
_____ ____to _____

Well #2
Field or Area East Boundary Butte

FROM	TO	%	SHOWS UNDERLINED	SAMPLES LAGGED(NOT)
1420	1430	80	Limestone, purple, mottled green, argillaceous.	
		20	Shale, red, calcareous with limestone pellets.	
1430	1450	100	Limestone, as above, III FA.	
1450	1460	70	Limestone, as above.	
		30	Shale, light red, mottled green, very calcareous.	
1460	1470	80	Limestone, light purple, slightly argillaceous, scarce red grains in III F-MA matrix.	
		20	Shale, as above.	
1470	1480	100	Limestone, light purple - white, III FA, slightly argillaceous.	
1480	1490	100	Limestone, as above, grading to limestone, pale gray, IVF-MA, gray, translucent.	
1490	1500	60	Limestone, as above, chert fragments.	
		40	Shale, red, calcareous, soft.	
1500	1510	100	Limestone, purple, III FA, very argillaceous to shale, purple, very calcareous, some green mottling.	
1510	1520	60	Limestone, as above.	
		40	Shale, orange red, calcareous with clear chert fragments.	
1520	1530	100	Limestone, light purple I-III VF-FA, slightly argillaceous, few pieces green, I VFA.	
1530	1540	90	Limestone, as above, with pellets, sandy.	
		10	Sandstone, white, speckled brown and black, very fine - fine, angular, calcareous, micaceous and bentonitic.	
			Tent. Top Shinarump: 1535	
1540	1550	100	Sandstone, as above.	
1550	1560		No recovery.	
1560	1570	100	Sandstone, white, fine - medium grains, well rounded and frosted to angular, well sorted, slightly calcareous, bentonitic with orange chert grains.	
1570	1580	100	Shale, white, very bentonitic.	
1580	1590	100	Sandstone, medium - coarse, with round - angular grains, poorly sorted, conglomeratic with fragments of dark gray and orange chert.	

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DITCH SAMPLES

Examined by Knight 1590 to 1815
_____ to ____

Well #2
Field or Area East Boundary Butte

FROM	TO	%	SHOWS UNDERLINED SAMPLES LAGGED (NOT)
1590	1600	100	Shale, purple, soft, slightly calcareous.
1600	1610	100	Shale, purple and white, very bentonitic, sandy.
1610	1620	100	Shale, as above with 20% loose sand grains.
1620	1640	100	Limestone, light purple, mottled green, I-III VF-FA, argillaceous (Possible Chinle cavings?).
1640	1660	100	Shale, light green, very soft, bentonitic, trace sandstone, white, fine.
1660	1670	100	Shale, red, mottled green calcareous; trace shale , orange brown.
1670	1690	100	Limestone, light purple, mottled green very argillaceous, grades to shale.
1690	1700	100	Shale, orange red, silty in part, slightly calcareous with some green mottling and ochre stain, few fragments white I VFA limestone with red veinlets.
1700	1730	100	Shale, red - orange red, mottled green, calcareous with rare white clear chert fragments.
1730	1750	60	Shale, brown - red brown, calcareous, smooth.
		40	Shale, orange red, calcareous, smooth, mottled green in part.
1750	1760	70	Shale, orange red, as above.
		30	Shale, light purple - gray, very soft with round dark brown pellets.
1760	1780	100	Shale, mottled purple and light gray, very soft, mushy.
1780	1790	100	Shale, red brown, smooth with concave fractures.
1790	1800	100	Shale, light gray, spotted purple, red, ochre, black, appears granular.
1800	1805	50	Shale, as above.
		50	Shale, red - brown red, smooth.
1805	1810	90	Shale, speckled purple and light green, soft, sandy.
		10	Sandstone, gray, fine - medium grains, angular, poor sort, argillaceous.
			Tent. Top Coconino: 1810
1810	1815	100	Sandstone, white, medium - coarse, angular, poor sort, calcareous, few green stained grains.

DITCH SAMPLES

Examined by Knight 1815 to 1925
_____ ____ to _____

Well #2
Field or Area East Boundary Butte

FROM	TO	%	SHOWS UNDERLINED — SAMPLES LOGGED (NOT)
1815	1820	80	Sandstone, as above.
		20	Shale, green.
1820	1825	100	Shale, light green - gray green, silty, soft, mushy.
1825	1830	60	Shale, as above.
		40	Sandstone, gray green, fine, very argillaceous.
1830	1835	50	Shale, light gray green, very sandy.
		50	Sandstone, dark green, very fine, very argillaceous.
1835	1840	100	Sandstone, as above.
1840	1845	100	Sandstone, medium olive green - black, very fine - fine, very argillaceous, hard, carbon streaks, pyritic.
1845	1855	100	Sandstone, light - medium green, very fine, round - angular, very argillaceous, carbon streaks and pyrite.
1855	1860	50	Shale, gray green, sandy.
		50	Sandstone, as above.
1860	1865	40	Shale, as above.
		40	Sandstone, as above.
		20	Sandstone, white, fine, angular, well sorted.
1865	1870	100	Sandstone, white, fine, angular, well sorted, friable, pyritic in some pore spaces.
1870	1875	100	Sandstone, white, fine - coarse grained, conglomeratic, angular - subrounded, with intergranular pyrite.
1875	1885	100	Sandstone, light gray - white, very fine - medium grained, angular, poorly sorted, conglomeratic, with gray and orange grains, 10% coal.
1885	1890	100	Sandstone, white - pale pink, very fine - fine, angular - subrounded, bentonitic cement with scarce white micaceous flakes.
1890	1900	100	Sandstone, As above, but fine and conglomeratic, rare coarse yellow opaque chert fragments and fine gray grains.
1900	1910	100	Sandstone, pale gray green, very fine, angular, with abundant medium - coarse well rounded grains in matrix.
1910	1925	100	Sand, loose, medium - coarse grains, well rounded.

DITCH SAMPLES

Examined by Knight 1925 to 1950
_____ ____to _____

Well #2
Field or Area East Boundary Butte

FROM	TO	%	SHOWS UNDERLINED	SAMPLES LAGGED (NOT)
1925	1935	100	Sand, as above, becoming orange stained.	
1935	1940	100	Sandstone, pale orange, fine - coarse grained, angular - very well rounded, rare green grains.	
1940	1950	100	Sand, medium - coarse, very well rounded, orange stained.	

DITCH SAMPLES

Examined by Knight 1950 to 2050
Allen ____ to ____

Well No.
Field or Area East Boundary Butte

FROM	TO	%	SHOWS UNDERLINED	SAMPLES LAGGED (NOT)
1950	1955	50	Sand, as above.	
		50	Shale, grey green, soft.	
1955	1960	50	Sand, as above.	
		50	Shale, grey green, soft, speckled black.	
1960	1970	100	Shale, brown, red, soft.	
1970	1980	70	Shale, as above.	
		30	Sand, as above.	
1980	1985	100	Sandstone, pale orange, coarse, conglomeratic, with abundant coarse, well rounded, slightly orange stained grains in very fine, angular matrix.	
1985	2000	100	Sandstone, as above, with rare green rock grains.	
2000	2050		Very poor samples - rig water supply went out.	
2000	2010	100	Shale, buff to tan, very bentonitic, very sandy, calcareous.	
2010	2020	100	Shale, as above with abundant very fine angular to medium well rounded, orange stained grains.	
2020	2030	100	Sandstone, white, very fine - fine, angular, poorly sorted, calcareous, hard.	
2030	2050	100	Sandstone, orange, very fine, angular, with abundant medium well rounded sand grains.	
2050	2070	100	Shale, brown, soft, flaky, very sandy, calcareous.	
2070	2090	100	Shale, red, green and brown.	
2090	2100	100	Sandstone, orange, very fine, slightly calcareous.	
2100	2130	100	Sandstone, medium orange brown, very fine, angular with abundant medium well rounded orange stained grains.	
2130	2150	100	Sandstone, as above, very slightly calcareous.	
2150	2210	100	Sandstone, as above, tripolitic.	
2210	2270	100	Siltstone, dark orange brown, mottled green.	
2270	2280	50	Siltstone, light green.	
		50	Siltstone, as above.	

DITCH SAMPLES

Examined by Knight 2280 to 2320
Allen ___ to ___

Well #2
Field or Area East Boundary Butte

FROM	TO	%	SHOWS UNDERLINED	SAMPLES LAGGED (NOT)
2280	2290	20	Siltstone, light green, as above.	
		80	Siltstone, orange brown, as above.	
2290	2300	50	Siltstone, light green, as above.	
		50	Siltstone, orange brown, as above.	
2300	2310	100	Sandstone, orange, very fine, angular, well sorted.	
2310	2320	100	Shale, purple brown, soft, smooth, calcareous.	

DITCH SAMPLES

Examined by Knight 2320 to 2490
Vendell ___ to ___

Well East Boundary Butte #2
Field or Area East Boundary Butte

FROM	TO	%	SHOWS UNDERLINED	SAMPLES LAGGED (NOT)
2320	2330	80	Shale, red, calcareous.	
		20	Shale, green, soft.	
2330	2340	80	Shale, red, calcareous, mottled green.	
		20	Shale, green, soft.	
2340	2350	70	Shale, red, as above.	
		30	Shale, green, as above.	
2350	2370	80	Shale, orange-red, soft.	
		20	Shale, green-gray, soft.	
2370	2380	100	Shale, brown-red, soft, flaky, smooth, slightly calcareous.	
2380	2390	60	Shale, as above.	
		40	Shale, medium gray, soft, flaky, sandy.	
2390	2400	100	Shale, varicolored green, gray, red, purple.	
2400	2410	60	Siltstone, orange, calcareous, hard.	
		40	Shale, red.	
2410	2420	100	Shale, red and purple, soft, flaky.	
2420	2430	60	Shale, purple, soft, flaky.	
		40	Shale, red, calcareous.	
2430	2450	80	Shale, red, calcareous.	
		20	Shale, gray-green, soft, slightly carbonaceous.	
2450	2460	100	Shale, red, calcareous.	
2460	2470	100	Shale, orange-red, mottled green, calcareous.	
2470	2480	70	Shale, as above.	
		30	Shale, gray-green, soft, flaky.	
2480	2490	100	Shale, orange-red, as above.	

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DITCH SAMPLES

Examined by Knight 2490 to 2700
Vendell ____ to ____

Well East Boundary Butte #2
Field or Area East Boundary Butte

FROM	TO	%	SHOWS UNDERLINED	SAMPLES LAGGED (NOT)
2490	2510	80	Shale, orange-red, as above.	
		20	Shale, gray-green, soft, flaky.	
2510	2520	80	Shale, red orange to brown, calcareous.	
		20	Shale, gray-green, silty, slightly carbonaceous.	
2520	2540	70	Shale, red-orange, as above.	
		30	Shale, gray-green, as above.	
2540	2550	80	Shale, red-orange, as above.	
		20	Shale, gray-green, as above.	
2550	2560	40	Shale, orange-red, calcareous.	
		40	Shale, green-gray, mottled red and purple, soft, granular.	
		20	Siltstone, orange, hard.	
2560	2570	100	Siltstone, as above.	
2570	2580	80	Siltstone, as above.	
		20	Sandstone, dark brown-red, very argillaceous, black, micaceous.	
			Gas: Mud; Ave. 0, max. 3. 2320-2580 Cuttings; Ave. 0, max. 3	
2580	2600	100	Siltstone, orange-red, slightly calcareous, hard.	
2600	2610	100	Shale, light red, mottled white, calcareous.	
2610	2650	100	Shale, orange-red, mottled white and green, calcareous.	
2650	2660	80	Shale, red to orange-red.	
		20	Siltstone, as above.	
2660	2670	70	Shale, as above.	
		30	Siltstone, as above.	
2670	2680	100	Siltstone, dark brown, slightly calcareous, black, micaceous.	
2680	2690	100	Siltstone, red, slightly calcareous with round limestone pellets.	
2690	2700	100	Siltstone, dark red-brown and light green, slightly calcareous.	

DITCH SAMPLES

Examined by Knight 2700 to 2900
Vendell ____ to ____

Well East Boundary Butte #2
Field or Area East Boundary Butte

FROM	TO	%	SHOWS UNDERLINED	SAMPLES/ LAGGED
2700	2710	100	Siltstone, dark red-brown calcareous with black mica.	Not
2710	2720	60	Shale, dark red-brown, calcareous.	
		40	Siltstone, dark red-brown, as above.	
2720	2730	100	Shale, red-brown, silty, calcareous, with black micaceous.	
2730	2760	100	Shale, as above, very calcareous.	
2760	2780	80	Shale, as above.	
		20	Shale, medium gray, very sandy, carbonaceous.	
2780	2790	100	Shale, red, calcareous, with light green mottling.	
2790	2800	100	Sandstone, medium red, very fine to fine-grained, angular, poorly sorted, very argillaceous, calcareous, with abundant black mica.	
2800	2810	100	Sandstone, as above, with some green mica.	
2810	2820	100	Shale, red, hard, granular, calcareous.	
2820	2830	100	Shale, brown, silty, with white granular anhydrite inclusions.	
			Gas: Mud: Max. - 3, ave. 0.	
			2500-2830 Cuttings: Max. - 3, ave. 0.	
2830	2840	80	Shale, red-brown, calcareous.	
		20	Limestone, gray, IVFA.	
2840	2850	100	Shale, brown-red, silty, calcareous, with white anhydrite inclusions.	
2850	2860	80	Shale, as above.	
		20	Limestone, brown-gray, IVFA.	
2860	2870	100	Shale, as above, very silty, with anhydrite inclusions.	
2870	2880	50	Shale, as above.	
		50	Siltstone, brown, calcareous, micaceous.	
2880	2890	100	Shale, brown-red, very calcareous, silty with abundant anhydrite inclusions.	
2890	2900	100	Shale, as above with spots of sandstone, green, very fine.	

DITCH SAMPLES

Examined by Knight [illegible] to [illegible]
Ieronimc ___ to ___

Well East Boundary Butte #2
Field or Area East Boundary Butte #2

FROM	TO	%	SHOWS UNDERLINED	SAMPLES LAGGED (NOT)
2900	2910	40	Siltstone, brown, calcareous, micaceous.	
		30	Shale, as above.	
		30	Siltstone, green, calcareous, micaceous.	
2910	2920	80	Shale, red, calcareous, with anhydrite inclusions.	
		20	Limestone, gray, olive, black, IVFA.	
2920	2930	100	Shale, red, with green mottling, calcareous.	
2930	2950	100	Shale, red, with green mottling, very calcareous, silty.	
2950	2960	80	Shale, orange-red, calcareous, silty.	
		20	Sandstone, light green, calcareous.	
2960	2980	60	Shale, as above.	
		40	Siltstone, brown, calcareous with anhydrite inclusions.	
2980	3000	100	Shale, brown-red, silty, slightly calcareous, with anhydrite inclusions.	
			Gas: Mud: Ave. 3, max. 4. 2830-3000 Cuttings: Ave. 3, max. 4.	
			Note: Rig water has 3 Gas Units. Instrument not zeroed on air.	
3000	3010	100	Shale, red, mottled light green, calcareous with limestone nodules.	
3010	3020	100	Shale, red, mottled light green, calcareous, with limestone nodules.	
3020	3030	100	Shale, red, mottled brown, silty, calcareous.	
3030	3040	100	Shale, red-orange, mottled light green, silty, calcareous.	
3040	3050	80	Shale, red-orange, mottled light green, silty, calcareous.	
		20	Shale, gray-green and purple, soft, one fragments white, fine to medium sandstone with gray well-rounded limestone grains.	
3050	3060	70	Shale, red to red orange, silty, calcareous.	
		30	Shale, gray-green, soft, sandy.	
3060	3070	60	Shale, red, mottled green, calcareous.	
		40	Shale, gray to gray-green, mottled purple, soft.	

DITCH SAMPLES

Examined by Knight 3070 to 3200
Colburn ____ to ____

Well East Boundary Butte #2
Field or Area East Boundary Butte

FROM	TO	%	SHOWS UNDERLINED	SAMPLES LAGGED (NOT)
3070	3080	50	Shale, red, mottled green, calcareous.	
		50	Shale, gray to gray-green, mottled purple, soft.	
3080	3090	50	Shale, orange-red, silty, calcareous.	
		50	Shale, medium gray, soft, slightly sandy.	
3090	3100	50	Shale, orange-red, silty, calcareous.	
		50	Shale, mottled purple, soft, slightly sandy.	
3100	3110	60	Shale, medium gray-green, soft, slightly sandy.	
		40	Shale, red, calcareous.	
3110	3120	80	Shale, medium gray-green, soft, slightly sandy.	
		20	Shale, red, calcareous.	
3120	3130	100	Shale, red-orange, silty with white granular anhydrite inclusions.	
3130	3140	60	Shale, light gray, mottled purple, mushy.	
		40	Shale, red-orange, silty with white granular anhydrite inclusions.	
3140	3150	80	Shale, red-orange, silty, with white granular anhydrite inclusions.	
		20	Shale, light gray, mottled purple, mushy.	
3150	3160	50	Shale, brown-orange, silty, calcareous with anhydrite inclusions.	
		50	Shale, light gray, mottled purple, mushy.	
3160	3170	100	Shale, red, green, purple.	
3170	3180	40	Shale, brown-orange, silty, calcareous with anhydrite inclusions.	
		40	Shale, medium gray, mottled purple and ochre, mushy.	
		20	Siltstone, brown, with anhydrite inclusions.	
3180	3190	80	Shale, orange - red, silty.	
		20	Shale, gray, as above.	
3190	3200	100	Shale, red to red-purple, mottled light gray, soft, mushy.	

DITCH SAMPLES

Examined by Knight ___ to ___
Colburn ___ to ___

Well East Boundary Butte #2
Field or Area East Boundary Butte

FROM	TO	%	SHOWS UNDERLINED	SAMPLES LAGGED (NOT)
3200	3210	60	Shale, light gray to gray-green, soft, mushy, mottled purple.	
		40	Shale, red-purple, soft.	
3210	3220	60	Shale, red, purple, soft.	
		20	Shale, light gray.	
		20	Shale, purple.	
3220	3230	60	Shale, red-purple, soft.	
		40	Shale, light gray, mushy.	
3230	3240	40	Shale, purple, mushy.	
		40	Shale, brown-orange, silty.	
		20	Shale, purple.	
3220	3230	60	Shale, red-purple, soft.	
		40	Shale, light gray, mushy.	
3230	3240	40	Shale, purple, mushy.	
		40	Shale, brown-orange, silty.	
		20	Shale, light gray, mushy.	
3240	3250	100	Shale, green, purple, red, soft.	
3250	3260	100	Shale, white, red, purple, gray, mushy.	
3260	3270	60	Shale, red-orange, mushy.	
		40	Shale, medium gray, mottled purple, mushy.	
3270	3280	60	Shale, medium gray, mottled purple, mushy.	
		40	Shale, red-orange, mushy.	
3280	3290	100	Shale, purple, ochre, gray, red, mushy.	

Gas: Mud, ave. 3, max. 4.
3170-3290 Cuttings; ave. 3, max. 4.
Note: rig water has 3 gas units.

DITCH SAMPLES

Examined by Knight ___ to ___
Colburn ___ to ___

Well East Boundary Butte #2
Field or Area East Boundary Butte

FROM	TO	%	SHOWS UNDERLINED	SAMPLES LAGGED (NOT)
3290	3300	100	Shale, [illegible] ochre, gray, red, mushy, with anhydrite inclusions.	
3300	3310	60	Shale, [illegible] brown, very calcareous, micaceous with white anhydrite inclusions.	
		40	Shale, orange-red.	
3310	3320	60	Shale, brown, gray green with annydrite inclusions.	
		40	Limestone, as above.	
3320	3330	100	Shale, red-purple, red, soft, mushy.	
3330	3340	100	Shale, red, calcareous, trace shale, green.	
3340	3350	90	Shale, red, calcareous with rare anhydrite inclusions.	
		10	Shale, green.	
3350	3360	100	Shale, red, silty, calcareous.	
3360	3370	100	Shale, red, silty, calcareous with abundant limestone nodules.	
3370	3410	100	Shale, variegated, red, green, brown, gray, purple, calcareous.	
3410	3450	100	Shale, as above, becoming 40%± green.	
3450	3460	60	Shale, gray-green, soft, slightly carbonaceous.	
		40	Shale, red, calcareous.	
3460	3470	100	Shale, gray-green, soft.	
3470	3480	60	Shale, gray-green, soft, flaky, silty.	
		40	Shale, orange and red, silty with anhydrite inclusions.	
3480	3490	50	Shale, orange and red, silty with anhydrite inclusions.	
		50	Shale, gray-green, soft, flaky, silty.	
3490	3500	80	Shale, red.	
		20	Shale, green.	
3500	3510	80	Shale, red - brown.	
		20	Shale, light green, olive.	

Gas: Mud ave. 3, max. 5.
3290-3510 Cuttings ave. 3, max. 5.
Note: Mud water has 3 gas units.

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DITCH SAMPLES

Examined by Knight 3510 to 3580
Colburn ___ to ___

Well East Boundary Butte #2
Field or Area East Boundary Butte

FROM	TO	%	SHOWS UNDERLINED	SAMPLES LAGGED (NOT)
3510	3520	100	Shale, variegated red, green, purple, brown, calcareous.	
3520	3530	100	Shale, brown, silty, very calcareous.	
3530	3540	100	Shale, orange-red.	
3540	3550	60	Shale, light gray-green to light purple-gray, very soft with abundant gray limestone pellets.	
		40	Shale, orange-brown.	
3550	3560	100	Shale, variegated purple, red, orange, green, brown.	
3560	3570	100	Shale, variegated, orange, red, brown, green.	
3570	3580	50	Shale, brown and orange, silty.	
		50	Shale, green, silty, soft.	

Gas: Mud; ave. 3, max. 5.
3510-3580 Cuttings; ave. 3, max. 5.
Note: rig water has 3 gas units.

DITCH SAMPLES

Examined by Turnbow &/ Vendell 3580 to 3770
Turnbow & Allen 3770 to 3890

Well East Boundary Butte #2
Field or Area Apache County, Arizona

FROM	TO	%	SHOWS UNDERLINED SAMPLES LAGGED (NOT)
3580	3620	100	Shale, brown, green, orange, red, with some white granular anhydrite.
3620	3640	100	Shale, brown, silty, very calcareous.
3640	3650	100	Shale, red, brown, green, purple.
3650	3670	100	Shale, red, gray green, purple, calcareous.
3670	3680	100	Shale, pink, purple, soft.
3680	3700	100	Shale, varicolored.
3700	3720	100	Siltstone, red to brown, calcareous.
3720	3730	50	Shale, as above.
		50	Siltstone, as above.
3730	3770	100	Siltstone, brown, red, calcareous, very shaly in part.
3770	3780	85	Siltstone, as above.
		15	Sandstone, white to light gray, very fine grains, calcareous.
3780	3790	100	Siltstone, as above.
3790	3800	70	Shale, variegated red, green, gray, purple, calcareous.
		30	Limestone, white to light gray, I VFA, very sandy, fine-grained sand.
3800	3810	50	Limestone, as above.
		50	Shale, brown, blocky, calcareous, very silty.
3810	3820	100	Sandstone, light brown, very fine-grained, well-sorted, micaceous, very calcareous.
3820	3830	100	Shale, brown, blocky, calcareous, silty.
3830	3860	100	Shale, variegated red, brown, green, gray, purple, calcareous.
3860	3870	70	Shale, as above.
		30	Sandstone, brown, very fine-grained, very calcareous.
3870	3880	90	Shale, as above.
		10	Limestone, light gray, I VFA, fossiliferous fragments.
3880	3890	60	Limestone, white, I VFA, sandy, fossiliferous fragments, cherty.
		40	Shale, as above.

DITCH SAMPLES

Examined by Turnbow & Allen 3890 to ____ ____ to ____

Well East Boundary Butte #2
Field or Area Apache County, Arizona

FROM	TO	%	SHOWS UNDERLINED — SAMPLES LAGGED (NOT)
3890	3900	100	Limestone, as above, with orange chert fragments, cherty crinoid stems.
3900	3910	70	Shale, variegated red, brown, green, gray, purple, calcareous.
		30	Limestone, as above, becoming light gray.
3910	3920	100	Shale, variegated red, green, gray, brown, calcareous.
			Trace sandstone, green, very fine grained, calcareous.
3920	3930	80	Shale, as above.
		20	Limestone, IVFA, sandy, light to medium gray.
3930	3960	100	Shale, as above.
3960	3970	75	Siltstone, brown, very calcareous.
		25	Limestone, light gray to gray green, IVFA, Sandy.
3970	3980	80	Limestone, light gray, IVFA, sandy, fossiliferous fragments, cherty.
		20	Siltstone, as above.
3980	3990	75	Shale, variegated red, brown, green, gray.
		25	Limestone, as above.
3990	4005	100	Shale, as above, with purple limestone pebbles
4005	4010	60	Limestone, light gray to gray green, IVFA, very cherty, with orange chert fragments.
		40	Shale, as above.
4010	4015	70	Shale, as above.
		30	Limestone, as above.
4015	4030	100	Shale, as above, with limestone pebbles.

Gas Shows 3890-4030
Mud: Maximum 4 B.U., Average 3 B.U.
Cuttings: Maximum 3 B.U., Average 2 B.U.

DITCH SAMPLES

Examined by Turnbow & Allen 4030 to 4110 ___ to ___

Well East Boundary Butte #2
Field or Area Apache County, Arizona

FROM	TO	%	SHOWS UNDERLINED — SAMPLES LAGGED (NOT)
4030	4040	100	Shale, brown, blocky, calcareous.
4040	4045	100	Shale, brown, as above, trace limestone, medium gray IVFA.
4045	4050	50	Shale, as above.
		50	Siltstone, bright red, mottled green, in part calcareous.
4050	4055	70	Siltstone, as above.
		30	Limestone, medium gray, IVFA, sandy.
4055	4060	85	Siltstone, red to red brown, calcareous.
		15	Limestone, white, IVFA, very sandy.
4060	4065	90	Siltstone, as above.
		10	Limestone, as above.
4065	4070	70	Siltstone, as above.
		30	Shale, variegated brown, gray, red.
4070	4075	50	Siltstone, as above.
		45	Shale, as above.
		5	Limestone, light gray, IVFA, slightly sandy.
4075	4080	85	Siltstone, red to red brown, calcareous.
		15	Limestone, light gray, IVFA, sandy, chert fragments.
4080	4095	100	Shale, varicolored, calcareous.
4095	4100	65	Shale, brown, soft to blocky, calcareous.
		35	Limestone, as above.
4100	4105	60	Shale, as above.
		40	Limestone, white IVFA, fossiliferous.
			Gas Shows: 4030 - 4105 Mud, maximum 3 B.U. average 2 B.U. Cuttings, maximum 3 B.U. average 2 B.U.
4105	4110	50	Siltstone, red brown, calcareous.
		50	Shale, as above.

DITCH SAMPLES

Examined by Turnbow & Allen 4110 to 4175 ___ to ___

Well East Boundary Butte #2
Field or Area Apache County, Arizona

SAMPLES LAGGED (NOT)

FROM	TO	%	SHOWS UNDERLINED
4110	4115	100	Shale, as above.
4115	4120	70	Shale, as above.
		30	Sandstone, light brown, very fine, well-sorted, calcareous.
4120	4130	60	Shale, as above.
		40	Sandstone, as above, becoming very calcareous.
4130	4135	60	Siltstone, bright orange red, very calcareous.
		40	Limestone, medium gra', IVFA, sandy.
4135	4140	100	Shale, varicolored, calcareous.
4140	4145	60	Limestone, I-III VFA.
		40	Shale, as above.
4145	4150	70	Limestone, as above.
		30	Shale, light gray green, soft, calcareous.
4150	4155	50	Limestone, as above.
		50	Shale, varicolored.
4155	4160	80	Limestone, light gray, IVFA, with orange chert fragments.
		20	Shale, as above.
4160	4165	70	Shale, varicolored.
		30	Limestone, as above.
4165	4170	80	Shale, as above.
		20	Limestone, light to medium gray, IVF-FA.
4170	4175	90	Shale, as above.
		10	Limestone, as above.

Gas Shows 4105-4175
Mud: Maximum 3 B.U. Average 2 B.U.
Cuttings: Maximum 3 B.U. Average 2 B.U.

DITCH SAMPLES

Examined by Knight 4180 to 4255
Allen ____ to ____

Well East Boundary Butte 2
Field or Area East Boundary Butte

FROM	TO	%	SHOWS UNDERLINED SAMPLES LAGGED (NOT)
4180	4185	100	Shale, variegated, with limestone pebbles.
4185	4190	90	Shale, as above.
		10	Limestone, light to medium gray, IVF-FA.
4190	4195	100	Siltstone, red to red brown, calcareous.
4195	4200	50	Limestone, white to light gray, IVFA, silty.
		50	Shale, red, calcareous.
4200	4205	75	Limestone, light gray, as above.
		25	Siltstone, maroon, micaceous.
4205	4210	80	Limestone, as above, with chert fragments.
		20	Siltstone, as above.
4210	4215	60	Limestone, light to medium gray, IVF-FA, silty.
		40	Shale, brown, maroon, silty, calcareous.
4215	4220	80	Shale, as above.
		20	Limestone, as above.
4220	4225	90	Siltstone, red to red-brown, calcareous, with limestone pebbles.
		10	Limestone, as above.
4225	4230	100	Siltstone, as above, mottled green.
4230	4235	75	Siltstone, as above.
		25	Limestone, light gray, IVFA, silty.
4235	4250	100	Shale, variegated, with limestone pebbles.
			Gas Summary Mud 1-4 MSA Units, Average ± 2.5 Cuttings C-4 MSA Units, Average 2.5
4250	4255	60	Shale, as above.
		40	Limestone, medium gray, IVF-FA, with crinoid stems, silty, chert fragments.

DITCH SAMPLES

Examined by Turnbow & Allen 4255 to 4330 to

Well East Boundary Butte #2
Field or Area Apache County, Arizona

FROM	TO	%	SHOWS UNDERLINED	SAMPLES LAGGED (NOT)
4255	4260	100	Limestone, light to medium gray, IVF-FA, silty to sandy, fossiliferous fragments.	
4260	4265	80	Limestone, as above with chert fragments.	
		20	Siltstone, brown, calcareous.	
4265	4270	80	Siltstone, as above.	
		20	Limestone, medium gray, IVFA, silty.	
4270	4275	100	Limestone, light gray to medium gray green, IVF-FA, silty, chert fragments, fossileferous fragments.	
4275	4280	90	Limestone, as above with fossiliferous fragments.	
		10	Shale, dark gray green, sub fissil, calcareous.	
4280	4285	60	Limestone, medium gray, I VFA, with crinoid stems.	
		40	Siltstone, red, very calcareous.	
4285	4290	60	Siltstone, as above.	
		40	Limestone, as above.	
4290	4300	100	Siltstone, as above with limestone pebbles.	
4300	4305	80	Limestone, light to medium gray, IVFA, chert fragments, fossiliferous fragments.	
		20	Siltstone, as above.	
4305	4310	85	Siltstone, as above.	
		15	Limestone, medium gray, IVF-MA, fossiliferous fragments.	
4310	4315	55	Siltstone, red, mottled green.	
		45	Limestone, as above.	
4315	4320	100	Limestone, light gray, IVFA, fusilinids.	
4320	4325	100	Limestone, as above, becoming silty, IVFA, fusilinids.	
4325	4330	70	Shale, brown, calcareous.	
		30	Siltstone, green gray.	

Gas Shows 4255-4330

Mud:	Maximum 4 B.U.	Average 2 B.U.
Cuttings:	Maximum 4 B.U.	Average 2 B.U.

DITCH SAMPLES

Examined by Turnbow & Allen 4330 to 4365 ____ to ____

Well East Boundary Butte #2
Field or Area Apache County, Arizona

FROM	TO	%	SHOWS UNDERLINED	SAMPLES LAGGED (NOT)
4330	4335	100	Siltstone, brown, mottled green, calcareous.	
4335	4340	60	Siltstone, as above.	
		40	Shale, green gray, silty, sub-fissile.	
4340	4345	50	Siltstone, as above.	
		50	Shale, as above.	
4345	4350	70	Shale, gray green, grading to siltstone with limestone pebbles.	
		30	Siltstone, as above.	
4350	4355	100	Siltstone, red, mottled green, with limestone pebbles.	
4355	4360	99	Siltstone, as above.	
		1	Limestone, medium gray, IVFA, silty.	
4360	4365		No recovery.	

Gas Shows 4330-4335

Mud:	Maximum 3 B.U.	Average 0 B.U.
Cuttings	Maximum 4 B.U.	Average 2 B.U.

[redacted]

DITCH SAMPLES

Examined by Knight & Allen 4365 to 4435 ___ to ___

Well East Boundary Butte #2
Field or Area Apache County, Arizona

FROM	TO	%	SHOWS UNDERLINED — SAMPLES LAGGED (NOT)
4365	4375	40	Shale, brown, silty, calcareous.
		30	Shale, gray green, calcareous, minutely micaceous.
		30	Limestone, gray, IVFA.
4375	4380	60	Shale, brown, silty, calcareous.
		20	Shale, medium gray, calcareous.
		20	Limestone, light gray, IVFA.
4380	4385	80	Shale, brown, silty, calcareous.
		20	Limestone, brown, IM-LA.
4385	4390	70	Shale, as above.
		20	Shale, medium gray.
		10	Limestone, light gray, IVFA.
4390	4395	40	Shale, brown and gray.
		40	Limestone, medium gray, IVFA.
		20	Chert, dark gray, opaque.
4395	4400	50	Shale, gray.
		50	Limestone, gray, IVFA.
			Samples lagged from 4400.
4400	4405	100	Limestone, light, I-III VFA.
4405	4410	50	Limestone, as above.
		50	Shale, medium gray, calcareous.
4410	4415	50	Limestone, as above, very poor sample.
		50	Shale, as above, very poor samples.
4415	4420	100	Limestone, light gray brown, I-III VFA, with rhombs or fine sand, pseudo-oolitic.
4420	4425	100	Limestone, light gray brown, I-III VFA, pseudo-oolitic.
4425	4430	100	Limestone, light gray, IVFA.
4430	4435	100	Limestone, light gray, IVFA, fine sandy.

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DITCH SAMPLES

Examined by Knight & Allen 4435 to 4490 ___ to ___

Well East Boundary Butte #2
Field or Area Apache County, Arizona

FROM	TO	%	SHOWS UNDERLINED — SAMPLES LAGGED (NOT)
4435	4450	50	Shale, brown red, calcareous, silty, very poor samples.
		50	Limestone, gray brown, IVFA, very poor samples.
4450	4455	60	Shale, medium gray, calcareous , gray green, calcareous, silty.
		40	Limestone, gray brown, IVFA.
			Gas Shows 4365-4455 Mud: Maximum 2 B.U. Average 0 B.U. Cuttings: Maximum 2 B.U. Average 0 B.U.
4455	4460	80	Shale, medium gray green, in part minute micaceous flakes, calcareous.
		20	Limestone, olive, IVFA.
4460	4465	70	Limestone, medium brown, IVFA.
		30	Shale, as above.
4465	4470	40	Shale, brown, silty, very calcareous.
		30	Shale, medium gray, calcareous.
		30	Limestone, gray brown, IVFA.
4470	4475	40	Shale, brown, as above.
		40	Limestone, as above.
		20	Shale, medium gray, as above.
4475	4480	60	Limestone, pale gray IVFA, fine sandy.
		30	Shale, gray to gray green, silty, calcareous.
		10	Chert, semi opaque.
4480	4485	30	Shale, medium gray to gray green, silty calcareous.
		30	Shale, brown and purple, silty, calcareous.
		20	Limestone, as above.
		20	Chert, as above.
4485	4490	60	Shale, medium green gray, silty, calcareous.
		40	Shale, brown, silty, micaceous, calcareous.

DITCH SAMPLES

Examined by Knight & Allen 4490 to 4520 ___ to ___

Well East Boundary Butte #2
Field or Area Apache County, Arizona

FROM	TO	%	SHOWS UNDERLINED	SAMPLES LAGGED (NOT)
4490	4495	40	Shale, brown, as above.	
		40	Limestone, light gray, IVFA.	
		20	Shale, medium green gray, as above.	
4495	4500	40	Shale, green, calcareous.	
		40	Shale, brown, calcareous, silty.	
		20	Limestone, gray, IVFA.	
4500	4505	60	Siltstone, light gray, calcareous.	
		40	Shale, medium gray, calcareous. (Very poor sample)	
4505	4515	60	Shale, as above.	
		40	Limestone, medium gray, I-III VF-FA.	
4515	4520	70	Limestone, dark gray, III FA, argillaceous, slightly dolomitic.	
		30	Shale, as above.	

Gas Shows: (4518, 10 units total, 6 units methane.
Cuttings: (4520, 12 units total, 6 units methane.
No shows in mud.

PB 4-3 8-50

WEEK ENDING 8-15-54

CORE FROM 4520 TO 4551.5

CORES EXAMINED BY Knight & Allen

SHELL OIL COMPANY

CORE RECORD

AREA OR FIELD East Boundary Butte

COMPANY Shell Oil

LEASE AND WELL NO. E. B. B. 2

NO.	FROM	TO	RECOV-ERED	FORMATIONAL, STRUCTURAL AND PROBABLE PRODUCTIVITY DESCRIPTION OF CORE	SYMBOL	OBSERVED DIP	CORE INDICATION OIL—GAS CORE OR DIT
1	4520	45235	2.5	Limestone, dark gray to black, I-III VF-FA, argillaceous.	None		
2	45235	4526	2.0	Limestone, dark gray to black, I-III VF-FA, argillaceous.	None		
3	4526	4551	15.5		None		
	4526	4527.5		Limestone, black, III F-VFA, very argillaceous.			
	4527.5	4528.5		Limestone, dark brown, IMA with one small chert nodule.			
	4528.5	4530.3		Limestone, light gray to brown, IVFA.			
	4530.3	4530.4		Shale, black, very calcareous, irregular parting.			
	4530.4	4532.8		Limestone, medium gray brown, IVFA with fusulinids top 1 ft., bottom 1 ft. contains abundant small forams.			
	4532.8	4534.0		Limestone, medium gray, I-III VF-FA with irregular black shale partings.			
	4534.0	4537.6		Limestone, light gray, IVFA with patches I LA & thin irregular shale partings; slight petroleum odor, pale spotty fluorescence, no cut fluorescence.			
	4537.6	4538.0		Limestone, light gray, IVF-MA, with abundant forams and fusulinid and organic remains, strong petroleum odor, pale spotty fluorescence, no cut fluorescence.			
	4538.0	4539.0		Limestone, light gray IVFA with patches of ILA with few styolites, strong petroleum odor, spotty fluorescence, no cut fluorescence.			
	4539.0	4541.5		Limestone, light gray IVFA matrix with C_{15} and B_5, faint distillate odor, strong spotty fluorescence, strong yellow cut fluorescence, faint light brown cut, few vugs show dead oil stain, good permeability.			

SYMPOLS: C-CLAY OR SHALE (SAND 0-5%). 1-CLAY OR SHALE WITH SAND STREAKS (SAND 5-25%). 2-CLAY OR SHALE AND SAND (SAND 25-60%). 3-SAND WITH SHALE STREAKS (SAND 60-90%). S-SAND (90-100%).
NOTE: SHOW FLUID CONTENT AS IN STANDARD LEGEND.

SD 4-B 8.50

WEEK ENDING August 22, 1954

CORE FROM 4551 TO 4563

CORES EXAMINED BY Knight & Allen

SHELL OIL COMPANY

CORE RECORD

AREA OR FIELD East Boundary Butte

COMPANY Shell Oil

LEASE AND WELL NO. E. B. B. #2

NO.	FROM	TO	RECOVERED	FORMATIONAL, STRUCTURAL AND PROBABLE PRODUCTIVITY DESCRIPTION OF CORE	SYMBOL	OBSERVED DIP	CORE INDICATIONS OIL—GAS CORE OR DITCH
4	4551	4601	50'				
	4551	4552		Limestone, light gray, I-III VF-FA$_C$, spotty light yellow fluorescence, strong yellow cut fluorescence.			
	4552	4553		Limestone, light gray, IVF-LA, fusulinids.			
	4553	4554		Limestone, light gray, IVF-LA, fusulinids, scarce horizontal and vertical fractures, small brachiopods, uniform yellow fluorescence, pale yellow cut fluorescence.			
	4554	4555		Limestone, light gray, IVFAC$_5$D$_5$, strong spotty to uniform yellow fluorescence, pale yellow cut fluorescence, no cut, some black dead oil in vugs.			
	4555	4556		Limestone, light gray, IVF-III VF-FAC$_{10}$D$_{5-1}$, uniform light oil stain, uniform to spotty light yellow fluorescence, strong yellow cut fluorescence, some black dead oil in vugs.			
	4556	4559		Limestone, light gray brown, IVF-LA, scarce fusulinids, black shale parting at 4556.5.			
	4559	4560		Limestone, light gray to brown, IVF-LAC$_1$, weak spotty yellow fluorescence, no cut fluorescence.			
	4560	4561		Limestone, light gray, IVFA with organic shadows.			
	4561	4562		Limestone, light gray, IVF-MA with abundant small smooth brachiopods.			
	4562	4563		Limestone, light gray brown, IVF-MAC$_2$ with small smooth brachiopods, strong spotty yellow fluorescence, strong yellow cut fluorescence, no cut.			

SYMBOLS: C-CLAY OR SHALE (SAND 0-5%). 1-CLAY OR SHALE WITH SAND STREAKS (SAND 5-25%). 2-CLAY OR SHALE AND SAND (SAND 25-60%). 3-SAND WITH SHALE STREAKS (SAND 60-90%). S-SAND (90-100%).
NOTE: SHOW FLUID CONTENT AS IN STANDARD LEGEND.

PD 4-B 8-50

SHELL OIL COMPANY

CORE RECORD

WEEK ENDING August 22, 1954

CORE FROM 4563 TO 4577

CORES EXAMINED BY Knight & Allen

AREA OR FIELD East Boundary Butte

COMPANY Shell Oil

LEASE AND WELL NO. E.B.B. #2

NO.	FROM	TO	RECOV-ERED	FORMATIONAL, STRUCTURAL AND PROBABLE PRODUCTIVITY DESCRIPTION OF CORE	SYMBOL	OBSERVED DIP	CORE INDICATIONS OIL—GAS / CORE OR DITCH
	4563	4564.3		Limestone, light gray brown, I-IIIFAC$_2$ with smooth, small brachiopods, strong spotty yellow fluorescence, strong yellow cut fluorescence, no cut. Stylolites at 4582 and 4564.			
	4564.3	4565		Limestone, light gray brown, I-III F-MA, brachiopods as above.			
	4565	4566		Limestone, as above, becoming III FA, brachiopods as above.			
	4566	4567.2		Dolomite, light gray brown, III FA, calcareous.			
	4567.2	4568		Limestone, light gray, IVFAD$_1$, spotty yellow fluorescence concentrated along tight fractures, very pale cut fluorescence, black residue in some vugs.			
	4568	4569		Limestone, light gray, IF-LAC$_2$D$_2$, very strong spotty yellow fluorescence, very strong yellow cut fluorescence, very pale brown cut, some dead oil residue in vugs.			
	4569	4570		Limestone, light gray brown, IM-LA, spotty yellow fluorescence.			
	4570	4571		Limestone, light gray brown, IVF-MA, slightly dolomitic, appears organic, strong yellow fluorescence along rare tight fractures.			
	4571	4572		Limestone, as above, but no shows.			
	4572	4573		Dolomite, light gray VI A, contains fossil hash, black thin irregular shale parting at 72.5.			
	4573	4574		Dolomite, as above, no fossils.			
	4574	4575		Dolomite, as above, slightly uniform yellow fluorescence.			
	4575	4577		Dolomite, as above, uniform moderate yellow fluorescence, pale yellow cut fluorescence.			

SYMBOLS: C-CLAY OR SHALE (SAND 0-5%). 1-CLAY OR SHALE WITH SAND STREAKS (SAND 5-25%). 2-CLAY OR SHALE AND SAND (SAND 25-60%). 3-SAND WITH SHALE STREAKS (SAND 60-90%). 4-SAND (90-100%).
NOTE: SHOW FLUID CONTENT AS IN STANDARD LEGEND.

PD 4-5 8.50

WEEK ENDING August 22, 1954

CORE FROM 4577 TO 4601

CORES EXAMINED BY Knight & Allen

SHELL OIL COMPANY

CORE RECORD

AREA OR FIELD East Boundary Butte

COMPANY Shell Oil

LEASE AND WELL NO. E. B. B. #2

NO.	FROM	TO	RECOV-ERED	FORMATIONAL, STRUCTURAL AND PROBABLE PRODUCTIVITY DESCRIPTION OF CORE	SYMBOL	OBSERVED DIP	CORE INDICATIONS OIL—GAS CORE OR DITCH
	4577	4578		Dolomite, as above, no shows.			
	4578	4579		Dolomite, as above, spotty yellow fluorescence.			
	4579	4580		Limestone, light brown, IF-MA, black carbonaceous shale at 79.3 with good 2° to 3° dip.		2°-3°	
	4580	4582		Limestone, light brown, IVF-FA, with rare large crinoid stem.			
	4582	4585		Sandstone, medium gray, very fine, well-sorted, very calcareous, may be III F-MA limestone.			
	4585	4586		Limestone, light brown, I-III VF-FA with irregular black shale stringers.			
	4586	4587		Limestone, tan, I-III FA, two prominent vertical fractures, 4585-4587, showing strong yellow fluorescence.			
	4587	4588		Limestone, light gray brown IMA.			
	4588	4589		Limestone, buff, IVFA with rare fusulinid.			
	4589	4593		Limestone, light gray brown, IVF-FA, thin irregular black shale partings 90 - 93.3.			
	4593	4595		Limestone, light gray, IVF-FA.			
	4595	4599		Limestone, tan III FA, dolomitic.			
	4599	4601		Limestone, light brown, IVF-MA, prominent stylolite at 4599.			

SYMPOLS: C-CLAY OR SHALE (SAND 0-5%). 1-CLAY OR SHALE WITH SAND STREAKS (SAND 5-25%). 2-CLAY OR SHALE AND SAND (SAND 25-60%). 3-SAND WITH SHALE STREAKS (SAND 60-90%). 5-SAND (90-100%).
NOTE: SHOW FLUID CONTENT AS IN STANDARD LEGEND.

PD 4-B 8.50

SHELL OIL COMPANY

CORE RECORD

WEEK ENDING August 19. 1954

CORE FROM 4601 TO 4651

CORES EXAMINED BY Knight & Allen

AREA OR FIELD East Boundary Butte

COMPANY Shell Oil

LEASE AND WELL NO. 2

NO.	FROM	TO	RECOV-ERED	FORMATIONAL, STRUCTURAL AND PROBABLE PRODUCTIVITY DESCRIPTION OF CORE	SYMBOL	OBSERVED DIP	CORE INDICATIONS OIL—GAS / CORE OR DITCH
5	4601	4651	49'				
	4601	4605		Limestone, light brown, IM-FA, scarce fusilinids 4604-05.			
	4605	4606		Limestone, light brown, IIIFA with patches ILA.			
	4606	4607.3		Limestone, tan, IIIFA, slightly dolomitic, good horizontal(±) dip.	± hor g		
	4607.3	4609		Limestone, tan, III-I VF-MA, pseudoolitic, with veins of calcite.			
	4609	4619		Limestone, light gray, IIIFA, with minute black micaceous flakes and fine sandy, rare black shale partings.			
	4619	4620		Limestone, medium brown, IF-MA.			
	4620	4623.2		Limestone, medium brown, I-III F-MA, very small pseudoolites. At 4619-23.2, abundant stylolites and rare thin, irregular black shale partings.			
	4623.2	4624.4		Siltstone, steel gray, slightly calcareous.			
	4624.4	4626		Limestone, medium brown, IVF-FA, with abundant small to medium pseudoolites, few pyrite crystals.			
	4626	4628		Limestone, gray, I-III F-M B_{1-2}, spotty bleeding light brown oil, spotty to uniform yellow fluorescence, strong white cut fluorescence, very light brown cut.			
	4628	4631.6		Limestone, tan, IF-MA, organic shadows at 4629-30, vertical fractures.			
	4631.6	4632.4		Limestone, gray brown, I-III F-M B_2, oolitic, with rare fractures bleeding light brown oil, strong spotty fluorescence, strong yellow cut fluorescence, pale brown cut, at 4631.6 prominant styolites.			
	4632.4	4635		Limestone, tan, IFA, pseudoolitic top 1.6', vertical fractures 32.5-35.5.			

SYMBOLS: C-CLAY OR SHALE (SAND 0-5%). 1-CLAY OR SHALE WITH SAND STREAKS (SAND 5-25%). 2-CLAY OR SHALE AND SAND (SAND 25-60%). 3-SAND WITH SHALE STREAKS (SAND 60-90%). S-SAND (90-100%).
NOTE: SHOW FLUID CONTENT AS IN STANDARD LEGEND.

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PD 4-B 8-50

WEEK ENDING August 19, 1954

CORE FROM 4601 TO 4651

CORES EXAMINED BY Knight & Allen

SHELL OIL COMPANY

CORE RECORD

AREA OR FIELD East Boundary Butte

COMPANY Shell Oil Co.

LEASE AND WELL NO. 2

NO.	FROM	TO	RECOV-ERED	FORMATIONAL, STRUCTURAL AND PROBABLE PRODUCTIVITY DESCRIPTION OF CORE	SYMBOL	OBSERVED DIP	CORE INDICATIONS OIL—GAS CORE OR DITCH
	4635	4636		Limestone, tan to light gray, I-III VF-MA, with fusilinids.			
	4636	4646		Limestone, light gray, IVF-FA, abundant fusilinids, scarce crinoid stems.			
	4646	4647		Limestone, light gray brown, IVFA, with scarce crinoid stems.			
	4647	4648.3		Limestone, light gray brown, IVF-FA, with scarce crinoid stems.			
	4648.3	4650		Limestone, light gray brown, I-III F-M B[illegible] spotty to uniform yellow fluorescence, pale yellow cut fluorescence, very pale brown cut.			
				NOTE: @ 4637-38, thin black shale zone. @ 4638-39, styolite zone. @ 4639-48, numerous thin, irregular black shale partings.			

SYMBOLS: C-CLAY OR SHALE (SAND 0-5%). 1-CLAY OR SHALE WITH SAND STREAKS (SAND 5-25%). 2-CLAY OR SHALE AND SAND (SAND 25-60%). 3-SAND WITH SHALE STREAKS (SAND 60-80%). S-SAND (80-100%).
NOTE: SHOW FLUID CONTENT AS IN STANDARD LEGEND.

DITCH SAMPLES

Examined by Knight 4650 to 4720
Allen ___ to ___

Well East Boundary Butte 2
Field or Area East Boundary Butte

FROM	TO	%	SHOWS UNDERLINED	SAMPLES LAGGED
4650	4655	50	Limestone, light gray, I-III F-MA.	
		50	Limestone, light gray, IIIF-MB 10-15° good.	
4655	4660	100	Limestone, light gray, IVFA + 5% B 10°.	
4660	4665	100	Limestone, light gray, IVFA + B.	
4665	4670	100	Limestone, light gray, IVFA.	
4670	4675	85	Limestone, light gray brown, IVF-FA.	
		15	Chert, light gray.	
4675	4680	100	Limestone, light gray brown. IVF-FA. with trace B & C	
			Shows 4650-4665, 20-30% spotty yellow fluorescence, pale yellow cut fluorescence. 4665-4690, 15-20% weak yellow fluorescence, pale yellow cut fluorescence.	
4680	4690	100	Limestone, light gray brown, IVFA.	
			Gas Summary (Rotary Engineer Units, Total/Methane) 4516-4520, (Cuttings) 12/6, (Mud) 0/0 4526-4540, (Mud) 6/4 Coring (DST #1, 5435-4601) 4540-4560, (M) 4-10/2-8 Coring 4560-4580, (M) 4-26/2-18 Coring Maximum @ 4576-80, (M) 26/18 4580-4600, (M) 4-18/3-14 Coring Maximum @ 4580-86, (M) 18/14 4600-4620, (M) 4-42/2-30 Coring Maximum @ 4605-07, (M) 42/30 Maximum @ 4610-13, (M) 22/14 4620-4640, (M) 6-10/2-6 Coring to 4651' 4640-4660, (M) 4-10/2-6 (C) @ 4652-60, 14-20/1-2 4660-4680, (M) 2-8/2-4 (C) 1-14/1-2 @ 4660-4662 4680-4700, (M) 2-6/0-4 (C) 1-4/1-2 @ 4694-4700 4700-4707, (M) 4-8/2-6 (C) 2/0	
4690	4705	100	Limestone, light gray, I/III VF-FA with thin shale partings.	
4705	4715	100	Limestone, light gray brown, IVFA with gray green shale partings.	
4715	4720	40	Limestone, as above.	
		40	Shale, gray green.	
		20	Siltstone, gray.	

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DITCH SAMPLES

Examined by Knight 4720 to 4795
Snyder ____ to ____

Well East Boundary Butte 2
Field or Area East Boundary Butte

FROM	TO	%	SHOWS UNDERLINED	SAMPLES LAGGED
4720	4730	100	Shale, green gray, silty, calcareous.	
4730	4735	100	Limestone, gray, I/III VF-FA.	
		Tr.	Shale, gray, with anhydrite inclusions.	
4735	4740	80	Limestone, as above, gray brown.	
		20	Shale, olive, calcareous.	
4740	4745	80	Siltstone, light gray, slightly calcareous, micaceous.	
		20	Shale, green gray.	
4745	4750	50	Limestone, very dolomitic, light brown, III FA.	
		50	Chert, light gray.	
			Shows 4740-4745 1% bluish yellow cut fluorescence.	
			Gas Summary (Rotary Engineering Units Total/Methane) 4707-4725 Mud: 10-30/2-12 4725-4744 Mud: 4-10/0-4 4707-4744 Cuttings: 2-6/0-4	
4750	4755	80	Dolomite, light to dark brown, III/IVF-FA with $B_{tr.}$, oolitic in part. Very poor sample, badly contaminated with uphole cavings.	
		20	Dolomite, pink, light tan, IIA, soft in part.	
4755	4765	80	Dolomite, white to medium gray, brown, I-III VFA+10B5 (mostly in "fines"). Suspect discarded "fines" more nearly represent sample. Porosity probably higher than described. Very poor samples.	
		20	Dolomite, tan, IIA.	
4765	4770	80	Dolomite, tan, II/I VFA, slightly argillaceous.	
		20	Dolomite, III F-LA + few cuttings B_5.	
4770	4775	80	Dolomite, as first above.	
		20	Dolomite, III/IFA with few cuttings B_5+C.	
4775	4780	90	Dolomite, tan, light brown, I/II VFA with some IIIFA+$B_{tr.}$.	
		10	Dolomite, pink, white, IIA, soft.	
4780	4785	100	Dolomite, mostly IIA with some medium to dark brown, IIIF-MA+$C_{tr.}$.	
4785	4790	100	Dolomite, buff, medium gray, III/I VF-FA+20$C_{5-10°}$	
4790	4795	90	Dolomite, as above with 30 $C_{2-10°}$	
22		10	Dolomite, tan, II/I VFA.	

[redacted]

DITCH SAMPLES

Examined by Thomas 4795 to 4865
_____ to _____

Well East Boundary Butte 2
Field or Area East Boundary Butte

FROM	TO	%	SHOWS UNDERLINED	SAMPLES LAGGED
4795	4800	60	Dolomite, 70% tan II/III VFA+30 C_{2-5} in local crystal development.	
		40	Dolomite, tan to medium brown, I/III VFA + $C_{tr.}$ +$B_{tr.}$.	
4800	4805	100	Dolomite, as first above + 15 C_{2-5}.	
4805	4810	80	Dolomite, as above.	
		20	Chert, light gray.	
			Shows 4770-4800, trace pale yellow cut fluorescence.	
			Gas Summary (Rotary Engineer Units Total/Methane) 4750-4752 Cuttings 18/12, Mud 7/4 4752-4778 Cuttings 4/0 , Mud 5/0 4778-4802 Cuttings 4/0 , Mud 5/0	
4810	4815	100	Dolomite, light gray, III FA with gray shale streaks.	
4815	4820	50	Dolomite, as above, calcareous.	
		50	Siltstone, medium gray, carbonaceous.	
4820	4825	50	Limestone, gray, IVFA.	
		50	Siltstone, medium gray, carbonaceous.	
4825	4830	100	Sandstone, light gray.	
4830	4835	70	Sandstone, light gray, very fine, hard, calcareous.	
		30	Shale, medium gray, flaky, micaceous, silty.	
4835	4840	100	Sandstone, as above.	
4840	4845	40	Limestone, light brown, IVFA.	
		30	Shale, as above.	
		30	Sandstone, as above.	
4845	4850	100	Limestone, light brown, III-I F-MA + 10% B_5 and C.; 5% strong uniform yellow fluorescence, strong milky yellow cut fluorescence, no cut; 50% cuttings show light brown oil stain.	
4850	4860	100	Limestone, light gray I-II VFA, slightly anhydritic (?).	
4860	4865	50	Limestone, as above.	
		50	Dolomite, light brown, IIIFA.	

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DITCH SAMPLES

Examined by Knight & Snyder 4865 to 4955 ___ to ___

Well East Boundary Butte 2
Field or Area East Boundary Butte

FROM	TO	%	SHOWS UNDERLINED	SAMPLES LAGGED
4865	4870	60	Dolomite, as above, becoming light gray.	
		40	Limestone, as above.	
4870	4875	100	Dolomite, light brown, IIIFA.	
			Gas Shows (Rotary Engineer Units Total/Methane) 4810-4845 Cuttings 0/0, Mud 6/4 4845-4855 Cuttings 20/8, Mud 20/18 4855-4875 Cuttings 0/0, Mud 4/2	
4875	4890	80	Shale, medium gray, hard, flaky, micaceous.	
		20	Dolomite, as above.	
4890	4900	100	Shale, medium gray to green gray, hard, micaceous.	
4900	4905	80	Shale, as above, very poor sample.	
		20	Limestone, IVFA.	
4905	4910	100	Shale, medium gray, silty, calcareous.	
4910	4915	50	Shale, as above.	
		50	Limestone, gray brown, IVFA.	
4915	4920	100	Limestone, light gray IVFA, with scarce black chert fragments, opaque.	
4920	4925	100	Limestone, light gray, I-III VFFA.	
4925	4930	70	Limestone, as above.	
		30	Limestone, light brown, IVFA, very dolomitic.	
4930	4935	80	Limestone, light gray, IVFA, fusulinid.	
		20	Shale, olive gray.	
4935	4940	60	Limestone, light gray brown, I-III VF-MA.	
		40	Shale, as above.	
4940	4945	100	Limestone, light brown, IVFA.	
4945	4950	100	Limestone, light brown, I-III VF-FA.	
			Gas Summary (Rotary Engineer Units Total/Methane) 4875-4950 Cuttings 0/0, Mud 4/4.	
4950	4955	80	Limestone, tan, I-III VF-FA.	
		20	Dolomite, light brown, IVFA.	

DITCH SAMPLES

Examined by Knight, Snyder, & Allen 4955 to 5020 ___ to ___

Well East Boundary Butte 2
Field or Area East Boundary Butte

FROM	TO	%	SHOWS UNDERLINED SAMPLES LAGGED
4955	4960	100	Limestone, as above.
4960	4970	100	Limestone, as above, becoming gray brown.
4970	4975	70	Limestone, light brown, IVF-MA.
		30	Dolomite, light brown, III FA.
4975	4980	80	Limestone, as above.
		20	Shale, medium gray, calcareous, silty.
4980	4990	70	Limestone, as above.
		30	Shale, medium gray, silty, platy, slightly calcareous.
4990	4995	50	Limestone, tan, IVFA.
		40	Shale, as above.
		10	Limestone, tan, III FAB, 5% spotty yellow fluorescence, pale yellow cut fluorescence, no cut.
4995	5000	60	Limestone, IVFA as above, trace III FB_2.
		40	Shale, as above.
5000	5005	60	Limestone, tan IVF-MA, with light gray, semi opaque chert fragments.
		40	Shale, purple, mottled green, silty, calcareous.
5005	5010	60	Shale, purple and light green, silty, calcareous, intercalated with limestone.
		40	Limestone, as above.
			Gas Summary (Rotary Engineer Units Total/Methane) 4950-4985 Cuttings 0/0, Mud 6/6 4985-4995 Cuttings 8/4, Mud 8/8 4995-5010 Cuttings 0/0, Mud 4/2
5010	5015	70	Shale and limestone intercalated as above.
		30	Limestone, light brown, I-III FA, with abundant small foramenifera.
5015	5020	50	Shale and limestone as above.
		30	Limestone, as above.
		20	Dolomite, tan to light gray III FA.

DITCH SAMPLES

Examined by Knight & Allen 5020 to 5100 ___ to ___

Well East Boundary Butte 2
Field or Area East Boundary Butte

FROM	TO	%	SHOWS UNDERLINED SAMPLES LAGGED
5020	5025	60	Dolomite, tan, III FA.
		40	Shale and limestone as above.
5025	5030	100	Limestone, light brown, IVFA.
5030	5035	70	Limestone, as above.
		30	Shale, gray, purple, green.
5035	5040	50	Limestone, as above.
		30	Limestone, medium gray, argillaceous, IVFA.
		20	Shale, medium gray, very calcareous, bryozoan fragments.
5040	5045	50	Limestone, light gray brown, IVF-FA.
		50	Shale, dark to medium gray, very calcareous, bryozpan and brach fragments.
5045	5050	70	Shale, as above.
		30	Limestone, as above.
5050	5060	100	Shale, medium gray, calcareous, blocky.
			Gas Summary (Rotary Engineer Units Total/Methane) 5010-5060 Cuttings 0/0, Mud 4/2
5060	5065	100	Dolomite, tan, IIIFAB$_{tr}$, 5% spotty yellow fluorescence, pale moderate yellow cut fluorescence, no cut.
5065	5070	100	Dolomite, as above, trace fluorescence as above.
5070	5080	100	Limestone, IIIF-MA + 10% C_{5-10}, trace fluorescence as above.
5080	5085	80	Limestone, tan, IVFA with forams. 10% to 20% yellow, moderately spotty fluorescence, moderate cut fluorescence.
		20	Chert, white to clear, speckled white, clear to semi opaque.
5085	5090	100	Limestone, tan, I-III VF-FA, with trace C (dolomite ?). Shows as above.
5090	5100	100	Dolomite, tan III FA with chert fragments as above. Shows as above.
			Gas Summary (Rotary Engineer Units Total/Methane) 5060-5100 Cuttings 0/0, Mud 4/2
			Note: Lost circulation of 38 bbls. mud, possibly at 5060-5080.

DITCH SAMPLES

Examined by R. L. Knight 5100 to 5240
B. D. Allen ____ to ____

Well East Boundary Butte
Field or Area East Boundary Butte 2

FROM	TO	%	SHOWS UNDERLINED	SAMPLES LAGGED
5100	5125	100	Limestone, medium gray, I-III FA.	
5125	5130	80	Shale, medium gray, calcareous, silty.	
		20	Limestone, as above.	
5130	5135	100	Shale, medium gray to gray green, calcareous.	
5135	5140	70	Limestone, light brown gray, I-III FA.	
		30	Shale, as above.	
5140	5145	100	Limestone, as above with dark brown chert.	
5145	5150	100	Limestone, medium gray brown, IMA with abundant small psuedoolites.	
5150	5155	50	Limestone, as above with trace pale spotty yellow fluorescence and cut fluorescence.	
		50	Limestone, tan, IVFA-$B_{tr.}$.	
5155	5190	100	Limestone, tan, IVF-MA with some tan and white chert fragments, shows as above.	
5190	5195	100	Limestone, as above, IVF-MA-$B_{tr.}$, 5% bright yellow fluorescence and cut fluorescence.	
5195	5200	60	Limestone, as above.	
		40	Dolomite, white, III MA + C_1 and $D_{tr.}$, 10% shows as above.	
5200	5205	100	Dolomite as above, 10% B_1 + C_1 + D_1, 20% strong yellow fluorescence, strong bluish yellow cut fluorescence, no cut, light oil stain visible on cuttings.	
5205	5210	100	Dolomite, as above, $B_{1-tr.}$, 10% shows as above.	
5210	5215	100	Limestone, tan to white, IVF-MA, with orange and gray chert fragments.	
5215	5220	60	Limestone, as above.	
		40	Shale, medium gray, silty, calcareous.	
5220	5225	100	Limestone, tan, IVF-FA.	
5225	5230	80	Shale, medium gray, calcareous.	
		20	Limestone, light brown, IVF-MA.	
5230	5235	100	Limestone, tan, IVF-FA, organic shadows.	
5235	5240	60	Limestone, as above.	
22		40	Shale, as above.	

DITCH SAMPLES

Examined by R. L. Knight 5240 to 5305
R. D. Allen ___ to ___

Well East Boundary Butte
Field or Area East Boundary Butte 2

FROM	TO	%	SHOWS UNDERLINED SAMPLES LAGGED
5240	5245	95	Limestone, as above.
		5	Limestone, tan, III FA + B_{5-10} & C, pseudoolitic.
5245	5250	100	Limestone, tan, as above, with tan chert fragments.
			Gas Summary: (Rotary Engineering Units Total/Methane) Cuttings: 5100-5190, 0/0; 5190-5215 16/6; 5215-5250, 0/0. Mud: 5100-5190, 4/4; 5190-5215 10/6; 5215-5250, 4/2.
5250	5255	100	Limestone, light brown, IVF-MA with dark gray silty shale partings.
5255	5260	100	Limestone, as above.
5260	5265	40	Limestone, tan, IVFA.
		40	Limestone, tan, IIIFA.
		20	Shale, purple, mushy.
5265	5270	80	Limestone, pale gray brown, IVFA.
		20	Shale, dark gray, silty, calcareous.
5270	5275	60	Limestone, as above.
		20	Shale, as above.
		20	Shale, purple, mushy.
5275	5280	100	Shale, purple, mushy, and shale, orange, blocky, silty.
5280	5285	60	Limestone, light brown, IVFA psuedoolitic.
		40	Shale, red, purple, gray.
5285	5290	100	Limestone, light brown to tan, IVFA with abundant pseudoolitics, trace waxy shale.
5290	5295	80	Limestone, as above.
		20	Shale, green, waxy.
5295	5300	60	Limestone, as above.
		40	Shale, as above.
5300	5305	40	Limestone, tan, IF-MA, pseudoolitic.
		40	Shale, red, gray, green, and purple.
		20	Limestone, light brown, IVFA.

DITCH SAMPLES

Examined by Knight 5305 to 5375
Vendell ___ to ___

Well East Boundary Butte 2
Field or Area East Boundary Butte

FROM	TO	%	SHOWS UNDERLINED SAMPLES LAGGED
5305	5310	100	Limestone, light brown, I-III VF-FA.
5310	5315	60	Limestone, as above.
		40	Shale, medium gray, silty, calcareous.
5315	5320	60	Shale, as above.
		40	Limestone, as above.
5320	5325	70	Shale, as above.
		30	Limestone, as above.
5325	5330	50	Limestone, tan. I-III VF-FA.
		50	Limestone, medium brown, III MA, crinoidal, argillaceous, fusilinids.
5330	5335	80	Limestone, tan, as above.
		20	Limestone, as above.
5335	5340	100	Limestone, tan IVFA.
5340	5345	100	Limestone, as above.
5345	5350	100	Limestone, I-III VF-FA with light gray chert fragments.
			NOTE: These samples poor.
			No shows.
			Gas Summary: (Rotary Engineering Units Total/Methane) Cuttings: 0/0 Mud: 2/2
5350	5355	100	Limestone, tan, I-III VF-FA with gray green shale partings.
5355	5360	60	Limestone, as above.
		40	Shale, brown, calcareous, silty.
5360	5365	100	Limestone, tan IVFA.
5365	5370	70	Shale, orange, very calcareous, silty.
		30	Limestone, as above.
5370	5375	70	Shale, gray.
		30	Limestone, white to buff, IVFA with fragments light gray chert.

DITCH SAMPLES

Examined by Knight & Vendell 5375 to 5450 ___ to ___

Well East Boundary Butte 2
Field or Area East Boundary Butte

FROM	TO	%	SHOWS UNDERLINED	SAMPLES LAGGED
5375	5380	70	Shale, purple, brown, green, orange.	
		30	Limestone, light gray brown, IVFA.	
5380	5385	100	Shale, as above.	
5385	5390	60	Shale, as above.	
		40	Limestone, tan, IVFA.	
5390	5395	70	Shale, purple, mottled ochre, brown, orange, gray, with light gray and orange chert fragments.	
		30	Limestone, as above.	
5395	5400	50	Limestone, as above.	
		50	Shale, purple, soft as above.	
5400	5405	60	Shale, purple, mottled ochre, brown, orange, gray, with light gray and orange chert fragments.	
		40	Limestone, white, IF-MA with purple shale partings.	
5405	5410	50	Limestone, as above.	
		50	Shale, as above, with chert fragments and green flakey shale.	
5410	5425	50	Limestone, as above.	
		50	Shale, as above.	
5425	5435	40	Limestone, light purple, I-III MA.	
		40	Shale, purple, silty, calcareous.	
		20	Chert, orange, semi-transparent.	
5435	5440	50	Limestone, purple, with orange chert, as above.	
		50	Shale, purple and light green, silty, calcareous.	
5440	5445	50	Shale, as above.	
		30	Limestone, as above.	
		20	Limestone, light brown, IVFA.	
5445	5450	40	Shale, as above.	
		30	Limestone, as above.	
		30	Limestone, light brown, IVFA.	

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DITCH SAMPLES

Examined by Knight 5450 to 5550
Vendell ___ to ___

Well East Boundary Butte 2
Field or Area East Boundary Butte

FROM	TO	%	SHOWS UNDERLINED	SAMPLES LAGGED
			No shows.	
			Gas Summary (Rotary Engineering Units Total/Methane) Cuttings: 0/0 Mud: 0/0	
5450	5455	60	Shale, purple, silty, flaky.	
		40	Shale, gray green, silty to very silty, calcareous.	
5455	5460	30	Shale, purple, as above.	
		30	Shale, red purple, silty.	
		20	Sandstone, red, very fine, very argillaceous, very calcareous.	
		20	Limestone, tan, IVFA with orange chert.	
5460	5465	40	Shale, purple, as above.	
		40	Shale, orange. silty.	
		20	Shale, light green.	
5465	5470	40	Shale, purple, as above.	
		30	Shale, orange, as above.	
		30	Shale, light green, with trace sandstone, white, medium to large, angular to sub-rounded, very calcareous.	
5470	5495	70	Shale, purple, orange, green, gray, brown.	
		30	Limestone, tan, IVFA.	
5495	5500	100	Shale, purple, gray, green, brown, with fragments, light gray translucent chert.	
5500	5510	40	Limestone, tan, IVF-FA.	
		30	Shale, purple, mushy.	
		30	Shale, purple and green, flaky.	
5510	5520	100	Limestone, white, IVFA with fragments cream opaque chert.	
5520	5525	100	Limestone, as above, pseudoolitic with scarce fragments yellow opaque chert.	
5525	5535	100	Limestone, white to cream, IVFA with stringers red shale.	
5535	5540	100	Limestone, as above, becoming oolitic.	
5540	5545	60	Limestone, tan, I-III VF-FA with yellow opaque chert fragments.	
		40	Limestone, white, I-III VF-MA with orange opaque chert fragments.	
5545	5550	60	Limestone, tan, as above, oolitic.	
22		40	Limestone, white, light yellow IVF-MA.	

DITCH SAMPLES

Examined by Knight & Allen 5550 to 5675 ____ to ____

Well East Boundary Butte 2
Field or Area East Boundary Butte

FROM	TO	%	SHOWS UNDERLINED	SAMPLES LAGGED
5550	5555	70	Limestone, white, IVF-LA with very large oolites.	
		30	Limestone, tan, IVFA.	
5555	5565	100	Limestone, white to tan, IVF-LA, oolitic, with trace limestone, yellow, III MA and fragments yellow opaque chert.	
5565	5570	70	Limestone, white to tan, as above.	
		30	Dolomite, light brown III MA.	
5570	5580	100	Dolomite, as above.	
5580	5585	70	Limestone, white, IVF-MA.	
		30	Limestone, white, mottled yellow and purple, III MA.	
5585	5590	60	Limestone, white as above.	
		40	Limestone, mottled as above.	
5590	5595	80	Limestone, white to light brown and yellow, I-III VF-MA.	
		20	Shale, apple green.	
5595	5615	100	Limestone, white, IF-LA, with large oolites. Trace B_1 porosity.	
5615	5620	50	Limestone, as above.	
		50	Limestone, light brown, IVFA.	
5620	5640	100	Limestone, light brown, IVF-MA	
5640	5645	50	Limestone, as above.	
		50	Limestone, white, IIIF-MA 1% moderate yellow spotty fluorescence, pale yellow cut fluorescence, no cut.	
5645	5650	100	Limestone, white I-III F-LA, pseudoolitic, with gray and orange opaque chert fragments. 1% shows as above.	
5650	5655	100	Limestone, as above, with white chert fragments. No shows.	
5655	5665	100	Limestone, tan, IM-LA. Very poor samples.	
			No gas shows in mud or cuttings. 5450-5665.	
5665	5670	100	Limestone, light brown, IVF-FA.	
5670	5675	80	Dolomite, tan, III MA trace B and C, 5% spotty to uniform strong yellow fluorescnece and moderate cut fluorescence, no cut.	
		20	Chert, white opaque.	

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DITCH SAMPLES

Examined by Knight 5675 to 5795
_____ ____ to ____

Well East Boundary Butte 2
Field or Area East Boundary Butte

FROM	TO	%	SHOWS UNDERLINED	SAMPLES LAGGED
5675	5680	100	Dolomite,	as above, with 30% B_2 + C_1 , 20% fluorescence as above with light brown cut and stain.
5680	5685	100	Dolomite,	as above, with 30% B_{1-5} + C_{1-5}, 20% shows as above.
5685	5690	100	Dolomite,	as above with 40% B_1 + C_5 + possibly D, 20% shows as above.
5690	5695	100	Dolomite,	as above, with 40% B_1 + C_{5-1} and possibly D, 10% shows as above.
5695	5700	100	Dolomite,	light brown, IIIMA + 50% B_{1-5} + C_1, 10% spotty to uniform yellow fluorescence, pale yellow cut fluorescence, no cut, light brown stain.
5700	5705	100	Dolomite,	as above, with III M B_{5-10} + C_1. 5% shows as above.
5705	5710	100	Dolomite,	as above with B_5 + C_1, 5% shows as above.
5710	5715	100	Dolomite,	with 50% B_{1-5}. 5% shows as above.
5715	5720	100	Dolomite,	with 50% B_{1-5} + C_1. 5% shows as above.
5720	5725	100	Dolomite,	with 70% B_{1-5}. 5% shows as above.
5725	5730	100	Dolomite,	with 10% B_{1-5}. 5% shows as above.
5730	5735	100	Dolomite	with 10% B_{1-5} + C_1. Trace yellow fluorescence.
5735	5740	100	Dolomite,	with 50% B_{5-1} + C_1. Trace yellow fluorescence.
5740	5745	100	Dolomite,	with 20% B_{1-5}. Trace yellow fluorescence.
5745	5750	100	Dolomite,	with 10% B_{1-5} + C_1. Trace yellow fluorescence.
5750	5760	100	Dolomite,	medium brown, IIIM B_5 + C_2, 1% bright yellow fluorescence.
5760	5765	100	Dolomite,	as above, with B_{5-1} + C_1, 1% fluorescence as above.
5765	5770	100	Dolomite,	as above, with B_{5-1} + C_1, 10% bright yellow fluorescence, strong yellow cut fluorescence, no cut.
				Gas Summary: (Rotary Engineering Units Total/Methane). Cuttings: 5677-5694: 10/6 5762-5770: 4/2-10/10. Mud: 5666-5730: 6/2 5730-5770: 4/2
5770	5775	100	Dolomite,	medium brown, IIIMB $_{5-1}$ + C_1. 30% shows as above.
5775	5785	100	Dolomite,	as above with B_{1-5} + C_1.
5785	5790	100	Dolomite,	light brown, IIIFA.
5790	5795	50	Dolomite,	as above.

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DITCH SAMPLES

Examined by Kriegh & Vendell ____ to 5895 ____ to ____

Well East Boundary Butte 2
Field or Area East Boundary Butte

FROM	TO	%	SHOWS UNDERLINED	SAMPLES LAGGED
5795	5800	50	Dolomite, medium brown, III MA.	
		50	Limestone, cream gray, brown, IVFA, dolomitic.	
5800	5805	90	Limestone, white, III MA.	
		10	Shale, bright green, waxy with few fine well-rounded sand grains.	
5805	5810	90	Limestone, as above, with white chert fragments.	
		10	Shale, as above	
5810	5815	60	Limestone, as above.	
		40	Dolomite, white, IIIFA.	
5815	5820	100	Limestone, white, IIIF-MA.	
5820	5825	100	Dolomite, tan, III FA.	
5825	5850	100	Dolomite, white to tan, III FA.	
5850	5855	100	Dolomite, tan, IIIFA.	
5855	5860	100	Dolomite, as above with trace green shale, as above.	
5860	5865	100	Dolomite, as above.	
5865	5870	50	Dolomite as above.	
		50	Limestone, tan, IVFA.	
5870	5875	100	Dolomite, tan, III FA.	
5875	5880	60	Dolomite, as above with white chert fragments.	
		20	Shale, green.	
		20	Shale, purple.	
5880	5885	100	Dolomite, as above with chert as above.	
5885	5890	50	Limestone, dolomite, IVFA	
		30	Shale, purple, platy.	
		20	Shale, bright green.	
5890	5895	60	Dolomite, light gray with streaks green shale.	
		20	Shale, bright green.	
22		20	Shale, purple.	

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DITCH SAMPLES

Examined by Knight & Vendell from 5895 to 6000

Well East Boundary Butte 2

Field or Area East Boundary Butte

FROM	TO	%	SHOWS UNDERLINED	SAMPLES LAGGED
5895	5900	100	Dolomite, light green, III FA.	
			Gas Summary (Rotary Engineering Units Total/Methane)	
			Cuttings 5[illegible] 12/2 Maximum, Average 8/4	
			5[illegible] 6/2 Maximum, Average 4/1	
			5[illegible] No gas.	
			Mud 5[illegible] 4/1 Maximum, Average 3/0	
5900	5905	60	Dolomite, green, as above.	
		40	Dolomite, tan IIIFA.	
5905	5910	60	Dolomite, tan, IIIFA.	
		40	Dolomite, green, as above.	
5910	5915	90	Dolomite, tan, as above.	
		10	Shale, bright green.	
5915	5920	80	Dolomite, as above IIIF-MA.	
		20	Dolomite, green, III FA.	
5920	5925	40	Dolomite, tan, as above.	
		40	Dolomite, green, as above.	
		20	Dolomite, light gray, III FA with abundant well-rounded sand grains.	
5925	5930	70	Dolomite, light gray, I-III VF-FA, pyritic.	
		30	Dolomite, light green, III FA.	
5930	5935	100	Dolomite, white to tan, III FA.	
5935	5940	80	Dolomite, as above.	
		20	Dolomite, light green, as above.	
5940	5950	80	Dolomite, as above.	
		20	Shale, gray.	
5950	5955	100	Sandstone, white, fine, angular to sub-rounded with rare medium well-rounded grains, strong uniform yellow fluorescence, moderate cut fluorescence, no cut, light brown oil stain 20% of cutting.	
5955	5960	100	Sandstone, white, very fine to medium, angular to well-rounded, siliceous.	
5960	5965	60	Dolomite, tan, III FA.	
22		40	Sandstone, as above.	

DITCH SAMPLES

Examined by [illegible] to [illegible]
[illegible] to [illegible]

Well East Boundary Butte 2
Field or Area East Boundary Butte

FROM	TO	%	SHOWS UNDERLINED	SAMPLES LAGGED
5965	5975	100	Dolomite, [illegible]	
			Sample Type Range Engineering Units Total/Methane)	
			[illegible] [illegible] [illegible]	
			[illegible] [illegible] [illegible]	
			[illegible] [illegible] [illegible]	
			[illegible] [illegible] [illegible]	
			Mud [illegible] [illegible]	
5975	6000	100	Dolomite, tan to light brown gray, III FA, with trace shows as above.	
6000	6005	100	Dolomite, tan, III FA, trace spotty yellow flucrescence and pale yellow cut fluorescence.	
6005	6010	100	Dolomite, tan, III F-MA, 5% shows as above.	
6010	6015	50	Dolomite, as above.	
		50	Dolomite, tan, III M-LA - C_1, 10% shows as above and dead oil in vugs.	
6015	6020	100	Dolomite, tan, III MA with medium well-rounded sand grains, 5% shows as above.	
6020	6025	100	Dolomite, as above with abundant sand as above, trace B, 1% shows as above.	
6025	6030	50	Dolomite, as above.	
		50	Dolomite, tan, III FA, trace green shale.	
6030	6035	60	Dolomite, as in 6020-25.	
		40	Dolomite, tan, III MA with abundant sand, medium well-rounded grains.	
6035	6040	100	Dolomite, tan, III FA.	
6040	6045	80	Dolomite, as above.	
		20	Shale, green, with abundant medium, well-rounded sand grains.	
6045	6050	60	Dolomite, tan, III FA.	
		40	Siltstone, light green.	
6050	6055	90	Dolomite, tan, III FA with green shale partings.	
		10	Dolomite, light gray, III FA, sandy.	
6055	6060	60	Dolomite, tan, III FA with green shale partings.	
		30	Dolomite, dark brown, IIIF-MA.	
22		10	Dolomite, light gray, III FA, sandy.	

[redacted]

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DITCH SAMPLES

Examined by Knight & Snyder 6060 to 6190 ___ to ___

Well East Boundary Butte 2

Field or Area East Boundary Butte

FROM	TO	%	SHOWS UNDERLINED	SAMPLES LAGGED
6060	6065	100	Dolomite, dark brown, as above.	
6065	6070	70	Dolomite, as above, white in part.	
		30	Dolomite, light gray, III FA, with medium well-rounded sand grains, silty.	
6070	6075	50	Dolomite, light gray, fine sandy as above.	
		50	Dolomite, white, as above.	
6075	6080	50	Dolomite, tan, IIIF-MA with fine angular to round sand grains.	
		30	Dolomite, gray, sandy, as above.	
		20	Shale, light green.	
6080	6085	60	Dolomite, medium brown, IIIF-MA.	
		40	Dolomite, tan, IIIF-M with medium to large well-rounded sand grains, some milky quartz.	
6085	6095	100	Dolomite, medium brown, as above.	
6095	6100	90	Dolomite, tan, III FA.	
		10	Sandstone, white, speckled light green, very fine, angular, glauconitic ?	
			6095 Top Undifferentiated Devonian	
6100	6105	100	Sandstone, white, very fine, angular, glauconitic ?	
6105	6115	100	Sandstone, as above, very fine to fine becoming fine to medium.	
6115	6125	100	Sandstone, white, fine, angular.	
6125	6150	100	Sandstone, as above, glauconitic ?	
6150	6155	100	Sandstone, red, very fine, angular, partly dolomitic.	
6155	6160	100	Sandstone, as above, red to purple, glauconitic ?	
6160	6170	100	Sandstone, as above, grading to siltstone.	
6170	6175	100	Sandstone, light red, fine, angular to sub-rounded.	
6175	6185	100	Sandstone, as above, glauconitic?, with scarce coarse well-rounded grains.	
6185	6190	60	Sandstone, as above.	
		40	Dolomite, cream, IVF-FA.	

DITCH SAMPLES

Examined by Knight 6190 to 6315
Snyder ___ to ___

Well East Boundary Butte 2
Field or Area East Boundary Butte

FROM	TO	%	SHOWS UNDERLINED	SAMPLES LAGGED
6190	6210	100	Dolomite, white to light yellow, IVF-III MA.	
			Shows 6184-6198 50% uniform yellow to bright yellow fluorescence, yellow to bright yellow cut fluorescence, no cut. 6198-6204 10-20% as above. 6204-6210 Trace, as above.	
6210	6225	100	Dolomite, dark brown, IIIF-MA.	
6225	6230	50	Dolomite, as above.	
		50	Dolomite, light gray, III FA.	
6230	6240	100	Dolomite, light gray, brown, III FA.	
6240	6250	100	Dolomite, medium gray, III MA, argillaceous.	
6250	6265	80	Dolomite, medium gray, III FA, argillaceous.	
		20	Shale, dark gray, silty, dolomitic.	
6265	6280	100	Dolomite, dark brown to black, III FA, argillacecus.	
6280	6285	80	Dolomite, as above.	
		20	Dolomite, medium brown, mottled white, III M-LA.	
6285	6290	100	Dolomite, brown, white, and black, IIIM-LA with trace B_1, dead oil in vugs.	
6290	6305	100	Dolomite, brown and white, mottled, IIIM-LC_1 with dead oil in vugs.	
6305	6310	100	Dolomite, light gray brown, III FA with abundant round sand grains, some frosted.	
6310	6315	100	Dolomite, as above, grading to dolomitic sand to sandstone, medium to large grains, sub-angular to rounded, some frosted.	
			Shows 6282-6292, 40% dull yellow fluorescence, dull yellow blue cut fluorescence (probably due to dead oil). No cut. 6292-6300, 70%, as above. 6300-6304, 10-30%, as above. 6304-6306, Trace as above.	

DITCH SAMPLES

Examined by Knight 5900 to 6315
Snyder ____ to ____

Well East Boundary Butte 2
Field or Area East Boundary Butte

FROM	TO	%	SHOWS UNDERLINED	SAMPLES LAGGED

GAS

Interval	Cuttings	Mud
5900-5948	0/0	0/0
5948-5952	4/2	2/0
5952-5956	20-30/4-2	2/2
5956-5970	5/1	2/2
5970-6012	0/0	2/2
6012-6018	4-8/2	2/2
6018-6034	2/2	2/2
6034-6036	0/0	4-8/2
6036-6084	0/0	2/2
6084-6100	0/0	4-6/2
6100-6126	0/0	2-4/2
6126-6237	0/0	2/2
6237-6256	0/0	0/0
6256-6272	2/2	2/2
6272-6288	2-6/2	2-4/2
6288-6302	12-28/2-4	2-8/2-4
6302-6315	4-2/2	0/0

6315	6320		Sample poor, mostly shale cavings.
6320	6325	100	Dolomite, light gray with abundant medium to coarse, sub-rounded sand grains.
6325	6330	50	Dolomite, as above.
		50	Sandstone, white, fine to coarse, angular, dolomitic.
6330	6339	100	Sandstone, white, as above.
			Total Depth, 6339, 9/23/54.

PD 4A MASTER SET 2-50 PRINTED IN U. S. A.

SHELL OIL COMPANY

WELL NO. 2

DRILLING REPORT
FOR PERIOD ENDING

East Boundary Butte (FIELD)

Apache, Arizona (COUNTY)

Gas Production Test #2

November 30 - December 7, 1954

3 (SECTION OR LEASE)

41 N., R. 28E., G&SRM (TOWNSHIP OR RANCHO)

DAY	DEPTHS FROM	DEPTHS TO	REMARKS
12-7		4730 PBTD	Blew well down at 8:30 A.M. through open pipe with flow from tubing to relieve back pressure in preparation for static survey test. Final flow prover pressure on 3/8" orifice 610 psi (still rising after 15 1/2 hrs.), final rate 1032 MCF/D. Casing pressure increased from 673 psi to 712 psi during flow. At 11:45 A.M. installed 3/4" orifice and opened casing, final flow prover pressure 253 psi, final rate 3150 MCF/D at 10:30 P.M. when well shut in for static pressure survey. See attached graph for results of test. NOTE. All calculations based on an assumed gas gravity of 0.70.

CONDITION AT BEGINNING OF PERIOD

HOLE SIZE	HOLE FROM	HOLE TO	CASING SIZE	DEPTH SET
13 3/4"	0'	704'	10 3/4"	697'
9"	704'	4520'	5 1/2"	4930'
8 3/4"	4520'	6339		

DRILL PIPE SIZES 2" tubing

22

Leonard M. Snyder

SIGNED

East Boundary Butte
(FIELD)
Apache, Arizona
(COUNTY)

DRILLING REPORT
FOR PERIOD ENDING
Gas Production Test #2
November 30 - December 7, 1954

WELL NO. 3
(SECTION OR LEASE)
41 N., R. 28 E., G&SRM
(TOWNSHIP OR RANCHO)

DAY	DEPTHS FROM	DEPTHS TO	REMARKS
			at 4670'
11-24			Ran pressure bomb to determine stabilized bottom hole pressure, 1515 psi.
11-30		4730 PBTD	Started production test No. 2 of intervals 4540'-4585 and 4650'-4690' at 1:30 P.M. Opened well through tubing with 1 1/8" orifice. Final flow pressure 275 psi, final rate 8000 MCF/D. Switched to 1 1/2" orifice at 3:30 P.M. and produced well through tubing and annulus. Recovered 40.5 bbls. fluid during 10 1/2 hr. flow period consisting of jet black sludge and water, average rate 120 B/D.
12-1		"	Switched to 1 1/4" orifice at 8:00 A.M. Final flow prover pressure on 1 1/2" orifice 78 psi, final rate 4940 MCF/D. A total fluid production of 75.5 bbls. fluid graded to dark green oil, 41° API dry, cutting 70% water. Produced 43.5 bbls. during 24 hr. flow period, 70% cut. All production through annulus and tubing.
12-2		4730 PBTD	Switched to 1 1/8" orifice at 8:00 PM. Final flow prover pressure on 1 1/4" orifice 100 psi, final rate 3955 MCF/D. Produced 25.0 bbls. gross fluid as above during 24 hour flow period, 70% cut. All production through annulus and tubing.
12-3		"	Continued to flow through 1 1/8" orifice. Average rate 3550 MCF/D. Produced 16 bbls. gross fluid as above during 24 hour flow period. All production through annulus and tubing.
12-4		4730 PBTD	Continued to flow through 1 1/8" orifice. Average rate 3350 MCF/D. Produced 13 bbls. gross fluid as above during 24 hour flow period, 70% cut. All production through annulus and tubing.
12-5		"	Switched to 3/4" orifice at 8:00 A.M. Final flow prover pressure on 1 1/8" orifice 101 psi, final rate 3200 MCF/D (not stabilized after 60 hours). From 10:00 A.M. to 12:30 P.M. rocked well to flush tubing. Faulty separator dumper caused fluid production through flowprover. Estimated fluid production during 24 hour period 12-24 B/D gross, 70% cut. Production through annulus only, after flushing well, to prevent fluid buildup in tubing.
12-6		4730 PBTD	Well shut in at 9:00 A.M. for pressure buildup prior to 600 psi transmission pressure test. Final flow prover pressure on 3/4" orifice 245 psi, final rate 3060 MCF/D. Shut in tubing pressure 680 psi after 8 hours. Well opened at 5:00 P.M. on 1/2" orifice for 1 hour. Final flow prover pressure 500 psi, final rate 2725 MCF/D. Switched to 3/8" orifice at 6:00 P.M. with production through tubing only. Estimated fluid production 8 bbls. gross, 70% cut, for 16 hour flow period.

CONDITION AT BEGINNING OF PERIOD

HOLE SIZE	HOLE FROM	HOLE TO	CASING SIZE	DEPTH SET
13 3/4"	0'	704'	10 3/4"	697'
9"	704'	4520	5 1/2"	4930'
8 3/4"	4520	6339		

DRILL PIPE SIZES 2" tubing

Leonard Snyder
SIGNED

SHELL OIL COMPANY

WELL NO. 2

DRILLING REPORT

FOR PERIOD ENDING

East Boundary Butte — 3

Apache, Arizona — October 24, 1954 — 41 N., R. 26E., G. & S. R. M.

DAY	DEPTHS		REMARKS
	FROM	TO	
10-18	4730 PB		Rigged up christmas tree. Started swabbing 7:30 AM. Swabbed 80 bbls when well started flowing at 10:50 AM. Casing pressure increased from 90 psi to maximum 990 psi in 4 hours 10 minutes, decreased to nearly stabilized 740 psi with 3/4" choke at 11:00 PM. Gas production decreased from 5500 mcf/d at 5:15 PM through 2 1/2" open pipe to 3725 mcf/d through 3/4" choke at 12:00. Fluid production consisted of water with trace oil totaling 315 bbls with salinity averaging 20,000 ppm. 350 bbls displaced to kill well. Swab unit released 4:50 P.M.
10-19	4730 PB		Well flowing through 3/4" bean. Decreased from tubing pressure 328 psi, rate 3725, to tubing pressure 268 psi, rate 3130 at 4:00 AM. Casing pressure remained constant 720 psi. Well shut in 4:00 AM to build up pressure to unload possible fluid accumulation in tubing. Tubing pressure reached maximum 998 psi and casing pressure maximum 1000 psi at 7:32 AM when well opened and dumped slug of fluid. Started well to flow at 7:40 AM with 1/2" bean. Tubing pressure decreased from 674 psi, rate 3500 mcf/d, to tubing pressure 643 psi, rate 3200 mcf/d, in 1 hour 25 minutes. Casing pressure decreased from 965 psi to 920 psi in 1 hour; not stabilized. Well opened to 3/8" bean at 9:30 AM. Tubing pressure increased from 843 psi, rate 2480 mcf/d, to 850 psi, rate 2500 mcf/d, in 45 minutes; casing pressure remained constant 980 psi. Well opened to 2 1/2" open pipe at 10:29 AM. Flow decreased to stabilized 3900 mcf/d in 6 hours with stabilized casing pressure 750 psi. Well opened to 3/8" bean at 5:45 PM. Tubing pressure remained nearly stabilized ranging between 752 psi, rate 2210 mcf/d and 739 psi, rate 2170 mcf/d. Casing pressure remained constant 875 psi. Two bbls fluid produced, salinity 24,800 ppm. Stabilized final rate 2200 mcf/D, 32 Bbl./D gross, 11 Bbl./D oil, 64% cut.
10-20	4730 PB		Well shut in at 6:50 AM. Tubing pressure increased from 900 psi at 7:04 AM to 1110 psi (still rising) at 3:15 PM. Casing pressure and tubing pressure remained identical during buildup. Rig released 12:00 noon.

Drillers for Denman Drilling Company
Jerry Clay
Jerry Sisk
D. H. Hood

CONDITION AT BEGINNING OF PERIOD

HOLE SIZE	FROM	TO	CASING SIZE	DEPTH SET
13 3/4"	0	704	10 3/4"	697'
9"	704'	4520'	5 1/2"	4930'
8 3/4"	4520	6339		

DRILL PIPE 2" tubing

22

Leonard M. Snyder

PD 4A MASTER SET 2-50 PRINTED IN U. S. A.

SHELL OIL COMPANY

WELL NO. 2

DRILLING REPORT

FOR PERIOD ENDING
October 17, 1954

East Boundary Butte
(FIELD)
Apache, Arizona
(COUNTY)

3
(SECTION OR LEASE)
41 N., 28 E., G.&S.R.M.
(TOWNSHIP OR RANCHO)

DAY	DEPTHS FROM	DEPTHS TO	REMARKS
10-15	P. B. T. D.	4730 PB	Ran in tubing with Johnston disc and Baker Pressure 'N' Test Packer. Used Johnston bar stop with 5-3/16" holes beneath disc. Set packer at 4620' with tail to 4690'. Baker Model N 2 B cast iron bridge plug previously set at 4730'. Perforations 4650-4690. Valve opened 3:15 AM, moderate to light blow then dead in 10 minutes. Waited on repair of swabbing unit 5 hours. Flagged in swab. amount fluid nil. Rigged up to acidize. Dowell acidize with 1000 gallons 15% HCL XF32. No pressure buildup from formation, all pressures were volume pressures. Maximum pressure 1000 psi and minimum pressure 0 psi. Tubing flushed with 18 bbl. water. Final pressure 900 psi. Average rate of injection 3 bbls. per hour, 42 bbls. total. Opened well to test tank 11:14 AM, puff blow then dead. Resumed swabbing, fluid at top hole. Swabbed 10 bbls. when well started flowing at 11:50 AM. Recovered 41 bbls. in tank, rate 90 bbls. per day, well open 11 hours, shut in 1 hour 8 minutes. Tubing pressure decreased from 110 psi with 1" orifice, 2,310 mcf/d to 73 psi, 1550 mcf/d in 7 hours. ISIP 900 psi, FSIP 1081 psi. After shut in pressure decreased from 324 psi with 1" orifice, 2500 mcf/d, to 186 psi with 5/8" orifice, 1500 mcf/d Oil produced, light brown green, varied from 96 to 24 bbls. per day, cutting 1%-20% water, salinity 77,500 ppm, and 41° API dry gravity. Specific gravity gas = .72.
10-16		4730 PB	Well open to 5:00 AM, 12 hours total. Stabilized flowing pressure 172 psi, rate 1390 mcf/D. Shut in 95 minutes. Pressure built up to 1030 psi still rising. Pulled packer and reset at 4514. Opened and blew water, no swabbing needed. Pressure 22 psi through 2 1/2", rate 5150 mcf. Rigged up to acidize. Dowell acidized with 15% HCL with XF32. Acidized zones, 4540'-4585' and 4650'-4690' with 2500 gallons, displaced with 12 bbls. of water. Maximum pressure 400 psi, and minimum pressure 0. Swabbed in well with first run. Packer leaked, B.O.E. shut, casing pressure 700 psi. Flowing gas rate, measured with pitot tube, 30 psi through 2 1/2" I.D. tubing, calculated rate, 6,650 mcf/D. Gravity of dry gas = 0.060, salinity of fluid 208,000 ppm., H_2S concentration 0.075%. Flow through 3/4" bean with 420 psi gave calculated rate of 5500 mcf/D, salinity dropped to 125,000 ppm. After 5 hours, pressure dropped to 347 psi and rate dropped to 4,390 mcf/D, making 2 bbls./hr. fluid. Changed to 5/8" bean. Pressure built up to 467 psi, rate 4060 mcf/D. After 10 hours pressure = 430 psi, rate = 3,740 mcf/D. Shut in 75 minutes, pressure built up to 945 psi. Killed well with water, using Halliburton's cement pump. Initial pressure 945 psi, final pressure 0. Pulled packer loose and pulled tubing, well blew periodically and water was added to keep it under control. Packer reached surface without rubbers. Reran tubing with 1 5/8" reduction collar on bottom and hung at 4690'. No packer. Started removing B.O.E.
10-17		4730 PB	

CONDITION AT BEGINNING OF PERIOD

HOLE SIZE	HOLE FROM	HOLE TO	CASING SIZE	DEPTH SET
13 3/4"	0	704'	10 3/4"	697'
9"	704'	4520'	5 1/2"	4930'
8 3/4"	4520'	6339'		

DRILL PIPE SIZES: 2" tubing

Drillers for Denman Drilling Company
Jerry Clay
Jerry Sisk
D. H. Hood

22

Edward G. Heath

PD 4A MASTER SET 2-50 PRINTED IN U. S. A.

SHELL OIL COMPANY

WELL NO. 2

DRILLING REPORT

FOR PERIOD ENDING October 17, 1954

East Boundary Butte (FIELD)

Apache, Arizona (COUNTY)

3 (SECTION OR LEASE)

41 N., 28E., G.&S. R.M. (TOWNSHIP OR RANCHO)

DAY	DEPTHS FROM	DEPTHS TO	REMARKS
10-11	PBTD	4778	Waited on swabbing unit repairs 4 hours. Swabbed off bottom 20 hours. Swabbing rate 217 B/D gross, 98 B/D oil, average tank cut 55%, salinity 50,000 ppm.
10-12	PBTD	"	Swabbed 4 1/4 hours, swabbing unit out of fuel; waited on refueling 3 3/4 hours. Resumed swabbing at 8:00 A.M., swabbed for 14 hours. Final rate 247 B/D gross, 84 B/D oil, average tank cut 65%, salinity 54,000 ppm. Tore out swabbing unit, pulling tubing with tester. Back scuttled string after pulling 15 stands.
10-13	PBTD	"	Finished pulling tester, broke down and loaded out. Went in hole with open end 2" tubing. Waited on orders. Pulled tubing and waited on Lane Wells (3 3/4 hours) to begin perforating.
10-14	PBTD	4730	Waited on Lane Wells 3 hours. Ran feeler gauge and junk basket. Set Baker model DB bridge plug at 4730'. Perforated with 3 jet and 3 bullet holes per foot the intervals 4650'-4690' and 4540'-4585'.

CONDITION AT BEGINNING OF PERIOD

HOLE SIZE	HOLE FROM	HOLE TO	CASING SIZE	DEPTH SET
13 3/4	0	704'	10 3/4"	697'
9"	704'	4520'	5 1/2"	4930'
8 3/4	4520	6339'		

DRILL PIPE SIZES 2" tubing

nlx 22

C. F. Thomas, L. C. Snyder

PD 4A MASTER SET 2-50 PRINTED IN U. S. A.

SHELL OIL COMPANY

DRILLING REPORT

FOR PERIOD ENDING October 10, 1954

WELL NO. 2

East Boundary Butte
(FIELD)
Apache, Arizona
(COUNTY)

Section 3
(SECTION OR LEASE)
T. 41N., R. 28E., G. & SRM
(TOWNSHIP OR RANCHO)

DAY	DEPTHS FROM	DEPTHS TO	REMARKS
10-7	P. B. T. D	4884'	Finished going in hole with test tool for DST #14, 2 hours. Ran DST #14, 14 hours. Backscuttled testing string, 1/2 hour. Pulled test tool 2 hours. Dressed test tool and rigged Lane Wells, 1 hour. Ran Lane Wells gauge ring and junk basket 4 hours. DST #14, 4745-4774, Johnston Testers. Ran tester with conventional 4" packer at 4732, casing hookwall packer at 4777, 4 outside pressure recorders (2 above and 2 below bottom packer), 1/2" subsurface bean, 1" surface bean, perforations 4732-4767, no water cushion. Tool open 12 hours, shut in 0. Moderate initial blow to strong in 2 minutes, died intermittently during remainder of flow period. Started flowing after 1 hour, 45 minutes. No fluid loss in annulus entire test. Gauged 48+ bbls. gross (cut 5.0%) in 12 hours, flowing by heads including estimated 10 bbls. to sump and 16 3/4 bbls. backscuttled. Estimated flow rate 96 bbls./day, 50% cut. Salinity 38,000 ppm (t). IFP 1215/1205, 20 minutes FP 950/925, FFP 1190/1155, SIP 1470/1480 (stabilized, HP 2105/2120 Calculated gas rate through 3/8" orifice (50 psi, gravity 1.02) 125 MCF/D. Gravity of oil 35° API.
10-8	P. B. T. D Bridge Plugs	4884 4825 4778	Set Baker Type K bridge plugs at 4825 and 4778 on wire line. Made up and ran test tool in hole for DST #15, 1 hour, 45 minutes. DST #15, 4745-4762, Johnston Testers. Ran straddle tool with 4" packers at 4730 and 4765, 4 outside pressure recorders (2 above and 2 below bottom packer), 1/2" subsurface bean, 1" surface bean, no water cushion. Dropped 2nd bar at 3:50 AM. Moderate initial blow to strong in 3 minutes, died in 33 minutes weak blow in 55 minutes, died in 1 hour. 10 minutes. Oil to surface in 2 hours, 50 minutes. Flowed in heads at rate of 82 B/D (8 bbls in 2 hours, 20 minutes), 12% cut, salinity 30,200 ppm NaCl (t). Rigged up to swab, began at 1:00 P.M. Swabbed 36 bbls. during last 5.4 hours, rate 160 B/D gross, 80 B/D oil, tank cut 50%, salinity 38,700 ppm. Swab line parted after 11 hours. swabbing.
10-9	P. B. T. D	4778	Killed well. Pulled tester and recovered swab. Drop bars fouled in disc valve. 7 hours waited on disc valve sub. Johnston charts showed communication with zone below bottom pcaker. Made up test tools and reran in hole. Rigging up to swab.
10-10	P. B. T. D	4778	Completed rigging up to swab. Waited for well to die, 3 hours. Swabbed 11 1/2 hours. Threw rod in swabbing unit engine, waited on repairs, 8 hours.

CONDITION AT BEGINNING OF PERIOD

HOLE SIZE	HOLE FROM	HOLE TO	CASING SIZE	DEPTH SET
13 3/4"	0	704	10 3/4	697'
9"	704'	4520	5 1/2	4930'
8 3/4"	4520'	6339		

DRILL PIPE SIZES 2" tubing

Drillers for Denman Drilling Company
Jerry Clay
Jerry Sisk
D. H. Hood

22

C. F. Thomas

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PD 4A MASTER SET 2-50 PRINTED IN U. S. A.

SHELL OIL COMPANY

WELL NO. 2

DRILLING REPORT
FOR PERIOD ENDING
October 10, 1954

East Boundary Butte (FIELD)
Apache, Arizona (COUNTY)
3 (SECTION OR LEASE)
T. 41N., R. 28E., G. & S. R. M. (TOWNSHIP OR RANGE)

DAY	DEPTHS FROM	DEPTHS TO	REMARKS
10-5	Cont. - P. B. T. D	4884'	IFP 615/590, FFP 630/615, SIP 1485/1485 (still rising very slowly), HP 2085/2085. Rig water supply 300+ ppm NaCl. Calculated gas rate 750 MCF/D (3/4" orifice, 50 psi, assumed gravity of gas 0.7).
10-6	4767 - 4773 w/3		Pulled DST #13, 2 1/2 hours. Serviced test tool and rigged up to perforate 1 1/2 hours. Perforated 8 1/4 hours interval 4745-4762 and 3 jet and 3 bullet holes per foot; two misruns with jet guns. Went in hole with test tool for DST #14, 2 1/2 hours. Packer wouldn't set, lost test tool. Started out to wait for fishing tool, ran back in after pulling 30 stands to fish with tubing. Caught fish and pulled out to rerun test tool. Waited on Johnston Testers 2 1/2 hours. Made up test tool 1 1/2 hours. DST #13, 4782-4806, Johnston Testers. Ran tester with 4" straight hole packer at 4776, 4" casing hookwall packer at 4815, 4 outside pressure recorders (2 below and 2 above bottom packer), 1/2" subsurface bean, 1" surface bean, perforations 4776-4806, no water cushion. Tool open 3 hours, 15 minutes, shut in 1 hour. Moderate initial blow, decreasing to medium weak in 10 minutes, to weak in 1 1/2 hours, leveled to shut in. No gas to surface, no fluid loss in annulus. Recovered 1830' (7 bbls) slightly gassy water.

Feet Above Tester	Description	Salinity
1690	SGW	2140
1410	SGW	5440
1130	SGW	7910
760	SGW	10,700
390	SGW	12,900
0	SGW	16,800

IFP 45/10, FFP 840/840, SIP 1480/1485 (stabilized, HP 2085/2070. Rig water 300+ppm Nacl (t).

CONDITION AT BEGINNING OF PERIOD

HOLE SIZE	HOLE FROM	HOLE TO	CASING SIZE	DEPTH SET
13 3/4"	0	704'	10 3/4"	697'
9"	704'	4520	5 1/2"	4930'
8 3/4"	4520	6339		

DRILL PIPE SIZES 2" tubing

2-2

C. F. Thomas

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JAN 13 1955
STATE LAND
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PD 4A MASTER SET 2-50 PRINTED IN U. S. A.

SHELL OIL COMPANY

2

WELL NO.

East Boundary Butte
(FIELD)
Apache, Arizona
(COUNTY)

DRILLING REPORT
FOR PERIOD ENDING
October 10, 1954

3
(SECTION OR LEASE)
41 N., 28 E., G&SRM
(TOWNSHIP OR RANCHO)

DAY	DEPTHS FROM	DEPTHS TO	REMARKS
10-4			Finished going into hole with W.S.O. #2. 4 jet holes, 1/2" @ 4669'-4700'. Casing hookwall packer at 4690. Stinger to 4699.6. Moderate blow immediately, increasing to strong in two minutes, remained constant for remainder of test. Bar dropped at 1:12 AM. Tester opened 1 hour, no shut in time. Recovered 190' of water.

Feet	Bbls.	Description	Salinity
70	.27	H_2S cut water	300+
120	.46	Fresh water	300+

IFP 0, FFP 10. Good test.

5 hours running test #2. 9 hours running W.S.O.#". 6 3/4 hours waiting on Lane Wells.
W.S.O. #3. 4 jet holes, 1/2" at 4525'-4526'. Casing hookwall packer at 4495'. Stinger to 4515. Cleaned out to 4884'. Moderate blow throughout Bar dropped at 9:47 AM. Tester opened 1 hour, no shut in time. Recovered 450' water.

Feet	Bbls.	Description	Salinity
450	1.74	Sl. gassy water w/H_2S @ top.	300+ (3 samples)

10-5	P. B. T. D	4884	3 1/4 hours perforating and making up DST tools. Perforated with 3 jets and 3 bullets per foot 4842-4850. Went in hole with testing tools for DST #12, 2 hours. Tested 5 hours. Coming out of hole with test tools, 2 hours. Dressed test tool 1 hour Waited on Lane Wells 2 hours. Rigged up to perforate 1 hour. Perforated interval 4782-4806 with 3 jet and 3 bullet holes per foot, 4 1/2 hours. Made up and went in hole with straddle test tool, 2 1/4 hours. Ran DST #13 for 4 1/2 hours. DST #12, 4842-4850, Johnston testers. Ran tool with single 4" casing hookwall packer at 4815, 2 outside pressure recorders, 1/2" subsurface bean, 1" surface bean, perforations 4817-4825, no water cushion. Tool open 3 hours, 20 minutes, shut in 1 hour. 30 minutes. Moderate initial blow increasing to strong in 1 minute; gradually increasing for 1 hour, leveled off for remainder. Inflammable gas to surface in 2 minutes. No fluid loss in annulus. Recovered 648' (2.5 bbls.) fluid including 246' (0.9 bbls.) gassy salt water and 402' (1.6 bbls) very gassy oil.

CONDITION AT BEGINNING OF PERIOD

HOLE SIZE	HOLE FROM	HOLE TO	CASING SIZE	DEPTH SET
13 3/4"	0	704'	10 3/4"	697'
9"	704'	4520'	5 1/2"	4930'
8 3/4"	4520	6339'		

DRILL PIPE SIZES 2" tubing

Feet Above Tester	Description	Salinity (t)NaCl	Baroid Units Total
0	Salt Water	35,000	0
93'	Gassy salt water	35,000	30
186'	" " "	34,500	100+
246'	" " "	34,500	100+
648'			

Very gassy oil (dark brown green, 32.5° gravity, cut 0.1-1.0%).

22

C. F. Thomas

PD 4A MASTER SET 2-50 PRINTED IN U. S. A.

SHELL OIL COMPANY

WELL NO. 2

East Boundary Butte
(FIELD)
Apache, Arizona
(COUNTY)

DRILLING REPORT
FOR PERIOD ENDING
October 3, 1954

Section 3
(SECTION OR LEASE)
T.41N., R. 28E., G.& S. R.M.
(TOWNSHIP OR RANCHO)

DAY	DEPTHS FROM	DEPTHS TO	REMARKS
10-3	P. B. T. D	4884'	Completed W.S.O. #1, 1 hour. 3 3/4 hours waiting on packer repairs. Went in with 4 3/4" bit and cleaned out from 4879-4884. 1 hour displacing mud with water. 10 1/2 hours picking up tester and running W.S.O. #1-A. 4 jet holes, 1/2" @ 4869-4870, casing hookwall packer at 4850', stinger to 4862', weak initial blow decreasing to very weak in 5 minutes, dead in 10 minutes. Bar dropped at 4:20 PM. Tester opened 1 hour, no shut-in time. Recovered 3' of rig water (300+ppm). IFP 0, FFP 0. Test O.K. Mud Summary Weight: 9.5#/gal. Viscosity: 55 secs. Water Loss: 10 cc. Cake: 2/32" Drillers for Denman Drilling Company Jerry Clay Jerry Sisk D. H. Hood

CONDITION AT BEGINNING OF PERIOD

HOLE SIZE	HOLE FROM	HOLE TO	CASING SIZE	DEPTH SET
13 3/4"	0	704'	10 3/4"	697'
9"	704'	4520		
8 3/4"	4520	6339		

DRILL PIPE SIZES 4 1/2"-16.6#

22

S. J. Ieronimo
SIGNED

32 × 8

FB 4A SAWYER SET 2-56 PRINTED IN U. S. A.

SHELL OIL COMPANY

WELL NO. 2

DRILLING REPORT

FOR PERIOD ENDING October 3, 1954

East Boundary Butte (FIELD)

Apache, Arizona (COUNTY)

Section 3 (SECTION OR LEASE)

41N., 28E., G. & S. R. M. (TOWNSHIP OR RANGE)

DAY	DEPTHS FROM	DEPTHS TO	REMARKS
9-28		4950 P. B. T. D.	12 Midnight - 12:30 AM, pulled 3 dry stands, 4th stand full of very gassy oil. After 4th stand had been set back, the gassy oil headed for +2 minutes. A toxic concentration of H_2S gas was emitted, along with abundant inflammable sweet gas. Two more wet stands were pulled while still heading. After attempts to back-scuttle this fluid failed (+250 PSI was put on rams), 2 dry stands were pulled, again reaching oil. The Johnston head was placed on top of the string again and the annulus checked to make certain it was full. Shut down at 2:30 AM - waiting for daylight to pull DST #11. 6:30-8 AM, attempted to reverse flush, applying +600 PSI to rams. Back-scuttle valve finally unplugged. 8-9:00 AM, reversed about 1 stand of oil out of drill pipe through 2" line to sump, until sulphur water was reached. 9-11 AM, pulled remainder of drill pipe (1 stand of sulphur water, the rest drilling mud). 2 1/2 hours broke down and loaded test tool. 2 1/2 hours strapped pipe going into hole. 8 hours conditioned hole prior to running casing. Treated mud with gel, starch, quebracho, lime, and caustic soda.
9-29		4950 P. B. T. D.	6 hours laying down 4 1/2" drill pipe and 7 drill collars. 2 hours rigging up to run casing. 5 hours waiting on casing tongs. 7 hours running in casing. Ran in 114 joints of 5 1/2", 17#, LT&C J-55 casing, set @ 4930'. Circulated 1 hour. Cemented (Halliburton cementers) with 350 sacks regular cement. Last plug down at 7:00 PM. 10-12 Midnight, waited on cement. Began flanging up.
9-30	P. B. T. D.	4950	Waiting on cement, 18 hours. Ran Lane Wells gamma ray with collar locater neutron log, and multispaced neutron log from 4879 to 4000. Gun perforated with 4 - 1/2" jet shots at 4869-4870. Total time Lane Wells 6 hours.
10-1			Waiting on cement. Changed rams in B. O. P. to 2 3/8". Made up tester while waiting on tubing.
10-2			2" E. U. E. 4.7#/ft Waiting on tubing to arrive from L. A. 10 hours, 1 hour unloading tubing, 5 3/4 hours picking up tubing and measuring into hole with casing tester to test W. S. O. Test 1 hour. 1 3/4 hours pulling tester. Checked test tools for 1 hour. 3 1/2 hours running in with tester to retest water shut off. Tried to set packer several times. W. S. O. #1, 4 jet holes, 1/2" at 4869'-4870', casing hookwall packer at 4850', stinger to 4862', very weak initial blow, dead in 17 minutes. Bar dropped at 5:47 PM. Tester opened 1 hour, no shut in time. Recovered 1 1/2' rig water (300±ppm). IFP 1500 psi due to plugging. No test.

CONDITION AT BEGINNING OF PERIOD

HOLE SIZE	HOLE FROM	HOLE TO	CASING SIZE	DEPTH SET
13 3/4"	0	704'	10 3/4"	697'
9"	704'	4520		
8 3/4"	4520	6339		
DRILL PIPE SIZES	4 1/2"		- 16.6#	

22

D. K. Murray and S. J. Ieronimo

FB 4A MASTER SET 2-50 PRINTED IN U. S. A.

SHELL OIL COMPANY

WELL NO. 2

East Boundary Butte
(FIELD)
Apache, Arizona
(COUNTY)

DRILLING REPORT
FOR PERIOD ENDING
October 3, 1954

Section 3
(SECTION OR LEASE)
T. 41 N., R. 28E., G. & S. R. M.
(TOWNSHIP OR RANGE)

DAY	DEPTHS FROM	DEPTHS TO	REMARKS
9-27		6339 T. D. Plugged to 4950'	Drilled 0'. 1 1/2 hours circulated, waiting on cement. 2 hours drilled plug from 4882 to 4950. 2 hours circulated to condition hole. 3 1/2 hours pulled out to run DST #11. 2 1/2 hours making up Johnston test tool. 2 1/2 hours running in hole with tester. DST #11, 4740-4950 (Plug) Johnston Testers, 2 -7 1/4" bobtail packers, bottom of top packer @ 4735 bottom of bottom packer @ 4740, 2 Johnston, 1 Amerada pressure recorders, 3/4" subsurface bean, 1" surface bean, perforations 4740-4770 and 4910-4950, 150' (1.61 bbls) air cushion, hole below packers 15.6 bbls., 210' of anchor to 4950, opened hydraulic tool at 2:00 PM, opened disc valve @ 2:20 PM, tool open 2 1/2 hours, initial shut-in 20 minutes, final shut-in 70 minutes. Blow medium becoming quite strong in 10 minutes, moderate after 20 minutes, weak after 60 minutes to strong after 65 minutes, died after 85 minutes. Inflammable gas to surface in 18 minutes, sweet distillate odor, no H_2S. No fluid loss in annulus. Recovered (after reverse circulating out) 540' of very gassy oil (7.7 bbls) and 420' (5.4 bbls) of black sulphur water. Most of the oil blew out while pulling. Oil is dark greenish brown with strong H_2S odor and good distillate odor.

Ft. Above Tester	Description	Salinity(T) ppm NaCl	Gas MSA Units 100#	Gravity or Weight	Water Cut
960	VGWO	-	High H_2S	34°API(wet)	25-40%
600	VGSWO	-	"	38° " "	4%
420	Sulphur Water	87,000	"	8.5#/gal.	-
240	"	105,760	65	8.6 "	-
150	"	127,215	10	8.6 "	-
0	"	153,615		8.6 "	-

HP 2505, IFP 825, FFP 1575/1605, ISIP 1575/1590, FSIP 1545/1605, (stabilized immediately). Maximum flow rate (during head of gas) ±50 MCF/day. BHT=118°F.

Pulled packers loose at 6:00 PM. Johnston head was removed and string reciprocated and rotated several times. After one single (dry) had been removed, the fluid in drill pipe blew out over crown for +5 minues. This fluid consisted of gassy, oily, watery drilling fluid. 6:15-7:30 PM, cleaned up rig. 7:30-11 PM, waiting on orders. 11-12 midnight, opened back-scuttle valve and reverse circulated. No fluid flowed from 2" line to sump even though annulus was full of mud. Apparently back-scuttle valve had become plugged. No mud treatment.

CONDITION AT BEGINNING OF PERIOD

HOLE SIZE	HOLE FROM	HOLE TO	CASING SIZE	DEPTH SET
13 3/4"	0	704'	10 3/4"	697'
9"	704'	4520		
8 3/4"	4520	6339		
DRILL PIPE SIZES	4 1/2"	16.6#		

22

D. K. Murray

East Boundary Butte
(FIELD)
Apache County, Arizona
(COUNTY)

DRILLING REPORT
FOR PERIOD ENDING
September 26, 1954

WELL NO. 3
(SECTION OR LEASE)
T. 41 N., R. 28 E.
(TOWNSHIP OR RANCHO)

DAY	DEPTHS FROM	DEPTHS TO	REMARKS
9-25	6339	6339	Drilled 0'. Finished pulling out of hole, 2 hours. Picked up and made up test tool, 2 hours. Ran in hole with test tool for DST #10, 4 hours. DST #10, 6250-6310 (straddle), Johnston Testers, 7 1/4" Bobtail packer at 6250, 7 1/2" conventional open hole packer at 6310, 3 outside recorders, 3/4" subsurface bean, 1" surface bean, perforations 6250-6310, 35' air cushion. Initial shut in 20 minutes, tool open 2 1/2 hours, shut in 1 hour 10 minutes, weak to very weak blow, no gas to surface, 2 bbl. fluid loss in annulus. Recovered 330' (2.6 bbl.) slightly gas cut mud.
9-26	6339	6339 (TD)	Plugged back. Built up mud volume, 4 hours. Plugged hole from total depth 6339' to 4852', 3 1/4 hours. With blank drill pipe including 520' drill collars, 2 3/8" I.D., hung at 6334', pumped 10 bbls. H_2O ahead, mixed and pumped 50 sacks, 16#/gal. modified cement slurry, followed by 2 bbls. H_2O; displaced with 79.5 bbls. With drill pipe hung at 5850', plugged as above and displaced with 68 bbls. With drill pipe hung at 5000', plugged with 70 sacks, slurry as above; displaced with 60 bbls. Pulled plugging string, 2 3/4 hours, layed down 15 drill collars and core barrel, 2 hours. Waited on cement 1 hour, strapped in hole 2 hours, circulated off bottom 1 1/2 hours. Found top plug at 4852', drilled 10' off plug. Waited on cement 7 1/2 hours. Treated mud with starch, caustic, lime and quebracho.

Ft. above tester	Description	Sal. (ppm, t.)	Total Methane Units	Wt. #/gal.
330	Sli. GCM	3000	2	8.9
120	Sli. GCM	4000	4	9.4
0	Sli. GCM	2650	4	9.4

ISIP 2100, IFP 90, FFP 180, SIP 1485, (still rising after 70 minutes). Flow rate too low to calculate.

Pulled test tool, 2 hours. Layed down and loaded tool, 3 hours. Changed drilling line, 4 hours. Went in hole with open end pipe for cementing, 3 hours.

Drillers for Denman Oil and Drilling Corp.
Jerry Clay
Jerry Sisk
Donald Hood

CONDITION AT BEGINNING OF PERIOD

HOLE SIZE	HOLE FROM	HOLE TO	CASING SIZE	DEPTH SET
13 3/4	0	704'	10 3/4"	697'
9"	704'	4520'		
8 3/4"	4520'	6339'		
DRILL PIPE SIZES	4 1/2"		16.6#/ft.	

Mud Summary
Weight: 9.8#/gal.
Viscosity: 41-50 sec.
Water Loss: 6-9.6 cc.
Cake: 2/32"
Salinity: 900-16--ppm NaCl
pH: 11-12.5

Leonard M. Snyder
SIGNED

22

PD 4A MASTER SET 2-50 PRINTED IN U. S. A.

SHELL OIL COMPANY

DRILLING REPORT

FOR PERIOD ENDING September 26, 1954

WELL NO. 2

East Boundary Butte (FIELD)

Apache, Arizona (COUNTY)

3 (SECTION OR LEASE)

T. 41 N., R. 29 E. (TOWNSHIP OR RANCHO)

DAY	DEPTHS FROM	DEPTHS TO	REMARKS
9-20	6205	6268	Drilled 63'. Treated mud with caustic, lime, starch, and quebracho.
9-21	6268	6315	Drilled 47'. Started Schlumberger logging 2 1/2 hours. Treated mud with caustic, lime, starch, and quebracho.
9-22	6315	6315	Drilled 0'. Finished running logs, 12 hours. Ran gamma ray-neutron log, hole caliper, electrical survey, microlog and laterolog. Picked up and made up Johnston Selective Zone test tool, 2 1/2 hours. Ran in hole with test tool, 2 1/2 hours. Set packers, 1 hour. DST No's 9 and 9A, 1/2 hour. DST #9, 4764-4797, Johnston Selective Zone tool, 7 1/4" Bobtail packer at 4764, 8" conventional open hole packer at 4797, 3 outside recorders, 3/4" subsurface bean, 1 " surface bean, perforations 4764-4797, no water cushion. Packers failed immediately after opening flow valve. Tool pulled loose and reset with 17.0' (2 bbl. loss in annulus) mud cushion for DST #9A. DST#9A 4972-4805, straddle tool as above, packers as above set at 4972 and 4805, recorders as above, beans as above, perforations 4972-4805, 170', 9.8# mud cushion, tool open 10 minutes, weak air blow prior to packer failure, 3.75 bbl. fluid loss in annulus, recovered 600' (6.17 bbls.) GCM. Ft. Above Tester: 600 — Description: GCM — Gas: 22/20 — Salinity: 900 ppm — Wt.#/gal.: 9.4 Ft. Above Tester: 0 — Description: GCM — Gas: 12/12 — Salinity: 1000 ppm — Wt.#/gal.: 9.6 HP 2290 psi, IFP 150 psi, FFP 150 psi. Tool not shut in due to leaking packers. Pressures not considered reliable. Pulled test tool, 3 1/2 hours. Changed tool dogs and recorders, 1 hour. Ran in hole with tester, 4 hours. Did not treat mud.
9-23	6315	6339 T. D.	Drilled 24'. Tried to set tool for DST #9B, 1 hour. DST #9B, 4832-4865 Johnston Selective Zone tool, packers as above at 4832 and 4865, recorders as above, beans as above, perforations 4832-4865, no water cushion. Could not set tool, no valves opened. Test failed. Pulled testing tool out of hole, 2 1/2 hours. Broke and layed down tool, 2 1/2 hours. Ran in hole with bit #63, 3 hours. Reamed 30', 1 hour, circulated to clean hole, 1 hour. Circulated following drilling, 3 hours. Treated mud with caustic, lime, starch, and quebracho.
9-24	6339	6339	Drilled 0'. Circulated 4 hours. Conditioned hole, 1 1/2 hours. Pulled bit #63, 3 hours. Ran DC's with bit #64, 1/2 hour. Cut drilling line, 4 1/2 hours. Repaired brakes, 1 hour. Pulled DC's with bit #64 and went in hole with dull bit, 3 hours. Conditioned hole, 1 1/2 hour. Started pulling (10 stands) for DST #10. Treated mud with caustic, lime, starch, and quebracho.

CONDITION AT BEGINNING OF PERIOD

HOLE SIZE	HOLE FROM	HOLE TO	CASING SIZE	DEPTH SET
13 3/4	0	704'	10 3/4"	697'
9"	704'	4520'		
8 3/4"	4520'	6339 (TD)		
DRILL PIPE SIZES 4 1/2",			16.6#/ft.	

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Leonard Snyder

PD 4A MASTER SET 2-50 PRINTED IN U. S. A.

SHELL OIL COMPANY

DRILLING REPORT

FOR PERIOD ENDING

September 19, 1954

WELL NO. 2

3
(SECTION OR LEASE)

T.41 N., R.28 E.
(TOWNSHIP OR RANCHO)

East Boundary Butte
(FIELD)

Apache County, Arizona
(COUNTY)

DAY	DEPTHS FROM	DEPTHS TO	REMARKS
9-16	6032	6084	Drilled 52'. Finished pulling DST #8 and broke down tool, 2 hours. Ran bit #55 in hole, 2 hours. Conditioned hole, pulled bit and ran 55 stands with bit #56, 6 hours. Treated mud with lime, starch, tannex, caustic, and gel.
9-17	6084	6112	Drilled 28'. Finished running in with bit #56, 1/2 hour. Conditioned hole and tripped for bit #57, 5 hours. Treated mud with lime, starch, caustic, gel, and tannex.
9-18	6112	6156	Drilled 44'. Repaired drum chain, 1 hour. Ran in bit #58, 2 1/4 hours. Conditioned hole 1 hour. Ran slope test, pulled bit #58 and ran in with bit #59, 5 1/4 hours. Treated mud with lime, starch, tannex, caustic, & gel.
9-19	6156	6205	Drilled 49'. Slipped drilling line, 1 hour. Jetted shale pits. Treated mud with caustic, starch, lime, tannex and jel. Mud Summary Weight 9.6-9.9#/gal. Viscosity 43-54 sec. Water Loss 6.4-10 cc. Cake 2/32" Salinity 1000 ppm pH 10-12.5 Checked B.O.E. Daily Drillers for Denman Oil & Drilling Corporation J. Sisk D. Hood J. Clay

CONDITION AT BEGINNING OF PERIOD

HOLE SIZE	HOLE FROM	HOLE TO	CASING SIZE	DEPTH SET
13 3/4"	0	704'	10 3/4"	697'
9"	704'	4520'		
8 3/4"	4520'	5954'		
DRILL PIPE SIZES	4 1/2"	16.6#/ft.		

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Ed Vendell & L. Snyder
SIGNED

PD 4A MASTER SET 2-50 PRINTED IN U. S. A.

SHELL OIL COMPANY

WELL NO. 2

DRILLING REPORT

FOR PERIOD ENDING September 19, 1954

East Boundary Butte (FIELD)

Apache County, Arizona (COUNTY)

3 (SECTION OR LEASE)

R. 41 N., R. 28 E. (TOWNSHIP OR RANCHO)

DAY	DEPTHS FROM	DEPTHS TO	REMARKS
9-13	5954	6003	Drilled 49'. Conditioned hole 1/2 hour. Pulled bit #52 and went in hole with #53, 4 1/4 hours. Cleaned slush pump, 3/4 hour. Conditioned hole 1/2 hour. Started pulling #53, 1 1/2 hour. Treated mud with lime, starch tannex, caustic, and gel.
9-14	6003	6029	Drilled 26'. Finished pulling #53 and went in hole with bit #54, 4 1/4 hours. Serviced core barrel, 2 hours. Reamed 40' to bottom, 1 1/2 hours. Tried to regain circulation lost at 6010, 8 3/4 hours. Treated mud with lime, caustic, starch, tannex, and beaver dam.
9-15	6029	6032	Drilled 3'. Conditioned hole for DST #8, 1 1/2 hours. Pulled bit #54, 2 1/4 hous. Relined brakes, 5 1/2 hours. Made up and picked up test tool, 2 1/2 hours. Went in hole with tool, 3 hours. Ran initial shut in 20 minutes. Tool open 2 hours, 30 minutes, shut in 1 hour, 10 minutes. Pulled tool 3 3/4 hours.

DST #8 Interval 5945-6032. Johnston Testers 2 - 7 1/4" BTOH packers at 5940 and 5945, 3 outside press recorders, 1-3/4" subsurface bean, 1-1" surface bean. Perforations 5945-5978 and 6003-6032. Air cushion 30', hole below packers 6.5 bbls. Pipe: 4 1/2", 16.6#/ft., 0.0142 bbl/ft. Drill collars and tools: 330', 2 3/8" ID, 0.0055 bbls./ft. Opened valve at 4:35 PM. No gas to surface. Blow fair increasing to moderate in 3 minutes, moderate to fairly strong remainder of 2 1/2 hour test. No fluid loss in annulus. Shut in 1 hour 10 minutes. Recovered 2250' (29 bbls.) gas cut salt water with trace of oil, (approximately 1.0%) and with strong uniform pale green fluorescence.

Ft. Above Tool	Description	Rotary Engr. Total/Methane	Salinity (t)ppm	Wt. #/gal.
2250	GCM Salt Water	140/60	23750	7.7
2070	(1% oil)	78/22	29250	7.8
1620	(1% oil)	60/18	37125	8.2
1080	(1% oil)	14/6	41500	8.8
870	(1% oil)	18/6	47750	8.6
420	(1% oil)	14/2	56250	8.8
60	(1% oil)	22/2	57500	8.5
at tool	(1% oil)	20/2	68000	8.9

Mud in pits: 1000 ppm, 9.9#/gal.

	HP	IFP	FFP	FSIP
Top	2970,	495,	1020,	1950,
Bottom	3000	555	1035	1995

ISIP 2775. / 2850

Maximum gas pressure 0 for 3/8" bean.
Calculated gas flow nil.

CONDITION AT BEGINNING OF PERIOD

HOLE SIZE	HOLE FROM	HOLE TO	CASING SIZE	DEPTH SET
13 3/4"	0'	704'	10 3/4"	697'
9	704'	4520'		
8 3/4"	4520	5954		

DRILL PIPE SIZES 4 1/2" - 16.6#/ft.

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E. W. Vendell, Jr.

FD 4A MASTER SET 2-58 PRINTED IN U. S. A.

SHELL OIL COMPANY

WELL NO. 2

East Boundary Butte
(FIELD)

Apache County, Arizona
(COUNTY)

DRILLING REPORT
FOR PERIOD ENDING
September 12, 1954

Section 3
(SECTION OR LEASE)
T. 41 N., R. 28 E.
(TOWNSHIP OR RANCHO)

DAY	DEPTHS FROM	DEPTHS TO	REMARKS
9-11	5873	5905	Drilled 32'. Waited on sub, 2 hour, finished making up tool and went in hole 4 hours. Ran DST #7 3 hours, 35 minutes. Pulled test tool and broke down 4 hours. Went back in hole with bit #51, 1 3/4 hours. DST #7, 5768-5873 Johnston testers. 2 - 7 1/4 BTOH packers at 5768 and 5762, 3 outside press recorders, 3/4" subsurface bean, 1" surface bean, perforations 5768-5784 and 5840-5873, 30' air cushion. Initial shut in 23 minutes, open 2 hours, 50 minutes, shut in 45 minutes (had to reset packers to shut in.Opened tool at 6:35 AM. Weak blow increasing to fair in 10 minutes; fair remainder of test. No fluid loss in annulus. Recovered: 1020' (12.2 bbls) of which 2.6 bbls was watery mud with pinpoints of oil, 1.3 GOWM (1% oil), 8.0 bbls. M salt water, 0.3 bbls. GCM with pinpoints of oil.

Tester	Description	Salinity	Wt.	Gas Total/Meth.
1020	WMw/pinpoints of oil	15000	9.2	17/12
840	GOMW (1 % oil)	33000	8.8	28/16
660	M Salt Water	42000	8.6	9/3
390	M Salt Water	51000	8.8	7/1
At tool	GCM w/pinpoints oil	29000	7.6	38/24

Mud in pits 2500 ppm, 10.0#/gal. HP 3000 IFP 185, FFP 510, FSIP 1930, nearly stabilized.

9-12	5905	5954	Drilled 49'. Conditioned hole, 1 hour. Pulled bit #51 and ran in hole with #52, 6 1/4 hours. Cut drilling line 2 hours. Treated mud with lime, starch, gel, caustic and tannex.

Checked B. O. E. daily

Mud Summary 9-6 to 9-12
Weight: 9.8-10#/gal.
Viscosity: 50-45 sec.
Water Loss: 7.3-8.2 cc.
Cake: 2/32"
Salinity: 975-2500 ppm

Drillers for Denman Drilling Co.
Jerry Clay
Jerry Sisk
D. H. Hood

CONDITION AT BEGINNING OF PERIOD

HOLE SIZE	HOLE FROM	HOLE TO	CASING SIZE	DEPTH SET
13 3/4	0	704	10 3/4	697
9	704	4520		
8 3/4	4520	5523		

DRILL PIPE SIZES 4 1/2" 16.6#/ft.

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E. W. Wendell

PB 4A MASTER SET 2-59 PRINTED IN U. S. A.

SHELL OIL COMPANY

WELL NO. 2

DRILLING REPORT

FOR PERIOD ENDING September 12, 1954

East Boundary Butte (FIELD)

Apache County, Arizona (COUNTY)

3 (SECTION OR BLOCK)

T.41 N., R.28 E. (TOWNSHIP OR RANCHO)

DAY	DEPTHS FROM	DEPTHS TO	REMARKS
9-6	5523	5587	Drilled 64'. Mounted #2 motor 1 1/2 hours. Treated mud with lime, tannex, caustic, starch, and gel.
9-7	5587	5688	Drilled 101'. Tripped for bit, 5 hours. Treated mud with starch, lime, caustic, starch, and gel.
9-8	5688	5693	Drilled 5', one hour. Circulated to condition hole for DST #6, 2 hours. Pulled bit, 2 1/2 hours. Waited for tester, 2 hours. Made up test tool 1 1/2 hours. Went in hole with tool, 2 1/2 hours. Tested 4 hours. Pulled test string, 4 hours. Broke down and loaded test tool, one hour. Started in hole with bit, 3 1/4 hours. Replaced magneto 1/4 hour. Treated mud with starch, lime, caustic, and tannex. DST #6, 5669-5693, Halliburton testers, 2-8" OH packers at 5669 & 5663, 2 outside pressure recorders, 1" subsurface bean, perforations 5670-5690; open 2 1/2 hours, shut in 1 1/2 hours. Weak blow increasing to moderate in 10 minutes, decreasing to weak after 1 hour, weak remainder of test. No fluid loss in annulus. Recovered 3440' (46.8 bbl.) of which 1.3 bbl. was G & OCM, 1.3 bbl. MW with pinpoints oil, 0.1 bbl. GCM with pinpoints oil, 44.1 bbl. salt water.
9-9	5693	5797	Drilled 104'. Finished going in hole with bit #49. Drilled bridges 1 hour. Circulated 1 hour. Pulled bit #49 and ran in 30 stands with #50 4 hours. Treated mud with lime, starch, tannex, caustic, and gel.
9-10	5797	5873	Drilled 76'. Finished going in hole with bit #50, 2 hours. Conditioned hole for DST #7, 1 1/2 hours. Pulled bit #50 and made up tool 5 hours. Waiting on sub from Johnston office 1 1/2 hours. Treated mud with lime, starch, caustic, tannex, and gel.

Ft. Above Tester	Description	Salinity	WT.	Gas Total/Methan
3440	G & OCM (1% O)	37000	8.8	32/2
3290	MW w/pinpoint O.	41000	8.5	34/12
3200	Salt Water	56000	8.6	8/2
2100	Salt Water	68000	8.7	3/2
1100	Salt Water	71000	8.7	2/2
300	Salt Water	70000	8.7	0/0
At tool	GCM w/pinpoint O.	66000	7.7	40/10

Mud before test 10.0#/gal, 1200 ppm. HP 2995, IFP 190, FFP 1500, SIP 1840, nearly stabilized.

CONDITION AT BEGINNING OF PERIOD

HOLE SIZE	HOLE FROM	HOLE TO	CASING SIZE	DEPTH SET
13 3/4	0	704	10 3/4	697
9	704	4520		
8 3/4	4520	5523		

DRILL PIPE SIZES 4 1/2" 16.6#/ft.

E. W. Vendell, Jr.

East Boundary Butte
(FIELD)
Apache, Arizona
(COUNTY)

DRILLING REPORT
FOR PERIOD ENDING
September 5, 1954

WELL NO. 3
(SECTION OR LEASE)
41 N., R. 28 E.
(TOWNSHIP OR RANCHO)

DAY	DEPTHS FROM	DEPTHS TO	REMARKS
9-2	5322	5371	Drilled 49'. Pulling bit to run logs, 3 1/2 hours; worked on #1 motor, 1/2 hour; ran Schlumberger logs, 5 hours; tore down logging tool 1/2 hour; slipped drilling line 1 hour, went in hole with bit #43 2 1/2 hours; worked on #2 motor 2 hours. Treated mud with lime, starch, quebracho, gel and caustic. Ran electrical survey, microlog, and laterolog.
9-3	5371	5435	Drilled 64'. Pulled bit #43, 3 1/2 hours; went in hole with #44, 2 hours; worked on #2 motor, 5 1/2 hours. Treated mud with lime, starch, quebracho caustic and gel.
9-4	5435	5461	Drilled 26'. Pulled bit #44, 3 hours, with 2 rig motors. Set #2 motor out, 3/4 hours. Cleaned mud pits, 2 hours. Worked on #3 motor, 3 1/2 hours. Changed pump liners, 4 hours. Ran into hole 2 3/4 hours. Treated mud with caustic, lime, starch, gel and tannex.
9-5	5461	5523	Drilled 62'. Tripped for bit 6 1/2 hours on two motors. Treated mud with caustic, lime, starch, gel and tannex. Checked B.O.P.'s daily; O.K. Mud Summary: Weight: 9.8-10.0#/gal. Viscosity: 45-62 sec. Water Loss: 6.0-7.2 cc. Cake: 1/32"-2/32" pH: 11.5-12 Salinity: 2400-3500 ppm. Drillers for Denman Drilling Contractor A. Y. Old J. Sisk D. H. Hood J. Clay

CONDITION AT BEGINNING OF PERIOD				
HOLE SIZE	HOLE FROM	HOLE TO	CASING SIZE	DEPTH SET
13 3/4	0	704	10 3/4	697
9	704	4520		
8 3/4	4520	5147		
DRILL PIPE SIZES 4 1/2"			16.6#/ft.	

E. W. Vendell
SIGNED

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FR 4A MASTER SET 2-50 PRINTED IN U.S.A.

SHELL OIL COMPANY

WELL NO. 2

DRILLING REPORT

POR PERIOD ENDING September 5, 1954

East Boundary Butte (FIELD)
Apache, Arizona (COUNTY)

Section 3 (SECTION OR LEASE)
41 N., R. 28 E. (TOWNSHIP OR RANCHO)

DAY	DEPTHS FROM	DEPTHS TO	REMARKS
8-30	5147	5223	Drilled 76'. Drilled 17 3/4 hours, tripped for bit 5 1/4 hours. Slipped drilling line 1 hour. Treated mud with caustic, lime, starch, and tannex.
8-31	5223	5274	Drilled 51'. Drilled 11 hours. Circulated 1 1/4 hours to condition hole for drill stem test. Tripped for test tool 5 1/2 hours. Made up tool 2 hours. Test ran 4 1/4 hours. Treated mud with lime, caustic, starch, gel and tannex.
9-1	5274	5322	Drilled 48'. Pulled test string 2 1/2 hours. 1 1/2 hours reverse circulated. 1 hour changed over mud lines and jetted cellar. 1 1/2 hours mixed mud. 2 1/4 hours broke down and loaded out test tool. Went in hole with bit 2 1/4 hours. Drilled 11 hours. Circulated 1 1/4 hours to condition hole for running logs. Started out of hole 3/4 hours. Treated mud with starch, lime, caustic, gel and tannex.

DST #5. Straddle 5190-5225. Johnston testers. 7 1/4" Bobtail packer at 5185, 7 1/2" O H packers at 5190 and 5225,
5 outside recorders, 3/4" sub-surface bean, perforations 5190-5225, 30' air cushion. Initial shutin 20 minutes, open 2 hours 40 minutes, shut in 1 hour 10 minutes. Moderate blow decreasing to weak after 1 1/2 hours. Inflammable gas to surface in 1 hour 40 minutes, rate nil. Recovered 120' (1.7 bbl.) very gassy mud, and 3260' (42.8 bbl.) gassy sulfur water and hydrogen sulfide. Trace oil scum on test tank.

Feet Above Tester	Description	Salinity (t)	Wt. #/gal.	Gas (R.E.U.) Total/Methane
3380	VGM	54000	8.6	420/140
3100	G Sul. Water	78000	9.1	146/112
2000	G Sul. Water	79000	9.1	360/80
1090	G Sul. Water	80000	9.1	320/60
500	G Sul. Water	82000	9.1	300/60
At tool	G Sul. Water	119000	9.6	380/110

ISIP 1725/1710, HP 2745/2700, IFP 195/190, FFP 1445/1480, SIP 1660/1680 nearly stabilized. Mud before test 9.8#/gal., 3000 ppm.

CONDITION AT BEGINNING OF PERIOD

HOLE SIZE	HOLE FROM	HOLE TO	CASING SIZE	DEPTH SET
13 3/4	0	704	10 3/4	697
9	704	4520		
8 3/4	4520	5147		

DRILL PIPE SIZES 4 1/2" - 16.6#/ft.

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R. D. Allen
SIGNED

PD 4A MASTER SET 4-50 PRINTED IN U.S.A.

SHELL OIL COMPANY

WELL NO. 2

East Boundary Butte
(FIELD)
Apache Co., Arizona
(COUNTY)

DRILLING REPORT
FOR PERIOD ENDING
August 29, 1954

Section 3
(SECTION OR LEASE)
41 N., 28 E.
(TOWNSHIP OR RANCHO)

DAY	DEPTHS FROM	DEPTHS TO
8-29	5121	5147

REMARKS

Drilled 26'. Finished coming out of hole to pick up test tool for DST 4, one hour. 3 hours dressed test tool, 2 1/2 hours ran tool into hole. 4 hours spent testing, 3 1/2 hours pulled test string. Broke down and loaded test tool, 2 hours. 1/2 hour made up drill collar stands 2 3/4 hours going in hole with bit. Drilled 4 3/4 hours. Treated mud with gel, caustic, lime, starch & tannex.

DST 4, straddle 4974-5003, Johnston testers, 2 - 7 1/4" bobtail open hole packers at 4974 and 5003, 3 outside pressure recorders, 3/4" subsurface bean, perforations @ 4974 to 5003, 30' air cushion; initial shut in 20 minutes, open 2 1/2 hours, shutin 1 hour 10 minutes. Moderate blow 2 hours decreasing slightly remainder of test, inflammable gas to surface in 90 minutes. No fluid loss in annulus; recovered 3770' (51.5 bbl) sulfur water with H_2S odor. Gas to surface not H_2S. Gas rate nil.

Feet above tester	Description	Salinity	Gas Total/Methane	Wt.
3680	Gas Cut Mud	21000	200/184	8.8
3050	Sul water 2/H_2S	56000	10/6	8.7
1970	"	58000	22/12	8.7
970	"	59000	26/16	8.7
250	"	60000	12/8	8.7
At tool	"	61000	16/6	8.7

ISIP 1625/1610; HP 2550/2610; IFP 1275/1290; FFP 1590/1620; SIP 1590/1620

Mud before test 9.8#/gal, 700 ppm.

CONDITION AT BEGINNING OF PERIOD

HOLE SIZE	HOLE FROM	HOLE TO	CASING SIZE	DEPTH SET
13 3/4	0	704	10 3/4	697
9	704	4520		
8 3/4	4520	4825		

DRILL PIPE SIZES 4 1/2" 16.6#

Mud Summary:
Weight 9.8-10.0#/gal. Cake 2/32"
Viscosity 40-50 sec. PH 11.5-12.
Water Loss 4.4-6.5 cc. Salinity 500-3500 ppm

Checked B.O.E. daily.
Drillers for Denman Drilling Co.
A. Y. Old
J. Sisk
D. H. Hood

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R. D. Allen
SIGNED

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PD 4A MASTER SET 2-50 PRINTED IN U. S. A.

SHELL OIL COMPANY

WELL NO. 2

East Boundary Butte
(FIELD)

Apache Co., Arizona
(COUNTY)

DRILLING REPORT
FOR PERIOD ENDING

August 25, 1954

Sec. 3
(SECTION OR LEASE)

(TOWNSHIP OR RANCHO)

DAY	DEPTHS FROM	DEPTHS TO	REMARKS
8-23	4825	4875	Drilled 50'. Serviced rig and jetted mud pits, 1/2 hour. Installed new engine clutch and repaired auxiliary brake, 6 hours. Treated mud with caustic, lime, starch, quebracho, and gel.
8-24	4875	4931	Drilled 56'. Worked on pump, 1 1/2 hour. Serviced rig and checked B.O.P.'s, 1/2 hour. Repaired air line leak, 1/4 hour. Rig inspection and safety meeting held. Treated mud with caustic, lime, starch, and gel.
8-25	4931	5010	Drilled 79'. Serviced rig and jetted shale pits. Began day work at 5000' at 9:15 PM. Treated mud with gel, lime, caustic, starch, and tannex.
8-26	5010	5088	Drilled 78'. Drilled 18 3/4 hours. Tripped for bit, 5 1/4 hours. Held safety meeting. Jetted shale pit. Treated mud with caustic, lime, starch, gel and tannex.
8-27	5088	5121	Drilled 33'. Drilled 10 1/2 hours. Tripped for bit 4 hours. Lost 30 bbls. of mud. 1/2 hour slipped drilling line. Circulated to condition hole for DST #3, 2 hours. Pulled bit for DST #3, 2 1/4 hours. Made up test tool, 2 hours. Went back in hole with test tool, 2 1/4 hours. Made up test tool, 2 hours. Went back in hole with test tool, 2 1/4 hours. 1/2 hour tested. Treated mud with gel, caustic, starch, lime, and tannex.
8-28	5121	-	Testing attempted for 1 hour, drill pipe leaking. 3 hours pulled test string, checking for leaks. Found one joint with two holes. Dressed test tool, 2 hours. Ran test tool back in hole for DST #3A, 2 3/4 hours Tested for 4 hours. Pulled test tool, 3 1/4 hours. Dressed tool, 2 1/2 hours. Went back in hole with bit to condition hole, 2 hours. Treated mud with lime, gel, tannex, starch, & caustic to build up volume. DST 3, 4973-5121, Initial shut in 20 minutes. Pipe leaking. HP 2610;ISIP 2490 / 2610 2505 DST 3A, 4973-5121, Johnston testers. Two 7 1/4" bobtail open hole packers at 4968 & 4973, 3 outside pressure recorders, 3/4" subsurface bean, perforations 4973-4989 & 5099-5121, 30' air cushion. Initial shut-in 20 minutes, tool open 2 1/2 hours, shut in 1 hour 10 min. Moderate blow decreasing throughout test. No fluid loss in annulus. Recovered 3691'(53.0 bbls) sulfur water with H_2S odor.

CONDITION AT BEGINNING OF PERIOD

HOLE SIZE	HOLE FROM	HOLE TO	CASING SIZE	DEPTH SET
13 3/4	0	704	10 3/4	697
9	704	4520		
8 3/4	4520	4825		
DRILL PIPE SIZES	4 1/2"	16.6#		

Feet above	Description	Salinity	Gas Total/Methane	Wt.
3691	H_2S cut mud	35000	32/26	8.75
2070	Sul. water w/ H_2S	44000	4/2	8.75
990	"	45000	18/12	8.75
290	H_2S cut mud	34000	78/74	8.8
200	Gas cut mud	44000	120/92	8.8

ISIP 2505/2550, HP 2625/2610, IFP 1230/1245, FFP 1710/1710

SIP 2055/2025 nearly stabilized

Mud before test 10.0#/gal. 600 ppm.

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R. D. Allen

PD 4A MASTER SET 2-50 PRINTED IN U. S. A.

SHELL OIL COMPANY

WELL NO. 2

DRILLING REPORT

FOR PERIOD ENDING August 22, 1954

East Boundary Butte (FIELD)

Apache County, Arizona (COUNTY)

Section 3 (SECTION OR LEASE)

41 N., 26 E. (TOWNSHIP OR RANCHO)

DAY	DEPTHS FROM	DEPTHS TO	REMARKS
8-18	4601	4651	Cored 50'. Core #5, recovered 49'. Cored 13 1/2 hours. Circulated one hour. Worked on rotary clutch and chain. Pulled and laid down core, 2 3/4 hours. Treated mud with lime, caustic, starch, quebracho and gel.
8-19	4651	4707	Drilled 56'. Circulated 1-1/2 hours prior to DST #2. Pulled dull bit, 2 hours. Made up test tool and went in hole, 2 3/4 hours. Tried to open tool, one hour. Treated mud with lime, caustic, starch, tannex and gel.
8-20	4707	4707	DST #2, 4620-4707, Johnston testers, 2 - 7-1/4" bobtail open hole packers 3 outside pressure recorders, 3/4" subsurface bean, perf. intervals:4620-4638, 4692-4707, no water cushion, tool open 1 hour, shut in 1/2 hour. Disc valve failed to open, recovered 369' of unaltered mud, indicating drill pipe leak. Came out of hole and broke down tool, 5 hours. Checked drill pipe for leaks, 14 1/2 hours. Went in hole for DST #2A, 3 hours. Treated mud with lime, tannex, starch, caustic and gel.
8-21	4707	4753	Drilled 46'. Finished going in hole with test tool for DST #2A, one hour. DST #2A, 4620-4707, Johnston Testers, 2 - 7-1/4" bobtail open hole packers set at 4615 and 4620, 3 outside pressure recorders, 3/4" subsurface bean, perforations at 4620-4638 and 4692-4707, no water cushion, tool open 2 1/2 hours, shut in 1 1/2 hours, gas to surface in 40 minutes, moderate to strong blow. Maximum flow rate 84.6 MCF/day of inflammable gas (Gravity of 1). Recovered 177' (1.0 bbl) of gas cut mud.

Feet above tester	Descript.	Salinity	Unit Gas Total/meth.	Wt.
177	GCM w/sul.odor	1500	80/28	8.6#/gal.

HP: 2466, IFP: 105, FFP:135, SIP: 1515

Maximum pressure (flow prover) 22 Psig for 3/8" bean. Pulled out of hole, 2 1/2 hours, broke down test tool and loaded on truck, 2 3/4 hours. Cut off drilling line, 2 hours. Went back in hole, 1 3/4 hours. Checked B.O.P., both O.K. Treated mud with gel, lime, starch, caustic and tannex.

8-22	4753	4825	Drilled 72'. Changed dogs in slips and worked on water pump, 3/4 hour. Treated mud with gel, starch, caustic, lime and tannex.	

CONDITION AT BEGINNING OF PERIOD

HOLE SIZE	HOLE FROM	HOLE TO	CASING SIZE	DEPTH SET
13 3/4	0	704	10 3/4	697
9	704	4520		
8 3/4	4520	4551		
DRILL PIPE SIZES 4 1/2				

Mud Summary

Weight: 10.2 #/gal. Cake: 2/32"
Viscosity: 42-43 Sec. Sal.: 425 - 1125 ppm.
pH: 12.5 - 13 So.: 3/4% - 1%
Water Loss: 4.6 - 9.8 cc.

Drillers for Denman Drlg. Co.:

A. Y. Old
J. Sisk
D. H. Hood

22

R. D. Allen

FD 4A MASTER SET 2-50 PRINTED IN U. S. A.

SHELL OIL COMPANY

WELL NO. 2

DRILLING REPORT

FOR PERIOD ENDING August 22, 1954

East Boundary Butte (FIELD)
Apache, County, Arizona (COUNTY)

Sec. 3, T. 41N., R. 28 E. (SECTION OR LEASE) (TOWNSHIP OR RANCHO)

DAY	DEPTHS FROM	DEPTHS TO	REMARKS
8-16	4551	4600	Cored 49'. Made up core barrel and went in hole 2 3/4 hour, circulated 3/4 hour, cored 19-1/4 hours on core #4, jetted pits, treated mud with lime, caustic, starch, quebracho, and gel.
8-17	4600	4601	Cored 1'. Completed cutting core #4, 3/4 hour, circulated 1-1/2 hours, came out of hole and dumped core 3-3/4 hours, recovered 50', dressed Johnston tool 2 hours, went into hole with tool 2 hours, DST#1 4535-4601, Johnston testers, 7-1/4" bobtail open hole packers set at 4530 and 4535, 3 outside pressure recorders, 3/4" subsurface bean, perforations: 4583-4597, 4535-4558. no water cushion, tool open 2 hours 35 minutes, closed 1-1/2 hours, very strong blow, gas to surface in 3 minutes, very strong blow throughout. No fluid loss in annulus, recovered 95' (0.5 bbls) of very gas cut mud.

Feet above Tester	Description	Sal. (ppm)	Baroid Total	Baroid Meth.	Wt. #/gal.
95	VGM w/tr dist.	875	100+	100+	9.0
5	VGM w/tr dist.	875	100+	100+	9.1
at tool	VGM w/tr dist	875	100+	100+	9.3

IFP 1230 / 1245 FFP 1305 / 1335 SIP 1395 / 1385 BHP 2325 / 2370

Maximum gas pressure (flow prover) 275 psig for 3/4" bean.
Calculated flow rate 3450 MCF/day of inflammable gas.

CONDITION AT BEGINNING OF PERIOD

HOLE SIZE	HOLE FROM	HOLE TO	CASING SIZE	DEPTH SET
13 3/4	0	704	10 3/4	697
9	704	4520		
8 3/4	4520	4551		

DRILL PIPE SIZES: 4 1/2

27

Ed Vendell

32 x

PD 4A MASTER SET 2-50 PRINTED IN U. S. A.

SHELL OIL COMPANY

WELL NO. 2

East Boundary Butte (FIELD)
Apache Co., Arizona (COUNTY)

DRILLING REPORT
FOR PERIOD ENDING
August 15, 1954

Section 3 (SECTION OR LEASE)

(TOWNSHIP OR RANCHO)

DAY	DEPTHS FROM	DEPTHS TO	REMARKS
8-14	4492	4523	Drilled 28', cored 3'. Worked on Hydril & checked B.O.P. equipment, 8 hours. Both O.K. Circulated 3/4 hour prior to tripping for core bbl. 2 3/4 hours pulled bit to pick up core bbl. 4 hours made up and dressed core bbl. & went into hole for core No. 1. Cored 3 1/2 ft. in 2 1/2 hours Recovered 3'. Core bbl. jammed. 1 1/2 hour pulled 33 stands. Treated mud with starch, lime, caustic, tannex and gel.
8-15	4523	4551	Cored 28'. 4 hours finished pulling core No. 1 and going in hole for core No. 2. 2 3/4 hours coring 2 1/2 feet. Core bbl jammed. 2 3/4 hours pulled core No. 2. 3 hours dressed core bbl. and went into hole for core No. 3. Core jammed in bbl. Pulled out and laid down core. Treated mud with gel, lime, caustic, starch, tannex. Core No. 1 4520-4523.5, rec. 2 1/2'. Core No. 2 4523.5 - 4526, rec. 2'. Core No. 3 4526-4551, rec. 15.5' Mud Summary Weight: 10-10.2 #/gal. Viscosity: 40-47 sec. Water loss: 8.2-9.0 cc. Cake: 2/32 - 4/32" pH: 11.5 - 13 Salinity: 500 - 3000 ppm Drillers for Denman Drilling Co. J. Sisk D. Hood A. Old

CONDITION AT BEGINNING OF PERIOD

HOLE SIZE	HOLE FROM	HOLE TO	CASING SIZE	DEPTH SET
13 3/4	0	704'	10 3/4	697
9"	704'	4286		

DRILL PIPE SIZES 4 1/2"

22

R. D. Allen

PD 4A MASTER SET 2-50 PRINTED IN U. S. A.

SHELL OIL COMPANY

WELL NO. _____

DRILLING REPORT

FOR PERIOD ENDING
August 15, 1954

East Boundary Butte
(FIELD)
Apache County, Arizona
(COUNTY)

Section 3
(SECTION OR LEASE)
41 N., 28 E., G. & S. R. M.
(TOWNSHIP OR RANCHO)

DAY	DEPTHS FROM	DEPTHS TO	REMARKS
8-9	4286	4323	Drilled 37'. Circulated one hour for running logs. Ran Schlurberger Electrical Survey and Microlog, 4 hours. Drillers T.D. 4292'. Schlumberger total depth 4292'. Laid down 3 drill collars and dressed others, 3 hours. Jetted pits. Leveled substructure, 45 min. Treated mud with starch, lime, gel, caustic and tannex.
8-10	4323	4399	Drilled 76'. Laid down worn drill collars and picked up 3 more. Jetted shale pit. Treated mud with lime, starch, caustic, gel and tannex.
8-11	4399	4473	Drilled 74'. Rotary Engineering Co. started logging unit operations at 4400' at 12:01 AM. Worked on pump. Changed drill collar and picked up 5 more drill collars. Jetted pits. Treated mud with lime, starch, gel, and tannex.
8-12	4473	4492	Drilled 19'. Put new magneto on light plant. Installed new motor on Hydril. Spent 2 hours going part way in hole with 25 stands and coming back out to pick up junk sub. Two hours waited for junk sub. Hydril not working. 9 hours circulated and waited on Hydril parts. Treated mud with starch, lime, gel, tannex, and caustic.
8-13	4492	4492	Drilled 0'. 22 hours circulated waiting on Hydril parts. Two hours working on Hydril. Treated mud with starch, lime, tannex, caustic, and gel.

CONDITION AT BEGINNING OF PERIOD				
HOLE SIZE	HOLE FROM	HOLE TO	CASING SIZE	DEPTH SET
13 3/4"	0	704	10 3/4"	697'
9"	704'	4286'		
DRILL PIPE SIZES	4 1/2, 16.60#/ft.			

22

R. D. Allen

32 × 8

PD 4A MASTER SET 2-50 PRINTED IN U. S. A.

SHELL OIL COMPANY

WELL NO. 2

DRILLING REPORT
FOR PERIOD ENDING
August 8, 1954

East Boundary Butte (FIELD)
Apache, Arizona (COUNTY)
SE¼, NW¼, Section 3 (SECTION OR LEASE)
T.41N., R.28 E., G.& S.R.M. (TOWNSHIP OR RANCHO)

DAY	DEPTHS FROM	DEPTHS TO	REMARKS
8-2	3767	3792	Drilled 25'. Worked on motors. Made up core barrel and mounted in rig 4-1/2 hours. Pulled #1 engine tail shaft. Treated mud with gel, quebracho, starch, lime, and caustic.
8-3	3792	3852	Drilled 60'. Installed tail shaft on #1 motor. Treated mud with lime, starch, quebracho, caustic, and gel.
8-4	3852	3970	Drilled 118'. Worked on traveling block hook. Repaired rotary table chain. Jetted mud pits. Treated mud with starch, lime, caustic, tannex, and gel.
8-5	3970	4044	Drilled 74'. Worked on rotary system. Slipped drilling line. Jetted shale pit. Dressed drill collar connections. Treated mud with lime, caustic, starch, and tannex.
8-6	4044	4143	Drilled 99'. Jetted pits. Installed new magneto and plugs in #1 motor. Treated mud with lime, caustic, starch, quebracho, and gel.
8-7	4143	4227	Drilled 84'. Jetted shale pits. Treated mud with starch, lime, quebracho, caustic, and gel.
8-8	4227	4286	Drilled 59'. Jetted mud pit. Treated mud with lime, caustic, starch, tannex, and gel.

Checked E.O.E. Daily

Mud Summary:
Weight 9.8-10.2#/gal.
Viscosity 39-49 sec.
Water Loss 4-12.4 cc.
Cake 2/32"
Salinity 425-525 ppm.
pH 12-12.5

Drillers for Denman Drilling Co.

A. Y. Old
D. H. Hood
J. Sisk

CONDITION AT BEGINNING OF PERIOD

HOLE SIZE	HOLE FROM	HOLE TO	CASING SIZE	DEPTH SET
13-3/4"	0	704'	10-3/4"	697'
9"	704'	3767'		

DRILL PIPE SIZES 4-1/2"

22

R. Dean Allen
SIGNED

FD 4A MASTER SET 2-50 PRINTED IN U. S. A.

SHELL OIL COMPANY

WELL NO. 2

DRILLING REPORT
FOR PERIOD ENDING

East Boundary Butte (FIELD)
Apache, Arizona (COUNTY)
August 1, 1954
SE¼ NW¼, Section 3 (SECTION OR LEASE)
T. 41 N., R. 28 E., G. & S. R. M. (TOWNSHIP OR RANCHO)

DAY	DEPTHS FROM	DEPTHS TO	REMARKS
7-26	2942	3047	Drilled 105'. Jetted pits. Cut derrick line. Worked on monkey board. Treated mud with quebracho, caustic, lime, starch, and barium carbonate.
7-27	3047	3228	Drilled 181'. Worked on water pump. Treated mud with starch, quebracho, caustic, and lime.
7-28	3228	3373	Drilled 145'. Jetted pits. Treated mud with starch, lime, caustic, quebracho, and gel.
7-29	3373	3511	Drilled 138'. Repaired rotary chain. Jetted pits. Worked on #2 draw works engine. Treated mud with lime, starch, quebracho, gel, and caustic.
7-30	3511	3624	Drilled 113'. Changed plugs on #2 and 3 engines. Worked on circulation pump. Treated mud with lime, quebracho, starch, caustic, and gel.
7-31	3624	3694	Drilled 70'. Worked on #1 motor. Treated mud with lime, quebracho, and gel, starch, and caustic.
8-1	3694	3767	Drilled 73'. Picked up core barrel - 3 hours. Blew n.g. line and switched over from butane. (15 minutes.) Treated mud with starch, lime, quebracho, caustic, and gel.

Checked B.O.E. daily
Mud Summary: Wt: 9.6 - 10.0 # with gel — Cake: 2/32" - 3/32"
Vis: 36 - 75 sec. — Sal.: 525 ppm
W.L.: 5.4 - 20.0 cc — pH: 11-13

Drillers for Denman Drilling Co.

D. H. Hood
J. Sisk
A. Y. Old

CONDITION AT BEGINNING OF PERIOD

HOLE SIZE	HOLE FROM	HOLE TO	CASING SIZE	DEPTH SET
13 3/4"	0	704'	10-3/4"	697'
9	704'	2942		

DRILL PIPE SIZES 4½ I.F. 2"

E. W. Vendell
SIGNED

22

32 × 8

PD 4A MASTER SET 2-50 PRINTED IN U. S. A.

SHELL OIL COMPANY

WELL NO. 2

DRILLING REPORT
FOR PERIOD ENDING
July 25, 1954

East Boundary Butte
(FIELD)
Apache, Arizona
(COUNTY)

SE¼, NW¼ Section 1
(SECTION OR LEASE)
T.41N., R. 28 E., G&SRM
(TOWNSHIP OR RANCHO)

DAY	DEPTHS FROM	DEPTHS TO	REMARKS
7-19	1490	1730	Drilled 240'. Afternoon tour driller injured; circulated until relief arrived. Repaired gas line. Treated mud with gel, quebracho and caustic.
7-20	1730	2119	Drilled 389'. Changed bottom hole drill collar. Treated mud with gel, quebracho and caustic.
7-21	2119	2263	Drilled 144'. Installed draw works engine, repaired water well pump. Drilled mouse hole and pumped water to tanks. Treated mud with quebracho and caustic.
7-22	2263	2403	Drilled 140'. Finished drilling mouse hole and pumping water. Repaired water pump. Treated mud with gel, quebracho and caustic.
7-23	2403	2564	Drilled 161'. Jetted mud pits. Treated mud with gel, quebracho and caustic.
7-24	2564	2735	Drilled 171'. Repaired brake drum, changed to lime base mud (3 hours). Treated mud with gel, quebracho, caustic, lime, and starch.
7-25	2735	2942	Drilled 207'. Jetted mud pits. Treated mud with gel, quebracho, caustic, lime, and starch. Checked B.O.E. Daily Mud Summary 7/19/54 - 7/25/54 Wt.: 9.5 - 10.5 #/gal. Cake 2/32" - 3/32" Vis.: 43 - 69 sec. Sal.: 100 - 525 ppm W.L.: 7.2 - 0.0 cc. pH: 9 - 13 Denman Drlg. Co. A. Y. Old D. H. Hood G. R. Harris T. Wilson J. Sisk O. A. Watson

CONDITION AT BEGINNING OF PERIOD				
HOLE SIZE	HOLE FROM	HOLE TO	CASING SIZE	DEPTH SET
13 3/4"	0	704'	10 3/4"	697'
9"	704'	1490'		
DRILL PIPE SIZES 4 1/2"				

22

S. J. Ieronimo
SIGNED

FD 4A MASTER SET 2-50 PRINTED IN U. S. A.

SHELL OIL COMPANY

WELL NO. 2

DRILLING REPORT
FOR PERIOD ENDING July 18, 1954

East Boundary Butte (FIELD)
Apache, Arizona (COUNTY)
Section 3 (SECTION OR LEASE)
T.43N., R.28E., G&SRM (TOWNSHIP OR RANGE)

DAY	DEPTHS FROM	DEPTHS TO	REMARKS
7-12	634	704	Drilled 70'. Layed gas line from butane tank. Changed rod and piston in pump. Treated mud with gel. H-40, short T. & C.
7-13	704	-	Ran 10 3/4", 40.5#/casing. Started cementing @ 6:55 A.M., plug down @ 7:30, finished @ 7:45 A.M. Used 320 sacks cement, 115# slurry, displaced with 69 bbls. water. Landed casing @ 697'. Good returns. Halliburton cementers. Cut off collar, removed conductor pipe, began flanging up. Dug cut cellar. Worked on engines.
7-14	704	-	Worked on pump and engines. Flanged up B.O.E. Put new 7 1/4" lines in #1 pump.
7-15	704	-	Finished flanging up and repairing mud pump. Dug mousehole. Picked up 2" water line. Blank rams tested with 800# for 30 min., O.K. Last collar tested with 800# for 15 min., O.K. Open hole tested with 800# for 15 min., O.K.
7-16	704	970	Drilled 266'. Made B.O.E. pressure test. Conditioned mud and jetted pits. Treated mud with gel, barium carbonate, quebracho and caustic soda.
7-17	970	1300	Drilled 330'. Worked on pump and serviced rig. Treated mud with caustic, quebracho and gel.
7-18	1300	1490	Drilled 190'. Worked on gas line and light plant, checked rig; stuck Totco instrument. Nippled up mud lines and changed fuel lines. Treated mud with gel, caustic and quebracho.

Mud Summary 7/12/54 - 7/18/54
Wt: 9.3 - 9.8 #/gal.
Vis. 43-45 sec.

Denman Drlg. Co.
O. A. Watson
A. Y. Old
E. Pugh

CONDITION AT BEGINNING OF PERIOD

HOLE SIZE	FROM	TO	CASING SIZE	DEPTH SET
13 3/4"	0	634'		
DRILL PIPE SIZE 4 1/2				

22

R. D. Allen

PD 4A MASTER SET 2-50 PRINTED IN U. S. A.

SHELL OIL COMPANY

WELL NO. 2

East Boundary Butte
(FIELD)

Apache Arizona
(COUNTY)

DRILLING REPORT
FOR PERIOD ENDING
July 11, 1954

SE/4, NW/4, Sec. 3
(SECTION OR LEASE)

41 N., 28 E., G. S. M.
(TOWNSHIP OR RANCHO)

DAY	DEPTHS FROM	DEPTHS TO	REMARKS
			Location: 1980 ft. S. and 1980 ft. E. of NW corner, sec. 3, T. 41 N., R. 28 E., Gila and Salt River Meridian, Apache County, Arizona. Ground Elev. 5296', K. B. 5307.45'.
7-7	0	37	Drilled 37'. Spudded at 1:00 AM with 9" bit. Conductor pipe and cellar washed out. Cemented pipe and celler. Treated mud with gel.
7-8	37	159	Drilled 122'. Cellar washed out again. Cemented cellar. Repaired fuel line. Twisted off Kelly.
7-9	159	206	Drilled 47'. Fished for and recovered Kelly with drill pipe. Waited on new Kelly. Broke swivel connection. Reamed to 180' with 13 3/4" bit.
7-10	206	335	Drilled 129'. Finished reaming to 206'. Cellar washed out. Cemented cellar. Worked on mud pump. Treated mud with gel.
7-11	335	634	Drilled 299'. Repaired pump and Kelly. Jetted pits. Treated mud with gel. Mud Summary 7/7/54 - 7/11/54: Weight 10.0-10.6 #/cu. ft. Viscosity 41-55 sec. Denman Drilling Company O. A. Watson A. Y. Old E. Pugh

CONDITION AT BEGINNING OF PERIOD				
HOLE SIZE	HOLE FROM	HOLE TO	CASING SIZE	DEPTH SET
DRILL PIPE SIZES				

2

Sam Ieronimo

Form 9-330

Budget Bureau No. 42-R-355.3.
Approval expires 12-31-55.

Window Rock, Arizona

U. S. LAND OFFICE Tribal Lands

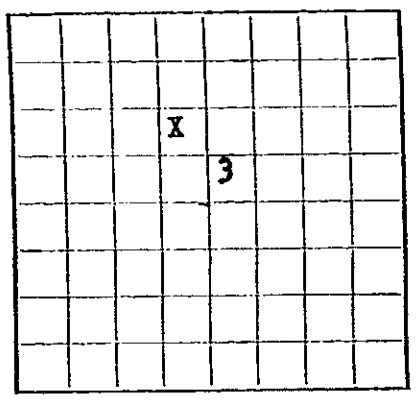
SERIAL NUMBER xxxxxxxxxxxxx

LEASE OR PERMIT 14-20-603-226

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

RECEIVED
JAN 17 1955
U. S. GEOLOGICAL SURVEY
FARMINGTON, NEW MEXICO

LOG OF OIL OR GAS WELL



LOCATE WELL CORRECTLY

Company Shell Oil Company Address 33 Richards St., Salt Lake City, Utah

Lessor or Tract Tribal Lands Field East Boundary Butte State Arizona

Well No. 2 Sec. 3 T. 41N. R. 28E. Meridian G.&S.R.B.& M. County Apache

Location 1980 ft. {N./S.} of Line and 1980 ft. {E./W.} of Line of Section 3 Elevation 5307.45
(Derrick floor relative to sea level)

The information given herewith is a complete and correct record of the well and all work done thereon so far as can be determined from all available records.

Signed J. J. Pickell

Title Exploitation Engineer

Date January 13, 1955

The summary on this page is for the condition of the well at above date.

Commenced drilling July 7, 1954 Finished drilling September 23, 1954

OIL OR GAS SANDS OR ZONES

(Denote gas by G)

No. 1, from 4745' to 4762' G

No. 2, from 4842' to 4854'

No. 3, from 4650' to 4690'

No. 4, from 4540' to 4585'

No. 5, from ---- to ----

No. 6, from ---- to ----

IMPORTANT WATER SANDS

No. 1, from ---- to ----

No. 2, from ---- to ----

No. 3, from ---- to ----

No. 4, from ---- to ----

CASING RECORD

Size casing	Weight per foot	Threads per inch	Make	Amount	Kind of shoe	Cut and pulled from	Perforated From	Perforated To	Purpose
10 3/4"	40.5#	-	-	697'	Baker	-	-	-	Surface Casing
5 1/2"	17#0#	-	-	4930'	Baker	-	4842	4854	Production
							4762	4690	
							4761	4743	
							4745	4762	
							4650	4690	
							4540	4585	

MUDDING AND CEMENTING RECORD

Size casing	Where set	Number sacks of cement	Method used	Mud gravity	Amount of mud used
10 3/4"	697'	320 sacks	displacement	-	-
5 1/2"	4930'	350 sacks	displacement	-	-

FOLD | MARK

PLUGS AND ADAPTERS

Heaving plug—Material Cement(left in shoe) Length 4730' - T.D. Depth set 4730'

Adapters—Material ---- Size ----

SHOOTING RECORD

Size	Shell used	Explosive used	Quantity	Date	Depth shot	Depth cleaned out

TOOLS USED

Rotary tools were used from 0 feet to 6339 T.D. feet, and from - feet to - feet

Cable tools were used from - feet to - feet, and from - feet to - feet

DATES

Completed January 13, 1955, 19 54 Put to producing (test) October 18, 19 54

The production for the first 24 hours was 32 barrels of fluid of which 36% was oil; -% emulsion; 64% water; and -% sediment. API Gravity, ~~60°~~ 41°

If gas well, cu. ft. per 24 hours 2,200,000 Gallons gasoline per 1,000 cu. ft. of gas -

Rock pressure, lbs. per sq. in. -

well shut in due to lack of outlet

EMPLOYEES

A. Y. Old, Driller D. H. Hood, Driller

J. Sisk, Driller J. Clay, Driller

FORMATION RECORD

FROM—	TO—	TOTAL FEET	FORMATION

January 13, 1955
Date

Signed J. J. Tickell
Title Exploitation Engineer

The summary on this page is for the condition of the well at above date.

Commenced drilling July 7, 1954 Finished drilling September 23, 1954

OIL OR GAS SANDS OR ZONES

(Denote gas by G)

No. 1, from 4745' to 4762' G
No. 2, from 4842' to 4854'
No. 3, from 4650' to 4690' G
No. 4, from 4540' to 4585'
No. 5, from — to —
No. 6, from — to —

IMPORTANT WATER SANDS

No. 1, from — to —
No. 2, from — to —
No. 3, from — to —
No. 4, from — to —

CASING RECORD

Size casing	Weight per foot	Threads per inch	Make	Amount	Kind of shoe	Cut and pulled from	Perforated From—	Perforated To—	Purpose
10 3/4"	40.5#	—	—	697'	Baker	—	—	—	Surface Casing
5 1/2"	17.0#	—	—	4930'	Baker	—	4842	4854	Production
							4650	4690	
							4745	4762	
							4540	4585	

MUDDING AND CEMENTING RECORD

Size casing	Where set	Number sacks of cement	Method used	Mud gravity	Amount of mud used
10 3/4"	697'	380 sacks	displacement	—	—
5 1/2"	4930'	350 sacks	displacement	—	—

PLUGS AND ADAPTERS

Heaving plug—Material Cement(left in shoe) Length 4730'- T.D. Depth set 4730'

Adapters—Material Size

SHOOTING RECORD

Size	Shell used	Explosive used	Quantity	Date	Depth shot	Depth cleaned out

TOOLS USED

Rotary tools were used from 0 feet to 6339 T.D. feet, and from — feet to — feet

Cable tools were used from — feet to — feet, and from — feet to — feet

DATES

January 13, 1955 well shut in due to lack of outlet

Completed 10-18-54, 19 Put to producing (test) October 18, 19 54

The production for the first 24 hours was 32 barrels of fluid of which 36% was oil; —% emulsion; 64% water; and —% sediment. API Gravity, [illegible] 42°

If gas well, cu. ft. per 24 hours 2,200,000 Gallons gasoline per 1,000 cu. ft. of gas —

Rock pressure, lbs. per sq. in. —

EMPLOYEES

A. Y. Old, Driller D. H. Hood, Driller
J. Siak, Driller J. Clay, Driller

FORMATION RECORD

FROM—	TO—	TOTAL FEET	FORMATION
0	1530'	1530'	Navajo, Kayenta, Wingate, Chinle
1530'	1660	130	Shinarump
1660	1808	148	Moenkopi
1808	3757	1949	Cutler-Rico
3757	5347	1590	Hermosa
5347	5510	163	Molas
5510	5668	158	Leadville
5668	5790	122	Ouray
5790	6093	303	Elbert
6093	6325	232	Undifferentiated Devonian
6325	-		Cambrian

TD 6339' PB 4730'

DEPT. STATE LAND
JAN 18
RECEIVED

[OVER]

*See Attached.

FORMATION RECORD—Continued

FORMATION RECORD—Continued

FROM—	TO—	TOTAL FEET	FORMATION

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JAN 18 1955
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16—43094-2 U. S. GOVERNMENT PRINTING OFFICE

HISTORY OF OIL OR GAS WELL

It is of the greatest importance to have a complete history of the well. Please state in detail the dates of redrilling, together with the reasons for the work and its results. If there were any changes made in the casing, state fully, and if any casing was "sidetracked" or left in the well, give its size and location. If the well has been dynamited, give date, size, position, and number of shots. If plugs or bridges were put in to test for water, state kind of material used, position, and results of pumping or bailing.

ENCLOSED :

Drilling Report, Core Record & Ditch Sample Record
Logging Unit Report

Form 9-331 b
(April 1952)

(SUBMIT IN TRIPLICATE)

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

Budget Bureau No. 42-R359.2.
Approval expires 12-31-52.

Indian Agency Window Rock
Arizona
Allottee Tribal Lands
Lease No. 14-20-603-226

SUNDRY NOTICES AND REPORTS ON WELLS

NOTICE OF INTENTION TO DRILL		SUBSEQUENT REPORT OF WATER SHUT-OFF	
NOTICE OF INTENTION TO CHANGE PLANS		SUBSEQUENT REPORT OF SHOOTING OR ACIDIZING	
NOTICE OF INTENTION TO TEST WATER SHUT-OFF		SUBSEQUENT REPORT OF ALTERING CASING	
NOTICE OF INTENTION TO REDRILL OR REPAIR WELL		SUBSEQUENT REPORT OF REDRILLING OR REPAIR	
NOTICE OF INTENTION TO SHOOT OR ACIDIZE		SUBSEQUENT REPORT OF ABANDONMENT	
NOTICE OF INTENTION TO PULL OR ALTER CASING		SUPPLEMENTARY WELL HISTORY	X
NOTICE OF INTENTION TO ABANDON WELL			

(INDICATE ABOVE BY CHECK MARK NATURE OF REPORT, NOTICE, OR OTHER DATA)

FARMINGTON, NEW MEXICO

January 7, 1955

East Boundary Butte 2
Well No. 1 is located 1980 ft. from [N] line and 1980 ft. from [W] line of sec. 3

NW¼ 3 (¼ Sec. and Sec. No.) | 41N. (Twp.) | 28E. (Range) | G. & S. R. B. & M. (Meridian)

East Boundary Butte (Field) | Apache (County or Subdivision) | Arizona (State or Territory)

The elevation of the Kelly Bushing above sea level is 5307.4 ft.

DETAILS OF WORK

(State names of and expected depths to objective sands; show sizes, weights, and lengths of proposed casings; indicate mudding jobs, cementing points, and all other important proposed work)

Production Test #2 11-30-54 - 12-7-54

Well was flowed a total of 187 hours. Final rate 3150 MCF/D (still decreasing), 12 B/D gross, 3.5 B/D oil, 70% cut. Cumulative Production for test 28,350 MCF, 126 bbls. gross, 38 bbls. oil, 70% cut. Well shut in 10:30 P.M., 12-7-54. See attached graph for details.

I understand that this plan of work must receive approval in writing by the Geological Survey before operations may be commenced.

Company Shell Oil Company

Address 33 Richards Street

Salt Lake City, Utah

By A. L. Brown

Title A. L. Brown
Division Exploitation Engr.

U. S. GOVERNMENT PRINTING OFFICE 16—84371b-4

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STATE LAND DEPARTMENT
STATE OF ARIZONA

Form O & G 52

Form Prescribed Under Oil and Gas Conservation Act of 1951
WELL COMPLETION REPORT
(File in Duplicate)

Operator SHELL OIL COMPANY Field Wildcat - East Boundary Butte 2
Street 33 Richards Street Pool -
City Salt Lake City State Utah County Salt Lake County
Lease Name Tribal Lands 14-20-603-226 Well No. 2 Acres in Unit Lease 2352 G&SRB&M
Location 1980' N. and 1980' W of NW corner of Sec. 3 Twp. 41 N. Rge. 28 E.
Elevation DF 5304.50' GR 5290' Electric Log Run To 6311' on September 22 19 54
Number of Crude Oil Producing Wells on this Lease, including this well 1 gas well
Has Authorization to Transport Oil or Gas from Well, Form O&G 57 been Filed? No

OFFICIAL COMPLETION GAUGE

Date Test Commenced 10-18, 1954 Hour 8:00 ~~P.M.~~ Date Test Completed 10-20, 1954 Hour 6:50 A.M.
Length of Test 47 Hours 20 Minutes
For Flowing Well: For Pumping Well:
Flowing pressure on Tbg. 752 lbs./sq.in. Length of stroke used _____ inches
Flowing pressure on csg. 875 lbs./sq.in. Number of strokes per min. _____
Size tbg. 2 in. No. ft. run 4690' Size of working barrel _____ inches
Size choke 3/8 in. Type choke orifice Size tubing. _____ in. No. ft. run _____
Length _____ in. Shut in pressure 1515 @ 4670'
If flowing well, was this well flowed for the entire duration of this test without the use of swab or other artificial flow device? yes If jetted, used - cu. ft. gas per bbl. oil. Result of this test (~~bbls.~~ cu./ft. oil per 24 hours). 2,200,000 (100% tank tables).
Gas-oil ratio of this well is (gas well) cu. ft. of gas per bbl. of oil.
Per cent water produced during this test water negligible.
Gravity of oil produced during this test (Corrected to A. P. I. 60°F.) 41° (minor amount)
Name of Pipe Line or other carrier None
If perforated: No. Shots 3 jet 3 bullet From *4540' To 4690' Date Perforated 10-14-54
Date well Spudded July 7, 1954. Date Well Completed October 18, 1954
*Top Pay 4540' Ft. Total depth of well 6339 Ft. P. B. T. D. 4730'.

CASING LINER AND TUBING RECORD

String	Size	Wt./Ft.	Name and Type	Amount Ft.	Amount In.	Depth Set at	Perforated From	Perforated To
Casing	10 3/4"	40.5	-	697'		697'	-	-
Casing	5 1/2"	17.0	-	4930'		4930'	4842'	4854'
Tubing	2"	4.7	-	4690'		4690'	4782'	4806'
							4767'	4773'
							4745'	4762'
							4650'	4690'
							4540'	4585'

CEMENT AND TESTING RECORD

Size of Hole	String	Where Cement Placed	No. Sacks of Cement	Method Used	Pressure Applied in Testing	Hardness of Cement Drilled	Type of Cement
13 3/4"	Casing	697' (shoe)	320	displacement	800 psi	-	Construction
9" & 8 3/4"	Casing	4930' (shoe)	350	"	-	-	Construction

CHEMICAL OR SHOOTING RECORD BEFORE COMPLETION

Size	Chemical or	Quantity	Date	Depth From	Depth To
			See Attached		

AFFIDAVIT

I, J. J. Pickell, being first duly sworn on oath state that I have knowledge of the facts and matter herein set forth and that the same are true and correct.

STATE OF UTAH)
COUNTY OF SALT LAKE) SS

J. J. Pickell
Representative of Company

Subscribed and sworn to before me this 14th day of January 1955

Salt Lake County, Utah
My Commission expires: February 8, 1958
Residing in Salt Lake City, Utah

Notary Public

* See attached drilling report.

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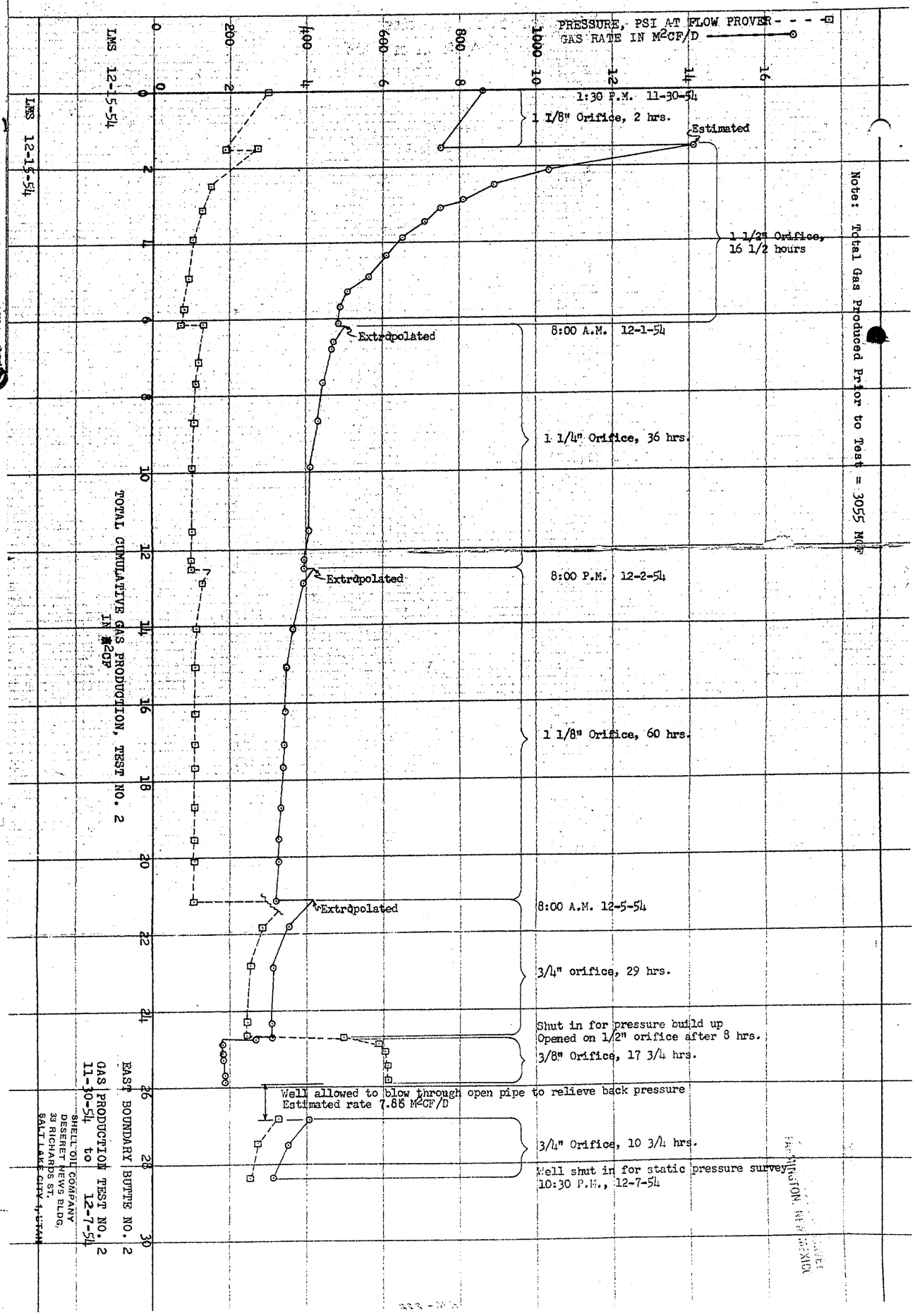
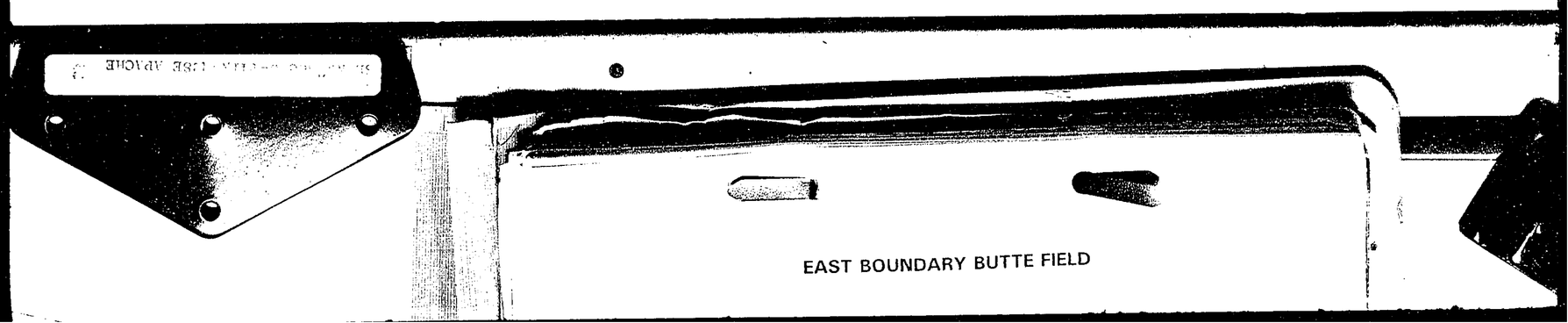

PRESSURE, PSI AT FLOW PROVER - - - -
GAS RATE IN M²CF/D ——
LMS 12-1-54
LMS 12-15-54
TOTAL CUMULATIVE GAS PRODUCTION, TEST NO. 2
IN M²CF
1:30 P.M. 11-30-54
1 1/8" Orifice, 2 hrs.
Estimated
1 1/2" Orifice, 16 1/2 hours
Extrapolated
8:00 A.M. 12-1-54
1 1/4" Orifice, 36 hrs.
Extrapolated
8:00 P.M. 12-2-54
1 1/8" Orifice, 60 hrs.
Extrapolated
8:00 A.M. 12-5-54
3/4" orifice, 29 hrs.
Shut in for pressure build up
Opened on 1/2" orifice after 8 hrs.
3/8" Orifice, 17 3/4 hrs.
Well allowed to blow through open pipe to relieve back pressure
Estimated rate 7.86 M²CF/D
3/4" Orifice, 10 3/4 hrs.
Well shut in for static pressure survey
10:30 P.M., 12-7-54
Note: Total Gas Produced Prior to Test = 3055 M²CF
EAST BOUNDARY BUTTE NO. 2
GAS PRODUCTION TEST NO. 2
11-30-54 to 12-7-54
SHELL OIL COMPANY
DESERET NEWS BLDG.
33 RICHARDS ST.
SALT LAKE CITY 1, UTAH


EAST BOUNDARY BUTTE FIELD

STATE LAND DEPARTMENT
STATE OF ARIZONA

Form O&G 63

Form Prescribed Under Oil and Gas Conservation Act of 1951

REPORT ON TEST OF WATER SHUT-OFF# 1A
(Formation Tester)

Water Shut Off Test #1, Tool Plugged

Operator Shell Oil Company
Well No. 2 Sec. 3 T. 41 N R. 28 E, G. & S. R. B. & M.
E. B. Butte, Wildcat Field, in Apache County, was tested for water shut-off on October 3, 1954. Mr. - designated by the supervisor, was not (strike one) present as prescribed in Statewide Rule 11, there were also present C. F. Thomas, Shell Engineer. No State witness was present

Shut-off data: 5½ in. 17 lb. casing was cemented at 4930 ft. on Sept. 29 1954 in 8 3/4" hole with 350 sacks of cement of which 50 sacks were left in casing. Casing record of well: 10 3/4", 40.5#, casing at 697' with 7 sacks of construction cement; 5½", 17#, J-55, casing at 4930' with 350 sacks of construction cement

Reported total depth 6339 ft. Bridged with cement from 4950 ft. to 6339 ft. Cleaned out to 4884 ft. for this test. A pressure of - lb. was applied to the inside of casing for - min. without loss after cleaning out to - ft. A Johnston tester was run into the hole on 2" in. drill pipe, with - ft. of water cushion, and packer set at 4850 ft. with tailpiece to 4862 ft. Tester valve, with ½" bean, was opened at 4:20 PM and remained open for 1 hr. and - min. During this interval Recovered 3' of rig water (300 ppm)

REPORT ON TEST OF WATER SHUT-OFF
(Bailing)

Operator
Well No. Sec. T. R. , B&M.
Field, in County, was tested for water shut off on , 19 . Mr. , designated by the supervisor, was not (strike one) present as prescribed in Statewide Rule 11, there were also present

Shut-off data: in. lb. casing was cemented at ft. on 19 in hole with sacks of cement of which sacks were left in casing. Casing record of well:

Reported total depth ft. Bridged with cement from ft. to ft. Cleaned out to ft. for this test. Casing test data:

APPROVED BY: Roger Ernst
State Land Commissioner

DATE:

12136
RECEIVED DEC 23 1954 STATE LAND DEPT.

11818
RECEIVED DEC 14 1954 STATE LAND DEPT.

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STATE LAND DEPARTMENT
STATE OF ARIZONA

Form O&G 63

Form Prescribed Under Oil and Gas Conservation Act of 1951

REPORT ON TEST OF WATER SHUT-OFF # 2
(Formation Tester)

Operator Shell Oil Company
Well No. 2 Sec. 3 T. 41 N R. 28 E, G. & S. R. B. & M.
E. B. Butte, Wildcat Field, in Apache County, was tested for water shut-off on October 4, 19 54. Mr. - designated by the supervisor, was not (strike one) present as prescribed in Statewide Rule 11, there were also present C. F. Thomas, Shell Engineer, No State witness was present

Shut-off data: 5½ in. 17 lb. casing was cemented at 4930 ft. on Sept. 29 19 54 in 8 3/4" hole with 350 sacks of cement of which 5.0 sacks were left in casing. Casing record of well: 10 3/4", 40.5#, casing at 697' with 320± sacks of construction cement; 5½", 17#, J-55, casing at 4930' with 350 sacks of cement

Reported total depth 6339 ft. Bridged with cement from 4950 ft. to 6339 ft. Cleaned out to Shoe 4884 ft. for this test. A pressure of - lb. was applied to the inside of casing for - min. without loss after cleaning out to - ft. A Johnston tester was run into the hole on 2" in. drill pipe, with - ft. of water cushion, and packer set at 4690 ft. with tailpiece to 4699.6 ft. Tester valve, with 2" bean, was opened at 1:12 AM and remained open for 1 hr. and - min. During this interval recovered 70' (0.27 bbl.) H_2S Cut water (300 ppm) 120' (0.46bbls.) fresh water (300 ppm)

REPORT ON TEST OF WATER SHUT-OFF
(Bailing)

Operator
Well No. Sec. T. R., B&M.
Field, in County, was tested for water shut off on , 19 . Mr. , designated by the supervisor, was not (strike one) present as prescribed in Statewide Rule 11, there were also present

Shut-off data: in. lb. casing was cemented at ft. on 19
in hole with sacks of cement of which sacks were left in casing. Casing record of well:

Reported total depth ft. Bridged with cement from ft. to ft.
Cleaned out to ft. for this test. Casing test data:

APPROVED BY: [signature]
State Land Commissioner

DATE:

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STATE LAND DEPARTMENT
STATE OF ARIZONA

Form O&G 63

Form Prescribed Under Oil and Gas Conservation Act of 1951

REPORT ON TEST OF WATER SHUT-OFF #3
(Formation Tester)

Operator Shell Oil Company
Well No. 2 Sec. 3 T. 41 N R. 28 E, G. & S. R. B. & M.
E. B. Butte, Wildcat Field, in Apache County, was tested for water shut-off on October 4, 1954. Mr. - designated by the supervisor, was not (strike one) present as prescribed in Statewide Rule 11, there were also present J. F. Thomas, Shell Engineer. No State Witness was present

Shut-off data: 5½ in. 17 lb. casing was cemented at 4930 ft. on Sept. 29, 1954 in 8 3/4" hole with 350 sacks of cement of which 5.0 sacks were left in casing. Casing record of well: 10 3/4", 40.5#, casing at 697' with 320 sacks of construction cement; 5½", 17#, J-55, casing at 4930' with 350 sacks of construction cement
Reported total depth 6339 ft. Bridged with cement from 4950 ft. to 6339 ft. Cleaned out to 4884 ft. for this test. A pressure of - lb. was applied to the inside of casing for - min. without loss after cleaning out to - ft. A Johnston tester was run into the hole on 2 in. drill pipe, with - ft. of water cushion, and packer set at 4495 ft. with tailpiece to 4515 ft. Tester valve, with ½" bean, was opened at 9:47 AM and remained open for 1 hr. and - min. During this interval recovered 450' (1.74 bbls) slightly gassy fresh water (300 ppm) with H_2S at top.

REPORT ON TEST OF WATER SHUT-OFF
(Bailing)

Operator
Well No. Sec. T. R., B&M.
Field, in County, was tested for water shut off on, 19. Mr., designated by the supervisor, was not (strike one) present as prescribed in Statewide Rule 11, there were also present

Shut-off data: in. lb. casing was cemented at ft. on 19
in hole with sacks of cement of which sacks were left in casing. Casing record of well:

Reported total depth ft. Bridged with cement from ft. to ft.
Cleaned out to ft. for this test. Casing test data:

APPROVED BY: [signature]
State Land Commissioner

DATE:

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RECEIVED DEC 24 1954 STATE LAND DEPT.

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STATE LAND DEPARTMENT
STATE OF ARIZONA

Form O&G 54

Form Prescribed Under Oil and Gas Conservation Act of 1951
SHOOTING OR TREATING REPORT

(File Report on This Form Within 30 Days After Shooting or Treating a Well)

Operator Shell Oil Company

Field East Boundary Butte Area, Wildcat

Pool East Boundary Butte Area,

County Apache

Lease Name Tribal Lands Well No. 2

Section N W ¼ Section 3 Township 41 N Range 28 E

Date Shot or Treated October 15-16 *, 1954

Daily Production Before Treating or Shooting: 15 MCF/D ~~Oil~~ - Bbl.; Water - Bbl.

* Initial Rate: 2200 MCF/D Gas

Daily Production After Treating or Shooting: / ~~Oil~~ 11 Bbl.; Water 21 Bbl.

Producing String of Casing (Set or Cemented at) 4930 Ft.

Depth to Top of Producing Sand or Formation 4540 Ft.

Formation Shot or Treated: Top-Ft. 4540 Bottom-Ft. 4690

Size of Shot Used: - Qts. Amount of Acid Used: *3500 Gals.

Remarks: * See attached drilling report for details.

J J Pickell
Representative of Operator of Well

21

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STATE LAND DEPARTMENT
STATE OF ARIZONA

Form0G 51

Form Prescribed Under Oil and Gas Conservation Act of 1951

NOTICE OF INTENTION TO DRILL NEW WELL

This notice and surety bond must be filed and permit must be granted before drilling begins

Salt Lake City, Utah May 24, 19 54

State Land Commissioner

In compliance with Statewide Rule 3, notice is hereby given that is is our intention to commence the work of drilling well No. 2 Sec. 3,
T. 41 N., R. 28 E., Gila and Salt River B.& M., East Boundary Butte Area ~~Field~~,
Apache County.

Legal description of lease 14-20-603-226, Tribal Lands, Indian Agency, Window Rock, Arizona (Plat attached)
(Attach map or plat to scale)

Location of Well: 1980 ft. from N. line and 1980 ft. from W line of Sec. 3
(Give exact footage from section corners or other legal subdivisions or streets)

Proposed drilling depth 6515 feet. Acres in ~~drilling unit~~ lease 2352.00. Has surety bond been filed? Yes Federal Insurance Co. of New York, ~~Bond~~ No. 7915611. Is location a regular or exception to spacing rule? Regular.

Elevation of ground above sea level 5298 feet.

All depth measurements taken from top of Kelly Bushing (Derrick, floor, Rotary Table or Kelly Bushing) which is 10 ± feet above the ground.

PROPOSED CASING PROGRAM

Size of Casing Inches A.P.I.	Weight	Grade and Type	Top	Bottom	Cementing Depths
10 3/4			Surface	800'	800'

If commercial production is obtained, a supplementary completion notice will be filed; otherwise the well will be plugged and abandoned in accordance with State regulations and an abandonment and plugging record will be filed.

Intended Zone or Zones of completion:

Name	Perforated Interval
Exploratory well. Deepest objective formation is undifferentiated Devonian.	

AFFIDAVIT:

I hereby certify under the penalty of perjury, that the information contained and statements herein made are to the best of my knowledge and belief, true, correct and complete.

Shell Oil Co., 33 Richards St. Salt Lake City, Utah (Applicant)

By A. L. Brown
Division Exploitation Engineer

OK RWJ

Application approved this 25th day of May 19 54

Permit NO. 22

Verne R. Runsvelt
State Land Commissioner

Retyping Authority

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STATE LAND
DEPT.

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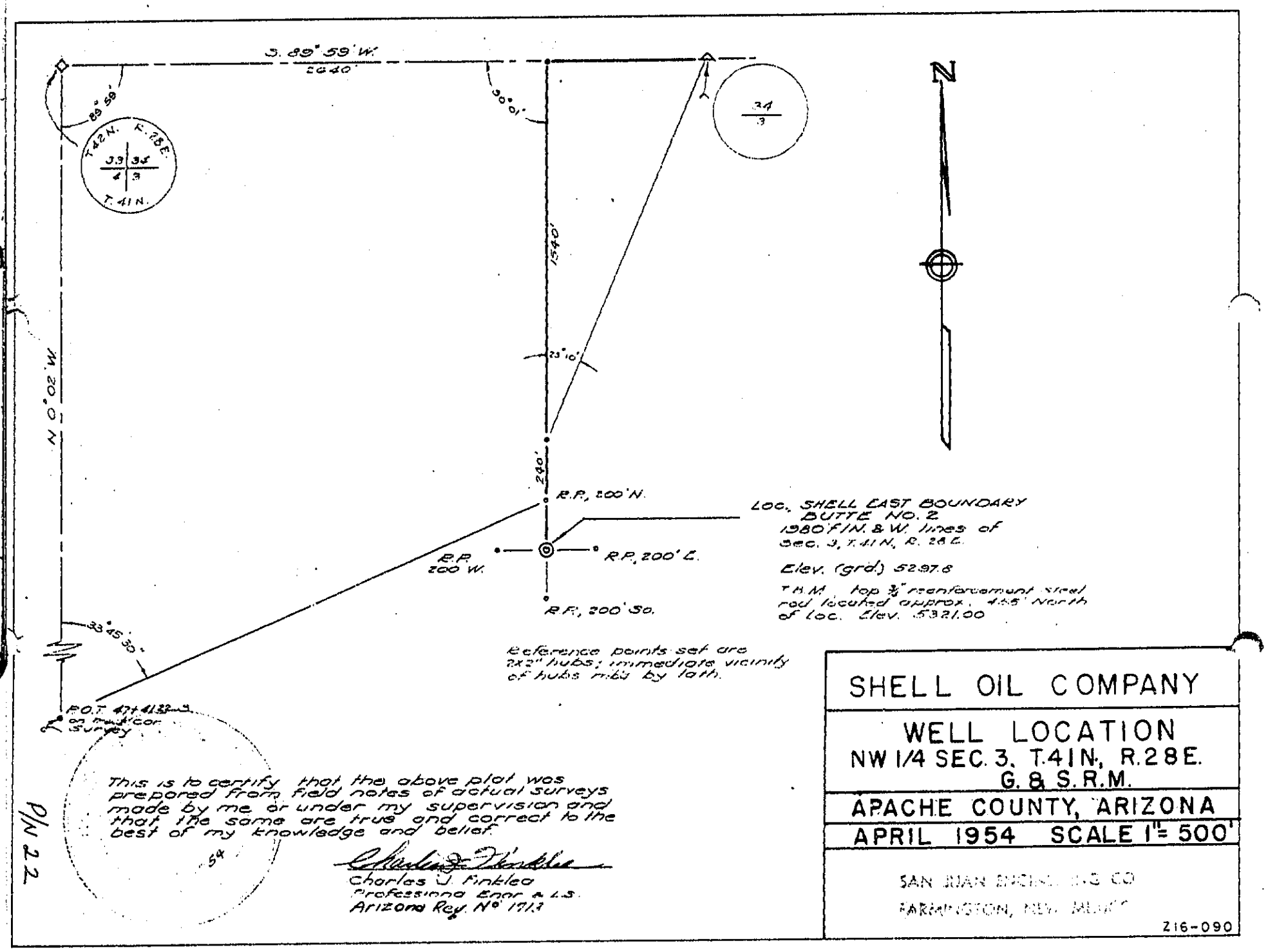

Loc. SHELL EAST BOUNDARY BUTTE NO. 2. 1980' F/N. & W. lines of Sec. 3, T. 41 N., R. 28 E.

Elev. (grd.) 5297.6

T.H.M. top ⅝" reinforcement steel rod located approx. 4.5' North of loc. Elev. 5321.00

Reference points set are 2x2" hubs; immediate vicinity of hubs mkd by lath.

This is to certify that the above plat was prepared from field notes of actual surveys made by me or under my supervision and that the same are true and correct to the best of my knowledge and belief.

Charles J. Finkle
Professional Engr. & L.S.
Arizona Reg. No. 1913

P/N 22

SHELL OIL COMPANY

WELL LOCATION
NW 1/4 SEC. 3, T. 41 N., R. 28 E.
G. & S. R. M.

APACHE COUNTY, ARIZONA

APRIL 1954 SCALE 1" = 500'

SAN JUAN ENGINEERING CO.
FARMINGTON, NEW MEXICO

Z16-090

92

32 x

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MAY 25 1954
STATE LAND
DEPT.

EAST BOUNDARY BUTTE FIELD

Operator: Elm Ridge Resources, Inc.

Bond Company*: Indian lands, evidence of bond posted with BIA

Underwriters Indemnity Co. $150,000 BIA Nationwide Bond No. B05973

Date approved: 8/01/96

* Pursuant to commission motion of October 31, 1997, no bond required with State of Arizona upon evidence of bond posted with the BIA.

Permits covered by this bond posted with the BIA:

022 ✓
028
490
515
905

State of Arizona
Arizona Geological Survey
416 W. Congress, Suite 100
Tucson, Arizona 85701
(520) 770-3500

Jane Dee Hull
Governor

Larry D. Fellows
Director and State Geologist

February 6, 2001

Ms. Kay Buchanan
Elm Ridge Resources, Inc.
12225 Greenville Ave, Suite 950
Dallas TX 75243-9362

Dear Ms. Buchanan:

This will acknowledge receipt of evidence of Elm Ridge Resources' bonding with the U.S. Department of the Interior, Bureau of Indian Affairs, completed Organization Report (Form1), and updated Operator's Certificate of Compliance and Authorization to Transport Oil or Gas from Lease (Form 8).

I have enclosed copies of the approved Form 8 for your files.

Sincerely,

Steven L. Rauzi
Oil & Gas Administrator

Enclosures

OPERATOR'S CERTIFICATE OF COMPLIANCE AND AUTHORIZATION TO TRANSPORT OIL OR GAS FROM LEASE

Federal, State, or Indian Lease Number, or lessor's name if fee lease	Field	Reservoir
	San Juan	San Juan
Survey or Sec-Twp-Rge	**County**	**State**
2,3 & 4 T41N R28E	Apache	Arizona

Operator
Elm Ridge Resources, Inc.

ADDRESS ALL CORRESPONDENCE CONCERNING THIS FORM TO:

Street	City	State
12225 Greenville Ave #950	Dallas	Texas 75243-9362

Above named operator authorizes (name of transporter)
Giant Industries Attn: Wanda

Transporter's street address	City	State
P. O. Box 12999	Scottsdale	AZ 85267

Field Address

Oil, condensate, gas well gas, casinghead gas

To transport 100 % of the Oil from said lease

OTHER GATHERERS TRANSPORTING FROM THIS LEASE ARE AS FOLLOWS:

Name of gatherer	% transported	Product transported
Western Gas Resources	100	
12200 North Pecos Street #230		
Denver, CO. 80234-3439		

Indicate whether or not this certificate is for a new lease. If not a new lease, indicate whether or not it is a change of operator, change of lease name, change of gatherer, or a consolidation or subdivision of leases and give effective date of change.

Change of Operator: From Central Resources, Inc. to Elm Ridge Resources, Inc.

The undersigned certifies that the rules and regulations of the State of Arizona Oil & Gas Conservation Commission have been complied with in drilling and producing operations on this lease, except as noted above, and that the above transporter is authorized to transport the above specified percentage of the allowable oil or gas produced from the above described property, and that this authorization will be valid until further notice or until cancelled by the State of Arizona Oil & Gas Conservation Commission.

CERTIFICATE: I the undersigned, under the penalty of perjury, state that I am the President of the Elm Ridge Resources, Inc. (company), and that I am authorized by said company to make this report; that this report was prepared under my supervision and direction and that the facts stated therein are true, correct and complete to the best of my knowledge.

1-08-01
Date

Signature

Date approved: 2-5-01

STATE OF ARIZONA
OIL & GAS CONSERVATION COMMISSION

By: Steven L. Ramos

Permit No. 22,28,515,490

Mail two copies of completed form to:
Oil & Gas Program Administrator
Arizona Geological Survey
416 W. Congress #100
Tucson, AZ 85701-1315

STATE OF ARIZONA
OIL & GAS CONSERVATION COMMISSION
Operator's Certificate of Compliance & Authorization to Transport Oil or Gas from Lease
File Two Copies
Form No. 8
2/96

S-5438

BOND NO. BO5973

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF INDIAN AFFAIRS

NATIONWIDE OIL AND GAS LEASE BOND

KNOW ALL MEN BY THESE PRESENTS, That we, Elm Ridge Resources, Inc., Elm Ridge Exploration Company, of 4925 Greenville Ave., #1305, Dallas, TX 75206-4021 as principal, and Underwriters Indemnity Company of 8 Greenway Plaza, #400, Houston, TX 77046, as surety, are held and firmly bound unto the United States of America in the sum of one hundred fifty thousand dollars ($150,000), lawful money of the United States, for the payment of which, well and truly to be made, we bind ourselves and each of us, our and each of our heirs, successors, executors, administrators, and assigns, jointly and severally, firmly by these presents.

Sealed with our seals and dated this 10th day of June, 19 96.

The condition of this obligation is such that whereas the said principal has heretofore or may hereafter enter into or otherwise acquire an interest in oil and gas mining leases and oil and gas prospecting permits of various dates and periods of duration covering lands or interests in lands held by the United States in trust for individual Indians, or tribes or bands of Indians, or subject to restrictions against alienation without the consent of the Secretary of the Interior or his authorized representative, which leases and permits have been or may hereafter be granted or approved by the Secretary of the Interior or his authorized representative, and the identification of which herein is expressly waived by both principal and surety hereto.

WHEREAS the principal and surety agree that the coverage of this bond shall extend to and include all extensions and renewals of leases and permits covered by this bond, such coverage to continue without any interruption due to the expiration of the term set forth therein.

WHEREAS the surety hereby waives any right to notice of any modification of any such lease or permit, or obligation thereunder whether effected by extension of time for performance, by commitment of such lease to unit, cooperative, or communitization agreement, by waiver, suspension, or change in rental, except an increase thereof, by minimum royalty payment, except an increase thereof, by compensatory royalty payment, or otherwise, this bond to remain in full force and effect notwithstanding.

WHEREAS the principal and surety agree that the neglect or forbearance of the obligee of any such lease or permit in enforcing the payment of any rental or royalty or the performance of any other covenant, condition, or agreement of any such lease or permit shall not in any way release the principal and surety, or either of them, from any liability under this bond; and

WHEREAS the principal and surety agree that in the event of any default under any such lease or permit, the obligee may prosecute any claim, suit, action, or other proceeding against the principal and surety, or either of them, without the necessity of joining the other.

Now, if the said principal herein shall faithfully carry out and observe all the obligations assumed in said leases and permits to which Elm Ridge Resources, Inc., Elm Ridge Exploration Company is now or may hereafter become a party, and shall observe all the laws of the United States and regula-

tions made, or which shall be made, thereunder, for the government of trade and intercourse with Indian tribes, and all rules and regulations that have been or shall hereafter be lawfully prescribed by the Secretary of the Interior relative to said oil and gas mining leases and permits, and shall in all particulars comply with the provisions of said leases, permits, rules and regulations, then this obligation shall become null and void; otherwise, to remain in full force and effect.

The rate of premium charged on this bond is $.....; the total premium paid is $.....

Signed and sealed in the presence of—

WITNESSES*

BY: Kay Buchanan
4925 Greenville Ave., #1305
P. O. Dallas, Texas 75206

BY: Bill Mauch
4925 Greenville Ave., #1305
P. O. Dallas, Texas 75206

as to

Elm Ridge Resources, Inc.
Elm Ridge Exploration Company

BY: ..... [SEAL]

BY: Nancy Cox
8 Greenway Plaza, Suite 400
P. O. Houston, TX 77046

BY: Sue Mayo
8 Greenway Plaza, Suite 400
P. O. Houston, TX 77046

as to

Underwriters Indemnity Company

BY: ..... [SEAL]
Roy C. Die, Attorney-in-Fact

P. O. .....

P. O. .....

as to ..... [SEAL]

P. O. .....

P. O. .....

as to ..... [SEAL]

*Two witnesses to each signature.

DEPARTMENT OF THE INTERIOR
BUREAU OF INDIAN AFFAIRS
Washington 25, D. C.

AUG 1 1996, 19.....

Approved:
Approved pursuant to authority delegated at 230 DM 2.3(C), dated 11-4-83.

ACTING Director, Office of Trust Responsibilities

ORGANIZATION REPORT

Full Name of the Company, Organization, or Individual
Elm Ridge Resources, Inc.

Mailing Address and Phone Number
12225 Greenville Avenue #950, Dallas, Texas 75243-9362 (971) 889-2100

Plan of Organization (State whether organization is a corporation joint stock association, firm or partnership, or individual
Corporation

Purpose of Organization (State type of business in which engaged)
Oil and Gas Industry

If a reorganiztion, give name and address of previous organization

If a foreign corporation give (1) State where incorporated	(2) Name and mailing address of state agent	(3) Date of permit to do business in state
Texas	C T Corporation System 3225 North Central Avenue Phoenix, AZ 85012	11/15/00

Principal Officers or Partners (if partnership) NAME	TITLE	MAILING ADDRESS
James M. Clark, Jr.	President	12225 Greeville Ave #950 Dallas, TX 75243-9362

DIRECTORS NAME	MAILING ADDRESS
James M. Clark, Jr., President	12225 Greenville Ave #950, Dallas, Tx 75243

CERTIFICATE I, the undersigned, under the penalty of perjury state that I am the President of the Elm Ridge Resources, Inc. (company), and that I am authorized by said company to make this report; and that this report was prepared under my supervision and direction and that the facts stated therein are true, correct and complete to the best of my knowledge.

Signature

1/8/01
Date

Mail completed form to
Oil and Gas Program Administrator
Arizona Geological Survey
416 W Congress., #100
Tucson, AZ 85701

STATE OF ARIZONA
OIL & GAS CONSERVATION COMMISSION
Organization Report
File One Copy
Form No. 1

ELM RIDGE RESOURCES, INC.
12225 GREENVILLE AVENUE, SUITE 950
DALLAS, TEXAS 75243-9362
(972) 889-2100 • FAX (972) 889-2104

February 2, 2001

State of Arizona
Attn: Steve Rauzi
416 West Congress Suite 100
Tuson, Arizona 85701

Dear Mr. Rauzi:

Pursuant to our recent telephone conversation, enclosed please find the Organization Report with the address of state agent changed. Also, the principal officer has been added. As far as the Operator's Certificate of Compliance and Authorization, we have completed the form for the transport percentage, added the gas gatherer and indicated that this certificate was for a change of operator.

We apologize for any inconvenience and should you have any questions, please feel free to call.

Sincerely,

Kay Buchanan

Kay Buchanan

CDB/kb

Enclosures

ELM RIDGE RESOURCES, INC.
12225 GREENVILLE AVENUE, SUITE 950
DALLAS, TEXAS 75243-9362
(972) 889-2100 • FAX (972) 889-2104

January 25, 2001

State of Arizona
Oil & Gas Conservation Commission
Attn: Steve Rauzi
416 West Congress, Suite 100
Tuson, Arizona 85701

Dear Mr. Rauzi:

Enclosed please find the Organization Report, Operator's Certificate of Compliance and Authorization to Transport Oil and Gas, and a copy of the Nationwide Oil and Gas Lease Bond.

Should you desire further information, please advise me.

Sincerely,

Kay Buchanan

Kay Buchanan

ext. 103

CDB/kb

Enclosures

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

1. Type of Well
[X] Oil Well [ ] Gas Well [ ] Other

2. Name of Operator
Elm Ridge Resources, Inc.

3. Address and Telephone No.
312 W. LaPlata Street, Farmington, New Mexico (505) 326-7099

4. Location of Well (Footage, T, R, M, or Survey Description)
1980' FNL & 1980' FWL (SE NW) Sec. 3-T41N-R28E

5. Lease Designation and Serial No.
N00C-14-20-603-226

6. If Indian, Allotte or Tribe Name
Navajo Tribal

7. If Unit or CA, Agreement Designation

8. Well Name and No.
Navajo #2 (22)

9. API Well No.
02-001-05020

10. Field and Pool, or Exploratory Area
East Boundary Butte

11. County or Parish, State
Apache County, AZ

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
	[ ] Altering Casing	[ ] Conversion to Injection
	[ ] Surface Casing/Cementing	[ ] Dispose Water
	[X] Other: CHANGE OF OPERATOR	(Note: Report results of multiple completion on Well Completion or Recompletion Report and Log form).

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

Please be advised that effective October 1, 2000, Elm Ridge Resources, Inc. assumed operatorship of the above referenced well. Bond coverage pursuant to 43 CFR 3104 for lease activities is being provided by Elm Ridge Resources, Inc. under their statewide bond, BLM Bond No. B05706. They will be responsible for compliance under the lease terms and conditions for that portion of the lease associated with this notice.

14. I hereby certify that the foregoing is true and correct
Signed: [signature] Title: Operations Manager Date: September 29, 2000

(This space for Federal or State office use)

Approved by: _____ Title: _____ Date: _____

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 Instructions on Reverse Side

State of Arizona
Arizona Geological Survey

416 W. Congress, Suite 100
Tucson, Arizona 85701
(520) 770-3500

Jane Dee Hull
Governor

Larry D. Fellows
Director and State Geologist

December 1, 1997

22

Ms. Trina M. Duran
Central Resources, Inc.
2600 Mellon Center
1775 Sherman Street
Denver, CO 80203-4313

Re: Central Resources, Inc.
$25,000 Oil Drilling Blanket Bond #91372
Frontier Insurance Company

Dear Ms. Duran:

This will acknowledge receipt of evidence of Central Resources' bonding with the BIA for operations on Indian leases in the State of Arizona.

In light of Central Resources' bonding with the BIA, this letter constitutes written permission by the Oil and Gas Conservation Commission of the State of Arizona to terminate liability under the referenced bond.

Let me know if we may be of further assistance.

Sincerely,

Steven L. Rauzi

Steven L. Rauzi
Oil & Gas Program Administrator

CENTRAL
RESOURCES, INC.

November 10, 1997

22

Mr. Steven L. Rauzi
State of Arizona
Arizona Geological Survey
416 W. Congress, Suite 100
Tucson, Arizona 85701

Dear Mr. Rauzi:

Per our conversation of November 7th, please find copies of Central Resources, Inc. $150,000 Nationwide BIA Bond and $150,000 BIA Navajo Tribe Bond. These bonds provide coverage for the wells that Central Resources operates in Arizona on Indian leases.

Based upon the enclosed bonds, please release Central's bond #91372 to the State of Arizona for $25,000.

Thank you for your assistance.

Regards,

Trina M. Duran

Trina M. Duran
Executive Assistant

Enclosures

2600 Mellon Center. 1775 Sherman Street. Denver, CO 80203-4313 (303) 830-0100 Fax: (303) 830-9297

State of Arizona
Arizona Geological Survey
416 W. Congress, Suite 100
Tucson, Arizona 85701
(520) 770-3500

Fife Symington
Governor

Larry D. Fellows
Director and State Geologist

June 9, 1997

file 22

Ms. Crystal Williams
Merrion Oil & Gas
610 Reilly Ave.
Farmington NM 87401

Re: Blanket Performance Bond No. 01-0130-00972-74-1
United States Fidelity and Guaranty
Amount $25,000

Dear Ms. Williams:

Our records show that Central Resources has posted a blanket bond for its operations at the East Boundary Butte Field, Arizona, and that Merrion Oil and Gas has no current drilling or plugging obligations in the State of Arizona.

As a result, this letter will serve as written permission of the **Oil and Gas Conservation Commission** of the State of Arizona to cancel the referenced bond.

Sincerely,

Steven L. Rauzi
Oil & Gas Administrator

enclosure: copy of referenced bond

State of Arizona
Arizona Geological Survey
416 W. Congress, Suite 100
Tucson, Arizona 85701
(520) 770-3500

Fife Symington
Governor

Larry D. Fellows
Director and State Geologist

June 9, 1997

file 22

Ms. Kris Fox
Aon Risk Services, Inc.
4100 E. Mississippi Ave. #1500
Denver, CO 80222

Re: Central Resources, Inc. as Principal
$25,000 Blanket Performance Bond Serial No. 91372
Frontier Insurance Company

Dear Ms. Fox:

This will acknowledge receipt and acceptance of the referenced blanket performance bond. I have enclosed a copy of the approved bond, effective June 9, 1997, for all wells operated by Central Resources in the State of Arizona.

Please advise if I may be of further assistance.

Sincerely,

Steven L. Rauzi
Oil & Gas Program Administrator

Enclosure

c Irene Martinez, Central Resources

AON

Aon Risk Services

June 6, 1997

file 22

Steven L. Rauzi
Oil & Gas Program Admin.
Arizona Geological Survey
416 W. Congress, Suite 100
Tucson, AZ 85701

Re: Bond number 91372

Dear Mr. Rauzi,

Enclosed please find the above referenced bond for Central Resources, Inc.

Please send written confirmation that this bond has been accepted by Arizona Geological Survey.

Please give me a call if you need anything or if I can be of further assistance.

Sincerely,

Kris Fox
Technical Assistant
Bond Department

Aon Risk Services, Inc. of Colorado • Formerly Rollins Hudig Hall of Colorado, Inc.
4100 East Mississippi Avenue, #1500 • Denver, Colorado 80222 • tel: (303) 758-7688 • fax: (303) 758-9458

Operator MERRION OIL & GAS CORPORATION

Bond Company UNITED STATES FIDELITY AND GUARANTY **Amount** $25,000

Bond No. 01-0130-00972-74-1 **Date Approved** 11-7-74

Permits covered by this bond:

22

28

58 (P&A 2/83)

69 (P&A 3/81)

444 (P&A 12/85)

490

514 (P&A 9/84)

515 (SWD)

518 (P&A 3/81)

Canceled 6-9-97

State of Arizona
Arizona Geological Survey
416 W. Congress, Suite 100
Tucson, Arizona 85701
(520) 770-3500

Fife Symington
Governor

Larry D. Fellows
Director and State Geologist

February 18, 1997

Ms. Irene Martinez
Central Resources, Inc.
1775 Sherman, Suite 2600
Denver, CO 80203-4313

file 22

Dear Ms. Martinez:

An approved duplicate original *Operator's Certificate of Compliance and Authorization to Transport Oil or Gas from Lease* is enclosed for Navajo leases NOOC-14-20-603-226 (permits 28 and 515) and NOOC-14-20-603-413 (permits 22 and 490) at the East Boundary Butte Field, Arizona.

Please advise if I may be of further assistance.

Sincerely,

Steven L. Rauzi
Oil & Gas Program Administrator

Enclosures

ORGANIZATION REPORT

Full Name of the Company, Organization, or Individual

CENTRAL RESOURCES, INC.

Mailing Address and Phone Number

1775 Sherman Street, Suite 2600, Denver, Colorado 80203-4313

Plan of Organization (State whether organization is a corporation, joint stock association, firm or partnership, or individual

Corporation

Purpose of Organization (State type of business in which engaged)

Oil and Gas

If a reorganiztion, give name and address of previous organization

If a foreign corporation, give (1) State where incorporated	(2) Name and mailing address of state agent	(3) Date of permit to do business in state
Colorado	CT Corporation 3225 N. Central Avenue Phoenix, Arizona 85012	Applied for 1/31/97

Principal Officers or Partners (if partnership) NAME	TITLE	MAILING ADDRESS
Paul J. Zecchi	President & CEO	1775 Sherman Street #2600 Denver, Colorado 80203-4313
Scotty A. Smith	Sr. Vice President	1775 Sherman Street #2600 Denver, Colorado 80203-4313
Catherine I. Eakle	Vice President & Secretary	1775 Sherman Street Denver, Colorado 80203-4313
Ray Hornsby	Vice President & Treasurer	1775 Sherman Street Denver, Colorado 80203-4313
Gary Davis	Vice President	1775 Sherman Street Denver, Colorado 80203-4313

DIRECTORS NAME	MAILING ADDRESS
Paul J. Zecchi	1775 Sherman Street, #2600, Denver, CO 80203-4313

CERTIFICATE: I, the undersigned, under the penalty of perjury, state that I am the Assistant Secretary of the CENTRAL RESOURCES, INC. (company), and that I am authorized by said company to make this report; and that this report was prepared under my supervision and direction and that the facts stated therein are true, correct and complete to the best of my knowledge.

Signature Jeannette H. Feigt

February 14, 1997

Date

FEB 1997
ARIZONA GEOLOGICAL SURVEY

Mail completed form to:
Oil and Gas Program Administrator
Arizona Geological Survey
416 W. Congress., #100
Tucson, AZ 85701

STATE OF ARIZONA
OIL & GAS CONSERVATION COMMISSION
Organization Report
File One Copy
Form No. 1

2/96

file P/N 22

OPERATOR'S CERTIFICATE OF COMPLIANCE AND AUTHORIZATION TO TRANSPORT OIL OR GAS FROM LEASE

Federal, State, or Indian Lease Number, or lessor's name if fee lease	Field	Reservoir
Navajo NOOC-14-20-603-226	East Boundary Butte	Paradox
Survey or Sec-Twp-Rge	**County**	**State**
Sec 4-T41N-R28E	Apache	AZ

Operator
Central Resources, Inc.

ADDRESS ALL CORRESPONDENCE CONCERNING THIS FORM TO:

Street	City	State
1775 Sherman St., #2600	Denver	CO 80203

Above named operator authorizes (name of transporter)
Giant Refining Company

Transporter's street address	City	State
P.O. Box 12999	Scottsdale	AZ 85267

Field Address
Red Mesa, Arizona

Oil, condensate, gas well gas, casinghead gas

To transport 100 % of the Oil from said lease

OTHER GATHERERS TRANSPORTING FROM THIS LEASE ARE AS FOLLOWS:

Name of gatherer	% transported	Product transported
Western Gas Resources	100	Gas

Indicate whether or not this certificate is for a new lease. If not a new lease, indicate whether or not it is a change of operator, change of lease name, change of gatherer, or a consolidation or subdivision of leases and give effective date of change.

Change of Owner/Operator

The undersigned certifies that the rules and regulations of the State of Arizona Oil & Gas Conservation Commission have been complied with in drilling and producing operations on this lease, except as noted above, and that the above transporter is authorized to transport the above specified percentage of the allowable oil or gas produced from the above described property, and that this authorization will be valid until further notice or until cancelled by the State of Arizona Oil & Gas Conservation Commission.

CERTIFICATE: I, the undersigned, under the penalty of perjury, state that I am the Engineering Technician of the Central Resources, Inc. (company), and that I am authorized by said company to make this report; that this report was prepared under my supervision and direction and that the facts stated therein are true, correct and complete to the best of my knowledge.

February 14, 1997
Date

Irene Martinez
Signature

Date approved: 2-18-97

STATE OF ARIZONA
OIL & GAS CONSERVATION COMMISSION

By: Steven L. Rauzi

Permit No. 22; 490

Mail two copies of completed form to:
Oil & Gas Program Administrator
Arizona Geological Survey
416 W. Congress #100
Tucson AZ 85701-1315

STATE OF ARIZONA
OIL & GAS CONSERVATION COMMISSION
Operator's Certificate of Compliance & Authorization to Transport Oil or Gas from Lease
File Two Copies

Form No. 8

2/96

State of Arizona
Arizona Geological Survey
416 W. Congress, Suite 100
Tucson, Arizona 85701
(520) 770-3500

Fife Symington
Governor

Larry D. Fellows
Director and State Geologist

February 11, 1997

Mr. Paul J. Zecchi, President
Central Resources, Inc.
1775 Sherman, Suite 2600
Denver, CO 80203-4313

file 22

Dear Mr. Zecchi:

We recently received the attached notice that Central Resources purchased the East Boundary Butte Field in Arizona from Merrion Oil and Gas. As a result of that purchase, I am writing to advise you that this office provides administrative and staff support to the Arizona Oil and Gas Conservation Commission.

In order that our records be accurate and current, in accordance with Arizona Statutes and rules, please fill out and submit the enclosed *certificate of compliance* and *organization report* forms to this office as soon as possible. R12-7-183 and R12-7-194 require the operator to submit these forms within 10 days of any change in ownership, etc.

Also for your file and use are blank copies of our *monthly producer's report* and *water disposal report* forms, and a copy of our oil and gas rules. These blank forms may be copied or generated digitally as needed.

We welcome Central Resources to Arizona and hope your venture here is a profitable one. Please let me know if you have any questions about the enclosed forms or rules or if I may be of any further assistance.

Sincerely,

Steven L. Rauzi

Steven L. Rauzi
Oil & Gas Program Administrator

Enclosures

Distribution: O+2 (Ari[illegible]a OCD); 1-Navajo Tribe; 1-Fi[illegible]; 1-Central Resources

SUNDRY NOTICES AND REPORTS ON WELLS

1. Name of Operator: MERRION OIL & GAS CORPORATION

2. Oil WELL [X] GAS WELL [ ] OTHER [ ] (Specify)

2. Well Name: NAVAJO NO. 2

Location: 1980' fnl & 1980' fwl (se nw)

Sec. 3 Twp. 41N Rge. 28E County Apache Arizona.

4. Federal, State or Indian Lease Number, or lessor's name if fee lease: Indian- Navajo Tribe
NOOC-14-20-603-226

5. Field or Pool Name: East Boundary Butte

6. Check Appropriate Box to Indicate Nature of Notice, Report, or Other Data

NOTICE OF INTENTION TO:				SUBSEQUENT REPORT OF:			
TEST WATER SHUT-OFF	[ ]	PULL OR ALTER CASING	[ ]	WATER SHUT-OFF	[ ]	MONTHLY PROGRESS	[ ]
FRACTURE TREAT	[ ]	DIRECTIONAL DRILL	[ ]	FRACTURE TREATMENT	[ ]	REPAIRING WELL	[ ]
SHOOT OR ACIDIZE	[ ]	PERFORATE CASING	[ ]	SHOOTING OR ACIDIZING	[ ]	ALTERING CASING	[ ]
REPAIR WELL	[ ]	CHANGE PLANS	[ ]			ABANDONMENT	[ ]
(OTHER)			[ ]	(OTHER) Change of Operator			[X]

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

7. DESCRIBE PROPOSED OR COMPLETED OPERATIONS (Clearly state all pertinent 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 markers and zones pertinent to this work.)

Effective 1/01/97 new owner of the above well is:

CENTRAL Resources, Inc.
2600 Mellon Center
1775 Sherman Street
Denver, Colorado 80203-4313
Phone No.: (303) 830-0100

JAN 1997
ARIZONA GEOLOGICAL SURVEY

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

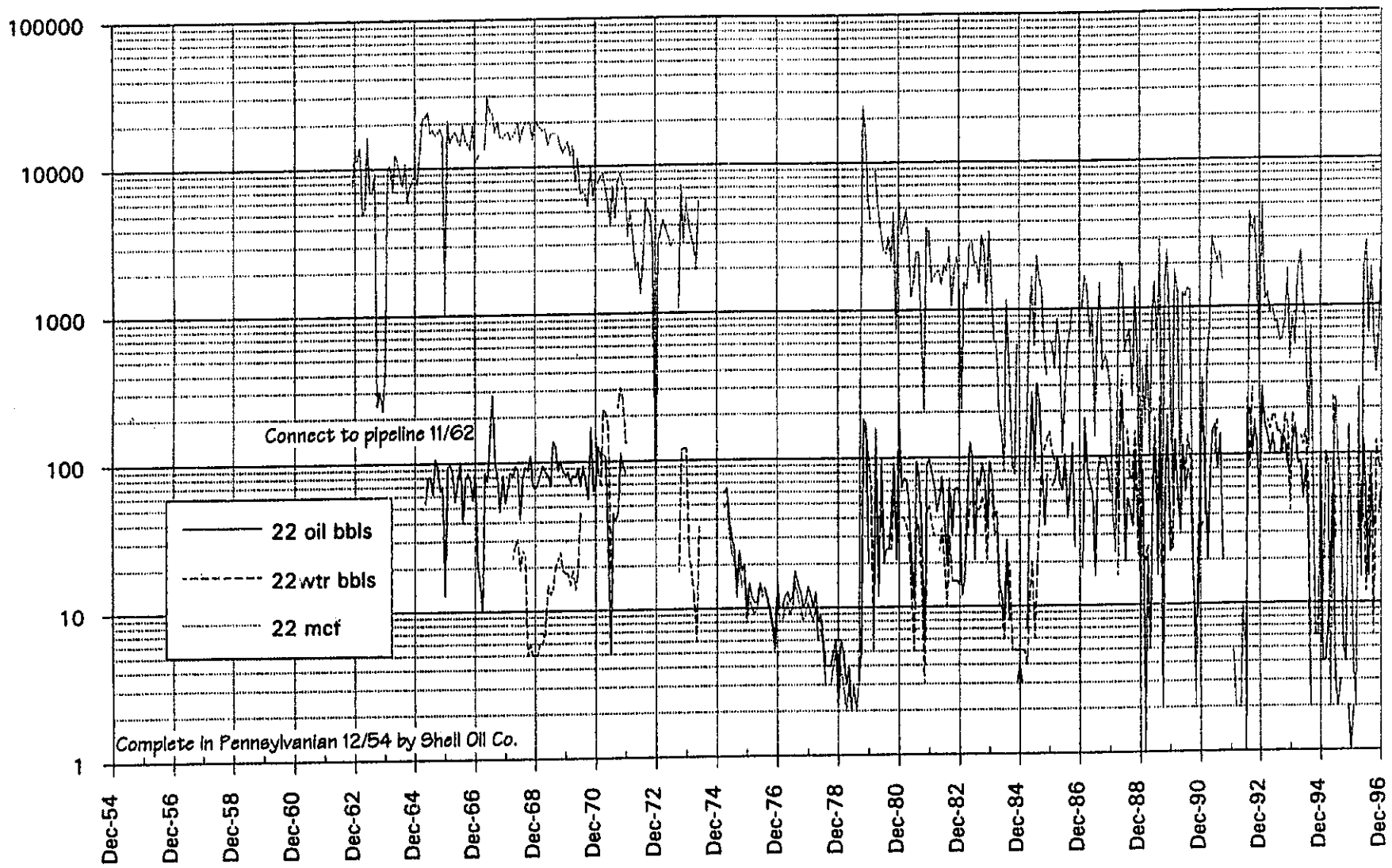
Signed Steven S. Dunn Title Drlg & Prod Manager Date 1/16/97

Permit No. 22

STATE OF ARIZONA
OIL & GAS CONSERVATION COMMISSION
Sundry Notices and Reports On Wells
File Two Copies
Form No. 25

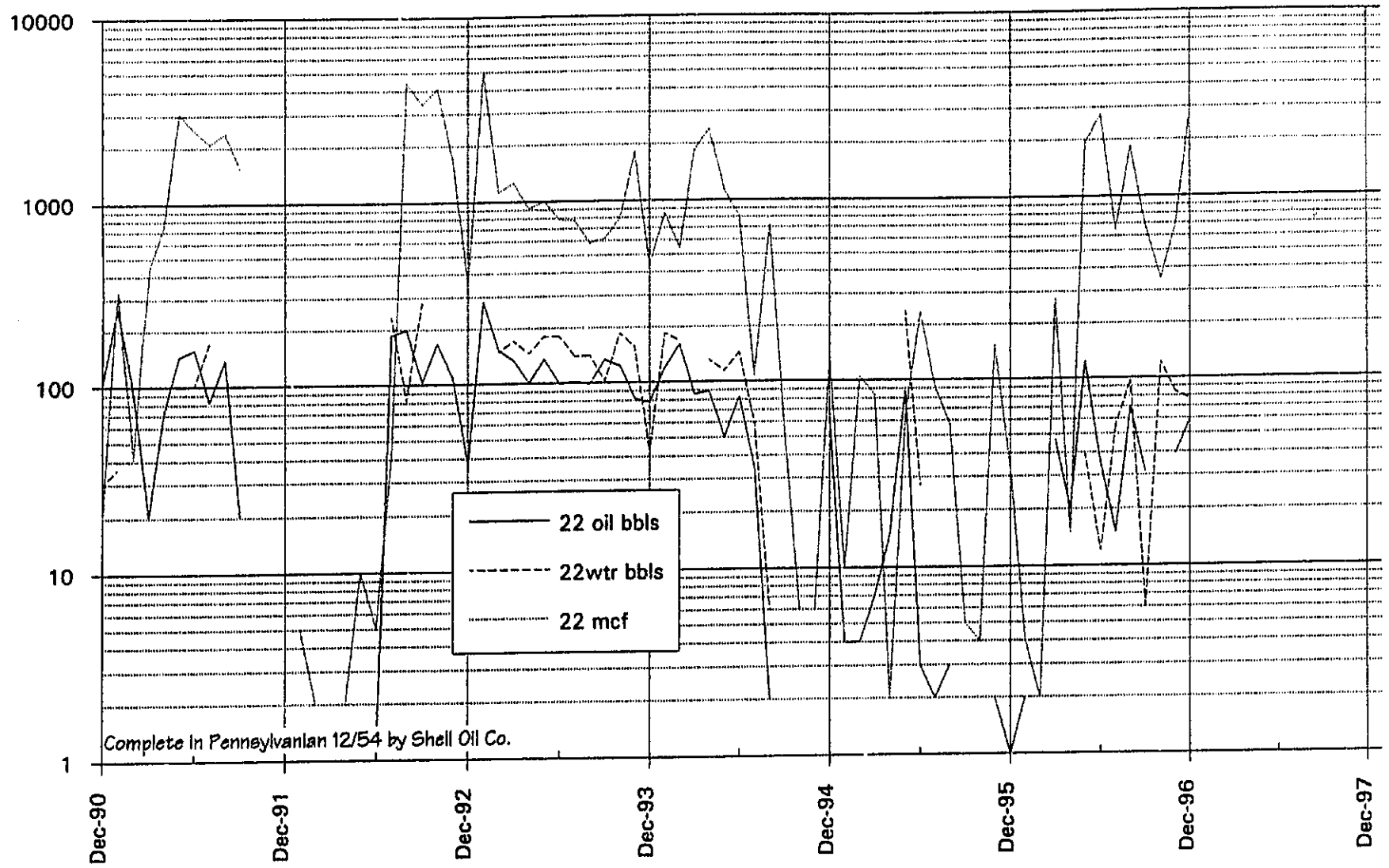
MONTHLY PRODUCTION AT 2 NAVAJO (22), ARIZONA: DEC 1954 - DEC 1996

se nw 3-41n-28e, East Boundary Butte Field, Apache County



MONTHLY PRODUCTION AT 2 NAVAJO (22), ARIZONA: DEC 1990 - DEC 1996

se nw 3-41n-28e, East Boundary Butte Field, Apache County



State of Arizona
Arizona Geological Survey
416 W. Congress, Suite 100
Tucson, Arizona 85701
(520) 770-3500

Fife Symington
Governor

Larry D. Fellows
Director and State Geologist

September 18, 1995

22

Mr. Steven S. Dunn
Operations Manager
Merrion Oil & Gas Corporation
P. O. Box 840
Farmington, New Mexico 87499

Re: **Change of oil transporter**
East Boundary Butte Field, Arizona

Dear Mr. Dunn:

Approved duplicate original Operator's Certificate of Compliance and Authorization to Transport Oil or Gas From Lease are enclosed for the Navajo #1, Navajo #2, and Navajo #3-11 wells at the East Boundary Butte Field, Arizona.

Let me know if I may be of further assistance.

Sincerely,

Steven L. Rauzi

Steven L. Rauzi
Oil & Gas Program Administrator

Enclosures

c Giant Refining Co., Scottsdale, Arizona

State of Arizona
Arizona Geological Survey
845 North Park Avenue, #100
Tucson, Arizona 85719
(602) 882-4795

Fife Symington
Governor

Larry D. Fellows
Director and State Geologist

June 6, 1994

22

Ms. Esther Greyeyes
Drilling & Production Tech
Merrion Oil & Gas Corporation
P. O. Box 840
Farmington, New Mexico 87499

Re: **Recompletion Reports for Navajo 1, 2, & 3-11** wells
East Boundary Butte Field, Arizona

Dear Esther:

Thank you for taking my telephone call last week during Mr. George Sharpe's absence from the office and for sending copies of the sundry notices on the referenced wells. We have copies of these sundry notices in our file.

We have not received, however, the *Well Completion or Recompletion Reports* (our Form 4) recording the details of the **recompletion** of the referenced wells. As a result, I have enclosed several blank copies of this report form and kindly ask that you forward them to the appropriate personnel to be completed and returned to my attention at the earliest convenience.

Thank you.

Sincerely,

Steven L. Rauzi
Oil & Gas Program Administrator

Enclosures

MERRION

OIL & GAS

May 31, 1994

22

Mr. Steve Rauzi
Arizona Geological Survey
845 North Park Avenue, Ste 100
Tucson, Arizona 85719

CONSERVATION
JUN 3 1994

RE: NAVAJO 1, 2, & 3-11

Dear Steve:

Enclosed are copies of sundry notices that we sent out on the above referenced wells, it looks like we had send several of the sundry notices to you, but never got an approval.

If you need more information, please give me a call.

Sincerely,

Esther J. Greyeyes
Drlg & Prod Tech

Enclosures

610 Reilly Avenue • P.O. Box 840 • Farmington, New Mexico 87499 • 505-327-9801 / 505-326-5900 (Fax)

State of Arizona
Arizona Geological Survey
845 North Park Avenue, #100
Tucson, Arizona 85719
(602) 882-4795

Fife Symington
Governor

Larry D. Fellows
Director and State Geologist

August 11, 1993

(22)

Mr. Randy Dirks
Western Gas Resources, Inc.
12200 North Pecos Street, Suite 230
Denver, Colorado 80234-3439

Dear Randy:

I have enclosed the *Operator's certificate of compliance and authorization to transport oil or gas from lease* for Merrion Oil and Gas Corporation's Navajo 1, Navajo 2, and Navajo 3-11 wells at the East Boundary Butte Field, Apache County, Arizona. As I mentioned on the phone, Navajo 1 is currently shut-in and Navajo 2 and Navajo 3-11 are producing.

Let me know if I can be of further assistance.

Sincerely,

Steve

Steven L. Rauzi
Oil and Gas Program Administrator

Enclosures

State of Arizona
Arizona Geological Survey
845 North Park Avenue, #100
Tucson, Arizona 85719
(602) 882-4795

Fife Symington
Governor

Larry D. Fellows
Director and State Geologist

October 30, 1992

George F. Sharpe
Merrion Oil & Gas Corporation
P. O. Box 840
Farmington, New Mexico 87499

Dear George:

Enclosed are approved operator's certificate of compliance and authorization to transport oil or gas from lease for the East Boundary Butte Field, Arizona.

Sincerely,

Steve

Steven L. Rauzi
Oil & Gas Program Administrator

Enclosures

FAX 505-326-5900

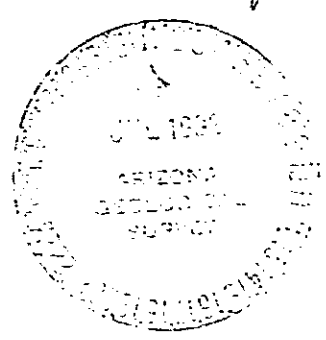
MERRION OIL & GAS CORPORATION
610 REILLY AVE. • P. O. BOX 840
FARMINGTON, NEW MEXICO 87499

PH. 505-327-9801

June 26, 1992

file P/N 22

Mr. Jack Jim
Teec Nos Pos Chapter House
Teec Nos Pos, Arizona 86514



Re: Work Plans
Apache County, Arizona
East Boundary Butte Field

Dear Mr. Jim,

This letter outlines Merrion's short term plans for the East Boundary Butte Field. Please notify the allottees that we will be working there over the next few months. Work will begin about July 8, 1992.

Navajo #1 - We plan to get a rig on this well to squeeze off the Desert Creek/ Issue perforations and complete the well in the Leadville Formation.

Permit #22

Navajo #2 - We plan to get a rig on this well to stimulate the well in an attempt to increase production. We also plan to install a compressor to increase production.

Navajo #3-11 - We plan to get a rig on this well to repair the down-hole pump and to return it to production.

I have enclosed a topo map showing the location of each well site where the work will be done.

Facilities

Depending on the success of the Navajo #1 recompletion, we may need additional facilities at the Navajo #3 location, which is where the production from the Navajo #1 is handled. The additional facilities should be on the existing well pad and should not require additional surface damages.

Also, we plan to install a water line and a fuel gas line from the Navajo #2 to the Navajo #3 disposal well. These lines will be laid together parallel to the existing gas lines to minimize damages. While our leases allow for line installations, we will honor our previous agreement with the Utah Land Office where we will pay $250 per acre for damages. For a 5500' long 15' wide right of way that would total 1.9 acres, or $474.00. Please let us know how to divide this up and who to make the checks out to. We need social security numbers of any individuals receiving money.

Part Time Employment

We understand that many of the allottees would appreciate the chance to earn some money. While we cannot hire these people for the rig work, there is a possibility we can use some of them on the facility and line installations. We will pay $6.50/hour up to a maximum of 92 hours in one year for one individual. (If someone earns more than $600 in one year, then we get into alot of reporting and tax complications).

In the past, we have coordinated this work through the Utah Land Office, but we understand that you are now the contact. Please provide a list of names, addresses, and **social security numbers** of all individuals who are interested in working. We will contact you when and if we need them and we will also send their paychecks through you.

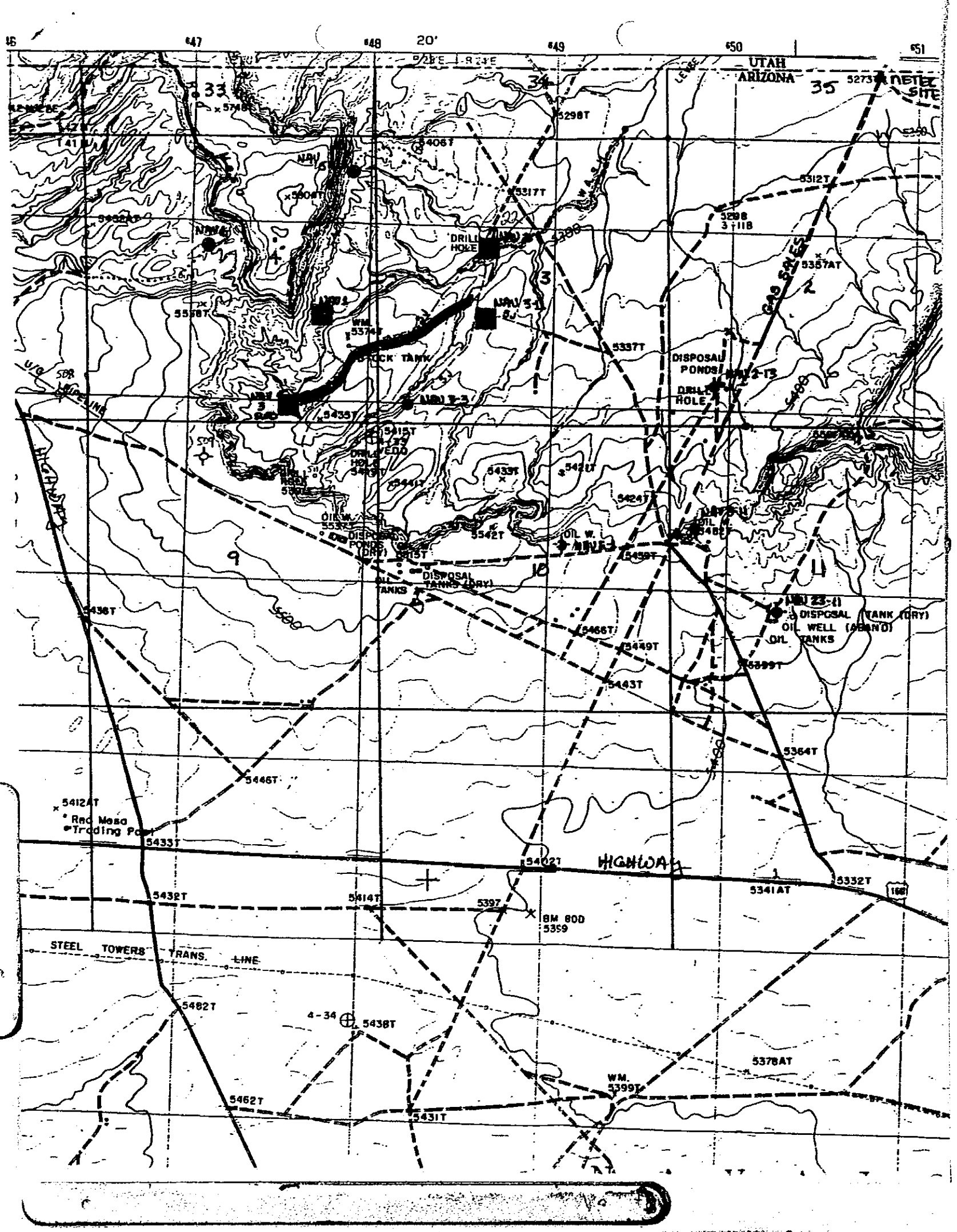
Thank you for your assistance. Please call if you have any questions at phone: (505) 327-9801.

Sincerely,

Steve S. Dunn
Operations Manager/Engineer

SSD/lt

cc: Melvin Capitan - Utah Land Office
Farmington BLM
Steve Rauzi - Arizona Oil Conservation Division
BIA - Window Rock, Arizona
J. Greg Merrion
George F. Sharpe
Pat Hegarty
Field File


UTAH
ARIZONA
DRILL HOLE
DISPOSAL PONDS
DISPOSAL TANKS (DRY)
OIL TANKS
OIL WELL (ABAND)
HIGHWAY
Red Mesa Trading Post
STEEL TOWERS TRANS. LINE
BM 800
5359
WM.
5399T
5378AT
5341AT
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5364T
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5317T
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5406T
5312T
5357AT
5298
3 118

State of Arizona
Arizona Geological Survey
845 North Park Avenue, #100
Tucson, Arizona 85719
(602) 882-4795

Fife Symington
Governor

Larry D. Fellows
Director and State Geologist

June 29, 1992

George F. Sharpe
Merrion Oil & Gas Corporation
P. O. Box 840
Farmington, New Mexico 87499

Re: Acid stimulation of Navajo #2, State Permit #22

Dear Mr. Sharpe:

This will grant Merrion Oil & Gas Corporation approval to perform the referenced acid stimulation as described in your sundry report dated June 22, 1992, provided that you

1. Advise this office of any modifications to this acid stimulation procedure; and
2. Report the results of the stimulation to the Commission on a sundry notice as required in A.A.C. R12-7-117 and R12-7-122.

Sincerely,

Steven L. Rauzi

Steven L. Rauzi
Oil & Gas Program Administrator

Enclosures

Oil and Gas Conservation Commission
STATE OF ARIZONA
5150 N. 16th STREET, SUITE B-141
PHOENIX, ARIZONA 85016
PHONE: (602) 255-5161

April 5, 1991

Mr. T. Greg Merrion
Merrion Oil & Gas
P. O. Box 840
Farmington, NM 87499

Dear Greg:

We received your request to vent gas on the 2 East Boundary Butte Well and approve the request.

However, the request was dated March 27, postmarked April 2, and received by us on April 4 (which is some sort of a speed record.) Since the request was for permission to flare on April 3 and 4, 1991, it was not sent in a timely manner. In the future, please allow enough time for requests to get to us, be approved and be returned to you before the date of scheduled action.

We hope you can verify sufficient productivity to justify installing a compressor.

Very truly yours,

Daniel J. Brennan
Executive Director

Form 3160-5
(November 1983)
(Formerly 9-331)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

SUBMIT IN TRIPLICATE* (Other instructions on reverse side)

Form approved.
Budget Bureau No. 1004-0135
Expires August 31, 1985

SUNDRY NOTICES AND REPORTS ON WELLS

(Do not use this form for proposals to drill or to deepen or plug back to a different reservoir. Use "APPLICATION FOR PERMIT—" for such proposals.)

AZ OIL & GAS CONSERVATION COMMISSION

APR 4 1991

1. OIL WELL ☐ GAS WELL ☒ OTHER

2. NAME OF OPERATOR: Merrion Oil & Gas Corporation

3. ADDRESS OF OPERATOR: P. O. Box 840, Farmington, N.M. 87499

4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements.* See also space 17 below.) At surface: 1980' FWL & 1980' FNL, Section 3, T41N-R28E

5. LEASE DESIGNATION AND SERIAL NO.: Navajo Tribal 14-20-603-226

6. IF INDIAN, ALLOTTEE OR TRIBE NAME: Navajo

7. UNIT AGREEMENT NAME:

8. FARM OR LEASE NAME: E. Boundary Butte

9. WELL NO.: 2

10. FIELD AND POOL, OR WILDCAT: East Boundary Butte

11. SEC., T., R., M., OR BLK. AND SURVEY OR AREA: Section 3 T41N-R28E

12. COUNTY OR PARISH: Apache

13. STATE: Arizona

14. PERMIT NO.:

15. ELEVATIONS (Show whether DF, RT, GR, etc.): 5304.5 DF, 5296 GR

16. Check Appropriate Box To Indicate Nature of Notice, Report, or Other Data

NOTICE OF INTENTION TO:		SUBSEQUENT REPORT OF:	
TEST WATER SHUT-OFF ☐	PULL OR ALTER CASING ☐	WATER SHUT-OFF ☐	REPAIRING WELL ☐
FRACTURE TREAT ☐	MULTIPLE COMPLETE ☐	FRACTURE TREATMENT ☐	ALTERING CASING ☐
SHOOT OR ACIDIZE ☐	ABANDON* ☐	SHOOTING OR ACIDIZING ☐	ABANDONMENT* ☐
REPAIR WELL ☐	CHANGE PLANS ☒	(Other)	
(Other)	Test Well	(NOTE: Report results of multiple completion on Well Completion or Recompletion Report and Log form.)	

17. DESCRIBE PROPOSED OR COMPLETED OPERATIONS: (Clearly state all pertinent 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 markers and zones pertinent to this work.)*

Request permission to vent gas for 2 days from the subject well. The economics of installing a pumping unit & compressor are being evaluated & a 2 day test against 100 psig back pressure is proposed to determine the well's productivity. Currently, the gas sales line pressure is 400 psig & the well is continually logging off. The estimated gas production from the well is 100 MCFPD, therefore about 200 MCF will be vented.

The test is scheduled for April 3-4, 1991.

APPROVED
By: D. J. Mann
Date: 4/5/91
ARIZONA STATE OIL & GAS CONSERVATION COMMISSION

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

SIGNED T. Greg Merrion TITLE Executive Vice President DATE March 27, 1991

(This space for Federal or State office use)

APPROVED BY _____ TITLE _____ DATE _____

CONDITIONS OF APPROVAL, IF ANY:

Permit #22

*See Instructions on Reverse Side

cc: 1 State of Arizona
6 BLM FMG.
1 Well File

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 with

32 x

Oil and Gas Conservation Commission
STATE OF ARIZONA

5150 N. 16th STREET, SUITE B-141
PHOENIX, ARIZONA 85016
PHONE: (602) 255-5161

October 5, 1990

Permit # 22

Meridian Oil, Inc.
P. O. Box 4289
Farmington, NM 87499

RE: R12-7-185, Transporter's and Storer's Monthly Report
East Boundary Butte field, Arizona

Dear Sir:

Our records indicate that, effective June 1990, Meridian Oil is the authorized transporter of oil produced from the East Boundary Butte field in Township 41 North, Range 29 East, Apache County, Arizona.

I am writing to acquaint you with the reporting requirements of each transporter of oil or condensate within the state and have enclosed a copy of our rule R12-7-185 for your file.

In order that our records be accurate and current, in accordance with Arizona Statutes, we request that the enclosed form, Transporter's and Storer's Monthly Report, be completed and returned to this office on a monthly basis. Please feel free to make copies of this form as needed.

Thank you for your cooperation in this matter.

Sincerely,

Steven L. Rauzi

Steven L. Rauzi
Oil & Gas Specialist

Enclosures

Oil and Gas Conservation Commission
STATE OF ARIZONA

5150 N. 16th STREET, SUITE B-141
PHOENIX, ARIZONA 85016
PHONE: (602) 255-5161

September 5, 1990

T. Greg Merrion, Production Engineer
Merrion Oil & Gas Corporation
P. O. Box 840
Farmington, NM 87499

P/N 22, 28, 490, 514, 515

RE: **R12-7-183, Certificate of compliance and authorization to transport**

Dear Mr. Merrion:

I noticed from your production report that you have changed the transporter of oil from the East Boundary Butte field in Arizona effective June 1990.

Please be advised that this change requires you to file a new "certificate of compliance and authorization to transport oil or gas from lease". I have enclosed a copy of the pertinent rule (R12-7-183) and two copies of form 8 for your use.

We appreciate your cooperation in this matter.

Sincerely,

Steven L. Rauzi

Steven L. Rauzi
Oil & Gas Specialist

Enclosures

MERRION OIL & GAS CORPORATION
610 REILLY AVE. • P. O. BOX 840
FARMINGTON, NEW MEXICO 87499
PH. 505-327-9801

RECEIVED
NOV 24 1986
O & G CONS. COMM.

November 20, 1986

Arizona Oil & Gas Conservation Commission
3110 N. 19th Avenue, Suite 190
Phoenix, Arizona 85007

Attention: Rudy Ybarra

Re: Well Status
East Boundary Butte
Apache Co., Arizona

Dear Mr. Ybarra:

Enclosed please find the "Notice of Intent to" and "Subsequent Report of" sundry notices for the plugging and abandonment of the Navajo 23-11 and the Navajo 2-11. Both wells are located in Section 11, T41N, R28E in Apache Co., Arizona.

The following is a list of the status of the wells which Merrion Oil and Gas operates in the East Boundary Butte Field, Apache Co., Arizona:

LEASE	WELL NAME	STATUS
14-20-603-226	Navajo No. 2	SI Gas Well
	Navajo No. 2-13	P & A
	Navajo No. 3-3	SI
	Navajo No. 3-11	SI
14-20-603-227	Navajo No. 2-11	P & A
	Navajo No. 23-11	P & A
14-20-603-412	Navajo No. E-1	P & A
14-20-603-413	Navajo No. 1	Pumping Oil Well
	Navajo No. 3	Salt Water Disposal

also 21 Navajo E

If you need any additional information, please advise.

Respectfully yours,

MERRION OIL & GAS CORPORATION

T. Gregory Merrion

T. Gregory Merrion, Production Engineer

TGM/am

Enc.

No. 7715611
Exempt $60.00

B O N D

KNOW ALL MEN BY THESE PRESENTS:

THAT, the undersigned SHELL OIL COMPANY, a corporation organized under the laws of the State of Delaware and duly authorized to do business in the State of Arizona, as Principal, and the undersigned FEDERAL INSURANCE COMPANY, a corporation organized under the laws of the State of New Jersey, as Surety, are held and firmly bound unto the State of Arizona for the use and benefit of the Oil and Gas Conservation Fund in the sum of Ten Thousand Dollars ($10,000.00) for the payment of which well and truly to be made, we bind ourselves, our successors and assigns, jointly and severally, by these presents.

THE CONDITION OF THE ABOVE OBLIGATION IS SUCH that whereas the said Principal is contemplating the drilling of wells in the State of Arizona for the production of oil and gas and the installation of equipment necessary and incidental thereto for the operation and maintenance of such wells;

NOW, THEREFORE, if in its oil and gas operations in the State of Arizona said Principal shall comply with rules, regulations and orders promulgated under subsections 1, 2 and 3 of Paragraph (a) of Section 17 (Sec. 11-1717 Arizona Code) of the Oil and Gas Conservation Act of 1951, then this obligation shall be void, otherwise to remain in full force and effect.

IN WITNESS WHEREOF, said Principal and Surety have caused their respective names to be subscribed hereto this 20th day of November, 1953.

SHELL OIL COMPANY

ACKNOWLEDGMENT OF ANNEXED INSTRUMENT

STATE OF CALIFORNIA
COUNTY OF Los Angeles } ss.:

On this 20th day of November in the year one thousand nine hundred and fifty-three before me, M. S. Banks, a Notary Public in and for the County of Los Angeles residing therein, duly commissioned and sworn, personally appeared F. Graeszel known to me to be the attorney-in-fact of FEDERAL INSURANCE COMPANY, the Corporation that executed the within instrument, and also known to me to be the person who executed the within instrument on behalf of the Corporation therein named and acknowledged to me that such Corporation executed the same.

IN WITNESS WHEREOF, I have hereunto set my hand and affixed my official seal in the County of Los Angeles the day and year in this certificate first above written.

CANCELLED DATE 2-15-62

M. S. Banks
Notary Public in and for the County of
Los Angeles State of California

My Commission expires Feb. 2, 1955

SF-670 PRINTED IN U. S. A. (7-52-2M B16183)

B-18
B-18

See Permit 18 for Bond

March 12, 1982

Mr. J. Gregory Merrion
Merrion Oil & Gas Corp.
P.O. Box 1017
Farmington, NM 87401

Re: Shell 2 Navajo, Permit 22
Sec. 3-41N-28E, Apache Co.

Dear Mr. Merrion:

We have your letter of February 26 enclosing copies of the well location and acreage dedication plat and production tabulation on subject well.

In view of the fact that no official acreage dedication was made on this well in 1954 when completed to gas production, we approve this dedication of 640 acres.

The production as shown in your tabulation does not fully agree with that shown in our files, and maybe in the future we can try to reconcile the differences.

Siucerely,

R. A. Ybarra
Enforcement Director

RAY:os
Enc.

MERRION OIL & GAS CORPORATION
P. O. BOX 1017
FARMINGTON, NEW MEXICO 87401

PH. 505-325-5093

RECEIVED
MAH 2 1982
O & G CONS. COMM.
JRK
RAY
AvB
OS

February 26, 1982

Arizona Oil & Gas Conservation Commission
1645 West Jefferson Street, Suite 420
Phoenix, Arizona 85007

Gentlemen:

Enclosed please find original and two (2) copies of surface plat and acreage dedication plat for our Navajo ~~3-3~~ #2 gas well located 1980' from north and west lines of Section 2, sec. 3 T41N, R28E, Apache County, Arizona. Also, enclosed please find a tabulation of yearly production of oil and gas from this well. This information should complete your files. Please advise of your approval.

Yours very truly,

MERRION OIL & GAS CORPORATION

J. Gregory Merrion
President

JGM/rs
Enclosures

P/N 22

RECEIVED

MAR 2 1982

O & G CONS. COMM.

PRODUCTION RECAP

EAST BOUNDARY BUTTE

(SHELL) NAVAJO NO. 2
Section 3, T41N, R28E
Apache County, Arizona

1954
1960

38

28,359
5,209

Reported Sheet

	OIL		GAS (MCF)	
1962	0		88,748	20,748
1963	0		146,966	76,353
1964	0		222,612	109,212
1965	624		209,685	192,996
1966	928		192,447	
1967	1,026	1,003	204,244	204,218
1968	3,545	967	214,812	215,554
1969	1,107		193,855	193,856
1970	1,003		108,953	
1971	897		84,660	84,799
1972	-0-		38,069	37,996
1973	-0-		41,330	
1974	-0-	GOR	18,267	
1975	308	798	246	
1976	142	1,124	124	
1977	149		121	
1978	84	—	65	
1979	404		46,714	
1980	731		43,889	
1981	648		31,269	
1982 (January only)	78		1,561	
Cumulative	11,050	9,147	1,888,637	

per prod. rept
1,648,181

R/N22

RECEIVED
NOV 23 1981
O & G CONS. COMM.

AKS
RAY:-
OS

N O T I C E

Effective October 1, 1981 the operating entity known as Merrion and Bayless will cease to exist. Operations will thereafter be carried on as Merrion Oil & Gas Corporation. Offices will continue at 205 Petroleum Center Bldg. Farmington, New Mexico. The new mailing address will be P.O. Box 1017, Farmington, New Mexico. The phone number remains (505) 325-5093.

515 (also 22, 28, 58)

February 3, 1978

Mr. Robert R. Rosnik
Consolidated Oil and Gas, Inc.
1860 Lincoln Street
Denver, Colorado 80295

Re: Blanket Performance Bond USF&G 31380-13-99-68

Dear Mr. Rosnik:

Consolidated Oil and Gas, Inc., has complied with all the rules and regulations of the Arizona Oil and Gas Conservation Commission. Therefore, I am authorized to release Consolidated Oil and Gas, Inc., from all responsibilities under this bond.

USF&G is being notified by the Oil and Gas Conservation Commission, by copy of this letter, of the release of the bond.

Very truly yours,

W. E. Allen
Director
Enforcement Section

WEA/vb

cc - USF&G

We do not have the address of the issuing office of the referred bond, therefore we are asking you to forward USF&G's copy of this letter to the correct office.

32

Operator Consolidated Oil & Gas, Inc.

Bond Company U.S.F. & G. Amount 25,000

Bond No. 31380-13-99-68 Date Approved 2-13-68

Permits covered by this bond:

~~22~~

69

~~481~~

488

490

514

524

528

~~37~~

518

CANCELLED

DATE 2-2-79 WEL

SEE File 518 For Canceled Bond

CANCELLED

DATE

February 20, 1976

Ms. Fay Bryan
Underwriter
The Travelers
Four Greenway Plaza East
Houston, TX 77046

RE: Blanket Oil & Gas Well Drilling Bond
Shell Oil Company, Principal
Bond #S-218

Dear Ms. Bryan:

Please refer to your letter of February 2, 1976 requesting cancellation of the above referenced bond and our letter to you dated February 5, 1976.

We have now received a request from Shell Oil Company for cancellation of this bond. Shell has complied with all the rules and regulations of this Commission and, therefore, this letter is our approval for the cancellation of Bond #S-218.

Very truly yours,

W. E. Allen, Director
Enforcement Section

WEA/sl

cc: L. L. Waggoner
Shell Oil Company

SHELL OIL COMPANY

P.O. BOX 831
HOUSTON, TEXAS 77001

February 18, 1976

Subject: Blanket Oil and Gas Well Drilling Bond
State of Arizona

Office of Oil and Gas Conservation Commission
State of Arizona
8686 North Central, Suite 106
Phoenix, Arizona 85020

Attention Mr. W. E. Allen, Director Enforcement Section

Gentlemen:

We have been forwarded a copy of your letter dated February 5, 1976, addressed to the Travelers, advising them that before you can acknowledge cancellation of the above bond, that you require a request by the principal. Therefore, please be advised that Shell Oil Company wishes that the above bond be cancelled.

We appreciate your kind assistance in this matter. If you require anything further, please advise.

Yours very truly,

L. L. Waggoner
Land Department
Western Division

LLW:PEE

CANCELLED
DATE 2-20-76

February 5, 1976

Mrs. Fay Bryan
Underwriter
The Travelers
Four Greenway Plaza East
Houston, Texas 77046

RE: Blanket Oil & Gas Well Drilling Bond
Shell Oil Company, Principal

Dear Mrs. Bryan:

Before this Commission can acknowledge cancellation of the above referenced bond, a request by the principal under this bond should be received by this office.

Very truly yours,

W. E. Allen, Director
Enforcement Section

WEA/sl

THE TRAVELERS

Surety Department
Robert S. Winter, Manager

February 2, 1976

Oil and Gas Conservation Commission
State of Arizona
4515 North 7th Avenue
Phoenix, Arizona 85013

Re: Blanket Oil & Gas Well Drilling
Bond
Bond No. S-218 (1270000)
Shell Oil Company, Principal

Gentlemen:

The Travelers Indemnity Company is surety on the above bond in the amount of $25,000.00 dated December 9, 1971. It is now our desire to terminate this bond and we would, therefore, appreciate receiving your acknowledgment that the bond has been cancelled for future liability.

A return envelope is enclosed for your convenience in replying.

Yours very truly,

THE TRAVELERS INDEMNITY COMPANY

Fay Bryan

(Mrs.) Fay Bryan
Underwriter

fb

Enc.

CANCELLED

DATE 2-20-76

RECEIVED
FEB 5 1976
O & G CONS. COMM.

HOUSTON OFFICE OF THE TRAVELERS INSURANCE COMPANIES
Four Greenway Plaza East, Houston, Texas 77046
Home Office: Hartford, Connecticut

Operator SHELL OIL COMPANY

Bond Company TRAVELERS INDEMNITY Amount $25,000

Bond No. S-218 Date Approved 1—3-72

Permits covered by this bond:

CANCELLED

DATE 2-20-76

THE TRAVELERS

THE TRAVELERS INSURANCE COMPANY · THE TRAVELERS INDEMNITY COMPANY

SURETY DIVISION
ELSTON K. SMITH, MANAGER

DENVER OFFICE
101 University Boulevard
DENVER, COLORADO 80206
Telephone: 388-6244

December 10, 1971

State of Arizona
Oil and Gas Conservation Commission
3500 North Central Avenue
Phoenix, Arizona

Gentlemen:

Re: Shell Oil Company
$25,000. Bond
Serial No. S-218

Enclosed herewith please find the above captioned bond which has been properly executed and signed and countersigned by a resident agent of the State of Arizona.

Very truly yours,

Surety Division

mjvs
Enc.

CANCELLED
DATE 2-20-69

RECEIVED
JAN 0 3 1972
O & G CONS. COMM.

BOND

KNOW ALL MEN BY THESE PRESENTS

BOND SERIAL NO. S-215

That we: SHELL OIL COMPANY, a corporation

of the County of: Denver in the State of: Colorado

as principal, and THE TRAVELERS INDEMNITY COMPANY, a corporation

of the State of Connecticut
AUTHORIZED TO DO BUSINESS WITHIN the State of Arizona.

as surety, are held and firmly bound unto the State of Arizona in the penal sum as indicated, lawful money of the United States, for which payment, well and truly to be made, we bind ourselves, and each of us, and each of our heirs, executors, administrators or successors, and assigns jointly and severally, firmly by these presents.

The conditions of this obligation is that whereas the above bounden principal proposes to drill a well or wells for oil, gas or stratigraphic purposes in and upon the following described land situated within the State, to wit:

for the production of oil and gas and the installation of equipment
(May be used as blanket bond or for single well)
necessary and incidental thereto for the operation and maintenance of
such wells;

NOW, THEREFORE, if the above bounden principal shall comply with all of the provisions of the laws of this State and the rules, regulations and orders of the Oil and Gas Conservation Commission, especially with reference to the requirements of A.R.S. 27-516, providing for the proper drilling and plugging of said well or wells, and filing with the Oil & Gas Conservation Commission all notices and records required by said Commission, in the event said well or wells do not produce oil or gas in commercial quantities, or cease to produce oil or gas in commercial quantities, then this obligation is void; otherwise, the same shall be and remain in full force and effect.

Penal sum of TWENTY FIVE THOUSAND and NO/100 DOLLARS ($25,000.00)

Witness our hands and seals, this 9th day of December, 1971

RECEIVED
JAN 03 1972
O & G CONS. COMM.

SHELL OIL COMPANY

By: J. B. Stanley
J. B. STANLEY, ATTORNEY-IN-FACT Principal

Witness our hands and seals, this 9th day of December, 1971

THE TRAVELERS INDEMNITY COMPANY

By: Gary R. Hanson
Gary R. Hanson, Attorney-in-Fact Surety

COUNTERSIGNED
BY
RESIDENT AGENT

(If the principal is a corporation, the bond should be executed by its duly authorized officers, with the seal of the corporation affixed. When principal or surety executes this bond by agent, power of attorney or other evidence of authority must accompany the bond.)

Approved 1-3-72
Date

STATE OF ARIZONA
OIL AND GAS CONSERVATION COMMISSION

The Travelers Indemnity Company
Hartford, Connecticut

POWER OF ATTORNEY

KNOW ALL MEN BY THESE PRESENTS:

That THE TRAVELERS INDEMNITY COMPANY, a corporation of the State of Connecticut, does hereby make, constitute and appoint

Gary F. Chinn, L. M. DeHaven, Gary R. Hanson, Herbert J. Harris, M. J. Saucier, E. K. Smith, Robert J. Sunich, all of Denver, Colorado, EACH

its true and lawful Attorney(s)-in-Fact, with full power and authority, for and on behalf of the Company as surety, to execute and deliver and affix the seal of the Company thereto, if a seal is required, bonds, undertakings, recognizances, consents of surety or other written obligations in the nature thereof, as follows:

Any and all bonds, undertakings, recognizances, consents of surety or other written obligations in the nature thereof

and to bind THE TRAVELERS INDEMNITY COMPANY thereby, and all of the acts of said Attorney(s)-in-Fact, pursuant to these presents, are hereby ratified and confirmed.

This appointment is made under and by authority of the following by-laws of the Company which by-laws are now in full force and effect:

ARTICLE IV, SECTION 13. The Chairman of the Board, the President, the Chairman of the Finance Committee, the Chairman of the Insurance Executive Committee, any Senior Vice President, any Vice President, any Second Vice President, any Secretary or any Department Secretary may appoint attorneys-in-fact or agents with power and authority, as defined or limited in their respective powers of attorney, for and on behalf of the Company to execute and deliver, and affix the seal of the Company thereto, bonds, undertakings, recognizances, consents of surety or other written obligations in the nature thereof and any of said officers may remove any such attorney-in-fact or agent and revoke the power and authority given to him.

ARTICLE IV, SECTION 15. Any bond, undertaking, recognizance, consent of surety or written obligation in the nature thereof shall be valid and binding upon the Company when signed by the Chairman of the Board, the President, the Chairman of the Finance Committee, the Chairman of the Insurance Executive Committee, any Senior Vice President, any Vice President or any Second Vice President and duly attested and sealed, if a seal is required, by any Secretary or any Department Secretary or any Assistant Secretary or when signed by the Chairman of the Board, the President, the Chairman of the Finance Committee, the Chairman of the Insurance Executive Committee, any Senior Vice President, any Vice President or any Second Vice President and countersigned and sealed, if a seal is required, by a duly authorized attorney-in-fact or agent; and any such bond, undertaking, recognizance, consent of surety or written obligation in the nature thereof shall be valid and binding upon the Company when duly executed and sealed, if a seal is required, by one or more attorneys-in-fact or agents pursuant to and within the limits of the authority granted by his or their power or powers of attorney.

This power of attorney is signed and sealed by facsimile under and by the authority of the following Resolution adopted by the Directors of THE TRAVELERS INDEMNITY COMPANY at a meeting duly called and held on the 30th day of November, 1959:

VOTED: That the signature of any officer authorized by the By-Laws and the Company seal may be affixed by facsimile to any power of attorney or special power of attorney or certification of either given for the execution of any bond, undertaking, recognizance or other written obligation in the nature thereof; such signature and seal, when so used being hereby adopted by the Company as the original signature of such officer and the original seal of the Company, to be valid and binding upon the Company with the same force and effect as though manually affixed.

This power of attorney revokes that dated March 12, 1970 on behalf of Gary F. Chinn, L. M. DeHaven, Gary R. Hanson, Herbert J. Harris, M. J. Saucier, E. K. Smith

IN WITNESS WHEREOF, THE TRAVELERS INDEMNITY COMPANY has caused these presents to be signed by its proper officer and its corporate seal to be hereunto affixed this 13th day of April 19 71.

THE TRAVELERS INDEMNITY COMPANY — SEAL

THE TRAVELERS INDEMNITY COMPANY

By E. A. Houser

Secretary, Surety

RECEIVED
JAN 03 1972
O & G CONS. COMM.

CANCELLED
2-20-65

State of Connecticut, County of Hartford—ss:

On this 13th day of April in the year 1971 before me personally came E. A. Houser III to me known, who, being by me duly sworn, did depose and say: that he resides in the State of Connecticut; that he is Secretary (Surety) of THE TRAVELERS INDEMNITY COMPANY, the corporation described in and which executed the above instrument; that he knows the seal of said corporation; that the seal affixed to said instrument is such corporate seal; that it was so affixed by authority of his office under the by-laws of said corporation, and that he signed his name thereto by like authority.

RUTH H. SOMERVILLE NOTARY PUBLIC CONNECTICUT

Ruth H. Somerville

Notary Public

My commission expires April 1, 1974

(Over)

S-1869 PRINTED IN U.S.A. 671

January 17, 1966

Shell Oil Company
1008 West Sixth Street
Los Angeles, California 90054

Attention: Right of Way Section

Re: Travelers Indemnity Company Bonds S-218 and S-92

Gentlemen:

Enclosed please find an approved copy of Travelers Indemnity Company Bond S-218 in the amount of $25,000, wherein Shell Oil Company is Principal.

Please be advised that Bond S-218 now replaces Travelers Bond S-92 and that said Bond S-92 may now be cancelled and Shell Oil Company now has no further obligation to this Commission under said Bond S-92.

In reviewing Bond S-218 the conditions and obligations expressed therein are "for the production of oil and gas and the installation of equipment necessary and incidental thereto for the operation and maintenance of such wells;". While this wording is satisfactory to the Commission, it must be understood by all parties that this bond does specifically cover the obligations of Shell Oil Company to comply with all rules and regulations of this Commission concerning not only production, but the drilling, completion, plugging and abandoning of any well by Shell Oil Company within the State of Arizona as well.

Should you have any questions would you please advise.

Very truly yours,

CANCELLED

DATE 1-3-72

John Bannister
Executive Secretary
mr
enc

cc: The Travelers Indemnity Co., 2200 N. Central, Phoenix, Ariz.
Mr. D.E. Clark, Manager, Land Department, Shell Oil Co.,
1008 W. Sixth Street, Los Angeles

UNITED STATES FIDELITY AND GUARANTY COMPANY
ALBUQUERQUE BRANCH OFFICE
PETER DiGANGI, JR., CPCU, MANAGER
SAN PEDRO PARK - SUITE 102
2201 SAN PEDRO DR., N.E.
ALBUQUERQUE, NEW MEXICO 87110
TELEPHONE: 505/265-7854

February 17, 1976

JAMES A. LYONS
SUPT. OF CLAIMS

State of Arizona
Oil & Gas Conservation Commission
8686 North Central, Suite 106
Phoenix, AZ 85020

Attn: Mr. W. E. Allen, Director

Re: Robert L. Bayless & J. Gregory Merrion
$25,000 Blanket Performance Bond #01-0130-972-74

Dear Mr. Allen:

This is to state that we agree to assume bonding responsibilities for all wells that the above principals operate in the State of Arizona.

This letter is to clarify the original bond which indicated "any and all oil or gas wells drilled within the State of Arizona".

Regards,

Peter Jordan

Peter Jordan, Supt.
Fidelity-Surety Dept.

PJ/pr

cc: Woods Insurance Service
Farmington, NM
Attn: Herb Dickinson

RECEIVED
FEB 19 1976
O & G CONS. COMM.

February 5, 1976

Mr. J. Gregory Merrion
Merrion & Bayless
P. O. Box 1541
Petroleum Club Plaza
Farmington, NM 87401

RE: U. S. Fidelity & Guaranty Company
Surety Bond #01-0130-972-74

Dear Greg:

Back on October 23, 1974, you requested your surety, USF&G, to notify you of their acceptance of the wells that you had recently taken over from Consolidated Oil & Gas. A check of our files indicates that USF&G never responded to your request.

We have received a request for cancellation of a bond that technically still covers some wells that you as operator have also covered under the above referenced bond. Before, we can comply with the request for the release of this bond, we must have a written statement from USF&G assuming bonding responsibilities of these wells.

Will you please have USF&G write this Commission agreeing to assume bonding responsibilities for all the wells that you operate in this state. The reason that this acknowledgement from USF&G is necessary is because this blanket bond states, "any and all oil and gas wells drilled within the state of Arizona". Our opinion is that legally USF&G could claim that only wells actually drilled by you were covered under Bond #01-0130-972-74.

We will appreciate your cooperation in this matter.

Sincerely,

W. E. Allen, Director
Enforcement Section

WEA/sl

22

OFFICE OF

Oil and Gas Conservation Commission

STATE OF ARIZONA

4515 NORTH 7TH AVE.
PHOENIX, ARIZONA 85013
PHONE: (602) 271-5161

February 7, 1975

Mr. Robert L. Bayless
Petroleum Club Plaza Building
P. O. Box 1541
Farmington, New Mexico 87401

Re: East Boundary Butte Commingling

We fully concur with Mr. G. R. Daniel's letter of December 26, granting permission to commingle at the surface of production in the Dineh-bi-Keyah Field. As you have mentioned, it will be necessary to meter the produced gas at each well and monthly production tests will be adequate to determine the oil production from each lease.

You mentioned that your plans are to convert the Consolidated No. 3-11 well, Permit No. 490, into a water disposal well. It will be necessary that you receive permission from this Commission prior to this conversion.

Very truly yours,

W. E. Allen, Director
Enforcement Section

WEA/rlb

Robert L. Bayless
PETROLEUM CLUB PLAZA BUILDING
P. O. BOX 1541
FARMINGTON, NEW MEXICO 87401

February 4, 1975

State of Arizona
Oil and Gas Conservation Commission
4515 North 7th Avenue
Phoenix, Arizona 85013

ATTENTION: Mr. W. E. Allen
Director

Re: East Boundary Butte Commingling

Dear Bill:

Enclosed please find a copy of our letter of October 21, 1974 requesting approval from the United States Geological Survey to commingle production from four Navajo leases and the reasoning behind the request. Also enclosed is a copy of the United States Geological Survey reply approving this request subject to approval by your Commission.

Please consider this a request to commingle the oil and gas produced as set forth in the letter of October 21, 1974.

Yours truly,

MERRION & BAYLESS

Robert L. Bayless

RLB/su

Enclosures: Letter to U.S.G.S. dated October 21, 1974
Letter from U.S.G.S. dated December 26, 1974

RECEIVED
FEB
O & G CONS. COMM.

October 21, 1974

United States Geological Survey
P.O. Box 959
Farmington, New Mexico 87401

ATTENTION: Mr. Phil McGrath

Re: Request for Permission to Commingle Production from Four Navajo Leases, East Boundary Butte Field, Apache County, Arizona.

Gentlemen:

We have heretofore operated the Navajo (14-20-603-413) and Navajo B (14-20-603-412) leases in Apache County, Arizona with production going to parallel tank batteries at a location in the SW/4 of the NW/4 Section 10, T41N, R28E.

We have recently acquired the Consolidated Oil & Gas properties on Navajo leases 14-20-603-226 and 14-20-603-227.

With five wells currently producible, there is a necessity for four tank batteries; each with a great amount of equipment.

Operating costs in this field have been extremely high due to:

1. The necessity to lift large quantities or water to produce either gas or oil.

2. Water disposal expense.

3. Scale and corrosion of flow lines and heater treeters.

4. High gathering and compression costs of natural gas produced.

The continued production from the field depends upon streamlining the operation and getting a better price for the gas. We have negotiated a better gas price and provided we can get FPC approval, we would like to re-vamp the flow line, compressor and tank battery facilities as per the attached plat.

RECEIVED
FEB 3 1975
O & G CONS. COMM.

2V

Under this plan we can utilize existing flow lines to the maximum extent, and by adding a small amount of additional flow line, we can separately gather gas and fluid in separate lines. Hopefully, we can back pressure against the wells, eliminate flow line turbulence thus reducing scale and paraffin problems and increase compressor suction pressure thus reducing horsepower requirements.

The new tank battery will be located in the NE/4 of the SW/4 of Section 3 (near the old Consolidated 3-11 well, which will be converted to disposal). A new compressor site will be erected in the SW/4 of Section 2 replacing the two existing sites.

Oil-gas separators will be installed at each well and gas will be metered before commingling. Oil will be accounted for by monthly tests of each well.

We would appreciate your consideration and approval of this plan.

Yours very truly,

MERRION & BAYLESS

By_____
J. GREGORY MERRION

JGM/su

Enclosure

United States Department of the Interior

GEOLOGICAL SURVEY

Drawer 1857
Roswell, New Mexico 88201

December 26, 1974

Approval to Commingle EBB

Mr. J. Gregory Merrion
P. O. Box 507
Farmington, New Mexico 87401

Dear Mr. Merrion:

Your letter of October 21, 1974 requests approval to commingle production on leases 14-20-603-412, -413, -226, and -227 located in secs. 1, 2, 3, 4, 10, 11, 12, 13, 14, 15 and 16, T. 41 N., R. 28 E., East Boundary Butte field, Apache County, Arizona.

As set forth in your request, the expense of operating the field does not justify the duplication of equipment and its maintenance. One tank battery would be located in the NE¼SW¼ sec. 3, T. 41 N., R. 28 E., and one compressor set in the SW¼ sec. 2. One oil-gas separator would be set at each well where gas would be metered separately and oil volumes would be allocated back to each well based on monthly tests of each well. The working interest and royalty interest on the four leases are identical.

The method of commingling production is hereby approved subject to like approval by the Arizona Oil and Gas Commission. Any change in this system must receive prior approval from this office. Form 9-361-A, "Lessee's Monthly Report of Sales and Royalty", must show all computations used in oil production allocated to each well.

You are requested to notify the Farmington office when the installation has been completed so that a field inspection can be made.

Sincerely yours,

G. R. DANIELS
Acting Area Oil and Gas Supervisor

OFFICE OF

Oil and Gas Conservation Commission

STATE OF ARIZONA

4515 NORTH 7TH AVE.
PHOENIX, ARIZONA 85013
PHONE: (602) 271-5161

October 28, 1974

Mr. J. Gregory Merrion
Petroleum Engineer
P. O. Box 507
Farmington, New Mexico 87401

Re: East Boundary Butte Field, Apache County, Arizona

Dear Greg:

If you receive approval from the U.S.G.S. and the Navajo Tribe, this Commission has no objections to the two proposals that you mentioned in your letter of October 23, 1974.

We are enclosing copies of our Form No. 15. It will be necessary that you complete this form in its entirety and return two copies to this Commission for our approval. We will also require a diagrammatic sketch of your down-hole installation for this disposal well.

Very truly yours,

W. E. Allen, Director
Enforcement Section

WEA/rlb

Encs.

#22

OFF. 328-0181
RES. 327-9094

J. GREGORY MERRION
PETROLEUM ENGINEER
P. O. BOX 507
FARMINGTON, NEW MEXICO 87401

October 23, 1974

State of Arizona
Oil and Gas Conservation Commission
4515 North 7th Avenue
Phoenix, Arizona 85013

ATTENTION: Mr. W. E. Allen
Director

Re: West Boundary Butte Field
Apache County, Arizona

Dear Bill:

Excuse my delay in answering your letter of September 23.

We have requested our surety, USF&G, to notify you of their acceptance of the following wells to be covered under our bond with them:

Navajo Tribal #2	SE 1/4	NW 1/4	Sec. 3	T41N, R29E
Navajo Tribal #3-3	SW 1/4	NW 1/4	Sec. 3	T41N, R29E
Navajo Tribal #3-11	NE 1/4	SW 1/4	Sec. 3	T41N, R29E
Navajo Tribal #2-11	SW 1/4	NW 1/4	Sec. 11	T41N, R29E
Navajo Tribal #23-11	NE 1/4	SW 1/4	Sec. 11	T41N, R29E

The above wells all being in Apache County, Arizona and effective date of our taking over operations being September 1, 1974.

Inclosed please find a xerox copy of a letter to the U.S.G.S. requesting permission to commingle production in one tank battery to be located in the NE 1/4 SW 1/4 of Section 3. Also enclosed please find a copy of the Federal Sundry Notice requesting approval to convert the #3-11 well to salt water disposal in the Mississippian-Devonian interval.

RECEIVED
OCT 25 1974
O & G CONS. COMM.

(22, 69, 490, 514 & 518)

J. GREGORY MERRION
PETROLEUM ENGINEER

After reviewing these, we would appreciate your advising (1) if our proposal for commingling will be acceptable to the State of Arizona with monthly tests of each well to determine the monthly split in lieu of the actual measurement required by Rule #308, and (2) whether a hearing will be necessary for the salt water disposal well conversion or whether this can be done administratively.

Thank you for your advice on the above matters.

Yours very truly,

MERRION & BAYLESS

By J. Gregory Merrion
J. GREGORY MERRION

JGM/su

Enclosures: Letter to U.S.G.S. dated October 21, 1974
Federal Sundry Notice, Navajo Tribe 3-11 Well dated October 22, 1974.
Flowline Plat

RECEIVED
OCT 25 1974
O & G CONS. COMM.

October 21, 1974

United States Geological Survey
P.O. Box 959
Farmington, New Mexico 87401

ATTENTION: Mr. Phil McGrath

Re: Request for Permission to Co-mmingle Production from Four Navajo Leases, East Boundary Butte Field, Apache County, Arizona.

Gentlemen:

We have heretofore operated the Navajo (14-20-603-413) and Navajo E (14-20-603-412) leases in Apache County, Arizona with production going to parallel tank batteries at a location in the SW/4 of the NW/4 Section 10, T41N, R28E.

We have recently acquired the Consolidated Oil & Gas properties on Navajo leases 14-20-603-226 and 14-20-603-227.

With five wells currently producible, there is a necessity for four tank batteries; each with a great amount of equipment.

Operating costs in this field have been extremely high due to:

1. The necessity to lift large quantities or water to produce either gas or oil.

2. Water disposal expense.

3. Scale and corrosion of flow lines and heater treaters.

4. High gathering and compression costs of natural gas produced.

The continued production from the field depends upon streamlining the operation and getting a better price for the gas. We have negotiated a better gas price and provided we can get FPC approval, we would like to re-vamp the flow line, compressor and tank battery facilities as per the attached plat.

RECEIVED
OCT 25 1974

Under this plan we can utilize existing flow lines to the maximum extent, and by adding a small amount of additional flow line, we can separately gather gas and fluid in separate lines. Hopefully, we can back pressure against the wells, eliminate flow line turbulence thus reducing scale and paraffin problems and increase compressor suction pressure thus reducing horsepower requirements.

The new tank battery will be located in the NE/4 of the SW/4 of Section 3 (near the old Consolidated 3-11 well, which will be converted to disposal). A new compressor site will be erected in the SW/4 of Section 2 replacing the two existing sites.

Oil-gas separators will be installed at each well and gas will be metered before commingling. Oil will be accounted for by monthly tests of each well.

We would appreciate your consideration and approval of this plan.

Yours very truly,

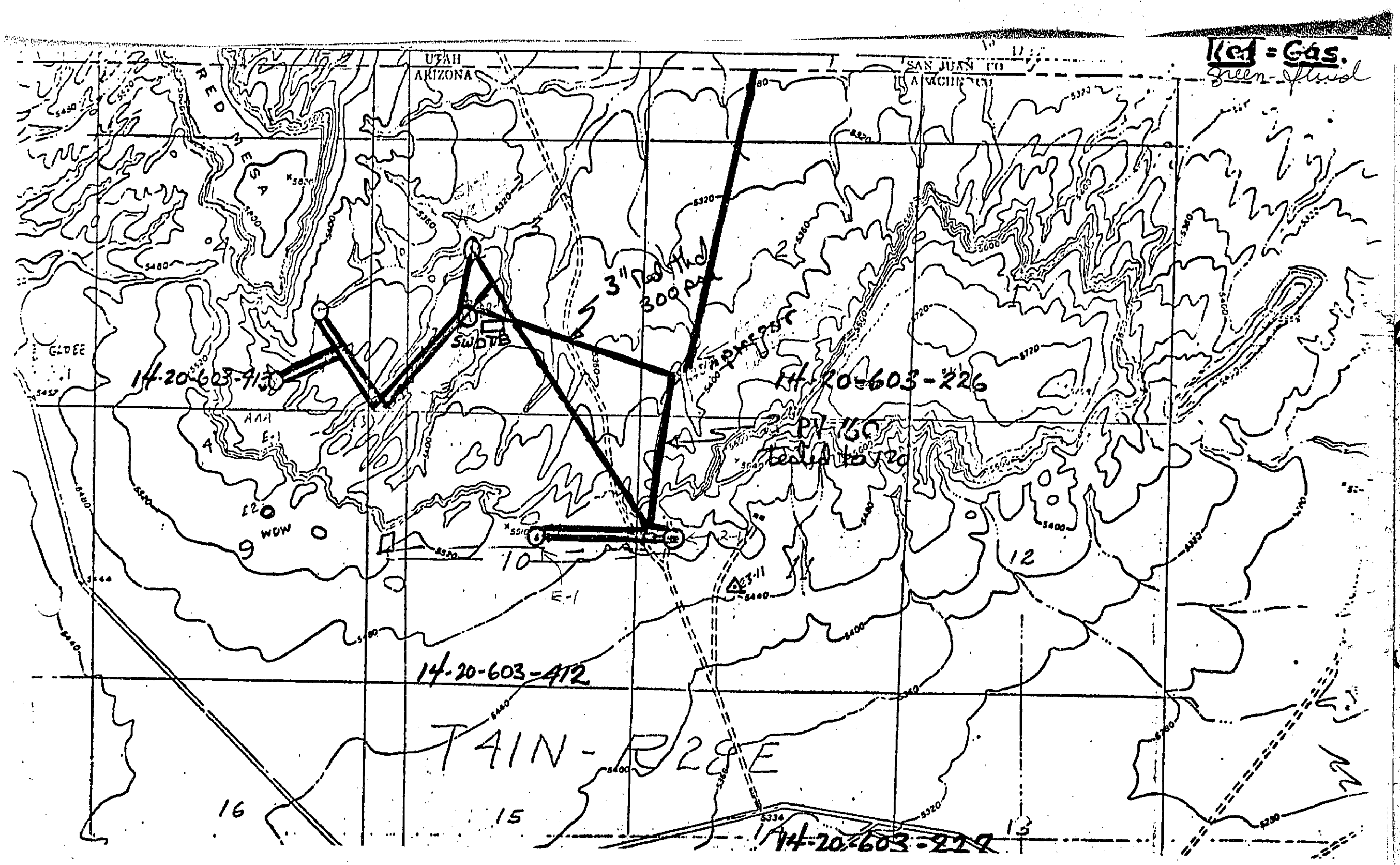
MERRION & BAYLESS

Original Signed
J. Gregory Merrion

By_____
J. GREGORY MERRION

JGM/su

Enclosure



Red = Gas.
Green-fluid
UTAH
ARIZONA
SAN JUAN CO
APACHE CO
RED MESA
GLOBE
14-20-603-413
14-20-603-226
14-20-603-412
14-20-603-227
3" Red thd 300 psi
SWDTB
WDW
E-1
T41N-R28E

Consolidated Oil & Gas, Inc.

LINCOLN TOWER BUILDING
1860 LINCOLN STREET
DENVER, COLORADO 80203
(303) 255-1751

September 27, 1974

Mr. W. E. Allen
Oil & Gas Con ervation Commission
State of Arizona
4515 North 7th Avenue
Phoenix, Arizona 85013

Re: COG #1 & 2
Apache County, Arizona

Dear Mr. Allen:

Enclosed per your letter request of September 23, 1974 are Designation of Operator forms executed by Consolidated naming J. Gregory Merion and Robert L. Bayless operator of Navajo Leases 14-20-603-226 and 14-20-603-227 covering all the lands in Apache County, Arizona under those two leases.

If there is anything additional you require, please let me know.

Very truly yours,

CONSOLIDATED OIL & GAS, INC.

Robert R. Rosnik

RRR:da
Enclosures

RECEIVED
SEP 30 1974
O & G CONS. COMM.

OFFICE OF

Oil and Gas Conservation Commission

STATE OF ARIZONA

4515 NORTH 7TH AVE.
PHOENIX, ARIZONA 85013
PHONE: (602) 271-5161

September 23, 1974

Mr. J. Gregory Merrion
Merrion & Bayless
P. O. Box 1541
Farmington, New Mexico 87401

Re: Navajo Tribal #2
Sec 3-T41N-R28E
Permit No. 22

Navajo #23-11
Sec 11-T41N-R28E
Permit No. 69

Consolidated #3
Sec 3-T41N-R28E
Permit No. 490

Consolidated Navajo #3-3
Sec 3-T41N-R28E
Permit No. 514

Consolidated Navajo #2-11
Sec 11-T41N-R28E
Permit No. 518

Dear Greg:

We have been informed by Consolidated that you are now the operators of the above referenced wells. For our records, will you please confirm your take over of these wells listing the well number, legal description and the effective date of the take over.

If it is your intention for these wells to be placed under your existing bond, it will be necessary for your surety company to notify this office that they are accepting these wells to be covered under your bond. It will also be necessary for your surety to specifically describe the wells as to their name and legal description.

I sincerely hope that you people will be able to improve the production on this group of wells.

Very truly yours,

Bill

W. E. Allen, Director
Enforcement Section

WEA/rlb

2✓

OFFICE OF

Oil and Gas Conservation Commission

STATE OF ARIZONA

4515 NORTH 7TH AVE.
PHOENIX, ARIZONA 85013
PHONE: (602) 271-5161

September 23, 1974

Mr. J. D. Smothermon
Manager, Operator
Consolidated Oil & Gas, Inc.
Lincoln Tower Building
1860 Lincoln Street
Denver, Colorado 80203

Re: Navajo Tribal #2
Sec 3-T41N-R28E
Permit No. 22

Navajo #23-11
Sec 11-T41N-R28E
Permit No. 69

Consolidated #3
Sec 3-T41N-R28E
Permit No. 490

Consolidated Navajo #3-3
Sec 3-T41N-R28E
Permit No. 514

Consolidated Navajo #2-11
Sec 11-T41N-R28E
Permit No. 518

Dear Mr. Smothermon:

We are attaching Designation of Operator forms for your use in officially notifying the Commission that the operation of the above referenced wells has been transferred to Merrion and Bayless of Farmington, New Mexico.

It would be appreciated if you would complete this form and return it to this Commission as quickly as possible.

Very truly yours,

W. E. Allen, Director
Enforcement Section

WEA/rlb

Encs.

22

September 18, 1973

Mr. Wayne Rogers
Consolidated Oil & Gas, Inc.
Lincoln Tower Building
1860 Lincoln Street
Denver, Colorado 80203

Dear Mr. Rogers:

Will you please supply this Commission with any information that you might have regarding the recoverable reserves in the East Boundary Butte Field for your Shell Navajo #2 (22), Navajo #2-11 (518), Navajo #3-3 (514) and Shell Navajo #23-11 (69); and also in the North Toh Atin Field for your Mobil Franco Wyo (32)?

This information will be considered confidential if you so desire.

Thank you for your cooperation.

Very truly yours,

W. E. Allen, Director
Enforcement Section

WEA/rlb

22

Consolidated Oil & Gas, Inc.

LINCOLN TOWER BUILDING
1860 LINCOLN STREET
DENVER, COLORADO 80203
(303) 255-1751

February 16, 1972

State of Arizona
Oil & Gas Conservation Commission
1624 West Adams - Room 202
Phoenix, Arizona 85007

Re: East Boundary Butte 7, Well No. 2
Navajo Tribal 14-20-603-226
SE NW Section 3, T41N-R28E

Gentlemen:

We are sending you two copies of Form 25 "Sundry Notices and Reports on Wells", requesting your approval to recomplete captioned well.

The well is currently producing less than 200 Mcf of gas per day with very little liquids. In 1954, Shell Oil swab tested 84 BOPD and 163 BWPD from the perforated intervals 4,745-62' and 4,767-73' KB. At that time, a cast iron bridge plug was set at 4,730'.

It is no longer economical to produce the upper sets of perforations without additional production.

Yours very truly,

CONSOLIDATED OIL & GAS, INC.

Wayne Rogers
Area Production Manager

WR:lt
Enclosures

RECEIVED
FEB 23 1972
O & G CONS. COMM.

Consolidated Oil & Gas, Inc.

LINCOLN TOWER BUILDING
1860 LINCOLN STREET
DENVER, COLORADO 80203
(303) 255-1751

December 11, 1970

State of Arizona
Oil and Gas Conservation Commission
4514 North 7th Avenue
Phoenix, Arizona 85013

Re: East Boundary Butte 2
East Boundary Butte Field
Apache County, Arizona

Attention: Mr. James Lambert

Gentlemen:

Please disregard (or void) our letter and Forms 25 of November 30, 1970, concerning an acid stimulation treatment of the subject well.

Presently-obtained bottomhole pressure buildup data indicate that the proposed treatment would have little, if any, effect on the producing characteristics of the well. Consolidated now does not intend to perform the treatment.

Very truly yours,

CONSOLIDATED OIL & GAS, INC.

D. E. Smink
Petroleum Engineer

DES/cc

cc. The Navajo Tribe, Minerals Dept.
Attention: Mr. P. K. Hurlbut

RECEIVED
DEC 14 1970
O & G CONS. COMM.

Consolidated Oil & Gas, Inc.

LINCOLN TOWER BUILDING
1860 LINCOLN STREET
DENVER, COLORADO 80203
(303) 255-1751

November 30, 1970

State of Arizona
Oil and Gas Conservation Commission
4515 N. 7th Avenue
Phoenix, Arizona 85013

Attention: Mr. James Lambert

Gentlemen:

Re: East Boundary Butte No. 2
East Boundary Butte Field
Apache County, Arizona

Please find attached the original and one copy of Form 25 signifying our intention to treat the subject well with acid. We will be pleased to furnish you copies of daily operations with the "Subsequent Report" when operations are completed.

Very truly yours,

CONSOLIDATED OIL & GAS, INC.

D. E. Smink
Petroleum Engineer

DES/ds
Attach.

cc: Navajo Tribe, Mineral Department
P. K. Hurlbut

RECEIVED
DEC 3 1970
O & G CONS. COMM.

22

22

November 18, 1970

Mr. David E. Smink
Consolidated Oil & Gas
1860 Lincoln Street
Suite 1300
Denver, Colorado 80203

Re: Humble #3 Navajo (413)
SW/4 SE/4 Section 4-T41N-R28E
Apache County
Our File #515

Dear Dave:

I am forwarding to you for your information copies of a supplemental well history just received by the Commission. As I explained in our conversation today, we are going to Tucson for a hearing. We will pursue this information and contact you at the first of the week.

Sincerely,

John Bannister
Executive Secretary

JB:jd
Enc.
cc: File

22

OFFICE OF

Oil and Gas Conservation Commission

STATE OF ARIZONA

ROOM 202

1624 WEST ADAMS

Phoenix, Arizona 85007

PHONE: 271-5161

December 12, 1969

TO ALL INTERESTED PARTIES:

Notice is hereby given that Case No. 39, Consolidated Oil and Gas, Inc., application to multicomplete its Shell No. 2 Navajo well located in the SE/4 NW/4 of Section 3, Township 41 North, Range 28 East, Apache County, Arizona, and for an unorthodox location, which had been re-scheduled to be heard on January 21, 1970, at 10:00 a.m., is hereby dismissed at the request of Consolidated Oil and Gas, Inc., as of December 10, 1969.

JOHN BANNISTER
Executive Secretary

22

Consolidated Oil & Gas, Inc.

LINCOLN TOWER BUILDING
1860 LINCOLN STREET
DENVER, COLORADO 80203
(303) 255-1751

December 10, 1969

State of Arizona
Oil and Gas Conservation Commission
1624 West Adams - Room 202
Phoenix, Arizona 85007

Attention: Mr. James A. Lambert

Gentlemen:

Re: (Shell) No. 2 Navajo
(East Boundary Butte No. 2)
SE NW Section 3, T41N-R28E
Apache County, Arizona

Please withdraw Consolidated's application to multicomplete the subject well as an unorthodox oil completion. This application (Case No. 39) was to be heard by the Commission on January 21, 1970, at the Commission's office in Phoenix.

Recent production behavior of the south offset well indicates that the Akah zone in this area of the East Boundary Butte field will produce only a semi-marginal amount of oil, and the contemplated multicompletion attempt does not now appear economically feasible.

It is hoped that this withdrawal of Consolidated's application will not cause the Commission any inconvenience.

Very truly yours,

CONSOLIDATED OIL & GAS, INC.

D. E. Smink
Petroleum Engineer

RECEIVED
DEC 12 1969
STATE O & G
CONS. COMM.

DES/sw

22

Consolidated Oil & Gas, Inc.

LINCOLN TOWER BUILDING
1860 LINCOLN STREET
DENVER, COLORADO 80203
(303) 255-1751

September 11, 1969

State of Arizona
Oil & Gas Conservation Commission
1624 West Adams - Room 202
Phoenix, Arizona 85007

Re: East Boundary Butte 7, Well #2
Navajo Tribal 14-20-603-226
SE NW Section 3, T41N-R28E
Apache County, Arizona

See Rule 11A

Permit 22

Gentlemen:

Please find enclosed two copies of Form 25 "Sundry Notices and Reports on Wells," signifying our intention to multiple complete the captioned well for dual gas and oil production. The well currently produces only gas with approximately four barrels of gas liquids and 0.5 barrels of water per day.

Your early attention to and approval of the enclosed form will be appreciated. Please advise us if additional data are required.

Yours very truly,

CONSOLIDATED OIL & GAS, INC.

D. E. Smink
Petroleum Engineer

DES:lt
Enclosures

RECEIVED
SEP 15 1969
STATE O & G
CONS. COMM.

PETROLEUM ENGINEERING
RESERVOIR STUDIES
EVALUATIONS
GEOLOGICAL STUDIES

EWELL N. WALSH, P.E.
President

WALSH
ENGINEERING & PRODUCTION
CORPORATION
PETROLEUM CLUB PLAZA BUILDING
P. O. BOX 254
FARMINGTON, NEW MEXICO 87401

LEASE MANAGEMENT
CONTRACT PUMPING
DRILLING SUPERVISION
WORKOVER SUPERVISION

TELEPHONE 325-8203

July 31, 1969

Mr. Leo Case
Production Superintendent
Consolidated Oil & Gas, Inc.
P. O. Box 757
Cortez, Colorado 81321

Ref: Shell Navajo No. 23-11
Shell Navajo No. 2
Franco Wyoming Navajo No. 2

Dear Mr. Case:

Enclosed you will find six copies each of the Deliverability Test Reports for the above-referred-to wells.

Two copies of each should be sent to the Arizona Oil and Gas Conservation Commission. The other copies are for your files and distribution.

Very truly yours,

Ewell N. Walsh, P. E.
President

ENW:lt

Enclosures

bcc: Mr. James A. Lambert
Arizona O&GCC

RECEIVED
AUG 1 1969
STATE O & G
CONS. COMM.

[redacted]

X-Chrono
X-Lambert

July 25, 1969

Mr. Leo Case
Consolidated Oil & Gas, Incorporated
P. O. Box 757
Cortez, Colorado 81321

Re: Franco Western Oil Navajo #1 — Permit 32 X
Shell Oil Navajo #2 — Permit (22)
Shell Oil Navajo #23-11 — Permit 69 X

Dear Mr. Case:

Please advise when we may expect to receive the reports requested in our letters dated May 22 and July 10.

Yours truly,

James A. Lambert
Administrative Assistant

JAL:jf

O.K. 22

32 X

X - Chrono
X - Lambert

July 10, 1969

Mr. Leo Case
Consolidated Oil & Gas, Incorporated
P. O. Box 757
Cortez, Colorado 81321

Re: Franco Western Oil Navajo #1 Permit 32 X
Shell Oil Navajo #2 Permit (22)
Shell Oil Navajo #23-11 Permit 69 X

Dear Mr. Case:

Please refer to our letter dated May 12, 1969. Please advise when we may expect to receive our completed forms 18 and 20 pertaining to the captioned wells. These reports were due this date.

Yours truly,

James A. Lambert
Administrative Assistant

JAL:jf

O.K. 22

32 X

X-Chrono
X-Lambert

May 22, 1969

Mr. Leo Case
Consolidated Oil & Gas, Incorporated
P. O. Box 757
Cortez, Colorado 81321

Re: Franco Western Oil Navajo #1 — Permit #32
Shell Oil Navajo #2 — Permit #42
Shell Oil Navajo #13-11 — Permit #69

Dear Mr. Case:

In accordance with Rule 401 the Oil and Gas Conservation Commission, State of Arizona, has adopted procedures for the annual testing for all gas and/or helium wells

The Commission's procedure is based upon and must be used in conjunction with the Manual of Back pressure Testing of Gas Wells as issued by Interstate Oil Compact Commission, P. O. Box 53127, Oklahoma City, Oklahoma 73105.

The Commission has prepared, in addition, a supplement to the IOCC manual inasmuch as that manual is based upon a pressure base other than the 15.025 required by the State of Arizona. The supplement to the IOCC manual has made all necessary corrections to the IOCC manual to reflect the 15.025 pressure base.

The tests required by Rule 401 shall be conducted during the month of June each year and reported in duplicate by July 10th of each year. Forms 18 and 20 will be used for this purpose.

Yours truly,

James A. Lambert
Administrative Assistant

JB:jf
Enc.
cc: Consolidated Oil & Gas in Denver, Colorado

22 O.K.

Consolidated Oil & Gas, Inc.

LINCOLN TOWER BUILDING
1860 LINCOLN STREET
DENVER, COLORADO 80203
(303) 255-1751

April 18, 1969

RECEIVED
APR 21 1969
STATE O & G
CONS. COMM.

State of Arizona
Oil & Gas Conservation Commission
1624 West Adams, Room 202
Phoenix, Arizona 85007

Attention: Mr. John Banister

Gentlemen:

East Boundary Butte Field
Apache County, Arizona

Consolidated Oil & Gas, Inc. acquired certain wells from Shell Oil in the East Boundary Butte field and one well from Mobil Oil in what is referred to as the North Toh-Atin field, all located in Apache County, Arizona. The two gas wells purchased from Shell in the East Boundary Butte field are known as the Navajo No. 2, located in the SE NW of Section 3, and Navajo No. 23-11, located in NE SW of Section 11, T41N-R28E. The Mobil well (Franco Western), Navajo No. 1, is located in the SW NW of Section 22. These names are being used by Consolidated.

Since acquiring the acreage, Consolidated drilled and completed its Navajo No. 2-13, located in the SW SW of Section 2. This well is carried on your records as the No. 1 Navajo under Permit No. 481. It is the dual oil producing and water disposal well.

Consolidated drilled and is currently completing its Navajo No. 3-11, located in the NE SW of Section 3. You call this well the No. 3 Navajo under Permit No. 490. Your Permit No. 488 for the No.2. Navajo was for a location in the NE SE of Section 3. Consolidated carries this location as the Navajo No. 3-9, and the well has not been drilled.

Attached to this letter is a map of the area showing our well locations with Consolidated's designated well numbers. If necessary, we will change our well numbers to meet the requirements of your department.

Consolidated proposes to lay a flow line from the well located in the NE SW of Section 3, Permit No. 490, to the tank battery located near the well in the SW SW of Section 2, Permit No. 481. We propose to produce the full well stream through the pipeline into a heater treater which will be equipped with an oil meter. The oil will be metered to a common tank battery along with oil from our Navajo No. 2-13 well. A difference in working interest owners exists between these two wells. However, the rights of the working interest owners and royalty owners will be protected by metering the oil in accordance with good oil field practices. Oil from our No. 23-11 well is transported through Four Corners Pipeline; however, we are having to truck the oil from our Navajo No. 2-13 well, Permit No. 481. Consequently, oil from our Navajo No. 3-11, Permit No. 490, will also be trucked. Form 8 has been filed with your office. (4-L)

Even though you have given verbal approval of this proposal, it would be appreciated if you would give us written approval for our records. If you need any additional information, please call me collect.

Yours truly,

CONSOLIDATED OIL & GAS, INC.

Wayne Rogers

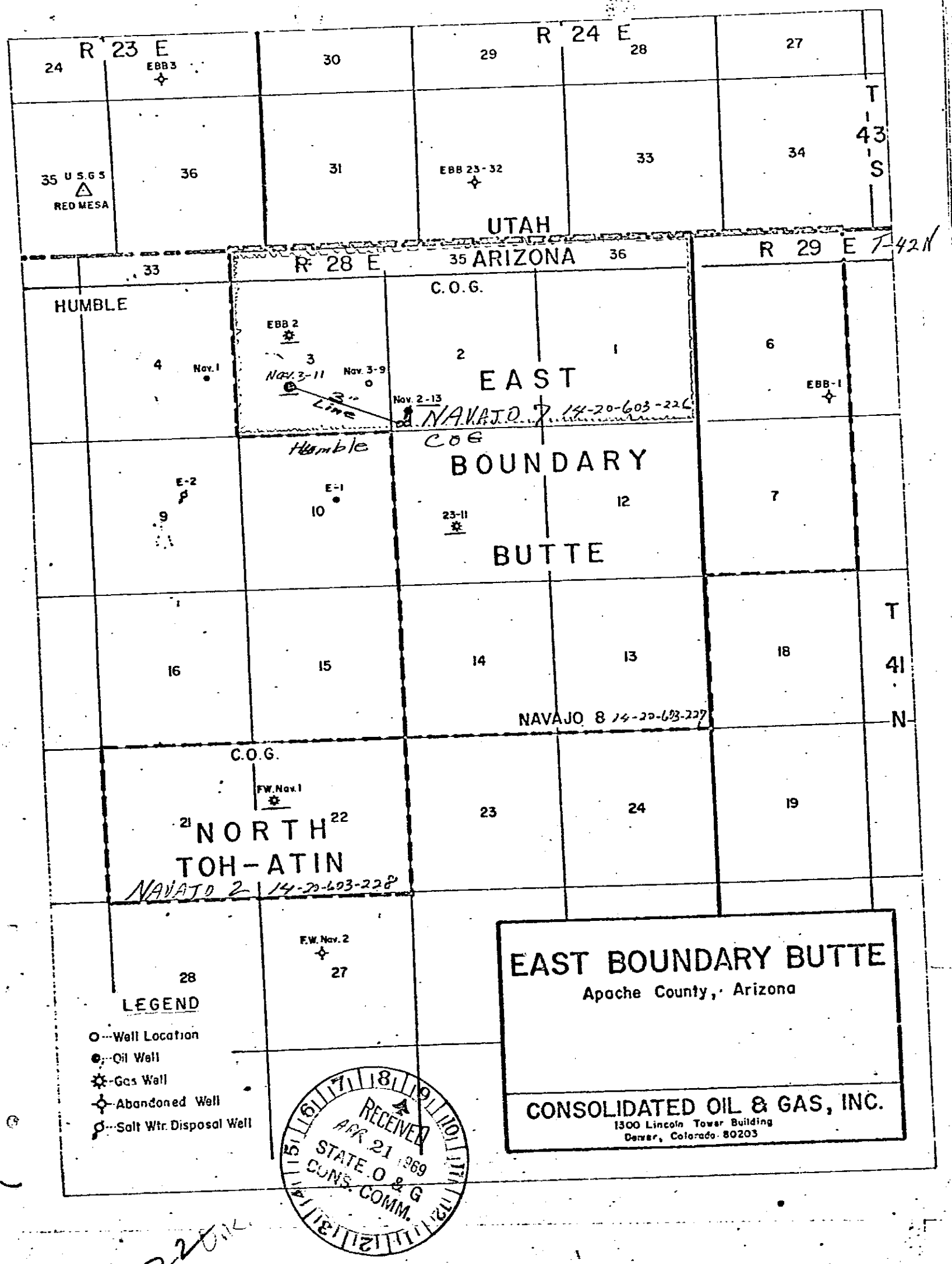
Wayne Rogers

WR/jt

Enclosure

RECEIVED
APR 21 1969
STATE O & G
CONS. COMM.

2-2
O.K.


R 23 E
R 24 E
24
EBB 3
30
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35 U.S.G.S.
RED MESA
36
31
EBB 23-32
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T 43 S
UTAH
ARIZONA
R 28 E
R 29 E
T 42 N
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C.O.G.
HUMBLE
EBB 2
3
Nov. 3-11
Nov. 3-9
4
Nov. 1
2
1
6
EBB-1
Nov. 2-13
Navajo 7 14-20-603-226
Line
Humble
COE
EAST
BOUNDARY
BUTTE
E-2
E-1
9
10
23-11
12
7
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18
T 41 N
NAVAJO 8 14-20-603-227
C.O.G.
FW. Nov. 1
21
NORTH
22
TOH-ATIN
NAVAJO 2 14-20-603-228
23
24
19
F.W. Nov. 2
28
27
LEGEND
O---Well Location
●---Oil Well
☼---Gas Well
---Abandoned Well
---Salt Wtr. Disposal Well
RECEIVED
APR 21 1969
STATE O & G
CONS. COMM.
EAST BOUNDARY BUTTE
Apache County, Arizona
CONSOLIDATED OIL & GAS, INC.
1300 Lincoln Tower Building
Denver, Colorado 80203
220

Enlargements...
SPECIAL CARE
REASONABLE PRICES
Color... Try a roll of Color Film in your Kodak for those special pictures
Burkmunt Envelope Co.
Denver, Colorado
Negatives Here
TUCK THIS TAB IN OVER THE NEGATIVES TO PROTECT THEM
Prints Here
ENCLOSED SNAPSHOTS
WERE FINISHED
BY
NuArt Photo Service
EASTMAN KODAK DEALER
120 EAST CONGRESS STREET
Tucson's Photographic Headquarters

1321

[redacted]

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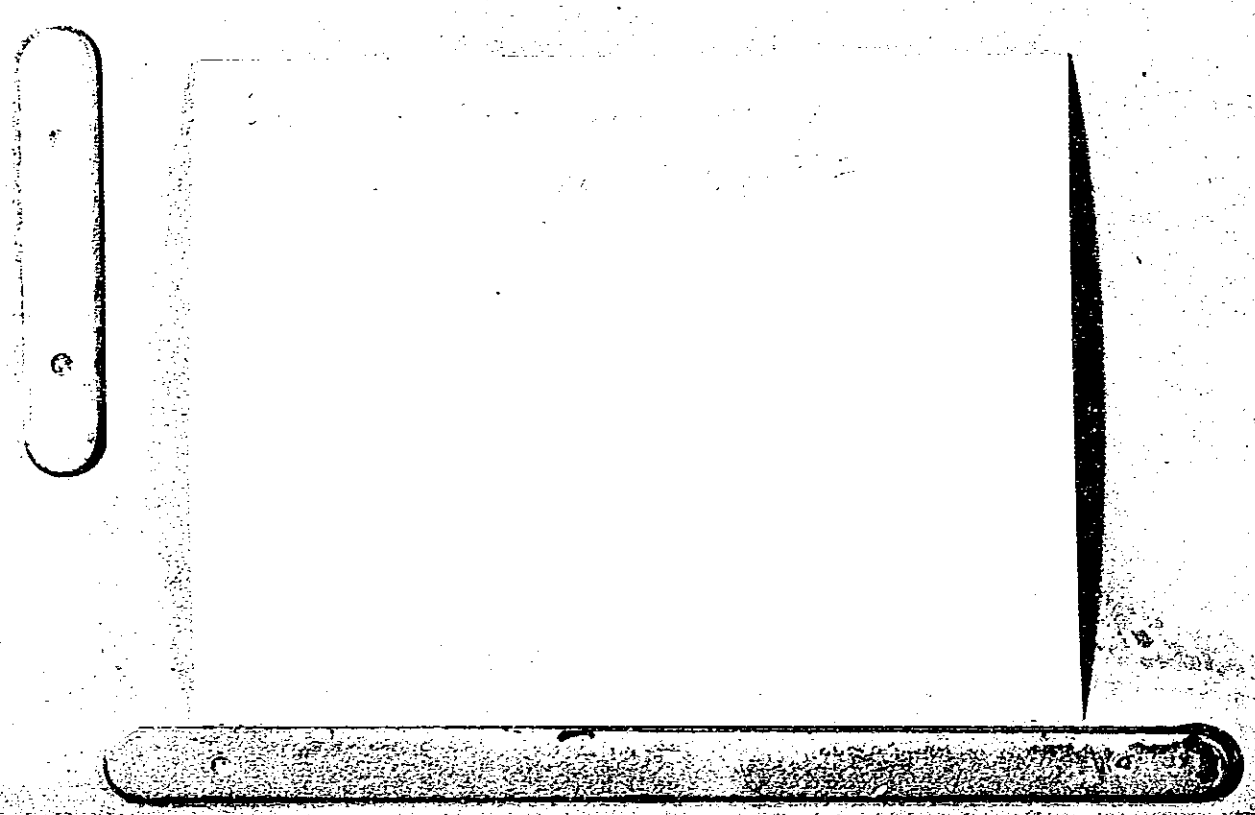

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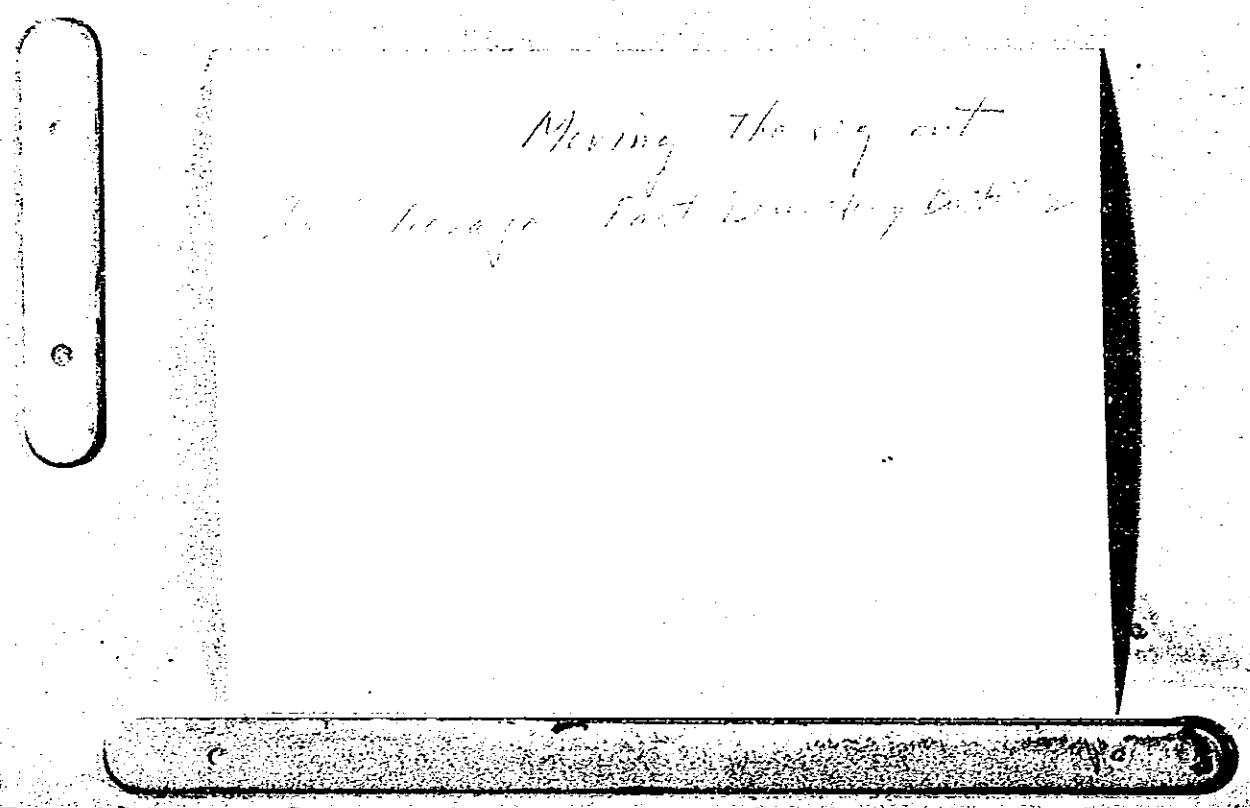
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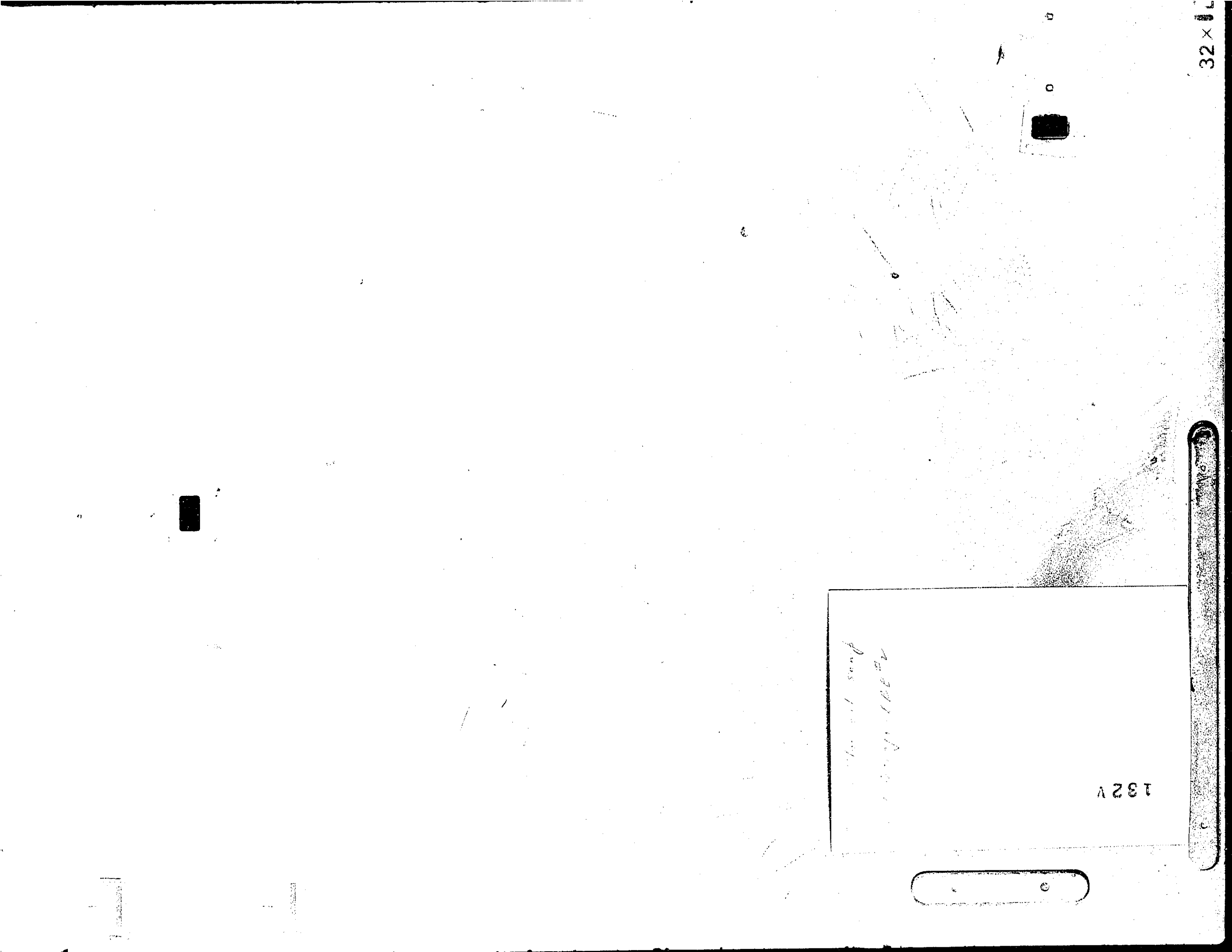
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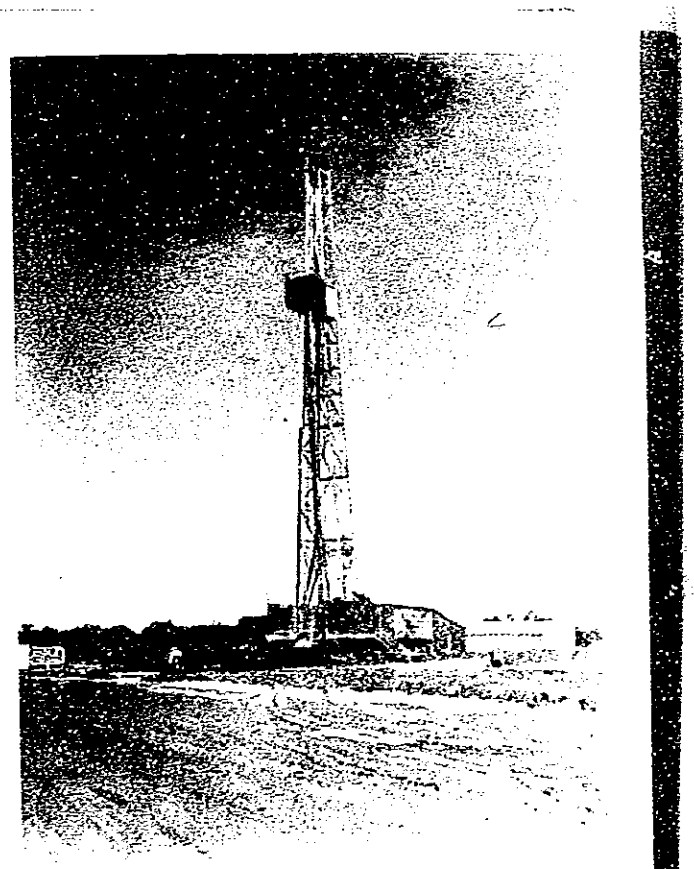

Shell Test Boundary
Butte #2

32×

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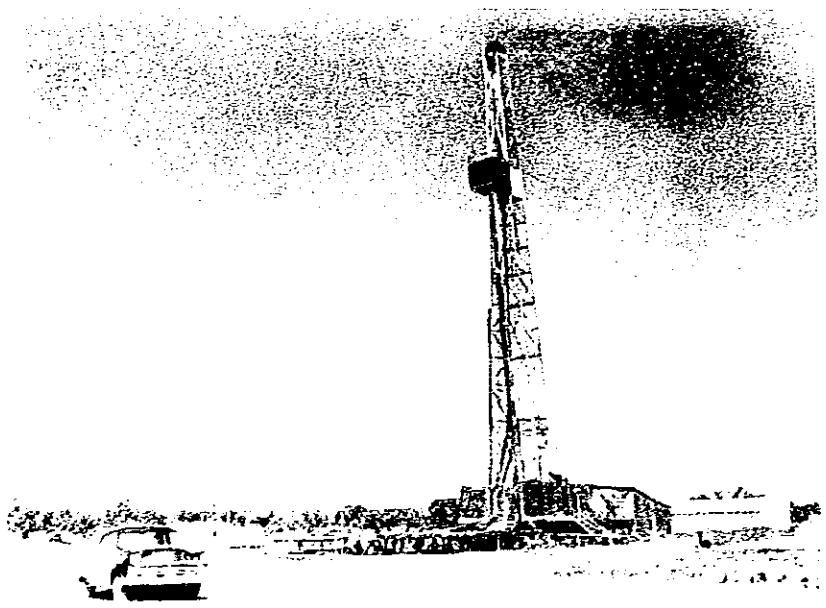
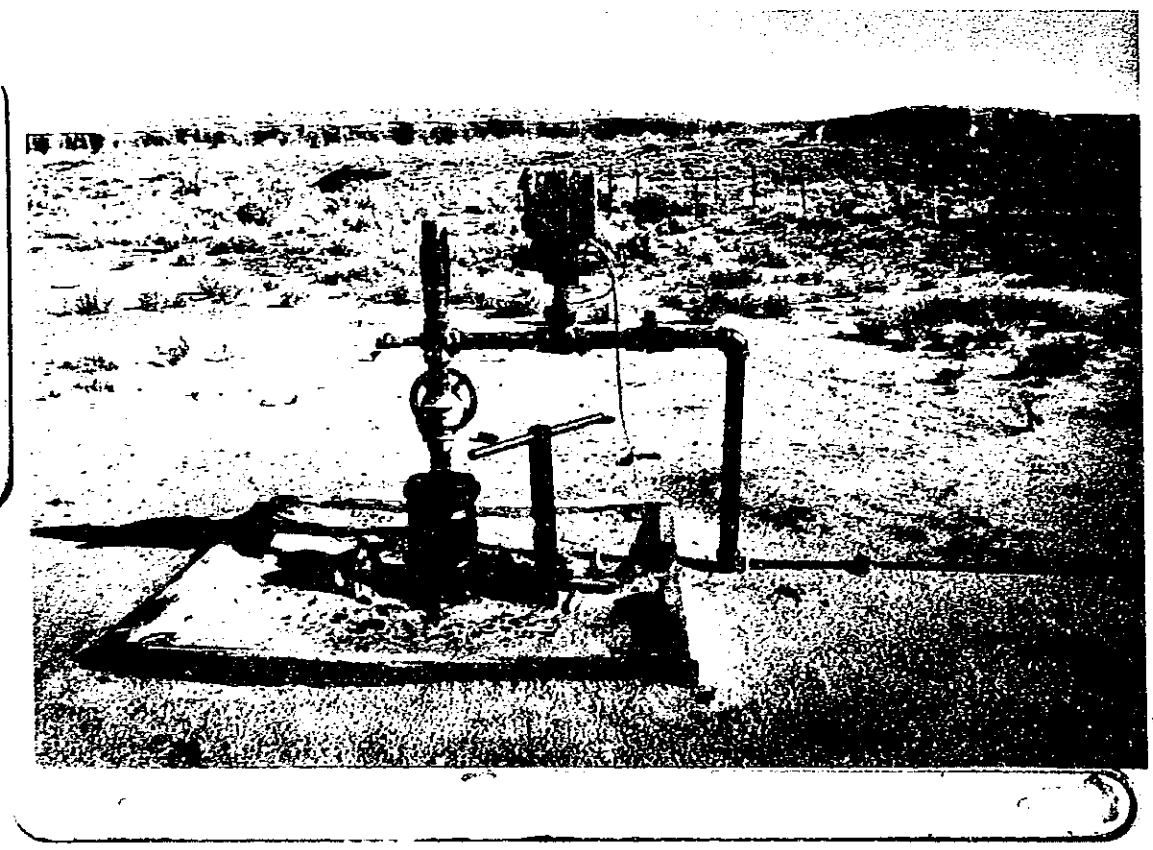


Shell East Boundary
Suite "L"

32 x

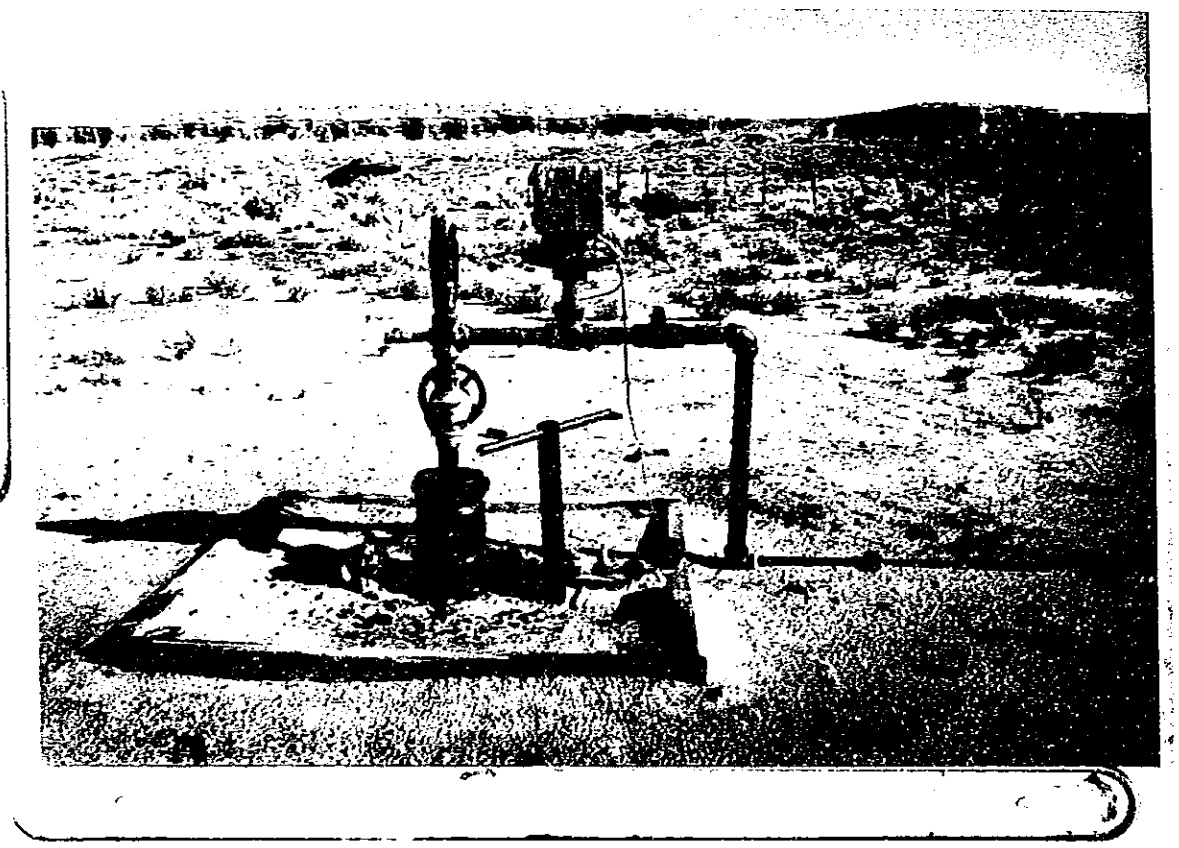


~~DR~~ 22A E. Boundary Battle

~~PKG 575~~ 10/89

P/N 22

32×



22A E. Bldg Butte

10/89

~~2Abs+S~~

P/N 22

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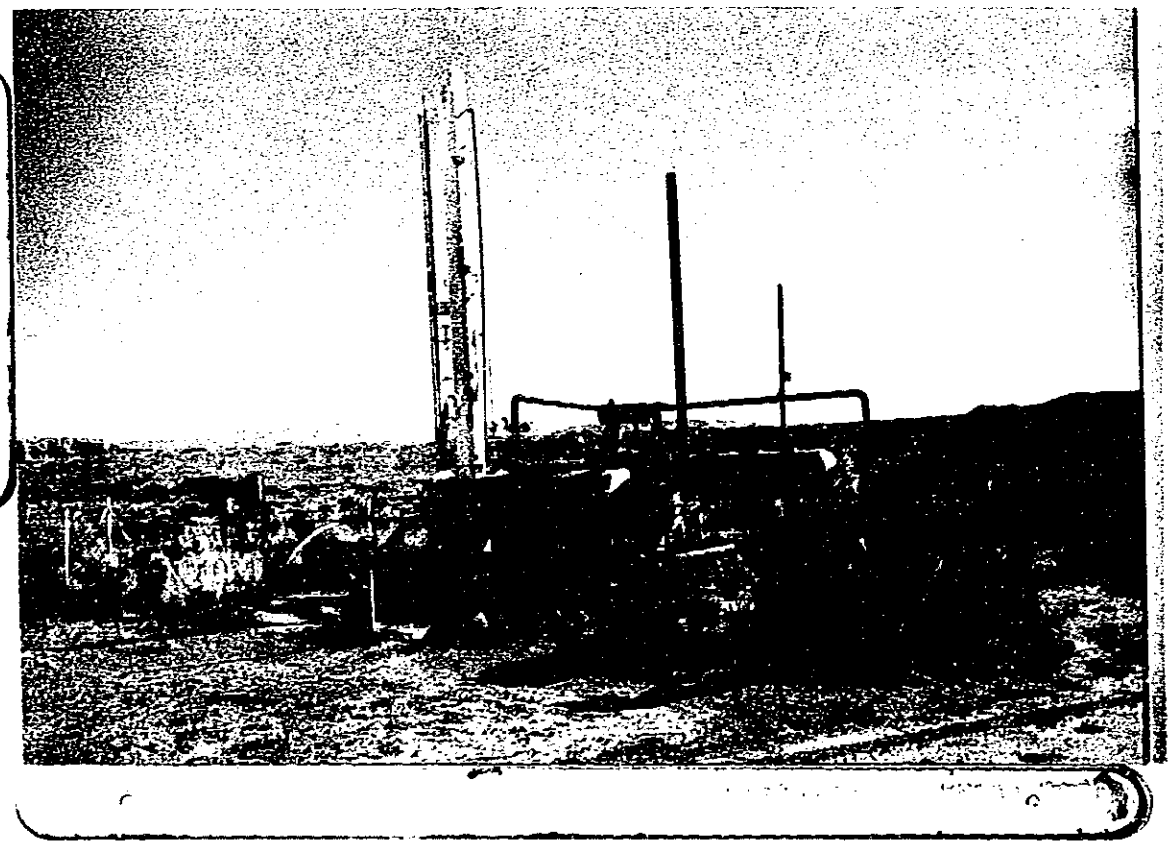
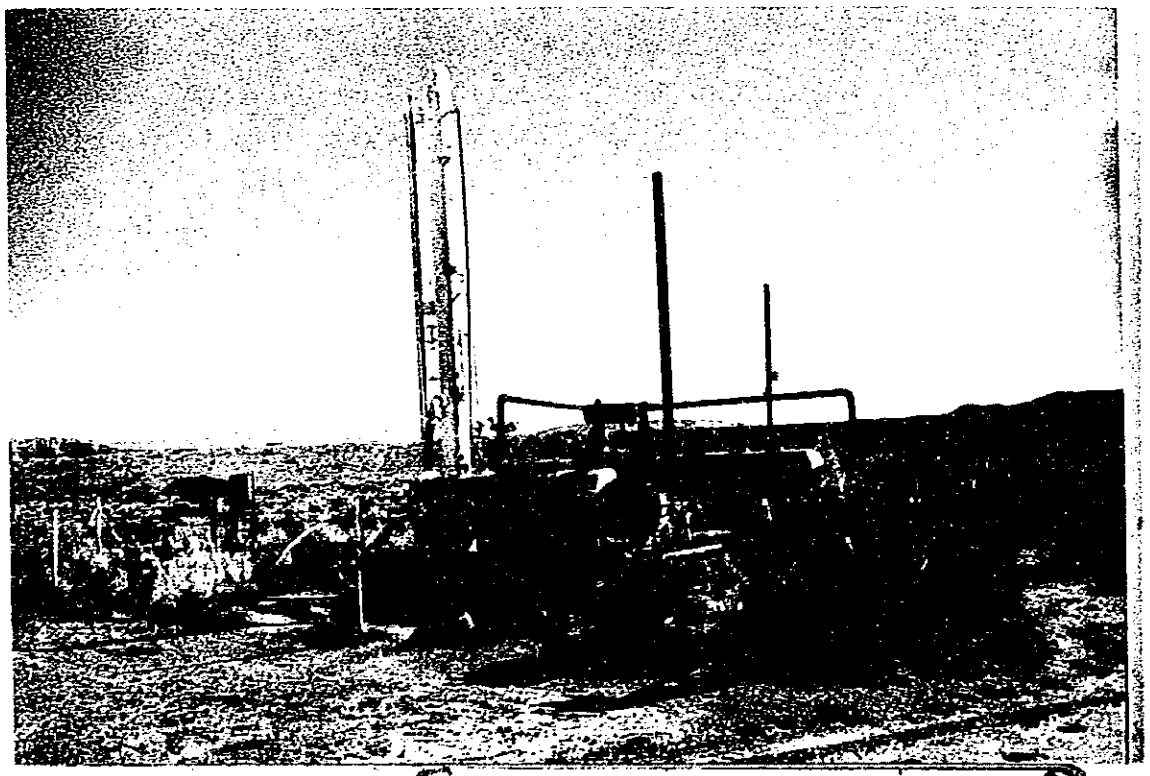


21A Mervin Oil Navajo
SENW 3 41N-28E

PN22



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HA Herria 01 Nauoj 2

SENW 3, 41N-28E

PN 22

[redacted]

32×

36

No. _____ Date 6-7-64

Name DSG-5

Address Box 2270

Promised _____ A.M. _____ P.M.

Remarks:

Filed # 11541

_____ Prints of each

_____ Negatives

Rolls	
Packs	50
Prints	16
Enlargements	
Total	
Sales Tax	
Total	66

#22

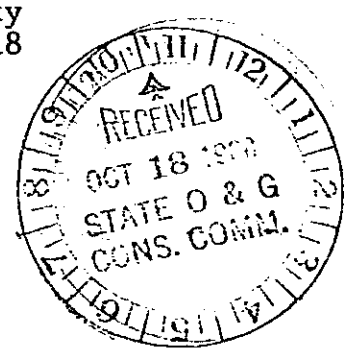
SHELL OIL COMPANY

SHELL BUILDING
1008 WEST SIXTH STREET
LOS ANGELES, CALIFORNIA 90054

TELEPHONE: 482-3131

October 17, 1968

Subject: State of Arizona
Travelers Indemnity
Company Bond S-218



Oil and Gas Conservation
Commission
State of Arizona, Room 202
1624 West Adams
Phoenix, Arizona

Attention: Mr. James A. Lambert
Administrative Assistant

Gentlemen:

Responsive to your letter of October 3, 1968 relating to cancellation of the subject Bond, please be advised the Bond to which you refer covers Shell operations throughout the State of Arizona. Therefore, we do not desire its cancellation at this time.

We appreciate your consideration in this matter.

Very truly yours,

For: D. E. Clark
Land Manager

TLM:prf

#69
#22

OK

OFFICE OF

Oil and Gas Conservation Commission

STATE OF ARIZONA

ROOM 202

1624 WEST ADAMS

Phoenix, Arizona 85007

PHONE: 271-5161

October 7, 1968

Mr. Ewell N. Walsh
Petroleum Club Plaza Building
P. O. Box 254
Farmington, New Mexico 87401

Re: Shell #2 Navajo
T41N, R28E, G & SRM
Sec. 3: SE/4 NW/4
Apache County, Arizona
Permit #22

Shell #23-11 Navajo
T41N, R28E, G & SRM
Sec. 11: NE/4 SW/4
Apache County, Arizona
Permit #69

Franco Wyoming #1 Navajo
T41N, R28E, G & SRM
Sec. 22: SW/4 NW/4
Apache County, Arizona
Permit #32

Dear Mr. Walsh:

Mr. Case, Consolidated Oil and Gas Company, reported to us on September 12 that the captioned wells were tested on July 7, and the information is in your hands. Mr. Case indicated that we should expect to receive the test information in a "reasonable" period of time. Almost four weeks have passed, and we have not received the test results. Rule 401 - Capacity Tests of Gas Wells - requires a report for the annual testing of all gas wells. Please furnish these reports at once. — Rec'd 10/9/68

Yours truly,

J. A. Lambert

James A. Lambert
Administrative Assistant

RECEIVED OCT 14 1968 STATE O. & G. CONS. COMM.

The reports referred to above have been sent to Leo Case, Consolidated Oil and Gas, for signature and mailing to Arizona O&GCC.

Ewell N. Walsh

Ewell N. Walsh, P. E.
Pres., Walsh Eng. & Prod. Corp.

22 OK.

October 3, 1968

Mr. D. E. Clark
Shell Oil Company
1008 West 6th Street
Los Angeles, California 90054

Re: Shell #2 Navajo
T41N, R28E, G & SRM
Sec. 3: SE/4 NW/4
Apache County, Arizona
Permit #22

Shell #23-11 Navajo
T41N, R28E, G & SRM
Sec. 11: NE/4 SW/4
Apache County, Arizona
Permit #69

Dear Mr. Clark:

Our records indicate that the captioned wells are indemnified by a United States Fidelity and Guaranty bond wherein Consolidated Oil and Gas, Incorporated, is the principal. They are the present operators of these wells.

We are willing to terminate Travelers Indemnity Company Bond S-218 wherein Shell Oil Company is principal should you notify us that you wish to have the bond released.

Yours truly,

James A. Lambert
Administrative Assistant

JAL:jf

September 30, 1968

Mr. Leo Case
Consolidated Oil and Gas, Inc.
P. O. Box 757
Cortez, Colorado

Re: Shell #2 Navajo
T41N, R28E, G & SRM
Sec. 3: SE/4 NW/4
Apache County, Arizona
Permit #22

Shell #23-11 Navajo
T41N, R28E, G & SRM
Sec. 11: NE/4 SW/4
Apache County, Arizona
Permit #69

Franco Wyoming #1 Navajo
T41N, R28E, G & SRM
Sec. 22: SW/4 NW/4
Apache County, Arizona
Permit #32

Dear Mr. Case:

The Commission looks to you for the report necessary to satisfy Rule 401. Our conversation on September 12 indicates that we would receive these tests within a reasonable period of time. It is your responsibility to see that Mr. Walsh or whoever your contractual agent may be delivers the reports.

Yours truly,

James A. Lambert
Administrative Assistant

JAL:jf

September 10, 1968

Mr. Leo Case
Consolidated Oil and Gas, Inc.
P. O. Box 757
Cortez, Colorado

Re: Shell #2 Navajo
T41N, R28E, G & SRM
Sec. 3: NE/4 NW/4
Apache County, Arizona
Permit #22

Shell #23-11 Navajo
T41N, R28E, G & SRM
Sec. 11: NE/4 SW/4
Apache County, Arizona
Permit #60

Franco Wyoming #1 Navajo
T41N, R28E, G & SRM
Sec. 23: SW/4 NW/4
Apache County, Arizona
Permit #32

Dear Mr. Case:

Rule 401 - Capacity Tests of Gas Wells - requires a report for the annual testing of all gas wells. By letter dated July 10, 1968, this office granted an extension and exception in your particular case pertaining to the captioned wells. We call attention to the fact that we have not received the report due August 10, 1968. Please furnish this report by return mail.

Yours truly,

James A. Lambert
Administrative Assistant

JAL:jf

OFFICE OF
Oil and Gas Conservation Commission
STATE OF ARIZONA
ROOM 202
1624 WEST ADAMS
Phoenix, Arizona 85007
PHONE: 271-5161

July 10, 1968

Consolidated Oil and Gas, Inc.
P.O. Box 757
Cortez, Colorado

Attention: Mr. Leo Case, Production Superintendent

Re: Capacity Testing of Gas Wells

Shell #s Navajo
SE NW 3-41N-28E Apache County, Arizona, File 22

Shell #23-11 Navajo
NE SW 11-41N-28E Apache County, Arizona, File 69

Franco Wyoming #1 Navajo
SW NW 22-41N-28E Apache County, Arizona, File 32

Gentlemen:

Mr. Ewell N. Walsh outlined to this Commission your request for an exception to the procedure for capacity testing of captioned wells.

Consolidated Oil and Gas, Inc. is granted an exception in that it will not be necessary to obtain the multi-point back pressure curve. In all calculations for deliverability the value of "n" shall be 0.85.

Further, an extension is granted to conduct the tests during the month of July and to submit the reports by August 10, 1968.

Very truly yours,

John Bannister

John Bannister
Executive Secretary
mr

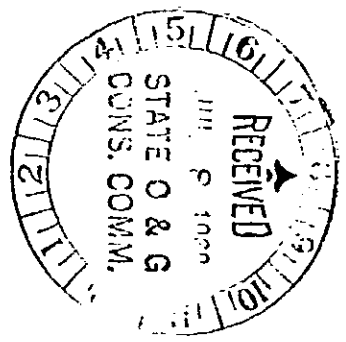
cc: Mr. Wayne Rogers, Consolidated Oil and Gas, Inc., Denver
Mr. Ewell N. Walsh

O.K.

EWELL N. WALSH
PETROLEUM ENGINEER CONSULTANT
PETROLEUM CLUB PLAZA BLDG.
P. O. BOX 254
FARMINGTON, NEW MEXICO
87401

TELEPHONE BUS. 325-8203
RES. - 325-6455

July 3, 1968



Mr. John Bannister
Executive Secretary
Oil and Gas Conservation Commission
State of Arizona
1624 West Adams, Room 202
Phoenix, Arizona 85007

Reference: Consolidated Oil and Gas Company
Shell Navajo No. 23-11 #69
Shell Navajo No. 2 #72
Mobil Franco Wyo. Navajo #32

Dear Mr. Bannister:

Mr. Leo Case, Consolidated Oil and Gas, requested that I obtain approval for exception to Rule 401 and date for filing the results of tests concerning the above referred to wells.

It is necessary to compress the gas production from the wells due to high gathering line pressure. In order to obtain sufficient drawdown of flowing pressures, to obtain a multi-point back pressure curve, it would be necessary to produce the wells to the atmosphere. Producing the wells to the atmosphere at this time would be a waste of gas. Therefore, it is requested that our exception to Rule 401 be approved to eliminate the necessity of obtaining the multi-point back pressure curve.

With approval of the above exception the slope or "n" value for use in the deliverability calculation will not be determined. It is requested that the "N" value of 0.85 be approved for use in the necessary calculations.

It is also requested that approval be given to file the necessary forms as soon as possible after July 15, 1968. The forms cannot be filed by the July 15 date due to the time needed to conduct the deliverability test, obtain calculated gas volumes and prepare the necessary forms.

Your approval of the requests would be greatly appreciated.

Very truly yours,

Ewell N. Walsh

Ewell N. Walsh, P. E.
Petroleum Engineer Consultant

OK 7-8-68 jk

Consolidated gas-Shell Navajo #23-11 & #72, Walsh - Copy of letter to Mr. J - Copy of letter to Mr. J

February 2, 1968

Consolidated Oil & Gas, Inc.
4150 East Mexico Avenue
Denver, Colorado 80222

Re: Shell #2 Navajo
SE NW 3-41N-28E, Apache County, Arizona
File 22

Shell #23-11 Navajo
NE SW 11-41N-28E, Apache County, ARizona
File 69

Gentlemen:

We are returning herewith the operator's certificate of compliance and authorization to transport oil or gas from lease covering captioned wells.

Our records show that these wells are covered by Travelers Indemnity Company bond S-218 with Shell Oil Company as principal.

As you are aware, a well must be under bond at all times. Should Shell desire to have this bond released, it will be necessary that you furnish bond to cover these wells.

If we may at any time be of service, please advise.

Very truly yours,

John Bannister
Executive Secretary
mr
enc

SHELL OIL COMPANY

POST OFFICE BOX 999
BAKERSFIELD, CALIFORNIA 93301

DEC 20 1967

Oil and Gas Conservation Commission
State of Arizona
1624 West Adams, Suite 202
Phoenix, Arizona 85007

Attention James R. Scurlock

Gentlemen:

We wish to advise that effective at the hour of 7:00 A.M., October 12, 1967, Consolidated Oil and Gas, Incorporated and Border Exploration Company, whose respective addresses are 4150 East Mexico Avenue, and 1224 Denver Club Building, Denver, Colorado, jointly purchased the Shell Oil Company interest in the East Boundary Butte lease.

Production figures on East Boundary Butte will be furnished by Consolidated Oil and Gas for November and in the future.

Very truly yours,

J. S. Gragg

J. S. Gragg
Division Office Supervisor
San Joaquin Division

cc - Consolidated Oil and Gas, Inc.
4150 East Mexico Avenue
Denver, Colorado

Border Exploration Company
1224 Denver Club Building
Denver, Colorado

RECEIVED
DEC 26 1967
STATE O & G
CONS. COMM.

O.K.

SHELL OIL COMPANY
POST OFFICE BOX 999
BAKERSFIELD, CALIFORNIA 93301

SEP 28 1967

RECEIVED
SEP 29 1967
STATE O & G
CONS. COMM.

Arizona Oil and Gas Conservation Commission
Room 202, 1624 West Adams
Phoenix, Arizona 85007

Gentlemen:

This refers to your letter of September 11, 1967, concerning Directive D-2-67 covering Gas-Oil Ratio Tests (Rule 301) and Capacity Tests of gas wells (Rule 401).

Our production in Arizona consists of two wells at East Boundary Butte and a part interest well at North Toh-Atin. Past production shows all three of these wells with a GOR greater than 50,000 cubic feet of gas per barrel which would place them in the "Gas Well" category under the Commission's definition. As confirmation, a test was made on September 14, 1967, with production as follows:

	Mcf/D	Oil B/D
East Boundary Butte		
No. 2	880	4
~~No. 23-11~~	1300	12
North Toh-Atin		

Mobil-Shell Navajo 1 - produces intermittently against line pressure and no test obtained. No oil or condensate produced over past year.

Consequently, we consider these wells come under your Rule 401 and we take note that an open flow capacity determination by the back pressure test method is to be made in June of each year. Would you please send us your Form 18 for the reporting of the capacity tests.

Yours very truly,

W. W. Eller, Jr.

for M. J. Edwardson
Division Production Manager
San Joaquin Division

March 24, 1967

Shell Oil Company
P.O. Box 1200
Farmington, New Mexico 87401

Gentlemen:

We note that in your gas production reports for January, 1967 you have shown the flaring or venting of 3,390 MCF of gas from the East Boundary Butte Field.

Would you please advise why it was/is necessary to flare or vent this quantity of gas; and if there is a way to prevent the flarring or venting of this product, would you please discuss what steps you are taking.

Your early reply would be appreciated.

Very truly yours,

John Bannister
Executive Secretary
mr

SHELL OIL COMPANY

Post Office Box 1200
Farmington, New Mexico

January 21, 1966

Oil and Gas Conservation Commission
State of Arizona
Room 202, 1624 West Adams
Phoenix, Arizona

Gentlemen:

We refer to your letter of January 13, 1966, advising of our responsibility under Rule 301 of the Rules and Regulations wherein a gas-oil ratio test for each producing well is called for on a semi-annual basis.

Our wells in Arizona are gas wells and therefore we wonder if Rule 301 applies. The wells do produce a very limited amount of condensate.

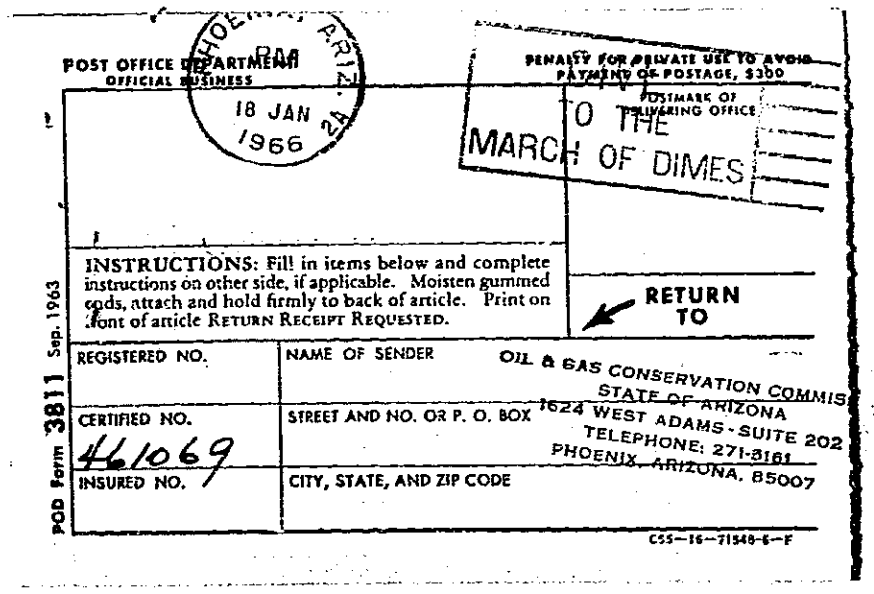
Very truly yours,

R B Lingel

R. B. Lingel
Division Office Supervisor

RBL:GC

RECEIVED
JAN 24 1966
STATE O & G
CONS. COMM.


POST OFFICE DEPARTMENT
OFFICIAL BUSINESS
PHOENIX, ARIZ.
18 JAN 2 PM
1966
PENALTY FOR PRIVATE USE TO AVOID PAYMENT OF POSTAGE, $300
POSTMARK OF DELIVERING OFFICE
O THE
MARCH OF DIMES
INSTRUCTIONS: Fill in items below and complete instructions on other side, if applicable. Moisten gummed ends, attach and hold firmly to back of article. Print on front of article RETURN RECEIPT REQUESTED.
RETURN TO
POD Form 3811 Sep. 1963
REGISTERED NO.
NAME OF SENDER
OIL & GAS CONSERVATION COMMIS
STATE OF ARIZONA
CERTIFIED NO.
46069
STREET AND NO. OR P. O. BOX
1624 WEST ADAMS - SUITE 202
TELEPHONE: 271-5161
INSURED NO.
CITY, STATE, AND ZIP CODE
PHOENIX, ARIZONA, 85007
C5S—16—71548-6—F

[redacted]

INSTRUCTIONS TO DELIVERING EMPLOYEE

☐ Deliver *ONLY* to addressee ☐ Show address where delivered

(Additional charges required for these services)

RECEIPT

Received the numbered article described on other side.

SIGNATURE OR NAME OF ADDRESSEE *(must always be filled in)*

Travelers Ins Co.

SIGNATURE OF ADDRESSEE'S AGENT, IF ANY

Dana L. Bandi

DATE DELIVERED	SHOW WHERE DELIVERED (only if requested)
1-18-66	

C55—16—71548-5—H GPO

[redacted]

INSTRUCTIONS TO DELIVERING EMPLOYEE

☐ Deliver *ONLY* to addressee

☐ Show address where delivered

(Additional charges required for these services)

RECEIPT

Received the numbered article described on other side.

SIGNATURE OR NAME OF ADDRESSEE *(must always be filled in)*

Shell Oil Company

SIGNATURE OF ADDRESSEE'S AGENT, IF ANY

Nina M. McFarland

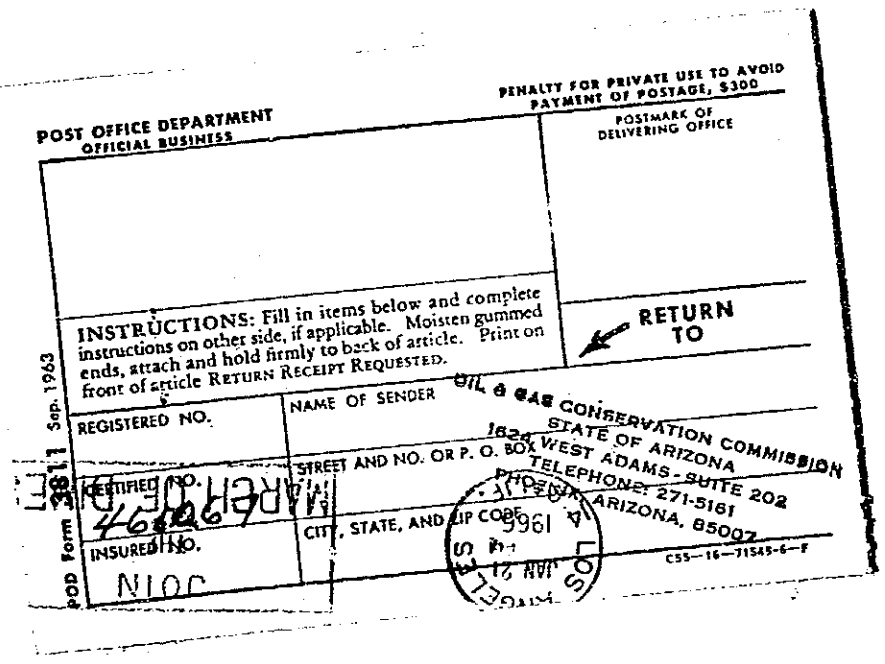
DATE DELIVERED

1-19-66

SHOW WHERE DELIVERED *(only if requested)*

CSS—16—71558-5—F GPO

[redacted]



POST OFFICE DEPARTMENT
OFFICIAL BUSINESS

PENALTY FOR PRIVATE USE TO AVOID PAYMENT OF POSTAGE, $300

POSTMARK OF DELIVERING OFFICE

INSTRUCTIONS: Fill in items below and complete instructions on other side, if applicable. Moisten gummed ends, attach and hold firmly to back of article. Print on front of article RETURN RECEIPT REQUESTED.

RETURN TO

OIL & GAS CONSERVATION COMMISSION
STATE OF ARIZONA
1624 WEST ADAMS - SUITE 202
TELEPHONE: 271-5161
PHOENIX, ARIZONA, 85007

REGISTERED NO.

NAME OF SENDER

CERTIFIED NO. 46[illegible]

STREET AND NO. OR P. O. BOX

INSURED NO. NIOC

CITY, STATE, AND ZIP CODE

CSS—16—71545-6—F

POD Form 3811 Sep. 1963

MAR 1961
JAN 21 PM
PHOENIX, ARIZ.

POST OFFICE DEPARTMENT
OFFICIAL BUSINESS

PENALTY FOR PRIVATE USE TO AVOID PAYMENT OF POSTAGE, $300

POSTMARK OF DELIVERING OFFICE

PHOENIX ARIZ. 18 JAN 1966 2PM

TO THE MARCH OF DIMES

INSTRUCTIONS: Fill in items below and complete instructions on other side, if applicable. Moisten gummed ends, attach and hold firmly to back of article. Print on front of article RETURN RECEIPT REQUESTED.

RETURN TO

REGISTERED NO.	NAME OF SENDER	OIL & GAS CONSERVATION COMMIS STATE OF ARIZONA
CERTIFIED NO. 46 1069	STREET AND NO. OR P. O. BOX	1624 WEST ADAMS - SUITE 202 TELEPHONE: 271-5161
INSURED NO.	CITY, STATE, AND ZIP CODE	PHOENIX, ARIZONA, 85007

POD Form 3811 Sep. 1963

C55—16—71548-6—F

POST OFFICE DEPARTMENT
OFFICIAL BUSINESS

PENALTY FOR PRIVATE USE TO AVOID PAYMENT OF POSTAGE, $300

POSTMARK OF DELIVERING OFFICE

LOS ANGELES CALIF. JAN 19 PM 1966

SALES ABROAD
MAKE JOBS AT HOME

INSTRUCTIONS: Fill in items below and complete instructions on other side, if applicable. Moisten gummed ends, attach and hold firmly to back of article. Print on front of article RETURN RECEIPT REQUESTED.

RETURN TO

REGISTERED NO.	NAME OF SENDER	OIL & GAS CONSERVATION COMMISSIO STATE OF ARIZONA
CERTIFIED NO. 461068	STREET AND NO. OR P. O. BOX	1624 WEST ADAMS - SUITE 202 TELEPHONE: 271-5161
INSURED NO.	CITY, STATE, AND ZIP CODE	PHOENIX, ARIZONA, 85007

POD Form 3811 Sep. 1963

C55—16—71548-6—F

POST OFFICE DEPARTMENT
OFFICIAL BUSINESS

PENALTY FOR PRIVATE USE TO AVOID PAYMENT OF POSTAGE, $300

POSTMARK OF DELIVERING OFFICE

INSTRUCTIONS: Fill in items below and complete instructions on other side, if applicable. Moisten gummed ends, attach and hold firmly to back of article. Print on front of article RETURN RECEIPT REQUESTED.

RETURN TO

REGISTERED NO.	NAME OF SENDER	OIL & GAS CONSERVATION COMMISSION STATE OF ARIZONA
CERTIFIED NO. 461069	STREET AND NO. OR P. O. BOX	1624 WEST ADAMS - SUITE 202 TELEPHONE: 271-5161
INSURED NO. NIOC	CITY, STATE, AND ZIP CODE	PHOENIX, ARIZONA, 85007

MARCH OF DIMES

LOS ANGELES CALIF. JAN 21 PM 1966

POD Form 3811 Sep. 1963

C55—16—71548-6—F

32 x 6

[redacted]

INSTRUCTIONS TO DELIVERING EMPLOYEE

☐ Deliver *ONLY* to addressee ☐ Show address where delivered

(Additional charges required for these services)

RECEIPT

Received the numbered article described on other side.

SIGNATURE OR NAME OF ADDRESSEE *(must always be filled in)*

Travelers Fire Co.

SIGNATURE OF ADDRESSEE'S AGENT, IF ANY

Dana L. Barrie

DATE DELIVERED	SHOW WHERE DELIVERED *(only if requested)*
1-18-66	

CSS—16—71548-5—F GPO

INSTRUCTIONS TO DELIVERING EMPLOYEE

☐ Deliver *ONLY* to addressee ☐ Show address where delivered

(Additional charges required for these services)

RECEIPT

Received the numbered article described on other side.

SIGNATURE OR NAME OF ADDRESSEE *(must always be filled in)*

Shell Oil

SIGNATURE OF ADDRESSEE'S AGENT, IF ANY

DESMOND MAIL SERVICE, INC.

DATE DELIVERED	SHOW WHERE DELIVERED *(only if requested)*
JAN 19 1966 BY G. GRANADINO	

CSS—16—71548-5—F GPO

INSTRUCTIONS TO DELIVERING EMPLOYEE

☐ Deliver *ONLY* to addressee ☐ Show address where delivered

(Additional charges required for these services)

RECEIPT

Received the numbered article described on other side.

SIGNATURE OR NAME OF ADDRESSEE *(must always be filled in)*

Shell Oil Company

SIGNATURE OF ADDRESSEE'S AGENT, IF ANY

Nina M. McFarland

DATE DELIVERED	SHOW WHERE DELIVERED *(only if requested)*
1-19-66	

CSS—16—71548-5—F GPO

[redacted]

January 17, 1966

Shell Oil Company
1008 West Sixth Street
Los Angeles, California 90054

Attention: Right of Way Section

Certified Mail 461067

Re: Travelers Indemnity Company Bonds S-218 and S-92

Gentlemen:

Enclosed please find an approved copy of Travelers Indemnity Company Bond S-218 in the amount of $25,000, wherein Shell Oil Company is Principal.

Please be advised that Bond S-218 now replaces Travelers Bond S-92 and that said Bond S-92 may now be cancelled and Shell Oil Company now has no further obligation to this Commission under said Bond S-92.

In reviewing Bond S-218 the conditions and obligations expressed therein are "for the production of oil and gas and the installation of equipment necessary and incidental thereto for the operation and maintenance of such wells;". While this wording is satisfactory to the Commission, it must be understood by all parties that this bond does specifically cover the obligations of Shell Oil Company to comply with all rules and regulations of this Commission concerning not only production, but the drilling, completion, plugging and abandoning of any well by Shell Oil Company within the State of Arizona as well.

Should you have any questions would you please advise.

Very truly yours,

John Bannister
Executive Secretary
mr
enc

Certified Mail 461069

cc: The Travelers Indemnity Co., 2200 W. Central, Phoenix, Ariz.
Mr. D.E. Clark, Manager, Land Department, Shell Oil Co.,
1008 W. Sixth Street, Los Angeles Certified Mail 461068

O.K.

Files: 22 and 69 + 32

January 3, 1966

Shell Oil Company
P.O. Box 1200
Farmington, New Mexico

Re: Shell Oil #2 Navajo well
SE/4NW/4 3-41N-28E, Apache County, Arizona
Our File 22

Gentlemen:

In reviewing the file on the captioned well we note that your Certificate of Compliance and Authorization to Transport Oil Or Gas from Lease covers only gas in so far as the captioned well is concerned. This Certificate was issued to you January 2, 1963.

Inasmuch as this lease is now producing oil as well as gas, we suggest that you amend your Certificate to cover both oil and gas production. For your convenience we are enclosing four copies of the necessary form, our Form 8. This form should be completed and returned at your earliest convenience for approval.

We would further call your attention to our Rule 301 of the Rules and Regulations wherein a gas-oil ratio test for each producing well is called for on a semi-annual basis.

This office does not desire at this time to specify a specific manner for such tests. It will accept your company's usual gas-oil ratio test for this purpose.

For your convenience we are enclosing a supply of our Form 5. It has been some time since we have received this necessary report and we ask your earliest cooperation in brining our records up to date.

Very truly yours,

John Bannister
Executive Secretary
mr
enc

XXXXXXXXXXXXXX
XXXXX

July 15, 1964

Copies mailed to: Federal Insurance Company
C/O Tucson REalty & Trust Co.
Tucson, Arizona

The Travelers Indemnity Company
Hartford, Connecticut

Shell Oil Company
Shell Building
1008 West Sixth Street
Los Angeles 54, California

Attention: Right of Way Section

Re: Travelers Replacement
Oil & Gas Drilling Bond S-92
Your File: Bonds General
Property No. 287

Gentlemen:

In reply to Mr. Bruce C. Kerr's letter of July 7, 1964, we accept your Travelers Indemnity Company Bond No. S-92 in the amount of $10,000.00 as a replacement bond for your Federal Insurance Company Bond No. 7915611. It is understood that the replacement bond is to be concurrent with your discontinued bond and covers the following wells and locations:

Shell Oil Company - Navajo Tribal #2
SE/4 NW/4 Section 3 - T41N - R28E, Apache County
File No. 22

Shell Oil Company - Navajo Tribal #23-11
NE/4 SW/4 Section 11 - T41N - R28E, Apache County
File No. 69

Shell Oil Company - Franco Western Navajo #1
SW/4 NW/4 Section 22 - T41N - R28E
Apache County, Arizona
File No. 32

This letter constitutes our authority to cancel the existing bond No. 7915611 with the Federal Insurance Company.

If we may be of further assistance, please advise.

Yours very truly,

John Bannister
Executive Secretary
JB:mkc

Cc: The Travelers Indemnity Company
Federal Insurance Company

O.K.

32 x

April 24, 1964

Shell Oil Company
P. O. Box 1200
Farmington, New Mexico

Attention: Mr. Joe E. Dozier, Jr.
Division Production Superintendent

Re: Monthly Individual Well Reports, Form PD-189(Rev.9/63)
22 — East Boundary Butte 2, Lease 7, Sec. 3-T41N-R28E
69 — East Boundary Butte 23-11, Lease 8, Sec.11-T41N-R28E
32 — Franco Western, North Toh-Atin 1, Navajo Lease 2
Sec.22-T41N-R28E

Gentlemen:

The captioned reports for the month of March have apparently gone astray. We would appreciate your sending us copies in duplicate at your very earliest convenience.

Your usual prompt handling of this matter will be greatly appreciated.

Very truly yours,

John Bannister
Executive Secretary

JB/mkc

Cc: Shell Oil Company Red from this address
Area Mailroom
1008 West 6th Street
P. O. Box 3397 Terminal Annex
Los Angeles 90054
Air Mail

O.K.

SHELL OIL COMPANY
Post Office Box 1200
Farmington, New Mexico

October 10, 1963

Subject: Cumulative Production
East Boundary Butte and
North Toh-Atin

Oil & Gas Conservation Commission
State of Arizona
Room 202 - 1624 West Adams
Phoenix 7, Arizona

Attention Mr. John K. Petty

Gentlemen:

With reference to your letter of October 3, 1963, we submit subject data for the following wells:

	Cumulative Oil (Bbls.)	Cumulative Gas (MCF)
East Boundary Butte, Lease 7, Well No. 2	---	164,343
East Boundary Butte, Lease 8, Well No. 23-11	5,288	221,061
Franco Western, North Toh-Atin, ~~Navajo Lease 2,~~ Well No. 1	326	189,798
East Boundary Butte, Lease 5, Well No. 1 (Idle)	---	497

The above figures are totals through August, 1963, as the Monthly Individual Well Reports for September are not yet available.

Yours very truly,

Joe E. Dozier, Jr.
Division Production Superintendent

EDH:OR

XXXXXXXXX
XXXXXXXXXX

October 3, 1963

Mr.Joe E. Dozier, Jr.
Division Production Superintendent
Shell Oil Company
P. O. Box 1200
Farmington, New Mexico

three Copy
Oil Gas

Re: Monthly Individual Well Reports - Form PD-189 (Rev 8-59)
East Boundary Butte 2, Lease 7 - 22 — 164,343
East Boundary Butte 23-11, Lease 8 5288 221,061
Franco Western, North Toh-Atin, Navajo Lease 2, Well #1 326 - 189.798
East Boundary Butte 1, Lease 5 (dle) — 497

Dear Mr. Dozier:

We appreciate very much your compliance with our request for monthly individual well reports on the subject wells.

In order that our records of oil, gas and helium production for the state of Arizona may be as accurate as possible; we now request that you forward to us the total cumulative production figure for each well through September, 1963. Thus as you send us your monthly production figures for each well, we will be able to keep the cumulative figures accurate.

Your prompt cooperation is appreciated.

Very truly yours,

John K. Petty
Acting Executive Secretary

JKP:mkc

Cc: Shell Oil Company
Area Mailroom
1008 West 6th Street
Los Angeles 54, California

O.K. ✓

32 x

XXXXXXXXX
XXXXXXXXXXX

October 3, 1963

Mr.Joe E. Dozier, Jr.
Division Production Superintendent
Shell Oil Company
P. O. Box 1200
Farmington, New Mexico

Re: Monthly Individual Well Reports - Form PD-189 (Rev 8-59)
East Boundary Butte 2, Lease 7 - 22
East Boundary Butte 23-11, Lease 8
Franco Western, North Toh-Atin, Navajo Lease 2, Well #1
East Boundary Butte 1, Lease 5

Dear Mr. Dozier:

We appreciate very much your compliance with our request for monthly individual well reports on the subject wells.

In order that our records of oil, gas and helium production for the state of Arizona may be as accurate as possible; we now request that you forward to us the total cumulative production figure for each well through September, 1963. Thus as you send us your monthly production figures for each well, we will be able to keep the cumulative figures accurate.

Your prompt cooperation is appreciated.

Very truly yours,

John K. Petty
Acting Executive Secretary

JKP:mkc

Cc: Shell Oil Company
Area Mailroom
1008 West 6th Street
Los Angeles 54, California

SHELL OIL COMPANY

Post Office Box 1200
Farmington, New Mexico

September 13, 1963

Subject: Monthly Individual Well Reports -
Form PD-189 (REV 8-59)
East Boundary Butte Leases 5, 7,
8 and Franco Western North
Toh-Atin Navajo Lease 2

Oil and Gas Conservation Commission
State of Arizona
Room 202, 1624 West Adams
Phoenix 7, Arizona

Attention Mr. John K. Petty

Gentlemen:

Per our telephone conversation on September 11, 1963, we are forwarding subject data from inception of production through July, 1963. By copy of this letter we are requesting our Los Angeles Office to send you copies monthly, commencing with the August report. We note that you will also require the monthly gas disposition report for each field.

The subject Shell Oil Company report will be utilized in lieu of your Form G-7, requested in your letter dated August 7, 1963, per Chapter III, Article II of the State of Arizona's General Rules and Regulations governing the oil industry.

The attached plat will show sites for the three producing wells in the following surveyed locations:

East Boundary Butte 2 Lease 7 - 1980' east, 1980' south of the NW corner of Section 3, T. 41 N., R. 28 E.

East Boundary Butte 23-11 Lease 8 - 1980' east, 1980' north of the SW corner of Section 11, T. 41 N., R. 28 E.

Franco Western, North Toh-Atin Navajo Lease 2, Well #1 - 660' east, 1980' south of the NW corner of Section 22, T. 41 N., R. 28 E.

East Boundary Butte 1 Lease 5 - Not producing and not shown on plat - 660' north, 660' west of the SE corner of Section 36, T. 41 N., R. 29 E.

All locations are from the Gila and Salt River Meridian Base Line.

O.K.

It is hoped that the above information will satisfy Shell's obligation to your office.

Very truly yours,

Joe E. Dozier, Jr.
Division Production
Superintendent

[redacted]

Attachments

cc - Area Mailroom, Los Angeles Office

January 31, 1963

Shell Oil Company
P. O. Box 1200
Farmington, New Mexico

Attention: Mr. Joe E. Donier, Jr.

Gentlemen:

We have approved and return a copy herewith of Operator's Certificate of Compliance and Authorization to Transport Oil or Gas from Lease, Form P - 17, Commission's Numbers 1, 2 and 3 covering the movement of oil and/or gas from your East Boundary Butte No. 7 and Navajo No. 8, Apache County, Arizona.

Thanking you very much for your cooperation in this matter, we are

Yours very truly,

E. A. Ludewick
Executive Secretary

enca 3

O.K
22

File with Shell & Boundary Battle

NE Arizona
Apache Co.

Mr. John K. Petty:

Our Production Department will forward to you shortly, under separate cover the gas analysis comparison as per your request.

Yours truly,

Cash Bond

[redacted]

[redacted]

Post Office Box 1200
Farmington, New Mexico

November 21, 1962

Subject: F.P.C. Docket No. C162-1097
East Boundary Butte Field

Oil and Gas Conservation Commission
State of Arizona
3500 North Central Avenue
Phoenix 12, Arizona

Attention Mr. John K. Petty

Gentlemen:

The Federal Power Commission is expected to set a date shortly for a hearing on Shell's application for a certificate to sell East Boundary Butte Area, Arizona (including North Teh-Atin) gas production to El Paso Natural Gas Company. It is possible that the hearing will be consolidated to include similar applications by Humble Oil & Refining Company and The Superior Oil Company for the sale of their gas production in Apache County, Arizona. It is our understanding that the hearing will be held before the end of the year however, they must give thirty days' advance notice.

The contract price for pipeline quality gas is 17.7¢/MCF on a 15.025 psia pressure base, which is the same as for the Boundary Butte Field and Greater Aneth Area in San Juan County, Utah. This price was set by the F.P.C. as a condition for the sale of gas from these Utah fields. The original contract price was 20¢/MCF.

Shell Oil Company made application for a certificate to sell East Boundary Butte Area (including North Teh-Atin) gas production on March 7, 1962, in which we involved temporary authority in order to expedite sale before a permanent certificate was received. Finally, after six months of waiting, we received, on September 5, 1962, a temporary authority with the price conditioned to 15¢/MCF from the 17.7¢/MCF contract price. In accepting the temporary certificate, the F.P.C. was informed that we would not accept a permanent certificate at 15¢/MCF without having an opportunity to justify the 17.7¢/MCF price.

It would be helpful to our case if we could enlist the help of the State of Arizona in supporting the 17.7¢/MCF contract price, and stop a reduction to 15¢/MCF. It would be to their advantage for the following reasons.

East Boundary Butte being in the same geological and geographical province as gas in the Greater Aneth Area of Utah, Arizona should be entitled to the same price for gas being produced in both areas. Anything less would be discriminatory against the State of Arizona.

To have a depressed price of an already depressed gas price would discourage rather than encourage exploratory activity. To have a lower price so short a distance away from the Greater Aneth Area would eventually lead to placement of a low setting over the entire state. This would also tend to reduce the tax base and income of Arizona's citizens. Therefore, East Boundary Butte being in the same geological province as Aneth, an increased price would increase exploratory incentive, which in turn would increase development essential to the progress of the state. However, any reduction in the price freely contracted between buyer and seller in the East Boundary Butte Area would be detrimental to further oil and gas activity in the state of Arizona.

We hope you will either file a statement or have someone present it in person, supporting Shell's contracted 17.7¢/MCF price, supported by the reasons above stated. If you wish to participate, we request that we be given an advance copy of your statements.

If we may be of any further help, please do not hesitate to contact us.

Very truly yours,

R. W. Matthews
Division Land Manager

RWM:GL

SHELL OIL COMPANY

Post Office Box 1200
Farmington, New Mexico

Nov. 9, 1962

Oil and Gas Conservation Commission
State of Arizona
3500 N. Central, Suite 221
Phoenix 12, Arizona

Attention Mr. John K. Petty

Gentlemen:

Attached are executed copies, in triplicate, of Operator's Certificate of Compliance and Authorization to Transport Oil or Gas from Lease, Form No. P-17, to cover movement of oil and gas from our Navajo No. 8 Lease and gas from our East Boundary Butte No. 7 Lease. We trust you will find these Certificates in order and will grant the requested authorization.

We have requested Franco Western Oil Company to submit to you three executed copies of Form No. P-17 to cover movement of gas from the Navajo No. 2 Lease.

Very truly yours,

Joe E. Dosier, Jr.
Division Production
Superintendent

FJK:BG

Attachments

22

November 7, 1962

Mr. Coleman
Shell Oil Company
P. O. Box 1200
Farmington, New Mexico

Dear Mr. Coleman:

This is to confirm emergency authorization for El Paso Natural Gas Company, P. O. Box 990, Farmington, New Mexico to purchase and move gas in their pipeline from the following wells located in Apache County, Arizona in the Four Corners area:

1 - Shell Oil Co. #2 East Boundary Butte Navajo Lease #7
Sec. 3, T41N, R28E

2 - Shell Oil Co. #23-11 Navajo Tribal - Navajo Lease #8
Sec. 11, T41N, R28E

3 - Franco Western #1 Navajo Lease #2
Sec. 22, T41N, R28E

This authorization is the result of a telephone conversation between you and this office this afternoon.

Yours truly,

John K. Petty
Petroleum Geologist

cc El Paso Natural Gas Company
P. O. Box 990
Farmington, New Mexico

O.K.

22

SHELL OIL COMPANY

705 West Municipal Drive
Farmington, New Mexico

August 14, 1958

Arizona State Land Office
Division Oil & Gas Conservation
Capitol Annex - Room 422
Phoenix, Arizona

Attention Mr. F. C. Ryan

Gentlemen:

This is to advise you that the offices of Shell Oil Company, Farmington District - Land, have been moved from 101 South Behrend Avenue, Farmington, New Mexico to 705 West Municipal Drive, Farmington, New Mexico. We would appreciate any future correspondence being directed to our new office.

Yours very truly,

R. L. Freeman
District Land Agent

22

SHELL OIL COMPANY

705 West Municipal Drive
Farmington, New Mexico

August 14, 1958

Arizona State Land Office
Division Oil & Gas Conservation
Capitol Annex - Room 422
Phoenix, Arizona

Attention Mr. F. C. Ryan

Gentlemen:

This is to advise you that the offices of Shell Oil Company, Farmington District - Land, have been moved from 101 South Behrend Avenue, Farmington, New Mexico to 705 West Municipal Drive, Farmington, New Mexico. We would appreciate any future correspondence being directed to our new office.

Yours very truly,

R. L. Freeman
District Land Agent

22

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AUG 15 1958
STATE LAND
DEPT.

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4067

SHELL OIL COMPANY

1901 Main Avenue
Durango, Colorado

April 4, 1956

RECEIVED
APR 5 1956
STATE LAND DEPT.

Subject: Use of Gas from East
Boundary Butte No. 2 Well
Apache County, Arizona

State Land Commissioner
State of Arizona
State Office Building
Phoenix, Arizona

Attention Mr. Roger Ernst

Gentlemen:

As discussed in a recent telephone conversation between Messrs. Ernst and Nantker, we plan to utilize gas produced from our East Boundary Butte No. 2 well, which is presently shut in, to supply fuel for drilling our East Boundary Butte No. 3 well, (located in the SW-1/4 of Section 25, T. 43 S., R. 23 E., S.L.M., San Juan County, Utah). We believe that the East Boundary Butte No. 2 well will yield a sufficient amount of fuel to supply the drilling rig.

At the suggestion of Mr. John A. Anderson, U. S. Geological Survey, we propose that royalty payments for the gas be calculated on the following basis:

Monthly Consumption

Monthly consumption will be computed by multiplying the number of hours that gas from East Boundary Butte No. 2 is being used by the horsepower rating of the drilling rig (675 HP) times the estimated cubic feet of gas consumed per horsepower hour (10 cu. ft. per HP hr.).

Price of Gas

Ten cents per MCF, the current price for gas in the area, will be used.

We shall, of course, keep the U. S. G. S. informed concerning operations and gas production by submitting each month completed copies of Forms 9-361A, "Lessee's Monthly Report of Oil and Gas Runs and Royalty", and 9-329A, "Lessee's Monthly Report of Operations". Kindly advise us of any forms which you require.

32

Would you kindly indicate your approval of these plans by signing the copy of the attached letter and returning it to us in the enclosed stamped, self-addressed envelope.

Very truly yours,

F. W. Nantker

F. W. Nantker
District Land Agent

Approved this 9 day
of April, 1956

State Land Commissioner
State of Arizona

Roger Ernst

22

December 15, 1955

COPY

Mr. O. H. Wilson
Shell Oil Company
Box 126
Holbrook, Arizona

Dear Mr. Wilson:

In response to your request for sample descriptions from the wells drilled in Apache and Navajo Counties we are inclosing all the available information we have on file.

According to the rules and regulations governing the conservation of oil and gas on wells drilled for oil and gas, all well logs, electrical logs if taken, and drilling records are usually filed within six months after completion or abandonment. Therefore, the current wells which are being drilled at the present time are still considered to be active by this Department, and until such time as they are completed we can not release any information.

Of course, we do have a complete file on the wells drilled by your own Company and are in receipt of a ditch sample description on the Shell well #2, which is quite lengthy. We were of the opinion that you would not be requesting any sample descriptions of your own wells, but rather the reports of other wells drilled in Navajo and Apache Counties. We are sorry, but the records of the Humble Oil & Refining Company and that of the Apache Oil and Helium Corporation, both of which are currently operating in Apache County are still considered to be active. Also there are two wells in Navajo County in this category.

For your information we are attaching a list of the wells drilled in the State of Arizona since our last publication in May, 1953. We sincerely hope the inclosed information will be of some benefit to you and if we can be of any further assistance, please let us know.

Very truly yours,

Louis C. Duncan,
Office Manager

LCD:mb
Encl.

22

SHELL OIL COMPANY

THIS LETTER IS FROM OUR
FIELD OFFICE

AT Box 126
Holbrook, Arizona
December 7, 1955

Mrs. Bates
State Land Department
Phoenix, Arizona

Dear Mrs. Bates:

Would you please send us two copies of the sample descriptions from wells in Apache and Navajo Counties.

We wish to thank you in advance for this information.

Very truly yours,

O. M. Wilson

O. M. Wilson

13828

RECEIVED
DEC 8 1955
STATE LAND
DEPT.

22

SHELL OIL COMPANY

1901 Main Avenue
Durango, Colorado

April 22, 1955

Subject: Use of Gas from East Boundary
Butte No. 2 Well
East Boundary Butte No. 7 Lease
Property No. 1453
Contract No. 14-20-603-226
For White Mesa No. 1 Well
White Mesa No. 3 Lease
Property No. 1475
Contract No. 14-20-603-218

Commissioner
Arizona Oil and Gas Conservation Commission
Capitol Annex Office Building
Phoenix, Arizona

Gentlemen:

We enclose for your files and information a copy of a letter from our Division Exploitation Engineer to the U. S. Geological Survey in Roswell, New Mexico regarding the use of gas from our East Boundary Butte No. 2 well located in T. 41 N., R. 28 E., Apache County, Arizona, for use in drilling our White Mesa well in T. 43 S., R. 24 E., San Juan County, Utah. As both of these wells are on leases issued by the Navajo Tribe, we understand operations are governed by the Supervisor, U. S. Geological Survey and accordingly, we have made the arrangements with him as outlined in the attached letter.

If you have any further questions regarding this matter, please do not hesitate to correspond with us.

Very truly yours,

SHELL OIL COMPANY

F. W. Nantker

F. W. Nantker
District Land Agent

Enclosure

5117

RECEIVED
APR 26 1955
STATE LAND
DEPT.

22

SHELL OIL COMPANY

DESERET NEWS BUILDING
33 RICHARDS STREET
SALT LAKE CITY 1, UTAH

TELEPHONE 22 0471

April 13, 1955

LAND APR 14 1955 SENT.
RECEIVED - RETURNED
BY MS TO JEM DATE 4-14
BY [illegible] TO [illegible] DATE 4-14
BY ___ TO ___ DATE ___
BY ___ TO ___ DATE ___

United States Geological Survey
P. O. Box 6721
Roswell, New Mexico

ATTENTION Mr. John A. Anderson
Regional Oil & Gas Supervisor

Re: Use of Gas from East Boundary Butte 2
Apache County, Arizona

Gentlemen:

This letter confirms today's telephone conversation between Messrs. Canfield and Brown. We understand that you approve our plan to produce gas from our East Boundary Butte 2 well (location: NW¼, Sec. 3, T.41 N., R.28 E., G.&S.R.B.&M.) for our own consumption as fuel for drilling our White Mesa 1 wildcat, located C SE SE Sec. 6, T.43 S., R.24 E., S.L.B.&M.

Gas consumption will be computed by multiplying the number of hours that gas is being used from East Boundary Butte 2 by the total horse power rating of the drilling rig engines, times 10 cubic feet per horse power hour.

Forms 9-361A and 9-331A will be submitted monthly in accordance with U.S.G.S. oil and gas operating regulations.

Thank you for the careful attention which you have given our questions regarding operations on the Navajo Indian leases.

Very truly yours,

A. L. Brown

A. L. Brown
Division Exploitation Engineer

ALB:vlb
bcc: Area Production
Area Gas
Division Land (2)
Division Treasury

22

5117

RECEIVED
APR 26 1955
STATE LAND
DEPT.

January 31, 1955

Mr. A. L. Brown,
Division Exploitation Engineer,
Shell Oil Company
Salt Lake City, Utah

Dear Mr. Brown:

This will acknowledge receipt of our forms O&G 63, "Report on Test of Water Shut-Off", numbers 1A, 2, and 3, concerning your recent operation of the Shell Oil - Navajo Tribal, #2, located in Section 3, Township 41N., Range 28E., Apache County, Arizona. Due to an oversight, a copy of these reports were not sent to your office for your files.

Transmitted herewith please find copies, which have been approved by the State Land Commissioner, as of December 17, 1954.

We also wish to acknowledge various reports and logs received by this Department, as well as our form O&G 52, "Well Completion Report", and for which we wish to thank you.

Very truly yours,

STATE LAND DEPARTMENT

By: _____
Secretary to Mr. P. W. Johnson

99

mb
ENCL (3)

OFFICE OF
State Land Department
STATE OF ARIZONA
Phoenix, Arizona

December 14, 1954

ROGER ERNST
~~W. W. LANE~~
STATE LAND COMMISSIONER

LCH
LAH
CAA
MBB
OJC
MFH
PHJ
CTP
VLS
NDW
PHX
HOLB
FILE

Mr. Phillip W. Johnson
P. O. Box 2270
Tucson, Arizona

Dear Phil:

Enclosed please find three copies of our form O&G 63, Report on Test of Water Shut-Off Nos 1A, 2, and 3, for Shell Oil Company, No. 2 well., Section 3, T. 41N., R. 28E., Apache County. Would you please check these reports and return them to me for Mr. Ernst's signature.

Also, Mr. Ernst thought it would be of benefit to us, if you could follow up on the inclosed Interstate Oil Compact Commission's request for news items.

Best regards.

Sincerely,

Muriel

~~Muriel~~ R. Bates

2136

RECEIVED
DEC 23 1954
STATE LAND DEPT.

mb
Encl. (3)

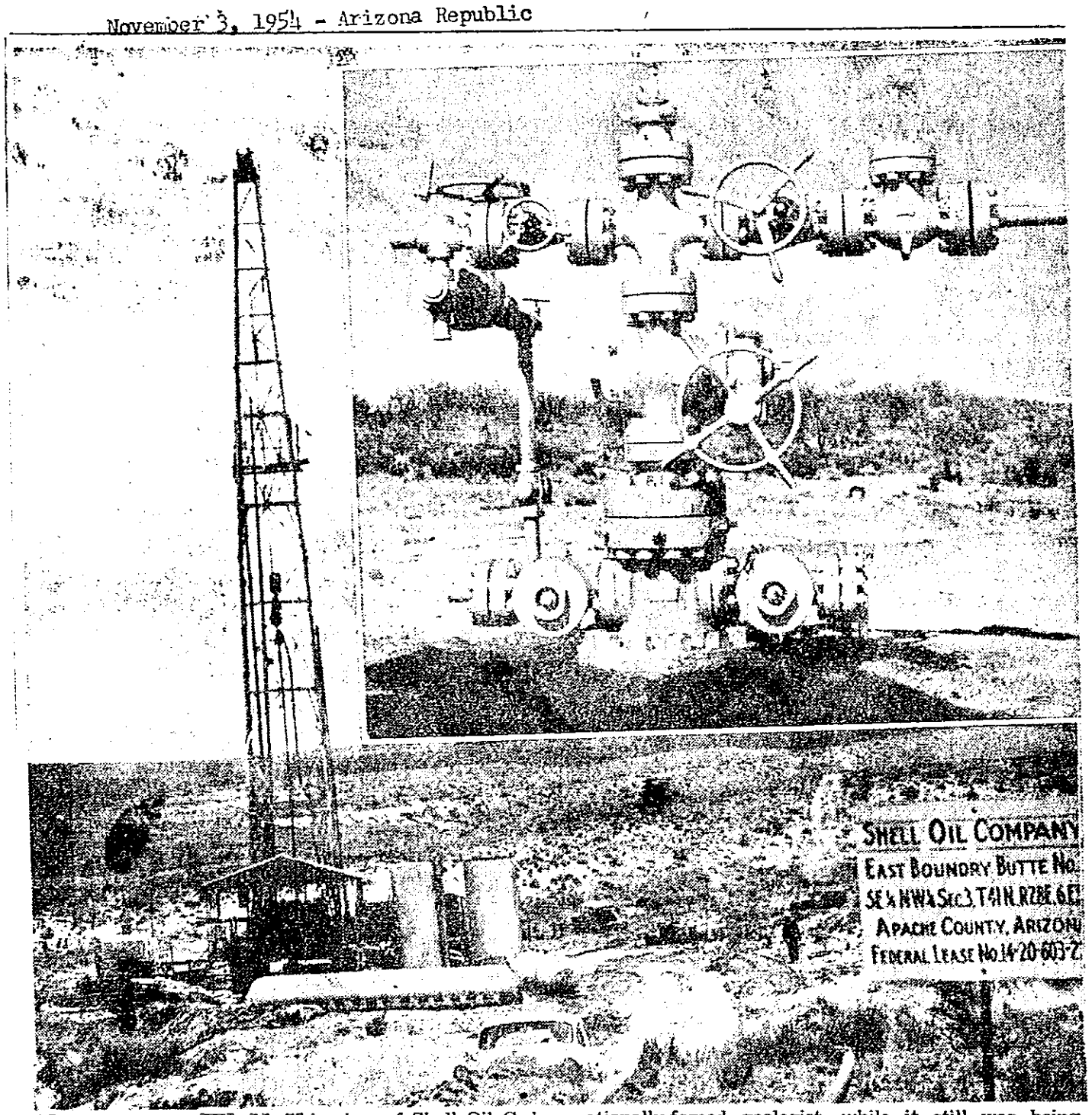
RECEIVED
DEC 16 19[illegible]
WATER RESOURCES DIVISION
U. S. GEOLOGICAL SURVEY
GROUND WATER BRANCH

22

32 x

[redacted]

November 3, 1954 - Arizona Republic



Discovery Well This view of Shell Oil Co.'s gas Discovery Well in northern Apache County was taken by Ralph Arnold, internationally-famed geologist, while it still was being tested. Inset is the "Christmas tree"—pipe fittings and valves which shut in the well until production is desired.

SHELL OIL COMPANY

DESERET NEWS BUILDING
33 RICHARDS STREET
SALT LAKE CITY 1, UTAH

TELEPHONE 22-0471

October 8, 1954

Office of State Land Department
State of Arizona
Phoenix, Arizona

ATTENTION: Phillip W. Johnson, Geologist

Gentlemen:

We thank you for the copy of Article II, Chapter III, "General Rules and Regulations Governing the Conservation of Oil and Gas in Arizona", and for the copies of O. & G. forms 55 and 56 which you transmitted with your letter of September 27, 1954.

As you know, operations on our East Boundary Butte 1 well (Shell Oil-Navajo-Tribal 1) were suspended on March 24, 1954, inasmuch as the well did not appear to be capable of commercial production. We produced this well approximately 30 days during the period July 1954 to September 1954, and used the produced gas as a fuel supply for our East Boundary Butte 2 well. The limited gas production obtained was not encouraging; accordingly, the well is presently shut in and is incapable of additional production in its present condition.

We plan to perform additional testing to further determine the productivity of this well. Prior to any abandonment proceedings, we will execute form O. & G. 55 in duplicate for transmittal to your office.

We thank you for your cooperation in this matter.

Very truly yours,

A. L. Brown

A. L. Brown
Division Exploitation Engineer

ARIZONA
STATE LAND DEPARTMENT

Noted by	To	Date
T.W.	R.E.	10/12
R.E.	P.J.	

Ans. by Date

28

Wednesday, October 6, 1954

New Arizona Oil Well To Get More Tests

SALT LAKE CITY (AP)—An oil company scout said yesterday that further tests will be necessary to determine whether an oil and gas well drilled in northern Arizona is the state's first commercial producer.

C. G. McKnight, scout for Shell Oil Co., said the well is located in the east boundary butte area of Apache County. He said it was drilled to a depth of 6,339 feet with 5½ inch casing run to a depth of [illegible] feet.

McKnight said [illegible] off and gas [illegible] over the top of the [illegible] for a short time while the drilling tool was open.

"I do not yet consider this a discovery well," he said, "but it has the possibility of becoming one. The well [illegible] days will undergo additional testing before we can determine whether it will be a producer."

September 9, 1954

Mr. J. J. Pickell
Exploitation Engineer
Shell Oil Company
Deseret News Building
33 Richards Street
Salt Lake City 1, Utah

Dear Mr. Pickell:

I have just returned from a three-week trip back east and found your letter of September 3 regarding samples at your East Boundary Butte No. 2 well. I shall take immediate steps to see that these samples are picked up. I had previously made arrangements for the collection of these samples and was under the impression that they had been taken care of.

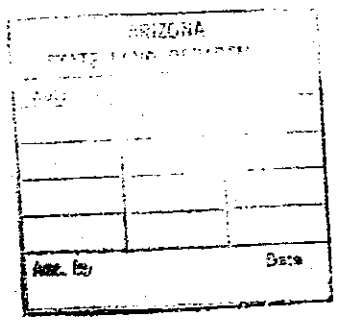
Thank you for advising me concerning these samples.

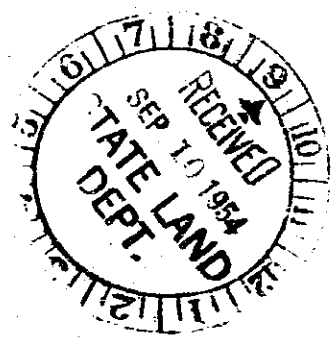
Very truly yours,

Phillip W. Johnson
Geologist

PWJ/vs

8482





22

SHELL OIL COMPANY

DESERET NEWS BUILDING
33 RICHARDS STREET
SALT LAKE CITY 1, UTAH

TELEPHONE 22-0471

September 3, 1954

State Land Department
State Capitol Building Annex
Phoenix, Arizona

ATTENTION Phillip W. Johnson, Geologist

Gentlemen:

This is intended to serve as a reminder that we are accumlating for the State of Arizona, a rather large number of ditch samples at our East Boundary Butte 2 well in Apache County, Arizona, and our Desert Creek 2 well in San Juan County, Utah. These wells are currently drilling below 5400' and 5000', respectively.

Should you wish to collect these samples in the near future, it would be advisable to bring a pick-up truck or some vehicle of similar capacity. Our engineers at the respective wells will be glad to assist you in any way.

Yours very truly,

J. J. Pickell

J. J. Pickell
Exploitation Engineer

CFT:vlb

cc: R. D. Allen
D. K. Murray
L. M. Snyder

8306

8482

RECEIVED SEP 10 1954 STATE LAND DEPT.

ARIZONA
STATE LAND DEPARTMENT

Noted by	To	Date

Ans. by (Date)

RECEIVED SEP 7 1954 STATE LAND DEPT.

22

SHELL OIL COMPANY
DESERET NEWS BUILDING
33 RICHARDS STREET
SALT LAKE CITY 1, UTAH

TELEPHONE 22-0471

June 22, 1954

State Land Department
State Capitol Building Annex
Phoenix, Arizona

ATTENTION: Phillip W. Johnson, Geologist

Gentlemen:

With reference to your letter of June 3, the procedure used at East Boundary Butte #1 for collecting and distributing ditch samples for the State of Arizona was entirely satisfactory to us. The same procedure will be followed at West Boundary Butte #2.

We have arranged for you to receive a complete set of samples and the final prints of all logs from our Desert Creek #1, currently drilling in San Juan County, Utah,

You will also be supplied with the samples which you are missing from the interval 5750-6190' at East Boundary Butte #1.

Please do not hesitate to call on us if we can be of any further assistance.

Yours very truly,

A. L. Brown

A. L. Brown
Division Exploitation Engineer

CFT:vlb

5821

RECEIVED
JUN 24 1954
STATE LAND DEPT.

~~BHB~~ 22

IN REPLY REFER TO:

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY
GROUND WATER BRANCH
P. O. Box 2270
Tucson Arizona

June 21, 1954

Muriel Bates
State Land Department
407 State Office Bldg.
Phoenix, Arizona

Dear Muriel:

Am sorry for the delay in answering the inquiry you made through Mr. Halpenny concerning the various items mentioned. We are, and will be, in the midst of moving and things are quite a mess.

We will receive a complete set of samples from the East Boundary Butte, Shell well No. 1, free of charge, from the Four Corners sample cut and I will send them shipping instructions direct.

I have no further word on the progress of the East Boundary Butte No. 2 well except as indicated in the letter from Mr. Knight.

You don't have to worry about the names and addresses for the Scout Report. I have taken care of that. I guess this answers all your questions. If not, let me know.

Regards,

Phil

Phillip W. Johnson
Geologist

PWJ/mh

RECEIVED JUN 22 1954 STATE LAND DEPT.

ARIZONA
STATE LAND DEPARTMENT
Noted by | To | Date
Ans. by | Date

SHELL OIL COMPANY
1901 Main Avenue
Durango, Colorado

June 8, 1954

Mr. Phillip W. Johnson
State Land Department
Phoenix, Arizona

Dear Phil:

I am wondering if it would be possible for you to arrange to have the samples from 40-1300 feet on East Boundary Butte #1 sent collect to my attention at this office.

The samples you are missing from 5750-6490 feet have undoubtedly been lost while cleaning up the location. However, Mrs. Smith at the Four Corners Sample Cut, Box 876, Farmington, New Mexico, has informed me that she is holding a set of samples from 1300-6490 feet for you pending instructions on where and how to send them.

Desert Creek #1 is not a tight hole, therefore I'm sure that we can obtain a set of samples and logs for your office. However, these will be delayed until the well is completed.

The well-sitting schedule for East Boundary Butte #2 has not been worked out so I'm not sure that I will be on it. The arrangement we had last time was quite satisfactory.

San Ieronimo told me you were out at the well and that he had known you at school.

I will look forward to seeing you on your next trip.

Very truly yours,

P. L. Knight

hLK:aar

ARIZONA
STATE LAND DEPARTMENT

Noted by	To	Date
[illegible]	[illegible]	6/9/54

Ans. by Date

5165

RECEIVED
JUN 9 1954
STATE LAND DEPT.

B28 22

June 3, 1954

Mr. A. L. Brown,
Division Exploitation Engineer,
Shell Oil Company
33 Richards Street
Salt Lake City, Utah

Dear Mr. Brown:

I was very glad to learn that the Shell Oil Company is planning to drill another well on the East Boundary Butte structure and sincerely hope it will be a producer.

You will note from my letter to Mr. Knight, a carbon copy of which is enclosed, that I would like to make the same arrangements for picking up samples as we had on the Number 1 well, if this meets with your approval.

I find inadvertently that my office neglected to return your copy of the report on the second water shut-off test on the East Boundary Butte Number 1 well. I am sorry for this delay and I am enclosing it herewith for your records.

On my recent trip north, I visited the Shell Desert Creek well and I am wondering if there is any possibility of securing a set of samples and copies of the logs when they are available. The close proximity of this well to the Arizona line makes this information very valuable to us and I would appreciate anything you could do to help us secure this data.

You will also note that we failed to get the samples from the bottom hole interval of 5750' to 6490' on the East Boundary Butte Number 1 well, but I trust that Mr. Knight will see that we receive them. Again I wish to thank you for the wonderful cooperation you have given us, as well as the splendid way I have been received by your men on my various visits to the Shell wells. If there is anything that I can do to help, please feel free to call on me.

Very truly yours,

Phillip W. Johnson,
Geologist

PWJ:mb
Enclosures

BTB 22

June 3, 1954

Mr. R. L. Knight
Shell Oil Company
1901 Main Avenue
Durango, Colorado

Dear Mr. Knight:

Pursuant to your letter of April 20th, the samples which you desire from the Shell East Boundary Butte Number 1 well, between 40-1300', are ready to be picked up at the U.S.G.S. - G.M. office, located at the Fairgrounds in Holbrook, Arizona. In checking over our samples, I find that we are missing the bottom hole interval from 5750' to 6190'. I would appreciate your checking the whereabouts of these samples. The reason we didn't get them is that the rig shut down and moved off location between our visits to pick them up. It would be very helpful if you could arrange to send these samples with whoever comes to get those at Holbrook.

I am sorry I missed seeing you on my recent visit. The fellows at the Desert Creek well told me you had just left so we must have passed each other on the road.

In connection with this well, I am wondering if there would be any chance of our getting a sample cut and a set of logs. The close proximity to Arizona makes this information very useful and I certainly would appreciate anything you can do in our behalf.

The Shell Navajo Tribal Number 2 will no doubt get underway soon and I would like to make the same arrangements for getting samples as we had on the number 1 well. Will you be sitting on this well? If not, will you tell the geologist who will be on the well, just how we handled the last one? I have already passed the word on to the boys at Holbrook so there won't be any delay in picking up the samples and therefore, no great accumulation at the well. I sincerely hope this meets with your approval. If there is anything I can do please let me know.

Very truly yours,

Phillip W. Johnson,
Geologist

PWJ:mb
cc - A. L. Brown
J. H. Harshbarger

BB 22

May 26, 1954

Shell Oil Company
33 Richards Street
Salt Lake City, Utah

Attention Mr. A. L. Brown
Division Exploitation Engineer

Gentlemen:

We are enclosing herewith Drilling Permit No. 22 granting approval to drill a new oil and gas well.

Your receipt in the amount of $25.00 which was paid as a drilling fee under the Oil and Gas Conservation Act of 1951 will be mailed in the due course of business.

Thank you for your fine cooperation with this Department.

Yours very truly,

STATE LAND DEPARTMENT

By _____
Vernon T. Bugge'
Acting Deputy
State Land Commissioner

bka
Enclosure

BFB 22

JUN-1-54 1 1 7 8 4 o o29037 Ck C&A — 25.00

STATE LAND DEPARTMENT

PHOENIX, ARIZONA

STATEMENT

You are hereby advised that RENTAL will be due and payable at this office on your Lease as shown by this statement. IF SAID RENTAL IS NOT RECEIVED ON OR BEFORE THE DUE DATE, PENALTY AND INTEREST WILL BE ADDED.

SHELL OIL COMPANY
33 RICHARDS ST
SALT LAKE CITY UTAH

LEASE NO. .22
6
B

	MO.	DAY	YR.
DATE	6	01	.54
DATE RENT DUE			

SHEET ____ OF ____ SHEETS

GR.	DESCRIPTION	SEC.	TWP.	RANGE	C. C.	RATE	ACREAGE		AMOUNT
	NW	3	41 N	28 E					
	DRILLING PER FEE								25.00
									25.00T
	O+G Conserva.								
									22
								TOTAL DUE	25.00G

Operator MERRION OIL & GAS CORPORATION

Bond Company UNITED STATES FIDELITY AND GUARANTY **Amount** $25,000

Bond No. 01-0130-00972-74-1 **Date Approved** 11-7-74

Permits covered by this bond:

22

28

58 (P&A 3/83)

69 (P&A 3/81)

444 (P&A 12/85)

490

514

515 (SWD)

518 (P&A 3/81)

RECEIVED
SEP 13 1982
O & G CONS. COMM.

RIDER

To be attached to and form part of Bond No. 01-0130-00972-74-1

in favor of State of Arizona

It is agreed that:

1. The Underwriter gives its consent to the change of the Name or Principal Address of the Insured from Robert L. Bayless and J. Gregory Merrion

to

Merrion Oil & Gas Corporation
P. O. Box 1017
Farmington, NM 87401

PROVIDED, however, that the liability of the Underwriter under the attached bond and under the attached bond as changed by this rider shall not be cumulative.

2. This rider is effective as of noon on August 30, 1982, standard time as specified in the attached bond.

UNITED STATES FIDELITY AND GUARANTY COMPANY

William F. Spliedt
Secretary

Williford Gragg
President

Countersigned [signature]
Authorized Representative

Accepted: Merrion Oil & Gas Corp. Attorney-in-Fact
Insert new name of Insured

By [signature]
Title

Robert L. Bayless & J. Gregory Merrion
Insert old name of Insured, if name changed

By [signature]
Title

CHANGE OF NAME OR ADDRESS RIDER
FOR USE WITH ALL FORMS OF STANDARD BONDS, CONSENT TO THE CHANGE IN NAME OR ADDRESS OF THE INSURED.
REVISED TO MAY, 1957.

Merc. Off. 1162 5-57

PERFORMANCE BOND

KNOW ALL MEN BY THESE PRESENTS

Bond Serial No. 010130-972-74-1

That we: Robert L. Bayless and J. Gregory Merrion

of the County of San Juan in the State of New Mexico

as principal, and United States Fidelity and Guaranty Company

of Baltimore, Maryland

AUTHORIZED TO DO BUSINESS WITHIN the State of Arizona.

as surety, are held and firmly bound unto the State of Arizona and the Oil and Gas Conservation Commission, hereinafter referred to as the "Commission", in the penal sum of Twenty-five Thousand and no/100 Dollars lawful money of the United States, for which payment, well and truly to be made, we bind ourselves, and each of us, and each of our heirs, executors, administrators or successors, and assigns jointly and severally, firmly by these presents.

The conditions of this obligation are that, whereas the above bounden principal proposes to drill a well or wells for oil, gas or stratigraphic purposes in and upon the following described land situated within the State, to-wit:

any and all oil or gas wells drilled within the state of Arizona

(May be used as blanket bond or for single well)

NOW, THEREFORE, if the above bounden principal shall comply with all the provisions of the Laws of this State and the rules, regulations and orders of the Commission, especially with reference to the requirements of A.R.S. §27-516, providing for the proper drilling, casing and plugging of said well or wells, and filing with the Oil and Gas Conservation Commission all notices and records required by said Commission, then in the event said well or wells do not produce oil or gas in commercial quantities, or cease to produce oil or gas in commercial quantites, this obligation is void, otherwise it shall remain in full force and effect.

CANCELLED 6-6-97

Whenever the principal shall be, and declared by the Oil and Gas Conservation Commission in violation of the Laws of this State and the rules, regulations and orders of the Commission, the surety shall promptly:

1. Remedy the violation by its own efforts, or
2. Obtain a bid or bids for submission to the Commission to remedy the violation, and upon determination by the Commission and the Surety of the lowest responsible bidder, arrange for a contract between such bidder and the Commission, and make available as work progresses sufficient funds to pay the cost of remedying the violation; but not exceeding, including other costs and damages for which the surety may be liable hereunder, the amount set forth in the first paragraph hereof.

Liability under this bond may not be terminated without written permission of this Commission.

WITNESS our hands and seals, this 4th day of October, 19 74

Gregor Merrion

Robert L Bayless

Principal

WITNESS our hands and seals this 4th day of October, 19 74

United States Fidelity and Guaranty Company

By: Gordon A. Woods

Surety Attorney in Fact

Countersigned: W W Roberts

Surety, Resident Arizona Agent
If issued in a state other than Arizona)

(If the principal is a corporation, the bond should be executed by its duly authorized officers, with the seal of the corporation affixed. When principal or surety executes this bond by agent, power of attorney or other evidence of authority must accompany the bond.)

Approved Date 11-5-74

STATE OF ARIZONA
OIL & GAS CONSERVATION COMMISSSION

By:

STATE OF ARIZONA
OIL & GAS CONSERVATION COMMISSSION

Bond

File Two Copies

Form No. 2

RECEIVED
NOV 4 1974
O & G CONS. COMM.

Permit No.

(CERTIFIED COPY)

GENERAL POWER OF ATTORNEY

No. 74300

Know all Men by these Presents:

That UNITED STATES FIDELITY AND GUARANTY COMPANY, a corporation organized and existing under the laws of the State of Maryland, and having its principal office at the City of Baltimore, in the State of Maryland, does hereby constitute and appoint

Gordon G. Woods and/or H. C. Dickinson

of the City of Farmington, State of New Mexico,
its true and lawful attorneys in and for the State of New Mexico

for the following purposes, to wit:

To sign its name as surety to, and to execute, seal and acknowledge any and all bonds, and to respectively do and perform any and all acts and things set forth in the resolution of the Board of Directors of the said UNITED STATES FIDELITY AND GUARANTY COMPANY, a certified copy of which is hereto annexed and made a part of this Power of Attorney; and the said UNITED STATES FIDELITY AND GUARANTY COMPANY, through us, its Board of Directors, hereby ratifies and confirms all and whatsoever the said either the said Gordon G. Woods or the said H. C. Dickinson

may lawfully do in the premises by virtue of these presents.

In Witness Whereof, the said UNITED STATES FIDELITY AND GUARANTY COMPANY has caused this instrument to be sealed with its corporate seal, duly attested by the signatures of its Vice-President and Assistant Secretary, this 4th day of October, A. D. 19 61

UNITED STATES FIDELITY AND GUARANTY COMPANY.

(Signed) By E. G. Hundley
Vice-President.

(SEAL)

(Signed) E. W. Buffington
Assistant Secretary.

STATE OF MARYLAND, BALTIMORE CITY, } ss:

On this 4th day of October, A. D. 19 61, before me personally came E. G. Hundley, Vice-President of the UNITED STATES FIDELITY AND GUARANTY COMPANY and E. W. Buffington, Assistant Secretary of said Company, with both of whom I am personally acquainted, who being by me severally duly sworn, said that they resided in the City of Baltimore, Maryland; that they, the said E. G. Hundley and E. W. Buffington were respectively the Vice-President and the Assistant Secretary of the said UNITED STATES FIDELITY AND GUARANTY COMPANY, the corporation described in and which executed the foregoing Power of Attorney; that they each knew the seal of said corporation; that the seal affixed to said Power of Attorney was such corporate seal, that it was so fixed by order of the Board of Directors of said corporation, and that they signed their names thereto by like order as Vice-President and Assistant Secretary, respectively, of the Company.

My commission expires the first Monday in May, A. D. 1963.

(SEAL) (Signed) Anne M. O'Brien
Notary Public.

STATE OF MARYLAND BALTIMORE CITY, } Sct.

I, James F. Carney, Clerk of the Superior Court of Baltimore City, which Court is a Court of Record, and has a seal, do hereby certify that Anne M. O'Brien, Esquire, before whom the annexed affidavits were made, and who has thereto subscribed his name, was at the time of so doing a Notary Public of the State of Maryland, in and for the City of Baltimore, duly commissioned and sworn and authorized by law to administer oaths and take acknowledgments, or proof of deeds to be recorded therein. I further certify that I am acquainted with the handwriting of the said Notary, and verily believe the signature to be his genuine signature.

In Testimony Whereof, I hereto set my hand and affix the seal of the Superior Court of Baltimore City, the same being a Court of Record, this 4th day of October, A. D. 1961

(SEAL) (Signed) James F. Carney
Clerk of the Superior Court of Baltimore City.

FS 3 (9-67)

COPY OF RESOLUTION

That Whereas, it is necessary for the effectual transaction of business that this Company appoint agents and attorneys with power and authority to act for it and in its name in States other than Maryland, and in the Territories of the United States and in the Provinces of the Dominion of Canada and in the Colony of Newfoundland.

Therefore, be it Resolved, that this Company do, and it hereby does, authorize and empower its President or either of its Vice-Presidents in conjunction with its Secretary or one of its Assistant Secretaries, under its corporate seal, to appoint any person or persons as attorney or attorneys-in-fact, or agent or agents of said Company, in its name and as its act, to execute and deliver any and all contracts guaranteeing the fidelity of persons holding positions of public or private trust, guaranteeing the performances of contracts other than insurance policies and executing or guaranteeing bonds and undertakings, required or permitted in all actions or proceedings, or by law allowed, and

Also, in its name and as its attorney or attorneys-in-fact, or agent or agents to execute and guarantee the conditions of any and all bonds, recognizances, obligations, stipulations, undertakings or anything in the nature of either of the same, which are or may by law, municipal or otherwise, or by any Statute of the United States or of any State or Territory of the United States or of the Provinces of the Dominion of Canada or of the Colony of Newfoundland, or by the rules, regulations, orders, customs, practice or discretion of any board, body, organization, office or officer, local, municipal or otherwise, be allowed, required or permitted to be executed, made, taken, given, tendered, accepted, filed or recorded for the security or protection of, by or for any person or persons, corporation, body, office, interest, municipality or other association or organization whatsoever, in any and all capacities whatsoever, conditioned for the doing or not doing of anything or any conditions which may be provided for in any such bond, recognizance, obligation, stipulation, or undertaking, or anything in the nature of either of the same.

I, H. Ronald Kirkland , an Assistant Secretary of the UNITED STATES FIDELITY AND GUARANTY COMPANY, do hereby certify that the foregoing is a full, true and correct copy of the original power of attorney given by said Company to

Gordon G. Woods and/or H. C. Dickinson

of Farmington, New Mexico , authorizing and empowering them to sign bonds as therein set forth, which power of attorney has never been revoked and is still in full force and effect.

And I do further certify that said Power of Attorney was given in pursuance of a resolution adopted at a regular meeting of the Board of Directors of said Company, duly called and held at the office of the Company in the City of Baltimore, on the 11th day of July, 1910, at which meeting a quorum of the Board of Directors was present, and that the foregoing is a true and correct copy of said resolution, and the whole thereof as recorded in the minutes of said meeting.

In Testimony Whereof, I have hereunto set my hand and the seal of the UNITED STATES FIDELITY AND GUARANTY COMPANY on

(Date)

H. Ronald Kirkland

Assistant Secretary.

UNITED STATES FIDELITY AND GUARANTY COMPANY
ALBUQUERQUE BRANCH OFFICE
PETER DIGANGI, JR., CPCU, MANAGER
SAN PEDRO PARK - SUITE 102
2201 SAN PEDRO DR., N.E.
ALBUQUERQUE, NEW MEXICO 87110
TELEPHONE: 505/265-7854

February 17, 1976

JAMES A. LYONS
SUPT. OF CLAIMS

State of Arizona
Oil & Gas Conservation Commission
8686 North Central, Suite 106
Phoenix, AZ 85020

Attn: Mr. W. E. Allen, Director

Re: Robert L. Bayless & J. Gregory Merrion
$25,000 Blanket Performance Bond #01-0130-972-74

Dear Mr. Allen:

This is to state that we agree to assume bonding responsibilities for all wells that the above principals operate in the State of Arizona.

This letter is to clarify the original bond which indicated "any and all oil or gas wells drilled within the State of Arizona".

Regards,

Peter Jordan

Peter Jordan, Supt.
Fidelity-Surety Dept.

PJ/pr

cc: Woods Insurance Service
Farmington, NM
Attn: Herb Dickinson

RECEIVED
FEB 19 1976
O & G CONS. COMM.

PERFORMANCE BOND Annual Premium $500

KNOW ALL MEN BY THESE PRESENTS

Bond Serial No. 91372

That we: CENTRAL RESOURCES, INC.

of the County of _____ in the State of Colorado

as principal, and FRONTIER INSURANCE COMPANY

of Rock Hill, New York

AUTHORIZED TO DO BUSINESS WITHIN THE STATE OF ARIZONA.

as surety, are held and firmly bound unto the State of Arizona and the Oil and Gas Conservation Commission, hereinafter referred to as the "Commission", in the penal sum of Twenty Five Thousand and no/100 ($25,000.00) lawful money of the United States, for which payment, well and truly to be made, we bind ourselves, and each of us, and each of our heirs, executors, administrators or successors, and assigns jointly and severally, firmly by these presents.

The conditions of this obligation are that, whereas the above bounden principal proposes to drill a well or wells for oil, gas or stratigraphic purposes in and upon the following described land situated within the State, to-wit:

Blanket Bond

(May be used as blanket bond or for single well)

NOW, THEREFORE, if the above bounden principal shall comply with all the provisions of the Laws of this State and the rules, regulations and orders of the Commission, especially with reference to the requirements of A.R.S. § 27-518, providing for the proper drilling, casing and plugging of said well or wells, and filing with the Oil and Gas Conservation Commission all notices and records required by said Commission, then in the event said well or wells do not produce oil or gas in commercial quantities, or cease to produce oil or gas in commercial quantities, this obligation is void; otherwise it shall remain in full force and effect.

Whenever the principal shall be, and declared by the Oil and Gas Conservation Commission in violation of the Laws of this State and the rules, regulations and orders of the Commission, the surety shall promptly:

1. Remedy the violation by its own efforts, or
2. Obtain a bid or bids for submission to the Commission to remedy the violation, and upon determination by the Commission and the Surety of the lowest responsible bidder, arrange for a contract between such bidder and the Commission, and make available as work progresses sufficient funds to pay the cost of remedying the violation; but not exceeding, including other costs and damages for which the surety may be liable hereunder, the amount set forth in the first paragraph hereof.

Liability under this bond may not be terminated without written permission of this Commission.

CANCELLED
DATE 12/1/97

WITNESS our hands and seals, this 9th day of May, 19 97.

CENTRAL RESOURCES, INC.

Katherine J. Earle

Principal

WITNESS our hands and seals, this 9th day of May, 19 97.

FRONTIER INSURANCE COMPANY

Tina E. Switzer, Attorney-In-Fact

(Surety, Resident Arizona Agent
If issued in a state other than Arizona)

(If the principal is a corporation, the bond should be executed by its duly authorized officer, with the seal of the corporation affixed. When principal or surety executes this bond by agent, power of attorney or other evidence of authority must accompany the bond.)

Approved
Date 6-9-97
STATE OF ARIZONA
OIL & GAS CONSERVATION COMMISSION
By: S L Rauzi

STATE OF ARIZONA
OIL & GAS CONSERVATION COMMISSION
Bond
File Two Copies
Form No. 2

Permit No. _____

Frontier INSURANCE COMPANY

ROCK HILL, NEW YORK 12775-8000

(A Stock Company)

POWER OF ATTORNEY

Know All Men By These Presents: That FRONTIER INSURANCE COMPANY, a New York Corporation, having its principal office in Rock Hill, New York, pursuant to the following resolution, adopted by the Board of Directors of the Corporation on the 4th day of November, 1985:

"RESOLVED, that the Chairman of the Board, the President, or any Vice President be, and hereby is, authorized to appoint Attorneys-in-Fact to represent and act for and on behalf of the Company to execute bonds, undertakings, recognizances and other contracts of indemnity and writings obligatory in the nature thereof, and to attach thereto the corporate seal of the Company, in the transaction of its surety business;

"RESOLVED, that the signatures and attestations of such officers and the seal of the Company may be affixed to any such Power of Attorney or to any certificate relating thereto by facsimile, and any such Power of Attorney or certificate bearing such facsimile signatures or facsimile seal shall be valid and binding upon the Company when so affixed with respect to any bond, undertaking, recognizance or other contract of indemnity or writing obligatory in the nature thereof;

"RESOLVED, that any such Attorney-in-Fact delivering a secretarial certification that the foregoing resolutions still be in effect may insert in such certification the date thereof, said date to be not later than the date of delivery thereof by such Attorney-in-Fact."

This Power of Attorney is signed and sealed in facsimile under and by the authority of the above Resolution.

DOES HEREBY MAKE, CONSTITUTE AND APPOINT: ALTUS E. WILDER, III TINA E. SWITZER

of OKLAHOMA CITY, in the State of OKLAHOMA

its true and lawful Attorney(s)-in-Fact with full power and authority hereby conferred in its name, place and stead to sign, execute, acknowledge and deliver in its behalf, and as its act and deed, without power of redelegation, as follows:

Bonds guaranteeing the fidelity of persons holding places of public or private trust; guaranteeing the performance of contracts other than insurance policies; and executing or guaranteeing bonds and undertakings required or permitted in all actions or proceedings or by law allowed; IN AN AMOUNT NOT TO EXCEED THREE MILLION FIVE HUNDRED THOUSAND ($3,500,000.00) DOLLARS; and to bind FRONTIER INSURANCE COMPANY thereby as fully and to the same extent as if such bond or undertaking was signed by the duly authorized officers of FRONTIER INSURANCE COMPANY, and all the acts of said Attorney(s)-in-Fact pursuant to the authority herein given are hereby ratified and confirmed.

In Witness Whereof, FRONTIER INSURANCE COMPANY, of Rock Hill, New York, has caused this Power of Attorney to be signed by its President and its Corporate seal to be affixed this 16th day of February, 19 96.

FRONTIER INSURANCE COMPANY

CANCELLED 5/1/97

BY: Walter A. Rhulen

WALTER A. RHULEN, President

State of New York
County of Sullivan ss:

On this 16th day of February, 19 96, before the subscriber, a Notary Public of the State of New York in and for the County of Sullivan, duly commissioned and qualified, came WALTER A. RHULEN of FRONTIER INSURANCE COMPANY to me personally known to be the individual and officer described herein, and who executed the preceding instrument, and acknowledged the execution of the same, and being by me duly sworn, deposed and said, that he is the officer of the Company aforesaid, and that the seal affixed to the preceding instrument is the Corporate Seal of the Company, and the Corporate Seal and signature as an officer were duly affixed and subscribed to the said instrument by the authority and direction of the Corporation, and that the resolution of the Company, referred to in the preceding instrument, is now in force.

In Testimony Whereof, I have hereunto set my hand, and affixed my official seal at Rock Hill, New York, the day and year above written.

Christine I. Lane

CHRISTINE I. LANE
Notary Public State of New York
Sullivan County Clerk's No. 1996
Commission Expires May 2, 1998

CERTIFICATION

I, JOSEPH P. LOUGHLIN, Secretary of FRONTIER INSURANCE COMPANY of Rock Hill, New York, do hereby certify that the foregoing Resolution adopted by the Board of Directors of this Corporation and the Powers of Attorney issued pursuant thereto, are true and correct, and that both the Resolution and the Powers of Attorney are in full force and effect.

In Witness Whereof, I have hereunto set my hand and affixed the facsimile seal of the corporation this 9th day of May, 19 97.

Joseph P. Loughlin

JOSEPH P. LOUGHLIN, Secretary

FM 19-5002-A (4/96)

W-12853-9/96-10M

CENTRAL
RESOURCES, INC.

November 10, 1997

Mr. Steven L. Rauzi
State of Arizona
Arizona Geological Survey
416 W. Congress, Suite 100
Tucson, Arizona 85701

Dear Mr. Rauzi:

Per our conversation of November 7th, please find copies of Central Resources, Inc. $150,000 Nationwide BIA Bond and $150,000 BIA Navajo Tribe Bond. These bonds provide coverage for the wells that Central Resources operates in Arizona on Indian leases.

Based upon the enclosed bonds, please release Central's bond #91372 to the State of Arizona for $25,000.

Thank you for your assistance.

Regards,

Trina M. Duran

Trina M. Duran
Executive Assistant

Enclosures

2600 Mellon Center, 1775 Sherman Street, Denver, CO 80203-4313 (303) 830-0100 Fax: (303) 830-9297

Form A-166
Rev. 1964

5-5438

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF INDIAN AFFAIRS

BOND NO. B05377

NATIONWIDE OIL AND GAS LEASE BOND

COPY

KNOW ALL MEN BY THESE PRESENTS, That we, Central Resources, Inc.
, of 1776 Sherman St.,Ste 2600, Denver, CO 80203
as principal, and Planet Indemnity Company
of 216 16th St., Ste., 1300 Denver, CO 80202, as surety, are held and firmly bound unto the United States of America in the sum of one hundred fifty thousand dollars ($150,000), lawful money of the United States, for the payment of which, well and truly to be made, we bind ourselves and each of us, our and each of our heirs, successors, executors, administrators, and assigns, jointly and severally, firmly by these presents.

Sealed with our seals and dated this 26th day of July, 19 95.

The condition of this obligation is such that whereas the said principal has heretofore or may hereafter enter into or otherwise acquire an interest in oil and gas mining leases and oil and gas prospecting permits of various dates and periods of duration covering lands or interests in lands held by the United States in trust for individual Indians, or tribes or bands of Indians, or subject to restrictions against alienation without the consent of the Secretary of the Interior or his authorized representative, which leases and permits have been or may hereafter be granted or approved by the Secretary of the Interior or his authorized representative, and the identification of which herein is expressly waived by both principal and surety hereto.

WHEREAS the principal and surety agree that the coverage of this bond shall extend to and include all extensions and renewals of leases and permits covered by this bond, such coverage to continue without any interruption due to the expiration of the term set forth therein.

WHEREAS the surety hereby waives any right to notice of any modification of any such lease or permit, or obligation thereunder whether effected by extension of time for performance, by commitment of such lease to unit, cooperative, or communitization agreement, by waiver, suspension, or change in rental, except an increase thereof, by minimum royalty payment, except an increase thereof, by compensatory royalty payment, or otherwise, this bond to remain in full force and effect notwithstanding.

WHEREAS the principal and surety agree that the neglect or forbearance of the obligee of any such lease or permit in enforcing the payment of any rental or royalty or the performance of any other covenant, condition, or agreement of any such lease or permit shall not in any way release the principal and surety, or either of them, from any liability under this bond; and

WHEREAS the principal and surety agree that in the event of any default under any such lease or permit, the obligee may prosecute any claim, suit, action, or other proceeding against the principal and surety, or either of them, without the necessity of joining the other.

Now, if the said principal herein shall faithfully carry out and observe all the obligations assumed in said leases and permits to which Central Resources, Inc.
is now or may hereafter become a party, and shall observe all the laws of the United States and regula-

32 x

tions made, or which shall be made, thereunder, for the government of trade and intercourse with Indian tribes, and all rules and regulations that have been or shall hereafter be lawfully prescribed by the Secretary of the Interior relative to said oil and gas mining leases and permits, and shall in all particulars comply with the provisions of said leases, permits, rules and regulations, then this obligation shall become null and void; otherwise, to remain in full force and effect.

The rate of premium charged on this bond is $.....; the total premium paid is $.....

Signed and sealed in the presence of—

WITNESSES*

BY: Ilena Dias

P. O. .....

BY: Judith A. Fay

P. O. .....

as to Catherine A. Rabbe [SEAL]

Central Resources, Inc.

BY .....

8 Greenway Plaza, Suite 400
P. O. Houston, Texas 77046

BY: Sue Dias

8 Greenway Plaza, Suite 400
P. O. Houston, Texas 77046

as to ..... [SEAL]

Planet Indemnity Company

Roy C. Die, Attorney-in-Fact

.....

P. O. .....

.....

P. O. .....

as to ..... [SEAL]

.....

P. O. .....

.....

P. O. .....

as to ..... [SEAL]

*Two witnesses to each signature.

DEPARTMENT OF THE INTERIOR
BUREAU OF INDIAN AFFAIRS
Washington 25, D. C.

....., 19.....

Approved:

.....
Commissioner of Indian Affairs.

GPO 932065

UNDERWRITERS
INDEMNITY

HOUSTON • DENVER
8 GREENWAY PLAZA, SUITE 400
HOUSTON, TEXAS 77046
(713) 961-1300
TELECOPIER: (713) 961-0285

BOND RIDER NO. 1

Attaching to and forming part of Bond To Cover Obligations of Assignees, Bond No. B6700, effective June 7, 1997, on behalf of Central Resources, Inc., as Principal, of 1775 Sherman Street, Suite 2600, Denver, Colorado 80203, in favor of United States Department of the Interior, Bureau of Indian Affairs as Obligee, in the amount of One Hundred Fifty Thousand and No/100 Dollars ($150,000.00).

It is understood and agreed that effective August 1, 1997 the location all been amended to read all tribal lease by Navajo Tribe in the State of New Mexico, Utah and Arizona.

all other conditions and terms to remain as originally written.

Signed, sealed and dated this 6th day of August, 1997.

Central Resources, Inc.
Principal

By: Catherine L. Cable

Underwriters Indemnity Company
Surety

By: Greg E. Chilson
Greg E. Chilson, Attorney-in-Fact
8 Greenway Plaza, Suite 400
Houston, Texas 77046

CERTIFICATE OF AUTHORITY NO. 17783

GENERAL POWER OF ATTORNEY

CERTIFIED COPY

KNOW ALL MEN BY THESE PRESENTS: That **UNDERWRITERS INDEMNITY COMPANY**, a corporation organized and existing under the laws of the State of Texas, and having its principal office in the City of Houston, Texas, does hereby constitute and appoint:

Greg E. Chilson

its true and lawful attorney-in-fact to execute, seal and deliver for and on its behalf as surety, any and all bonds and undertakings, recognizances, contracts of indemnity and other writings obligatory in the nature thereof, which are or may be allowed, required or permitted by law, statute, rule, regulation, contract or otherwise, in an amount not to exceed:

**********One Hundred Fifty Thousand and No/100 Dollars**********

and the execution of all such instrument(s) in pursuance of these presents, shall be binding upon said **UNDERWRITERS INDEMNITY COMPANY** as fully and amply, to all intents and purposes, as if the same had been duly executed and acknowledged by its regularly elected officers at its principal office. This Power of Attorney is executed, and may be certified to and may be revoked, pursuant to and by authority of a resolution enacted by the Board of Directors of UNDERWRITERS INDEMNITY COMPANY. The following is a true transcript of said resolution:

That at all times since the formation of this corporation, the President or any Vice President, Assistant Vice President, Secretary or Assistant Secretary shall have power and authority.

(1) to appoint attorneys-in-fact, and to authorize them to execute on behalf of the Company; and attach the Seal of the Company thereto, bonds and undertakings, recognizances, contracts of indemnity and other writings obligatory in the nature thereof, and

(2) to appoint special attorneys-in-fact, who are hereby authorized to certify to copies of any power-of-attorney issued in pursuance of this section and/or any of the Bylaws of the Company, and

(3) to remove, at any time, any such attorney-in-fact or special attorney-in-fact and revoke the authority given to him.

Further, this Power of Attorney is signed and sealed by facsimile pursuant to resolution of the Board of Directors of said Company adopted by consent of which the following is a true excerpt:

"Now therefore the signatures of such officers and the seal of the Company may be affixed to any such power of attorney or any certificate relating thereto by facsimile, and any such power of attorney or certificate bearing such facsimile signatures or facsimile seal shall be valid and binding upon the Company and any such power so executed and certified by facsimile signatures and facsimile seal shall be valid and binding upon the Company in the future with respect to any bond or undertaking to which it is attached."

IN TESTIMONY WHEREOF, **UNDERWRITERS INDEMNITY COMPANY** has caused this instrument to be signed and its corporate seal to be affixed by its authorized officer, E.H. Frank, III, on this the 30th day of April 1996.

E.H. Frank III _____ President

STATE OF TEXAS
COUNTY OF HARRIS

On this 30th day of April 1996, before me came the individual who executed the preceding instrument, to me personally known, and, being duly sworn, said that he is the therein described and authorized officer of **UNDERWRITERS INDEMNITY COMPANY**; that the seal affixed to said instrument is the Corporate Seal of said Company; that the said Corporate Seal and his signature were duly affixed by order of the Board of Directors of said Company.

IN TESTIMONY WHEREOF, I have hereunto set my hand and affixed my Official Seal, at the City of Houston, Texas, the day and year first above written.

Robin N. Neville _____ NOTARY PUBLIC, Harris County, Texas

CERTIFICATION

I, the undersigned officer of **UNDERWRITERS INDEMNITY COMPANY**, do hereby certify that I have compared the foregoing copy of the Power of Attorney and affidavit, and the copy of the Section of the By-Laws of said Company as set forth in said Power of Attorney, and that the same are correct transcripts thereof, and of the whole of the said originals, and that the said Power of Attorney has not been revoked and is now in full force and effect.

IN TESTIMONY WHEREOF, I have hereunto set my hand this 6th day of August, 19 97

Greg E Chilson _____ Assistant Secretary
Greg E. Chilson

Only a certified copy of Power of Attorney bearing the Certificate of Authority No. printed in red on the upper right corner is binding. Photocopies, carbon copies or other reproductions of this document are invalid and not binding upon the Company.

ANY INSTRUMENT ISSUED IN EXCESS OF THE PENALTY AMOUNT STATED ABOVE IS TOTALLY VOID AND WITHOUT VALIDITY.

UN1020 (4/96)

Form 5-151 m
October 1966

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF INDIAN AFFAIRS

BOND NO. B6700

BOND TO COVER OBLIGATIONS OF ASSIGNEES

KNOW ALL MEN BY THESE PRESENTS, That we, Central Resources, Inc.
of 1775 Sherman St., #2600, Denver, CO 80203, as principal, and Underwriters Indemnity Company
of 8 Greenway Plaza, #400 Houston, TX 77046, as surety, are held and firmly bound unto the United States of America in the sum of One Hundred Fifty Thousand and no/100 dollars, lawful money of the United States of America, for the payment of which well and truly to be made, we bind ourselves, and each of us, our and each of our heirs, executors, administrators, successors, and assigns, jointly and severally, firmly by these presents.

Sealed with our seals and dated this 7th day of June, 19 97

The condition of this obligation is such that whereas Central Resources, Inc., as lessee, entered into a certain indenture of lease, dated with lessor, as obligee, for the lease of a tract of land described as follows:

and located in the all tribal lease by Navajo Tribe in the State of New Mexico See Rider #1
for oil and gas mining purposes for the period of years from the date of approval thereof and as much longer thereafter as the lease shall be continued in force in the manner provided for therein.

WHEREAS, thereafter the lessee, the said Central Resources, Inc.

assigned right, title, and interest in and to the above-described lease to the said principal herein, and subject to all the conditions and provisions in said lease contained.

WHEREAS the surety hereby waives any right to notice of any modification of such lease, or obligation thereunder, whether effected by extension of time for performance, by commitment of such lease to unit, cooperative, or communitization agreement, by waiver, suspension, or change in rental, except an increase thereof, by minimum royalty payment, except an increase thereof, by compensatory royalty payment, or otherwise, this bond to remain in full force and effect notwithstanding.

WHEREAS the principal and surety agree that the neglect or forbearance of the lessor-obligee in enforcing against the assignee principal the payment of any rental or royalty or the performance of any other covenant, condition or agreement of the lease, shall not in any way release the principal and surety or either of them, from any liability under this bond; and

WHEREAS the principal and surety agree that in the event of any default under such lease, the lessor-obligee may prosecute any claim, suit, action, or other proceeding against either the principal or surety without the necessity of joining the other.

Now, if the said principal herein shall faithfully carry out and observe all the obligations assumed in said indenture and assignment of lease, and shall observe all laws of the United States, and regulations made, or which shall be made, thereunder, for the government of trade and intercourse with Indian tribes, and all the rules and regulations that have been, or may hereafter be, lawfully prescribed by the Secretary of the Interior relative to mining leases on the said Reservation, then this obligation shall be null and void; otherwise to remain in full force and effect.

32 x 6

PROVIDED, That in event supervision over all the leased tract... which this bond applies is ... quished by the Secretary of the Interior and the assignee shall have made all payments then due under the lease and shall have fully performed all obligations on his part to be performed up to the time of relinquishment of supervision, this bond shall be of no further force and effect.

The rate of premium charged on this bond is $.....; the total premium paid is $.....

Signed and sealed in the presence of—

WITNESSES:*

BY: Lena M Dees
1775 Sherman St., Suite 2600
P. O. Denver, CO 80203

BY: Judith A. Fesp
1775 Sherman St., Suite 2600
P. O. Denver, CO 80203

Central Resources, Inc.
as to Catherine L. Cable [SEAL]

BY: Greg E Chilson
8 Greenway Plaza, #400
P. O. Houston, TX 77046

BY: Nancy Cox
8 Greenway Plaza, #400
P. O. Houston, TX 77046

Underwriters Indemnity Company
BY: .....
Roy C. Die, Attorney-in-Fact
as to ..... [SEAL]

.....
P. O. .....

as to ..... [SEAL]

.....
P. O. .....

.....
P. O. .....

as to ..... [SEAL]

.....
P. O. .....

*Two witnesses to each signature.

~~APPROVED~~

~~Anadarko Agency, BIA, Anadarko, Oklahoma~~
~~Approved under authority delegated by 209 DM 8; 10 BIAM 3; and Anadarko Area Office Addendum to 10 BIAM 3.~~

~~Date~~ ~~Superintendent~~

APPROVED, PURSUANT TO SECRETARY'S REDELEGATION ORDER 209 DM, 8, SECRETARY'S ORDER NOS. 3150 AND 3177, AND 10 BIAM BULLETIN 13, AS AMENDED.

Jenni Venetoza
ACTING AREA DIRECTOR

Date: 7/31/97