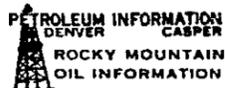


Eastern Petroleum 1-10 STATE
NE/4-NE/4 Sec. 10 -Twp. 19N -R26E
Apache, County

M-10

ARIZONA
APACHE CO.
PINTA DOME (D)



Twp 19n-26e
Section 10
c ne ne
660 s/n 660 w/e

OPR: Eastern Pet.

WELL #: 1 State-10 OWWO

ELEV: 5737 Gr
*TOPS: Log-Sample
Shinarump 817
Moenkopi 831
Coconino 972

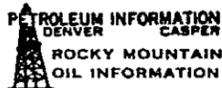
DSTS. & CORES:
No cores or tests

SPUD: 8-31-60 COMPL: 9-16-60
TD: 1035 PB: 979
CSG: 8-5/8" @ 98 w/50
4 1/2" @ 1024 w/100
PERF: 972-979 w/2 per ft.

PROD. ZONE: Coconino 972-979

INIT. PROD: IPF 33 MCFGPD,
3/16" ck, 1 hr test,
CP 42#.

ARIZONA
APACHE COUNTY
PINTA DOME (D)



Twp 19n-26e
Section 10
ne ne

OPR: Eastern Pet.	WELL #:	1 State-10
ELEV: 5737 Gr.	DSTS. & CORES:	SPUD: 6-1-59 COMPL: 6-8-59
*TOPS: Log-Samples		TD: 1035 PB: 998
Chinle surface	Crd 974-1000, rec 26	CSG: 8-5/8" @ 98 w/50
Chinle Conglomerate 699	sd, fine to med, bubb-	4 1/2" @ 1024 w/100
Shinarump 817	ing gas.	PERF:
Moenkopi 831		
		PROD. ZONE:
		INIT. PROD:

D & A.

WELL COMPLETION OR RECOMPLETION REPORT AND WELL LOG

DESIGNATE TYPE OF COMPLETION:

New Well Work-Over Deepen Plug Back Same Reservoir Different Reservoir Oil Gas Dry

DESCRIPTION OF WELL AND LEASE

Operator Eastern Petroleum Company		Address 2520 First Nat'l. Bank Bldg. Denver, Colo.		
Lease Name State of Arizona #2089		Well Number #1-10	Field & Reservoir Pinta	
Location 660 feet W of E Line, 660 feet S of N Line Sec.—TWP—Range or Block & Survey Section 10, T19N, R26E				
County Apache	Permit number 80	Date Issued May 19, 1959	Previous permit number	Date Issued
Date spudded June 1, 1959	Date total depth reached June, 1959	Date completed, ready to produce	Elevation (DF, RKB, RT or Gr.) 5743* K.B. feet	Elevation of casing hd. flange 1* above G.I. feet
Total depth 1035*	P.B.T.D. 998*	Single, dual or triple completion? Single	If this is a dual or triple completion, furnish separate report for each completion.	
Producing interval (s) for this completion Coconino Sandstone		Rotary tools used (Interval) 0* - 1035*	Cable tools used (interval)	
Was this well directionally drilled? No		Was directional survey made?	Was copy of directional survey filed?	Date filed
Type of electrical or other logs run (check logs filed with the commission) Electrical Induction & Microlog				Date filed December 4, 1959

CASING RECORD

Casing (report all strings set in well—conductor, surface, intermediate, producing, etc.)						
Purpose	Size hole drilled	Size casing set	Weight (lb./ft.)	Depth set	Sacks cement	Amt. pulled
Surface	10 3/4	8 5/8		98*	50	
Production	6 3/4	4 1/2		1024.4*	100	

TUBING RECORD

LINER RECORD

Size in.	Depth set ft.	Packer set at ft.	Size in.	Top ft.	Bottom ft.	Sacks cement	Screen (ft.)

PERFORATION RECORD

ACID, SHOT, FRACTURE, CEMENT SQUEEZE RECORD

Number per ft.	Size & type	Depth Interval	Amt. & kind of material used	Depth Interval
NOT PERFORATED				

INITIAL PRODUCTION

Date of first production		Producing method (Indicate if flowing, gas lift or pumping—if pumping, show size & type of pump:)					
Date of test	Hrs. tested	Choke size	Oil prod. during test bbls.	Gas prod. during test MCF	Water prod. during test bbls.	Oil gravity * API (Corr)	
Tubing pressure	Casing pressure	Cal'ed rate of Production per 24 hrs.	Oil bbls.	Gas MCF	Water bbls.	Gas—oil ratio	

Disposition of gas (state whether vented, used for fuel or sold):

Shut-In

CERTIFICATE: I, the undersigned, under the penalty of perjury, state that I am the Secretarial Assistant of the Eastern Petroleum 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.

Date

January 2, 1960

Signature

J. Stanton

STATE OF ARIZONA STATE LAND COMMISSIONER
Well Completion or Recompletion Report and Well Log.
Form No. P-7 File two copies
Authorized by Order No. 4-8-59
Effective April 6, 19 59

WFW

80

(ADDITION TO JANUARY 2, 1960, FILE)
STATE OF ARIZONA
OIL AND GAS CONSERVATION COMMISSION
PHOENIX, ARIZONA

FORM O&G 52

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

Operator Eastern Petroleum Company Field Pinta
Street 2520 First National Bank Building Pool _____
City Denver 2 State Colorado County Apache
Lease Name State of Arizona #2089 Well No. 1-10 Acres in Unit _____
Location 660 feet W of E line, 660 Feet S of N line
Sec. 10 Twp. 19N Rge. 26E
Elevation DF 5743* GR _____ Electric Log Run June 6, 1959 19 _____
Number of Crude Oil Producing Wells on this Lease, including this well 2
Has Authorization to Transport Oil or Gas From Well, Form O&G 57 been filed? No

OFFICIAL COMPLETION GAUGE

Date Test Commenced 9-17-1960 Hour A. Date Test Completed 9-17-1960 Hour P. M.
Length of Test 7 Hours 30 Minutes
For Flowing Well: For Pumping Well:
Flowing pressure on Tbg. _____ lbs./sq. in. Length of stroke used _____ inches
Flowing pressure on csg. 93 lbs./sq. in. Number of strokes per min. _____
Size tbg. _____ in. No. ft. run _____ Size of working barrel _____ inches
Size choke 4 points in. Type choke _____ Size tubing _____ in. No. ft. run _____
Length _____ in. Shut in pressure _____
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 ~~150 MCFPD~~ 150 MCFPD
Gas-oil ratio of this well is _____ cu. ft. of gas per bbl. of oil.
Per cent water produced during this test _____
Gravity of oil produced during this test (Corrected to A. P. I. 60° F) _____
Name of Pipe Line or other carrier _____
If perforated: No. Shots 8 From 975 To 979 Date Perforated _____
Date well Spudded June 1, 1959 Date Well Completed September 12, 1960
Top Pay 975 Ft. Total depth of well 1035 Ft.

CASING LINER AND TUBING RECORD

String	Size	Wt./Ft.	Name and Type	Amount Ft. In.	Depth Set at	Perforated From	To

CEMENT AND TESTING RECORD

Size of Hole	String	Where Cement Placed	No. Sacks Cement	Method Used	Pressure Applied in Testing	Hardness of Cement Drilled	Type of Cement
<u>6 3/4</u>	<u>4 1/2</u>	<u>T.D.</u>	<u>100</u>	<u>Howco</u>	<u>2,000 lbs.</u>		<u>No Record</u>

CHEMICAL OR SHOOTING RECORD BEFORE COMPLETION

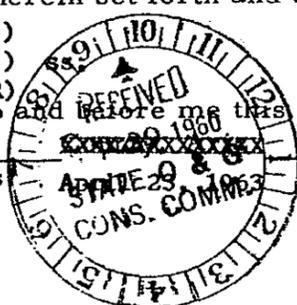
Size	Chemical or	Quantity	Date	From	To
	<u>Mud Ban</u>	<u>500 Gals.</u>	<u>9-8-60</u>	<u>975</u>	<u>979</u>

AFFIDAVIT

I, J. Stoutner, 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 COLORADO)
)

CITY & COUNTY OF DENVER)
Subscribed and sworn to and before me this _____ day of _____ 1960
by J. Stoutner
My Commission expires _____



J. Stoutner
Representative of Company

_____ 27th day of _____ September 19 60
Lois J. Shadell Notary Public

PLUGGING RECORD

Operator Kerr-McGee Corporation		Address P. O. Box 250, Amarillo, TX 79105	
Federal, State, or Indian Lease Number, or lessor's name if fee lease.		Well No. 1-10	Field & Reservoir PINTA DOME/Coconino Sand
State		Sec-Twp-Rge or Block & Survey	
Location of Well NE-NE, Section 10, Twp 19N, Rge 26E		County Apache	
Application to drill this well was filed in name of Eastern Petroleum Co.	Has this well ever produced oil or gas Yes-Helium	Character of well at completion (initial production): Oil (bbbls/day) Unknown Gas (MCF/day) Unknown Dry? No	
Date plugged: 4/15/77	Total depth 1035'	Amount well producing when plugged: Oil (bbbls/day) 0 Gas (MCF/day) 0 Water (bbbls/day) 0	
Name of each formation containing oil or gas. Indicate which formation open to well-bore at time of plugging	Fluid content of each formation	Depth interval of each formation	Size, kind & depth of plugs used. Indicate zones squeeze cemented, giving amount cement
N/A			

CASING RECORD

Size pipe	Put in well (ft.)	Pulled out (ft.)	Left in well (ft.)	Give depth and method of parting casing (shot, ripped, etc.)	Packers and shoes
8 5/8"	98'	0	98'	---	EZSV Retainer at 924'
4 1/2"	1024'	0	1024'	---	-----

Was well filled with mud-laden fluid, according to regulations?
Yes

Indicate deepest formation containing fresh water.

NAMES AND ADDRESSES OF ADJACENT LEASE OPERATORS OR OWNERS OF THE SURFACE

Name	Address	Direction from this well:
Kerr-McGee Corporation	P. O. Box 250, Amarillo, TX 79105	A11

In addition to other information required on this form, if this well was plugged back for use as a fresh water well, give all pertinent details of plugging operations to base of fresh water sand, perforated interval to fresh water sand, name and address of surface owner, and attach letter from surface owner authorizing completion of this well as a water well and agreeing to assume full liability for any subsequent plugging which might be required.

Well was plugged by setting 4 1/2" EZSV Cement retainer at 924' with 50 sxs. Class "B" cement pumped below retainer and 76 sxs. Class "B" Cement from retainer to surface.

Use reverse side for additional detail.

CERTIFICATE: I, the undersigned, under the penalty of perjury, state that I am the Engineering Assistant of the Kerr-McGee 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.

Date April 22, 1977 Signature Lynn Kelley **Lynn Kelley**

D & G CONS. COMM.	STATE OF ARIZONA OIL & GAS CONSERVATION COMMISSION
Permit No. <u>80</u>	Plugging Record File One Copy
	Form No. 10

APPLICATION TO ABANDON AND PLUG

FIELD Pinta Dome
 OPERATOR Kerr-McGee Corporation ADDRESS P. O. Box 250, Amarillo, TX 79105
Federal, State, or Indian Lease Number or Lessor's Name if Fee Lease State _____ WELL NO. 1-10
 SURVEY T-19N, R-26E SECTION 10 COUNTY Apache
 LOCATION _____

TYPE OF WELL Gas (Helium) TOTAL DEPTH 1035'
(Oil, Gas or Dry Hole)
 ALLOWABLE (If Assigned) None
 LAST PRODUCTION TEST OIL 0 (Bbls.) WATER 0 (Bbls.)
 GAS 0 (MCF) DATE OF TEST 1-1-76
 PRODUCING HORIZON Coconino Sand PRODUCING FROM 975' TO 979'

1. COMPLETE CASING RECORD

8-5/8" - cemented with 50 sx at 98'
4-1/2" - cemented with 100 sx at 1024'
PBTD 998'

2. FULL DETAILS OF PROPOSED PLAN OF WORK

1. Set cement retainer at 925'.
2. Squeeze 50 sx of cement below retainer. Equalize 20 sx of cement from 925' to 725'.
3. Pull tubing.
4. Fill casing to surface with cement.
5. Erect 4" pipe marker as per Rule 202-A7.

If well is to be abandoned, does proposed work conform with requirements of Rule 202? yes If not, outline proposed procedure above.

DATE COMMENCING OPERATIONS Upon approval.
 NAME OF PERSON DOING WORK _____ ADDRESS _____
 CORRESPONDENCE SHOULD BE SENT TO C. J. Breeden *C. J. Breeden*
Name
District Manager
Title
P. O. Box 250, Amarillo, TX 79105
Address
March 1, 1977
Date

Date Approved 3-7-77
 STATE OF ARIZONA
 OIL & GAS CONSERVATION COMMISSION
 By: [Signature]

STATE OF ARIZONA
 OIL & GAS CONSERVATION COMMISSION
 Application to Abandon and Plug
 File Two Copies
 Form No. 9

Permit No. Unknown 80

KERR-MCCOY CORPORATION EXHIBIT NO.
 SUMMARY OF SURFACE SHUT-IN PRESSURES, PSIG
 Pinta Dome Coconino Sand Gas Pool,
 Apache County, Arizona

Well Name	Initial 10/1/61	24 Hours 10/1/62	24 Hours 6/16/63	8 Hours 1/22/64	24 Hours 8/27/64	24 Hours 11/11/65	24 Hours 5/2/66	24 Hours 12/30/66
State 4-A (State 4)	99.4	96.0	92.80	89.4	86.1	N.M.	77.2	N.M.
State 1-28	98.8	95.6	92.43	89.3	85.8	78.6	76.8	73.9
Fee 1	99.3	95.5	92.20	89.2	85.6	78.5	77.0	73.1
State 3-A (State 3)	99.1	95.4	92.20	89.0	81.2	N.M.	77.7	73.2
State 2	99.1	95.5	92.15	89.0	85.6	78.5	76.7	73.0
State 1	99.1	95.4	92.19	88.7	85.4	78.5	77.0	73.1
State 2	99.3	95.7	92.45	89.2	85.8	78.7	77.1	73.3
State 1-2	99.6	96.7	93.85	91.2	N.M.	83.2	81.6	77.1
State 1-10	99.6	96.5	N.M.	N.M.	N.M.	83.0	81.6	77.0
Averages	99.3	95.8	92.53	89.4	85.1	79.9	78.1	74.2

N.M. - Not measured.

80

KERR-MCCOY CORPORATION
 PINTA DOME COCONINO SAND GAS POOL
 APACHE COUNTY, ARIZONA
 12/21/67
 2

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

Lease Eastern State #1-10	Field Pinta Dome	Reservoir Coconino
Survey or Sec-Twp-Rge 10-19N-26E	County Apache	State Arizona
Operator Eastern Petroleum Company		
ADDRESS ALL CORRESPONDENCE CONCERNING THIS FORM TO:		
Street Box 291	City Carmi, Illinois	State Illinois
Above named operator authorizes (name of transporter) Kerr-McGee Oil Industries, Inc.		
Transporter's street address Kerr-McGee Building	City Oklahoma City	State Oklahoma
Field address Navajo, Arizona		
Oil, condensate, gas well gas, casinghead gas		
To transport	100% of the 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. No Changes		

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.....**Secretary**.....of the **Eastern Petroleum 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.

Date May 6, 1964
Date

Date approved: MAY 11 1964

Commissioner's Number: _____

File No. 80

John N. Edwards
Signature

By: *John Bannister*
**Executive Secretary
Oil & Gas Conservation Commission
State of Arizona**

**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
Authorized by Order No. 4-659
Effective April 6, 1959

80

NEW MEXICO OIL CONSERVATION COMMISSION

Form C-122

Revised 12-1-55

MULTI-POINT BACK PRESSURE TEST FOR GAS WELLS

Pool PINTA Formation COCONINO SANDSTONE County APACHE
 Initial _____ Annual _____ Special X Date of Test 11/14 & 15, 1961
 Company EASTERN PETROLEUM CO. Lease STATE Well No. 1-10
 Unit A Sec. 10 Twp. 19N Rge. 2E Purchaser _____
 Casing 4 Wt. _____ I.D. _____ Set at 999 Perf. 979 To 979
 Tubing _____ Wt. _____ I.D. _____ Set at _____ Perf. _____ To _____
 Gas Pay: From _____ To _____ L _____ xG .916 -GL .916 Bar.Press. 12
 Producing Thru: Casing _____ Tubing _____ Type Well _____
 Date of Completion: _____ Packer _____ Reservoir Temp. _____

OBSERVED DATA

Tested Through (Prover) (SANDSTONE) Type Taps _____

No.	Flow Data			Tubing Data		Casing Data		Duration of Flow Hr.	
	(Prover) (Line) Size	(Choke) (Orifice) Size	Press. psig	Diff. h _w	Temp. °F.	Press. psig	Temp. °F.		Press. psig
SI	<u>2"</u>							<u>97.0</u>	
1.	<u>2"</u>	<u>1/8</u>						<u>87.1</u>	<u>61</u>
2.	<u>2"</u>	<u>3/16</u>						<u>83.5</u>	<u>59</u>
3.									
4.									
5.									

FLOW CALCULATIONS

No.	Coefficient (24-Hour)	$\sqrt{h_{wpf}}$	Pressure psia	Flow Temp. Factor Ft	Gravity Factor F _g	Compress. Factor F _{pv}	Rate of Flow Q-MCFPD @ 15.025 psia
1.	<u>.3418</u>		<u>99.1</u>	<u>.9990</u>	<u>.8076</u>	<u>1.014</u>	<u>27</u>
2.	<u>.7651</u>		<u>65.5</u>	<u>1.0010</u>	<u>.8076</u>	<u>1.014</u>	<u>42</u>
3.							
4.							
5.							

PRESSURE CALCULATIONS

Gas Liquid Hydrocarbon Ratio _____ cf/bbl.
 Specific Gravity Separator Gas _____
 Gravity of Liquid Hydrocarbons _____ deg.
 Specific Gravity Flowing Fluid _____
 P_c .916 (1-e^{-s}) .065 P_c 109 P_c 11.861

No.	P _w P _t (psia)	P _t ²	F _c Q	(F _c Q) ²	(F _c Q) ² (1-e ^{-s})	P _w ²	P _c ² -P _w ²	Cal. P _w	P _w /P _c
1.	<u>95.1</u>	<u>9.021</u>				<u>9.021</u>	<u>2.060</u>		
2.	<u>65.5</u>	<u>4.270</u>				<u>4.270</u>	<u>7.59</u>		
3.									
4.									
5.									

Absolute Potential: 49 MCFPD; n _____
 COMPANY GELECTRIC INC.
 ADDRESS BOX 842
 AGENT and TITLE AGENT
 WITNESSED _____
 COMPANY _____

REMARKS

INSTRUCTIONS

This form is to be used for reporting multi-point back pressure tests on gas wells in the State, except those on which special orders are applicable. Three copies of this form and the back pressure curve shall be filed with the Commission at Box 871, Santa Fe.

The log log paper used for plotting the back pressure curve shall be of at least three inch cycles.

NOMENCLATURE

Q = Actual rate of flow at end of flow period at W. H. working pressure (P_w).
MCF/da. @ 15.025 psia and 60° F.

P_c = 72 hour wellhead shut-in casing (or tubing) pressure whichever is greater.
psia

P_w = Static wellhead working pressure as determined at the end of flow period.
(Casing if flowing thru tubing, tubing if flowing thru casing.) psia

P_t = Flowing wellhead pressure (tubing if flowing through tubing, casing if flowing through casing.) psia

P_f = Meter pressure, psia.

h_w = Differential meter pressure, inches water.

F_g = Gravity correction factor.

F_t = Flowing temperature correction factor.

F_{pv} = Supercompressibility factor.

n = Slope of back pressure curve.

Note: If P_w cannot be taken because of manner of completion or condition of well, then P_w must be calculated by adding the pressure drop due to friction within the flow string to P_t .

Nov. 13, 1961

EASTERN PETROLEUM Co.
DENVER, COLO

GENTLEMEN:

FOLLOWING ARE THE READINGS ON YOUR STATE 1-10 COVERING A 24 HOUR

PERIOD: Nov. 10 11:00 P M 97 SHUT IN. ALL READINGS ARE GAUGE 1/8 PLATE
11:34 1/2 91.2 54 DEGREES
11:41 1/2 91.0 55
11:50 90.5 57
12:00 90.1 58
12:12 89.7 58
12:26 1/2 89.3 58.5
12:44 88.8 59
1:05 88.4 58
1:30 87.7 59
2:00 87.1 61

SHUT IN TO BUILD UP TO SHUT IN PRESSURE CHANGE PLATE TO 3/16

15 MIN	74.0	61
34 1/2 MIN	70.1	62
41 1/2 MIN	69.0	62
50 MIN	67.5	62
1 HR	66.0	62
1 HR 12 MIN	64.5	62
1 HR 26 1/2 MIN	62.8	62
1 HR 44 MIN	60.5	62
2 HR 5 MIN	58.2	62
2 HR 30 MIN	55.5	61
3 HR	53.5	59

11/11

9:10 A M	34.5	56
10:10 A M	34.5	61
11:00 A M	34.5	62

CALCULATED ON THE ABOVE FIGURES AND BASED ON 30 DAYS THIS WELL WILL
PRODUCE 23 MCFPD AGAINST 72.4 # LINE PRESSURE.

I TRUST THIS IS SATISFACTORY, IF NOT PLEASE ADVISE.

B H Keyes
B H KEYES

STATE OF ARIZONA
OIL AND GAS CONSERVATION COMMISSION
PHOENIX, ARIZONA FORM O&G 53
Form Prescribed Under Oil and Gas Conservation Act of 1951

CAPACITY TEST REPORT
BACK PRESSURE TEST OF GAS WELL
(Critical Flow Prover or Orifice Meter)
OPEN FLOW POTENTIAL TEST

Date September 27, 19 61

Operator Eastern Petroleum Company Field Pinta

Lease State No. 1-10 Well Ac. None

Acres Under Well 640 Connection None

Reservoir Coconino County Apache

Sand Depth 975* Csg. @ 998* Tubing@
Size Line and
Gr. of Gas 8.5% Helium Meter or Prover

Pressure
Is ~~XXXXXX~~ Corrected to sand face? No

Closed Pres. LBS.			Back Pressure Test		
Orifice Size	Coeff 24 Hr.	Working Pressure psia	2 (Pc - PW)	2 Lb. Q, MCFPD @ 15.025 psia	Volume
1/4"	1.4030	43.8	9,107,000	49	
3/16"	.7851	53.8	8,131,000	33	
3/32"	.1820	63.9	6,942,000	9	
1/8"	.3418	58.8	7,568,000	16	
Volume - 24 Hour					MCF.

Open Flow Test

Shut In Pres. 105 psia Time Shut In 5 days Water - Oil - Etc. (Important)

Producing Through Casing

TIME	READING	LIQUID USED	SPRING GAUGE
15 Min.	See back pressure chart on file		
20 Min.			
25 Min.			
30 Min.			

Test Until Two Readings Check
OPEN FLOW CAPACITY 150 MCF per 24 Hrs.

SIGNATURES

BOARD _____
CON. _____
CO. James H. Brown
OTHER _____

(ACCOMPANY THIS REPORT WITH A BACK PRESSURE CHART)

5/12/58



80 3

NEW MEXICO OIL CONSERVATION COMMISSION

Form C-122

Revised 12-1-55

MULTI-POINT BACK PRESSURE TEST FOR GAS WELLS

Pool FINVA Formation COOKING SANDSTONE County SAGUPE
 Initial _____ Annual _____ Special x Date of Test Sept. 17, 1950
 Company EASTERN PETROLEUM Lease STATE Well No. 1-10
 Unit A Sec. 10 Twp. T8 19N Rge. 2E Purchaser _____
 Casing 4 1/2 Wt. _____ I.D. _____ Set at 990 Perf. 975 To 972
 Tubing _____ Wt. _____ I.D. _____ Set at _____ Perf. _____ To _____
 Gas Pay: From _____ To _____ L _____ xG .918 -GL .916 Bar.Press. 12
 Producing Thru: Casing _____ Tubing _____ Type Well _____
 Date of Completion: Sept. 12, 1950 Packer _____ Reservoir Temp. 75° EST.

OBSERVED DATA

Tested Through (Prover) (Choke) (Meter) _____ Type Taps _____

No.	Flow Data			Tubing Data		Casing Data		Duration of Flow, Hr.
	(Prover) (Line) Size	(Choke) (Orifice) Size	Press. psig	Diff. h _w	Temp. °F.	Press. psig	Temp. °F.	
SI	2"					97.0		
1.	2"	1/4				81.8	77	3
2.	2"	3/16				41.8	80	1 1/2
3.	2"	1/8				51.9	79	2
4.	2"	1/8				46.8	69	1 1/2
5.								

FLOW CALCULATIONS

No.	Coefficient (24-Hour)	$\sqrt{h_w P_f}$	Pressure psia	Flow Temp. Factor F _t	Gravity Factor F _g	Compress. Factor F _{pv}	Rate of Flow Q-MCFPD @ 15.025 psia
1.	1.4030		41.8	.9840	.8076	1.314	49
2.	.7851		33.8	.9813	.8076	"	38
3.	.1820		63.9	.9832	.8076	"	9
4.	.3418		56.8	.9793	.8076	"	16
5.							

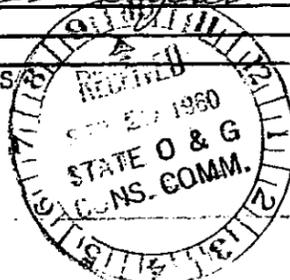
PRESSURE CALCULATIONS

Gas Liquid Hydrocarbon Ratio _____ cf/bbl.
 Gravity of Liquid Hydrocarbons _____ deg.
 P_c _____ (1-e^{-s}) .085
 Specific Gravity Separator Gas _____
 Specific Gravity Flowing Fluid _____
 P_c 105.0 P_c 11.025

No.	P _w P _t (psia)	P _t ²	F _c Q	(F _c Q) ²	(F _c Q) ² (1-e ^{-s})	P _w ²	P _c ² -P _w ²	Cal. P _w	P _w /P _c
1.	43.8	1,918				1,918	2,107		
2.	33.8	1,143				1,143	6,131		
3.	63.9	4,093				4,093	6,942		
4.	56.8	3,246				3,246	7,368		
5.									

Absolute Potential: 150 MCFPD; n _____
 COMPANY Geotronics, Inc.
 ADDRESS Box 642 103 N. Main Artes, New Mexico
 AGENT and TITLE W. H. Hayes Agent
 WITNESSED _____
 COMPANY _____

REMARKS



80 5

INSTRUCTIONS

This form is to be used for reporting multi-point back pressure tests on gas wells in the State, except those on which special orders are applicable. Three copies of this form and the back pressure curve shall be filed with the Commission at Box 871, Santa Fe.

The log log paper used for plotting the back pressure curve shall be of at least three inch cycles.

NOMENCLATURE

Q = Actual rate of flow at end of flow period at W. H. working pressure (P_w).
MCF/da. @ 15.025 psia and 60° F.

P_c = 72 hour wellhead shut-in casing (or tubing) pressure whichever is greater.
psia

P_w = Static wellhead working pressure as determined at the end of flow period.
(Casing if flowing thru tubing, tubing if flowing thru casing.) psia

P_t = Flowing wellhead pressure (tubing if flowing through tubing, casing if flowing through casing.) psia.

P_f = Meter pressure, psia.

h_w = Differential meter pressure, inches water.

F_g = Gravity correction factor.

F_t = Flowing temperature correction factor.

F_{pv} = Supercompressability factor.

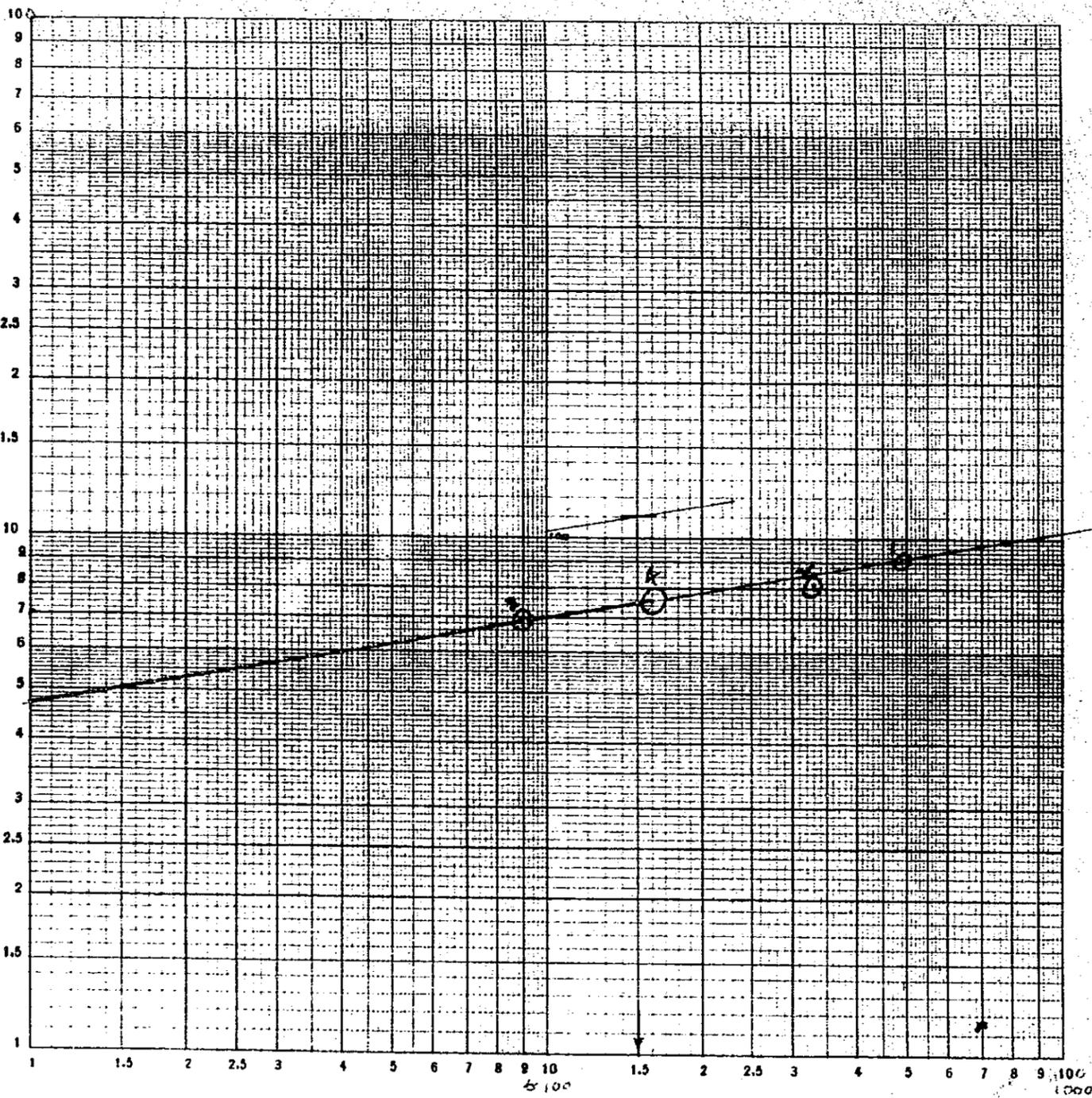
n = Slope of back pressure curve.

Note: If P_w cannot be taken because of manner of completion or condition of well, then P_w must be calculated by adding the pressure drop due to friction within the flow string to P_t .

State No 1-10

TECHNICAL

Pressure (Thous)



2 @ 15025 PSIA

807

Eastern Petroleum No. 1-10 State (continued)

Present Status: Shut-in

Cores:

- No. 1 974 feet to 1000 feet Cut 25 feet, recovered 26 feet
26' Sandstone, buff, fine to medium grained, subround
to subangular, friable, some thin light
green shale streaks intercalated in the
sand from 976 to 978. Vertical fractures
from 981 to 988. Appears by tasting to
be a salt water level at 989'.

Drill Stem Tests:

- No. 1 973 feet to 980 feet - Straddle Packer Test
(Coconino sandstone)
Open 2 hours, no blow, by passed at the end of first
hour - few bubbles.
Pressure charts indicated tool plugged. Test is a
mis-run.
Recovered $1\frac{1}{2}$ gallons rat-hole mud.
Shut-in time, initial and final, 30 minutes.
Initial flowing pressure: 4 psig
Final flowing pressure: 4 psig
Initial shut-in pressure: 40 psig
Final shut-in pressure: 5 psig
Initial hydrostatic pressure: 488 psig
Final hydrostatic pressure: 488 psig
- No. 2 971 $\frac{1}{2}$ feet to 979 $\frac{1}{2}$ feet - Straddle Packer Test
(Coconino sandstone)
Open 100 minutes, no blow, by passed at the end of
60 minutes, no blow.
Perforations were plugged when tool removed. Test is
considered to be a mis-run.
Recovered 20 feet of gas-cut-mud.
Shut-in time, initial and final, 30 minutes.
Initial flowing pressure: 16 psig
Final flowing pressure: 18 psig
Initial shut-in pressure: 230 psig
Final shut-in pressure: 12 psig
Initial hydrostatic pressure: 476 psig
Final hydrostatic pressure: 463 psig

APPLICATION FOR PERMIT TO DRILL, DEEPEN OR PLUG BACK

APPLICATION TO DRILL DEEPEN PLUG BACK

NAME OF COMPANY OR OPERATOR

DATE

EASTERN PETROLEUM COMPANY May 12, 1959
Address City State
 2520 1st. National Bank Bldg Denver 2, Colorado

DESCRIPTION OF WELL AND LEASE

Name of lease State # 2089	Well number 1-10	Elevation (ground) 5765
--------------------------------------	----------------------------	-----------------------------------

Well location (give footage from section lines) Section—township—range or block & survey
660' W of E line & 660' S of N line Sec 10, T19N; R26E

Field & reservoir (If wildcat, so state) Pinta Dome Area	County Apache
--	-------------------------

Distance, in miles, and direction from nearest town or post office
7 1/2 miles South from Navaho, Arizona

Nearest distance from proposed location to property or lease line: 660 feet	Distance from proposed location to nearest drilling, completed or applied—for well on the same lease: 3700 feet
---	---

Proposed depth: 2500	Rotary or cable tools Rotary	Approx. date work will start May 25, 1959
--------------------------------	--	---

Number of acres in lease: 1520.00	Number of wells on lease, including this well, completed in or drilling to this reservoir:
---	--

If lease, purchased with one or more wells drilled, from whom purchased:	Name	Address
--	------	---------

Status of bond **Blanket**

Remarks: (If this is an application to deepen or plug back, briefly describe work to be done, giving present producing zone and expected new producing zone)

* Fill in Proposed Casing Program on other side

CERTIFICATE: I, the undersigned, under the penalty of perjury, state that I am the Partner-Engineer of the Eastern Petroleum (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.

Paul Fullop
 Signature **Paul Fullop**

Permit Number: **80**
 Approval Date: **May 19, 1959**
 Approved By: *Obed M. Karsen*
 Notice: Before sending in this form be sure that you have given all information requested. Much unnecessary correspondence will thus be avoided.
 See Instruction on Reverse Side of Form

STATE OF ARIZONA STATE LAND COMMISSIONER
 Application to Drill, Deepen or Plug Back
 Form No. P-1 File two copies
 Authorized by Order No. **4/6/59**
 Effective **April 6, 1959**

80 11

INSTRUCTIONS

READ CAREFULLY AND COMPLY FULLY

For the purpose of this determination attach hereto a neat, accurate plat, map or sketch of this lease, section, block or lot locating thereon the proposed site for this location. Plat shall be drawn to a scale which will permit the facile observation of all pertinent data. Show distances of the proposed well from the two nearest lease and section lines, and from the nearest wells on the same lease completed in or drilling to the same reservoir. If the location requested is not in conformance with the applicable well-spacing rules, show all off-setting wells to the proposed well, and the names and addresses of all adjoining lease or property owners.

In event plat is filed for the purpose of designating the drilling and producing unit, or proration unit, on which the proposed well is to be drilled, the boundaries of such unit shall be shown, also the boundaries of all other such units attributed to other wells on the same lease completed in or drilling to the same reservoir. The acreage contained within each unit shall also be shown.

Do not confuse survey lines with lease lines. The sketch or plat should show your entire lease if possible. If it is not practical to show the entire lease and the plat shows only a section, block or lot out of your lease, you should clearly show that same is only a part of the lease.

Designate scale to which plat or sketch is drawn. Also designate northerly direction on the sketch or plat.

PROPOSED CASING PROGRAM

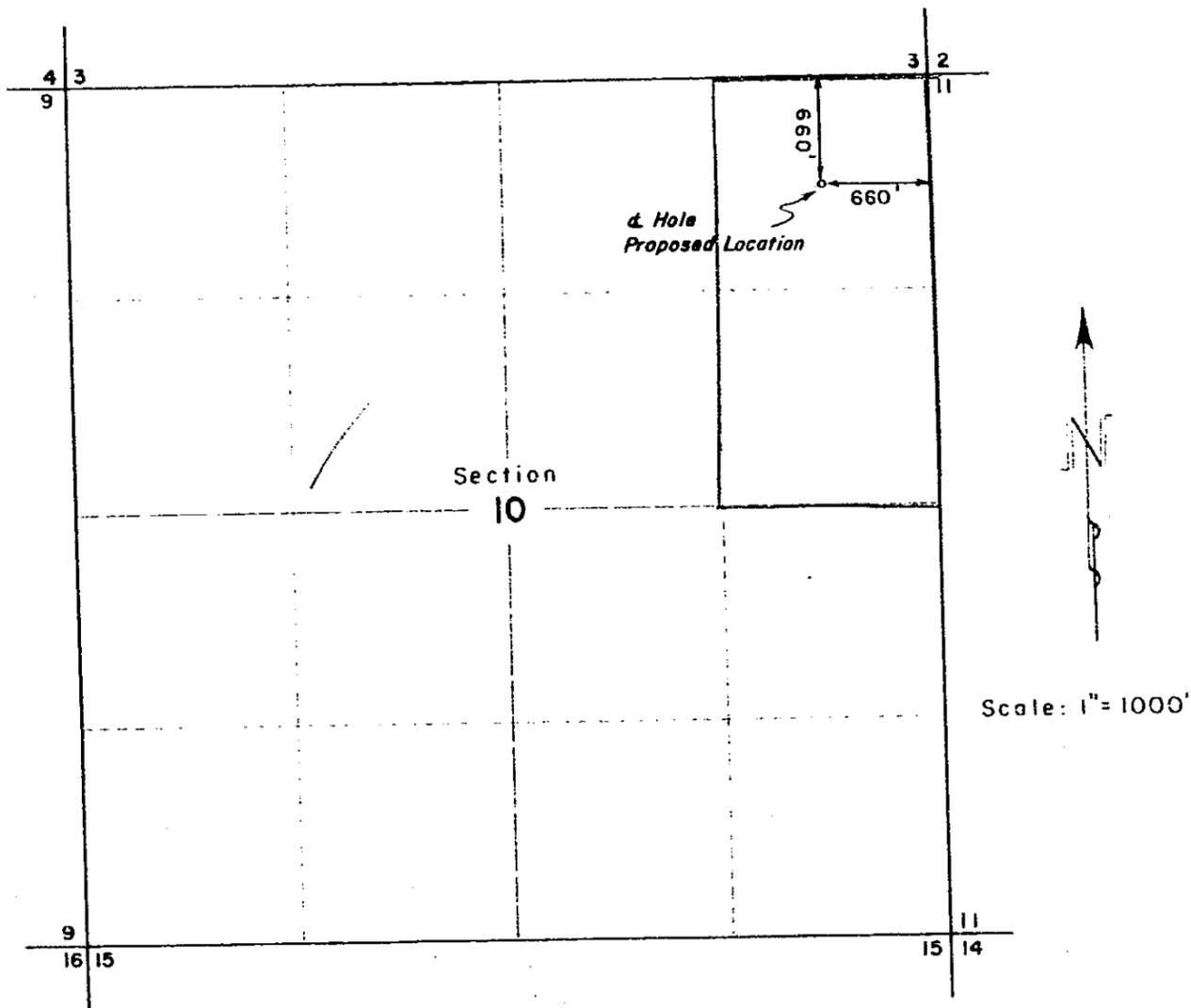
Size of Casing	Weight	Grade & Type	Top	Bottom	Cementing Depths	Sacks Cement
8 5/8"	24	H-40	Sur.	200	200	200
4 1/2"	11	J-55	Sur	T.D.	T.D.	200

Form No. P-1

MAY 13 3 12 PM 1959

STATE LAND DEPARTMENT

CERTIFICATE OF SURVEY



WELL LOCATION:

Located 660 feet West of the East line and 660 feet South of the North line of Section 10
Township 19 North Range 26 East Gila & Salt River Meridian
Apache Co. Arizona
Existing ground elevation determined at 5765± feet based on U.S.G.S. Datum

the hereon, with the above plat represents a survey
made under my supervision and is accurate to the
best of my knowledge and belief.

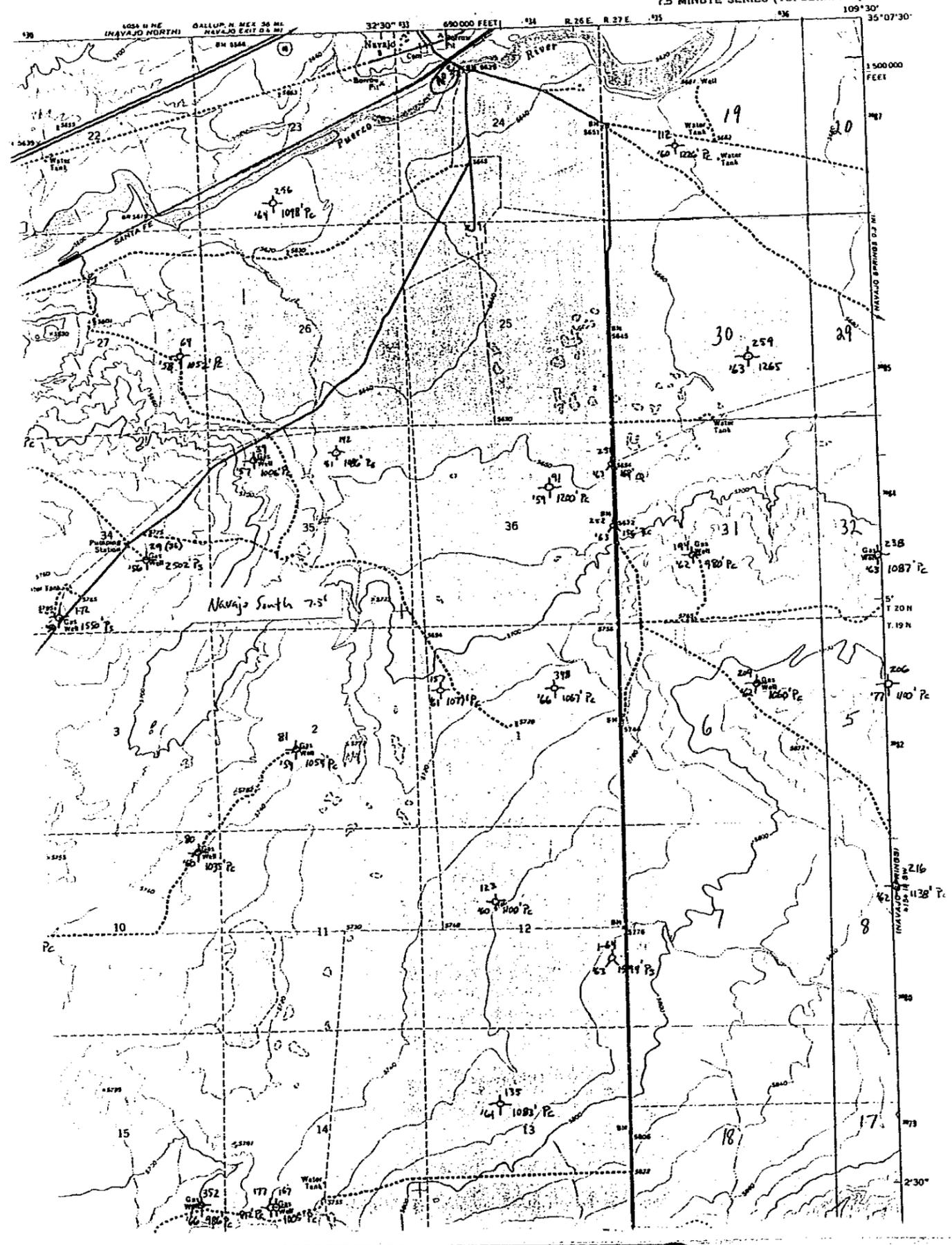
Elmer M. Clark
ELMER M. CLARK
Registered Land Surveyor
Colo. 2279

E.M. CLARK & ASSOCIATES
Durango, Colorado
May 11, 1959

MAY 13 3 12 PM 1959

STATELAND DEPARTMENT

ARIZONA-APACHE CO.
7.5 MINUTE SERIES (TOPOGRAPHIC)

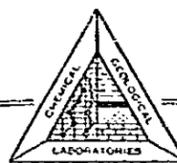


CHEMICAL & GEOLOGICAL LABORATORIES

CHEMISTS

CORE ANALYSTS

ENGINEERS



EASTERN PETROLEUM COMPANY

STATE NO. 1-10

NE NE 10-19N-26E

COCONINO

WILDCAT, APACHE COUNTY, ARIZONA

CORE ANALYSIS

RECEIVED FEBRUARY 1961

NEW YORK

1961 FEBRUARY 1961

NEW YORK

NEW YORK

1961 FEBRUARY 1961

NEW YORK



EASTERN PETROLEUM No. 1-10 State

975 to 982 feet.

7 feet of pay with the following characteristics:

Average Porosity..... 13.6%
Average Permeability..... 97.3 md.
Average Water Saturation... 51.3%

982 to 989 feet.

7 feet of pay with the following characteristics:

Average Porosity..... 15.6%
Average Permeability..... 409 md.
Average Water Saturation... 62.3%

80

PERMEABILITY (MILLIDARCIES)

(0-10 ON COORDINATE SCALE; 10-1000 ON LOGARITHMIC SCALE)

10 15 20 25 30 35 40 50 60 70 80 90 100

DEPTH (FEET)

970 980 990 1000

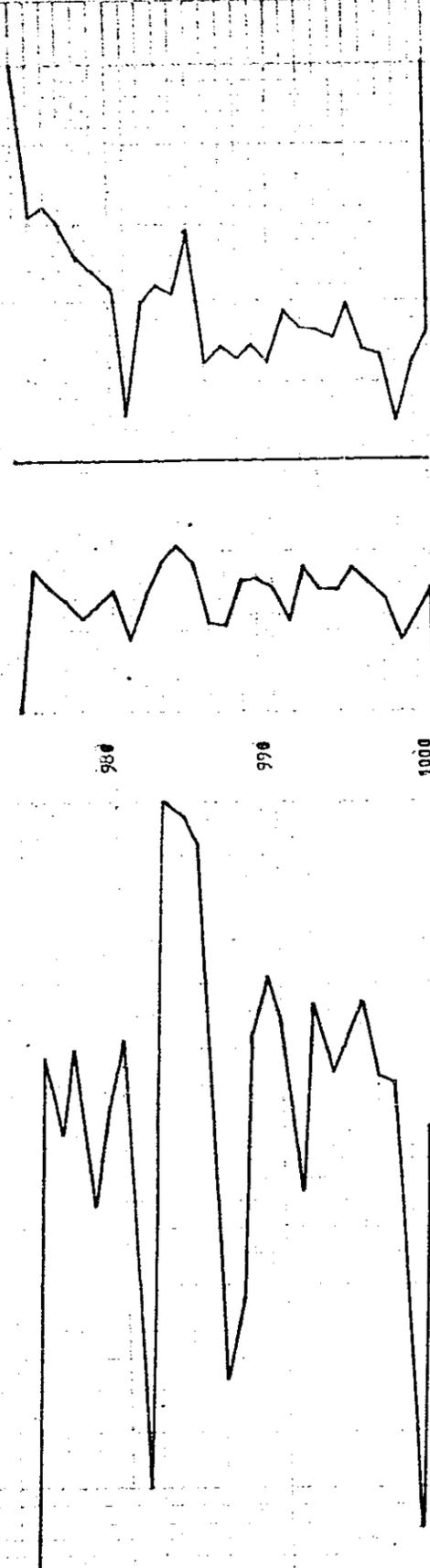
EFFECTIVE POROSITY (PER CENT)

10 20

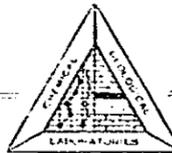
SATURATION (% PORE SPACE)

RESIDUAL OIL 20 40 60 80
TOTAL WATER 20 40 60 80

PROBABLE FLUID



CHEMICAL & GEOLOGICAL LABORATORIES



CHEMISTS CORE ANALYSTS ENGINEERS

P. O. BOX 279
CASPER, WYOMING

June 8, 1959
Farmington, N. Mexico

Eastern Petroleum Company
2520 1st National Bank Building
Denver, Colorado

Re: Core Analysis Report
State No. 1-10
Apache Co., Arizona

Gentlemen:

Chem Lab, Service "A", small plug type core analysis was performed on the sandstone samples submitted from the subject well.

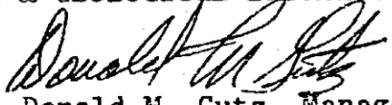
On June 5, 1959, Chem Lab was called to fly our company airplane to Navajo, Arizona, to pick up 26 samples from Core No. 1, interval 974' - 1000', in the Coconino sand.

The analysis was completed that same day and results were telephoned to Mr. Dean in Denver and Mr. Lauth in Navajo, Arizona.

We again wish to thank you and trust our service meets with your entire satisfaction.

Very truly yours,

CHEMICAL & GEOLOGICAL LABORATORIES


Donald M. Gutz, Manager
Farmington Branch

DMG/en

CHEMICAL & GEOLOGICAL LABORATORIES

Casper Farmington Glendive Sterling

CORE ANALYSIS REPORT

80

Company Eastern Petroleum Company Date June 5, 1959 Lab. No. F-1160
 Well No. State # 1-10 Location Sec 10-19N-26E
 Field Wildcat Formation Coconino
 County Apache Depths 974' - 1000'
 State Arizona Drilling Fluid JEL

C—Crack F—Fracture H—Horizontal O—Open	LEGEND NF—No Fracture IS—Insufficient Sample	S—Slight St—Stain V—Vertical Vu—Vugs
---	---	---

SAMPLE NO.	LEGEND	DEPTH, FEET	EFFECTIVE POROSITY PERCENT	PERMEABILITY MILLIDARCIES		SATURATIONS		CONNATE WATER	SOLUBILITY	
				HORIZONTAL	VERTICAL	% PORE SPACE RESIDUAL OIL	% PORE SPACE TOTAL WATER		MUD ACID	15% ACID
		Core No. 1	974' - 1000'	Recovered 26 Ft.						
1	NF	974-75	17.4	180		0	38.3			
2	VF	975-76	15.3	114		0	36.5			
3	VF	976-77	13.8	197		Trace	40.4			
4	NF	977-78	11.9	68		0	49.6			
5	NF	978-79	13.0	127		0	52.3			
6	NF	979-80	14.9	208		Trace	57.4			
7	NF	980-81	8.8	10		0	87.9			
8	VF	981-82	14.5	117		0	59.5			
9	VF	982-83	18.3	966		0	55.7			
10	VF	983-84	20.5	919		0	58.5			
11	VF	984-85	18.2	756		Trace	41.9			
12	VF	985-86	11.2	22		0	75.4			
13	VF	986-87	10.3	36		0	70.7			
14	VF	987-88	16.0	215		0	73.9			
15	VF	988-89	16.2	308		0	69.8			
16	NF	989-90	15.8	238		Trace	75.4			
17	NF	990-91	11.4	74		0	62.6			
18	NF	991-92	18.0	256		0	66.1			
19	VC	992-93	15.5	165		0	67.7			
20	VHC	993-94	15.2	220		Trace	69.4			
21	NF	994-95	17.9	270		0	60.5			
22	VC	995-96	15.6	161		0	71.9			
23	NF	996-97	14.1	153		0	72.7			
24	NF	997-98	8.8	5.43		0	90.3			
25	NF	998-99	12.5	120		0	74.9			
26	NF	999-1000	15.5	104		0	67.2			

Distribution for Final Report

Eastern Petroleum Company
Wildcat, Apache Co., Arizona
State No. 1-10

1 copy Eastern Petroleum Company
Mr. Charles Blanton
Navajo, Arizona

1 copy Mr. Bob Lauth
Durango, Colorado

6 copies Eastern Petroleum Company
2520 1st Nat'l Bank Building
Denver, Colorado

1 copy CHEMICAL & GEOLOGICAL LABORATORIES
220 West Broadway
Farmington, New Mexico

Invoice: Eastern Petroleum Company
P. O. Box 91
Carmi, Illinois

GEOLOGICAL COMPLETION REPORT
EASTERN PETROLEUM COMPANY
STATE NO. 1-10
SECTION 10, T19N, R26E
APACHE COUNTY, ARIZONA

Buzz's
copy

By: Robert E. Lauth
Geological Consultant
Durango, Colorado
August 1, 1959

ROBERT E. LAUTH
Consulting Geologist

GEOLOGICAL COMPLETION REPORT

*Eastern Petroleum Company
State No. 1-10
Section 10, T19N, R26E
Apache County, Arizona*

WELL DATA

Rotary: Surface to total depth; mud drilled

Spud date: June 1, 1959

Date drilling completed: June 8, 1959

Initial production: Testing

Surface casing: 8 5/8" @ 98 feet with 50 sacks

Production casing: 4 1/2" @ 1024.4 feet with 100 sacks

Contractor: Eastern Drilling Company

Leased rig of Apache Drilling Company, Denver, Colorado

Well location: NE - NE; 660 FNL & 660 FEL, Section 10, Township 19

North, Range 26 East, Apache County, Arizona

Elevation: 5737 ground

5743 Kelly Bushing

Total depth: 1035 feet

Plug back: 998 feet

FORMATION TOPS

Formation	Depth	Elevation	Thickness
Chinle	Surface	+5743	817'
Chinle congl.	699	+5044	75' - 50' to 60' (avg)
Shinarump congl.	817	+4926	14'
Moenkopl.	831	+4912	144'
Coconino	975	+4768	-

CORRELATION

Formation	Eastern Petr. State 1-10 NE 10-19N-26E	Eastern Petr. State 1-6 NE 6-19N-26E	Kerr-McJee No. 1 State SW 34-20N-26E
Chinle congl.	+5044	+4991	+5040
Coconino	+4768	+4713	+4773
Formation	Kerr-McJee No. 2 State SE 34-20N-26E	Kerr-McJee No. 3 State SE 4-19N-26E	Kerr-McJee No. 1-See SE 33-20N-26E
Chinle congl.	+5052	+5031	+5061
Coconino	+4782	+4766	+4787

DISCUSSION

The purpose of this report is to present geological information and basic data concerning the Eastern Petroleum Company, State No. 1-10 well located in the NE NE of Section 10, Township 19 North, Range 26 East, Apache County, Arizona.

Under surface pipe the hole was drilled to 1035 feet with a 6 3/4-inch bit. Approximately 150 barrels of mud was lost in the Coconino sandstone at a depth of 1035 feet.

Four and one-half inch casing was set and cemented at 1024 feet with 100 sacks of cement. One core and two drill stem tests were taken on this well. Details of these will be given in the report. Careful examination of the sample cuttings were made at the wellsite at the time of drilling.

A Schlumberger Electrical-Induction log was run from under surface casing to a depth of 997 feet on into the Coconino sandstone. A micralog was run from 96 feet to 996 feet.

Final formation tops have been adjusted and picked from electrical log curves related to sample cutting examination and stratigraphic correlation.

STRATIGRAPHY

Attached to this report is the sample description made by the writer from 10 foot and 5 foot sample cuttings for the interval 100 to 1035 feet.

The lithology and correlation of the possible producing horizon (the Coconino sandstone) is discussed in the following paragraphs.

The (thin) conglomerate section is completely water wet in this well and hence will not be discussed.

Coconino sandstone 975' to 1035' (penetrated 60 feet)

The Coconino sandstone is massive, buff in color and is apparently disconformable with the overlying Moenkopi. A transition zone exists which is composed of dark red silty shales of the Moenkopi streaked with buff colored re-worked sandstones of the Coconino. This zone is present from 954 feet to 975 feet.

By log analysis and core analysis there is a maximum of 14 feet which will be productive of Helium-Nitrogen gas. Of this, seven feet is in the gas-water transition zone.

The average core analysis in each of the seven foot intervals had the following characteristics:

975 to 982 feet

Average Porosity 13.6%

Average Permeability 97.3 millidarcies

Average Water Saturation . . . 51.3%

982 to 989 feet

Average Porosity 15.6%

Average Permeability 409 millidarcies

Average Water Saturation . . . 62.3%

It is my opinion that a small commercial helium producer can be made in the upper seven foot zone.

RECOMMENDED COMPLETION PROCEDURE

Four and one-half inch (OD), J-55, 9.5 lb., used casing was set and cemented at 1024.4 feet with 100 sacks of cement. The top of the float collar is at 998 feet. Centralizers were placed on the shoe joint and just above the pay zone. The plug was pumped down to the top of the float collar with clear water.

The following procedure is recommended in completing the Coconino sandstone zone:

- 1) Perforate with 2 shots per foot the interval 975 to 979 feet.
- 2) Wash with mud acid sufficient enough to completely cover all perforations approximately 30 gallons.
- 3) Load the hole with water and allow to set for 4 to 8 hours.
- 4) Swab water and acid back and allow the well to blow dry.

If the initial potential is not large enough, a very small sand-water frac might help. Too large of a frac treatment might break into the water zone.

CONCLUSIONS

This test is considered to have adequately tested all the formations penetrated.

The Coconino sandstone from 975 to 989 feet is indicated to be capable of small commercial helium production.

It is recommended that only the interval 975 to 979 feet be perforated so as to stay completely above water. Completion should be a natural one.

The writer expresses his appreciation for the opportunity of making this well study and respectfully submits this report.

Robert E. Lauth

Robert E. Lauth
Geological Consultant
Durango, Colorado
August 1, 1959

CORE DESCRIPTION

*Eastern Petroleum Company
State No. 7-10
Sec. 10, T19N, R26E
Apache County, Arizona
Elevation 5743' rotary boring*

Core No. 1 974 - 1000 (cut 25 feet, recovered 26 feet)

*Coring time (minutes per foot), 4, 4, 4, 2, 3, 2, 2, 3, 2, 4, 4,
4, 2, 3, 2, 3, 3, 3, 3, 3, 4, 3, 5, 4, 3.*

*26' Sandstone, buff, fine to medium grained, subround to subangular,
friable, some thin light green shale streaks inter-
calated in the sand from 976 to 978. Vertical
fractures from 981 to 988. Appears by tasting to
be a salt water level at 989'.*

DRILLSTEM TEST RECORD

Eastern Petroleum Company

State No. 7-10

Sec. 10, T19N, R26E

Apache County, Arizona

Elevation 5743' rotary bushing

- DST No. 1 973 - 980 - Straddle Packer Test (Coconino sandstone)
Open 2 hours, no blow, by passed at the end of first hour - few bubbles.
Pressure charts indicated tool plugged. Test is a mis-run.
Recovered $1\frac{1}{2}$ gallons rat-hole mud.
Shut-in time, initial and final, 30 minutes.
Initial flowing pressure: 4 psig.
Final flowing pressure: 4 psig.
Initial shut-in pressure: 40 psig.
Final shut-in pressure: 5 psig.
Initial hydrostatic pressure: 488 psig.
Final hydrostatic pressure: 488 psig.
- DST No. 2 971 $\frac{1}{2}$ - 979 $\frac{1}{2}$ - Straddle Packer Test (Coconino sandstone)
Open 100 minutes, no blow, by passed at the end of 60 minutes, no blow.
Perforations were plugged when tool removed. Test is considered to be a mis-run.
Recovered 20 feet of gas-cut-mud.
Shut-in time, initial and final, 30 minutes.
Initial flowing pressure: 16 psig.
Final flowing pressure: 18 psig.
Initial shut-in pressure: 230 psig.
Final shut-in pressure: 12 psig.
Initial hydrostatic pressure: 476 psig.
Final hydrostatic pressure: 463 psig.

DRILLING TIME RECORD
 Eastern Petroleum Company
 State No. 1-10
 Sec. 10, T19N, R26E
 Apache County, Arizona
 Elevation 5743' rotary bushing

From	To	Minutes Per Ten Feet
100	200	3-4-3-5-3-3-2-3-5-5
200	300	5-3-5-8-6-6-4-5-5-7
300	400	5-7-7-9-8-8-7-8-6-6
400	500	8-11-10-6-9-9-8-9-10-11
500	600	9-10-10-10-11-11-NR-10-8-11
600	700	10-10-12-11-15-12-15-NR-14-20
700	800	20-20-25-24-19-20-14-53-24-25
800	900	40-40-14-14-18-20-26-30-26-20
900	974	40-36-36-30-42-43-45-(13 min. -4 ft.) Cored 974' to 999'
999	1035(total depth)	- No record.

SAMPLE DESCRIPTION

Eastern Petroleum Company
State No. 7-10
Sec. 10, T19N, R26E
Apache County, Arizona
Elevation 5743' rotary bushing

Samples start at 100 feet in the Chinle formation.

100 - 110	10 sandstone white, fine to medium grained, subangular to angular. 10 limestone red crystalline. 80 shale brick-red, with green blebs.
110 - 120	Trace of sandstone ditto. 10 limestone ditto. 90 shale ditto.
120 - 130	100 shale ditto, sandy, some limestone nodules.
130 - 140	Trace of sandstone ditto. 10 limestone ditto. 90 shale ditto.
140 - 150	10 limestone as above. 90 shale ditto.
150 - 160	Sample ditto. No limestone. 100 shale.
160 - 170	Sample ditto. 100 shale brick-red with green blebs.
170 - 180	Trace of limestone, probably nodules. 100 shale ditto.
180 - 190	100 shale ditto.
190 - 200	Trace of limestone. 100 shale ditto.
200 - 210	Trace of limestone. 100 shale ditto.
210 - 220	100 sandstone gray, fine to medium grained, subround to angular, well cemented.
220 - 230	70 sandstone ditto, calcareous. 30 shale brick-red.
230 - 240	90 sandstone ditto, calcareous. 10 shale ditto.
240 - 250	50 sandstone ditto, calcareous. 50 shale ditto, also gray.
250 - 260	50 sandstone ditto. 50 shale ditto.
260 - 270	20 sandstone ditto. 10 limestone gray, crystalline. 70 shale brick-red and light gray.
270 - 280	10 sandstone ditto. 90 shale ditto, brick red and light gray.

- 280 - 290 Trace of sandstone. 100 shale ditto, brick red and light gray.
- 290 - 300 Trace of sandstone. 10 limestone light gray, crystalline. 90 shale brick red and gray.
- 300 - 310 20 sandstone gray to red, fine to medium grained, subround to angular, well cemented. 80 shale ditto. Trace of limestone.
- 310 - 320 10 sandstone ditto. 90 shale varicolored.
- 320 - 330 10 sandstone ditto. Trace of limestone. 90 shale ditto, some brown sandy shale.
- 330 - 340 10 sandstone brown to gray, fine grained, micaceous. Trace of limestone. 90 shale ditto, some brown sandy shale.
- 340 - 350 10 sandstone ditto, micaceous. Trace of limestone. 90 shale ditto, some brown sandy shale.
- 350 - 360 30 sandstone white to gray, medium grained, subround to angular, in part brown micaceous. 70 shale ditto. Trace of limestone.
- 360 - 370 Trace of sandstone. 10 limestone. 90 shale brick red, brown.
- 370 - 380 Trace of sandstone. 100 shale brick red, brown, purple. Trace of light green shale.
- 380 - 390 20 sandstone white, fine grained. 80 shale light red.
- 390 - 400 20 sandstone ditto. 80 shale red and purple, much chert - brown and red.
- 400 - 410 10 sandstone ditto, fine to medium grained, friable, much brown chert and red. 60 shale light green to gray to red.
- 420 - 430 20 sandstone white, fine grained, much chert. 80 shale red, predominately light green.
- 430 - 440 80 sandstone white to clear, predominately medium grained, angular, much red chert. 20 shale ditto, much light green.
- 440 - 450 60 sandstone ditto, much red chert. 40 shale predominately light green.
- 450 - 460 20 sandstone ditto, much red chert. 80 shale with green sand and mudstone inclusions.
- 460 - 470 100 shale light green.

470 - 480 100 shale light green. Trace of red chert.
 480 - 490 100 shale light green.
 490 - 500 20 sandstone white, very shaley. 80 shale light green,
 sandy.
 500 - 510 10 sandstone gray, fine grained. 90 shale light green.
 510 - 520 10 sandstone ditto, probable cave. 90 shale ditto and
 purple.
 520 - 530 100 shale ditto, brick red, light green and lavender.
 530 - 540 20 sandstone medium grained, loose, some red chert.
 Trace of limestone. 80 shale as above.
 540 - 550 Much loose sandstone, probable cave. Trace of limestone.
 100 shale as above.
 550 - 560 Much loose sandstone, probable cave. 100 shale light
 green, red, and gray.
 560 - 570 10 sandstone gray, fine grained, cemented. 80 shale
 light red, gray, green. 10 limestone gray, crystalline.
 570 - 580 Trace of sandstone. 90 shale ditto, some chocolate brown.
 10 limestone ditto.
 580 - 590 Trace of brown silty sandstone. 100 shale ditto. Trace
 of limestone red, gray, and crystalline.
 590 - 600 20 sandstone brown, silty. 80 shale ditto.
 600 - 610 10 sandstone ditto. 90 shale predominately green, silty,
 and sandy.
 610 - 620 100 shale predominately green, slightly silty.
 620 - 630 100 shale ditto.
 630 - 640 100 shale ditto.
 640 - 650 30 sandstone light green, very fine grained, hard.
 70 shale ditto.
 650 - 660 50 sandstone ditto. Trace of red crystalline limestone.
 50 shale ditto, some chocolate brown.
 660 - 670 10 sandstone ditto. Trace of chert. 90 shale ditto,
 some brown micaceous.
 670 - 680 10 sandstone white, fine grained, and large loose quartz
 pebbles. 90 shale green, gray, and red, purple.
 680 - 690 10 sandstone red, very fine grained and loose pebbles.
 10 limestone tan, gray crystalline. 80 shale as above.

- 690 - 700 30 sandstone white, green, fine to coarse grained, angular, white clay cement. 10 limestone ditto and 10% brown chert. 50 shale ditto.
- 700 - 710 Sample ditto, lot of cave.
- 710 - 720 70 sandstone red, clear, fine to coarse grained, loose, subround to angular, some brown chert. 30 shale ditto.
- 720 - 730 80 sandstone white, fine to coarse grained, loose and well cemented, much pyrite and red chert. 20 shale ditto.
- 730 - 740 80 sandstone white, clear, medium to coarse grained, loose, 20 shale brown, micaceous and sandy - red.
- 740 - 750 90 sandstone ditto, some red and brown chert. 10 shale ditto.
- 750 - 760 90 sandstone ditto. 10 shale ditto.
- 760 - 770 70 sandstone ditto, much brown chert. 30 shale ditto.
- 770 - 780 90 sandstone ditto, much white chert. 10 shale ditto.
- 780 - 790 80 sandstone ditto, very much chert. 20 shale some red very sandy to brown sandy.
- 790 - 800 60 sandstone ditto, very much chert. 40 shale brown, red and gray.
- 800 - 810 70 sandstone ditto, very much chert, also mudstone conglomerate. 30 shale brown, red and gray.
- 810 - 820 40 sandstone ditto, red, conglomerate. 60 shale dark brown, green and gray.
- 820 - 830 30 sandstone white and red, loose as above, micaceous. Trace of limestone. 70 shale brown, chocolate red.
- 830 - 840 40 sandstone red, fine grained, very shaly. 60 shale chocolate brown and green, sandy. Trace of limestone.
- 840 - 850 20 sandstone ditto, probable cave. 80 shale chocolate red.
- 850 - 860 20 sandstone red, fine grained, micaceous. 80 shale chocolate brown, green, and gray, micaceous.
- 860 - 870 Sandstone and much chert, probable cave. 100 shale brown, green and gray, predominately brown micaceous.
- 870 - 880 Sandstone as above, probable cave. 10 limestone. 90 shale red and brown - some gray and green and lavender.
- 880 - 890 30 sandstone white, fine grained, well cemented. Trace of limestone. 70 shale red, green, gray, some sandy.

817 Elwood
Mack

831
Shively
Moerkopf

890 - 900	40 sandstone ditto, some red micaceous. 10 limestone tan, crystalline. 50 shale red and green and gray.
900 - 905	30 sandstone, probable cave. 70 shale red, gray, green, and purple.
905 - 910	20 sandstone red, white. 80 shale red, gray, green. Trace of limestone.
910 - 915	10 sandstone ditto. 90 shale ditto.
915 - 920	10 sandstone ditto. 90 shale red to chocolate brown, micaceous.
920 - 925	20 sandstone red and green, fine grained. 80 shale brown, red, green.
925 - 930	30 sandstone red, white, very fine grained, calcareous, micaceous. 70 shale chocolate brown, micaceous, some green.
930 - 935	50 sandstone red, fine grained, well cemented. 50 shale ditto.
935 - 940	20 sandstone light red, white, light green, fine grained, well cemented. 80 shale brown, red, sandy, micaceous.
940 - 945	30 sandstone as above, friable. 70 shale brown, red, green.
945 - 950	20 sandstone rootbeer color, tan, fine to very fine grained, calcareous, hard. 80 shale ditto.
950 - 955	10 sandstone white, very fine to fine grained, some medium, salt and pepper in appearance. 90 shale red, green, brown, some brown chert.
955 - 960	10 sandstone tan to buff to red, very fine grained. 90 shale red and gray.
960 - 965	50 sandstone tan to brown, very fine grained. 50 shale red to brown, probably streaked.
965 - 970	80 sandstone red, very fine grained, shaly. 20 shale brown as above.
974 - 1000	See Core No. 1
1000 - 1010	100 sandstone buff, fine to medium grained, subround to subangular, friable.
1010 - 1020	100 sandstone ditto.
1020 - 1030	100 sandstone ditto.
1030 - 1035	100 sandstone ditto.

Root Beer
20' show

975
Coconino



Fife Symington
Governor

State of Arizona
Arizona Geological Survey

845 North Park Avenue, #100
Tucson, Arizona 85719
(602) 882-4795



Larry D. Fellows
Director and State Geologist

October 28, 1992

Mr. Merle Bohlander
1600 Turtle Creek
Pampa, Texas 79065

Dear Merle:

Enclosed is the information you requested, the last few years of production and the plugging records for the wells in the Pinta Dome Field. I have also enclosed a summary of surface shut-in pressures for the Pinta Dome Field.

Sincerely,

Steven L. Rauzi
Oil & Gas Program Administrator

Enclosures



OFFICE OF
Oil and Gas Conservation Commission

STATE OF ARIZONA
8686 NORTH CENTRAL, SUITE 106
PHOENIX, ARIZONA 85020
PHONE: (602) 271-5161

March 7, 1977

Mr. C. J. Breeden
Kerr-McGee Corporation
P.O. Box 250
Amarillo, Texas 79105

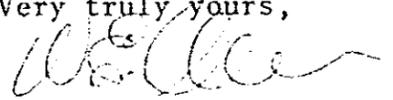
Re: Form 9, Application to Abandon and Plug

Dear Mr. Breeden:

Attached are your approved copies of Form 9, Application to Abandon and Plug ten wells in the Pinta Dome Field, Apache County, Arizona.

Please advise me what date you plan to commence plugging operations.

Very truly yours,


William E. Allen
Director
Enforcement Section

WEA/vb
Enc.



KERR-McGEE CORPORATION
626 AMARILLO PETROLEUM BUILDING
P. O. BOX 250 • AMARILLO, TEXAS 79105

PHONE
806 376-7256

February 28, 1977

Arizona Oil and Gas Conservation Commission
8686 North Central Avenue, Suite 106
Phoenix, Arizona 85020

RECEIVED
MAR 3 1977
O & G CONS. COMM.

RE: Form 9
Application to Abandon
and Plug

Gentlemen:

Attached are two copies each of Form 9, Application to Abandon and Plug, for 10 wells in the Pinta Dome Field, Apache County, Arizona. Plugging will commence when your approval is obtained and with availability of equipment to perform this work. If there are any questions, please advise.

Sincerely,

KERR-McGEE CORPORATION

C. J. Breeden
District Manager
Southwest District - North America

CJB/srm

Attachments

80

Operator Eastern Petroleum Company

Bond Company U. S. Fidelity & Guaranty Co. Amount \$10,000

Bond No. 27716-13-3746-60 Date Approved 8-1-60

Permits covered by this bond:

*see this
file*

<u>269</u> ✓	234 ✓
<u>81</u> ✓	230 ✓
<u>252</u> ✓	229 ✓
<u>251</u> ✓	237 ✓
<u>107</u> ✓	236 ✓
<u>207</u> ✓	218 ✓
<u>157</u> ✓	209 ✓
<u>88</u> ✓	206 ✓
<u>80</u> ✓	194 ✓
<u>78</u> ✓	188 ✓
<u>264</u> ✓	155 ✓
<u>263</u> ✓	150 ✓
<u>273</u> ✓	152 ✓
<u>259</u> ✓	109 ✓
<u>258</u> ✓	108 ✓
<u>255</u> ✓	107 ✓
<u>282</u> ✓	
<u>250</u> ✓	
<u>276</u> ✓	
<u>284</u> ✓	
<u>227</u> ✓	

CANCELLED

DATE 11-22-65

RECEIVED
FEB 01 1971
O & G CONS. COMM.

RECEIVED
1971
O & G CONS. COMM.

January 28, 1971

81

Mr. F. C. Ryan
State Land Department
1624 West Adams
Phoenix, Arizona 85007

Re: U.S.F.G. Bond 13374760
Amount - \$4000.00

Dear Mr. Ryan:

I know we've had a few discussions regarding release of this bond which has been in effect for 10 years or so. It was taken out to cover the drilling of a well at that time. For some years now we have had a \$25,000 blanket bond #13398363 in effect. I can think of no useful purpose this smaller bond can perform. The well in question was plugged and the location cleaned up. Surely the blanket bond is large enough to satisfy state requirements.

It's a bit hazy with me now but I believe the Land Department's attorney is the one who refused to authorize release.

Anything you may do in this regard will be appreciated.

Yours very truly,

EASTERN PETROLEUM COMPANY

J. N. Edwards

JNE:sjn

cc: Mr. John Bannister
Oil & Gas Conservation Comm.
4515 North 7th Avenue
Phoenix, Arizona 85013

*Could you give me
a hand here -
Thank*

Y. Ch...
L...

X [10
39
36
349
378
80
38
81
Kerr-McGee Station #
(No Permit)

June 12, 1968

Mr. Otto C. Barton
Kerr-McGee Corporation
P. O. Box K
Sunray, Texas 79086

Re: Pinta Dome Unit Wells

Dear Mr. Barton:

This letter constitutes permission from this Commission to suspend the annual testing for the captioned wells as provided by Rule 401 during June, 1968.

Sincerely,

John Bannister
Executive Secretary

JAL:jf



OFFICE OF
Oil and Gas Conservation Commission
 STATE OF ARIZONA
 ROOM 202
 1624 WEST ADAMS
 PHOENIX, ARIZONA 85007
 PHONE: 271-5161

X- Lambert
 X- Chrono

May 22, 1969

Mr. Otto C. Barton
 Kerr-McGee Corporation
 P. O. Box K
 Surray, Texas 79086

Re: Kerr-McGee Fee #1
 Kerr-McGee Fee #2
 Kerr-McGee State #1 (Sec. 34 of 20826)
 Kerr-McGee State #2
 Kerr-McGee State #3A
 Kerr-McGee State #4A
 Eastern State #1-10
 Eastern State #1-28
 Eastern State #1-2

Permit #10
 Permit #39
 No Permit
 Permit #36 } X
 Permit #349 }
 Permit #378 }
 Permit #80 }
 Permit #88 } X
 Permit #81 }

Dear Mr. Barton:

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.

Page 2
Mr. Barton
May 22, 1969

The tests as 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.



OFFICE OF
Oil and Gas Conservation Commission
STATE OF ARIZONA
ROOM 202
1624 WEST ADAMS
Phoenix, Arizona 85007
PHONE: 271-5161

June 6, 1968

Kerr-McGee Corporation
P.O. Box K
Sunray, Texas 79086

Attention: Mr. Otto C. Barton

Re: Kerr-McGee #1 State
SW SW 34-20N-26E, Apache County, Permit

Kerr-McGee #2 State
NW SE 34-20N-26E, Apache County, Permit 36

Eastern Petroleum #1-2 State
NE SW 2-19N-26E, Apache County, Permit 81

Eastern Petroleum #1-28 State
SE SE 28-20N-26E, Apache County, Permit 88

Kerr-McGee #1 Fee
SW SE 33-20N-26E, Apache County, Permit 10

Eastern Petroleum #1-10 State
NE NE 10-19N-26E, Apache County, Permit 80

Kerr-McGee #2 Fee
NW NW 35-20N-26E, Apache County, Permit 39

Kerr-McGee #3A State
NE NE 4-19N-26E, Apache County, Permit 349

Kerr-McGee #4A State
SW NE 32-20N-26E, Apache County, Permit 378

Gentlemen:

In reply to your letter of May 22, 1968, this letter constitutes permission from this Commission to suspend until further notice the annual capacity testing of captioned helium gas wells comprising the Pinta Dome Coconino Sand Gas Pool Unit.

Very truly yours,

John Bannister
Executive Secretary



May 22, 1968

Oil & Gas Conservation Commission
of the State of Arizona
Room 202, 1624 West Adams Street
Phoenix, Arizona 85007

Attention: Mr. John Bannister
Executive Secretary

Gentlemen:

We are hereby requesting the Commissions approval to defer the annual testing requirements set forth in the rule 401 on all Helium Gas Wells in the Pinta Dome Unit, Apache County, Arizona.

This field is a unit operation and only those wells needed to supply the plants demand are produced. At present only four wells, Eastern State #1-28, Eastern State #1-2, KM State #1 and KM State #2 are being produced. The other five wells in the unit, Eastern State #1-10, KM State #3A and 4A and KM Fee #1 and #2 have been shut in since the unit was formed on January 1, 1968.

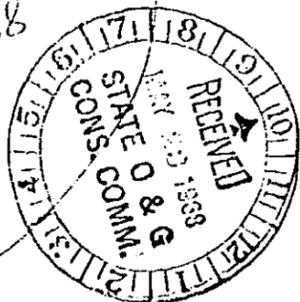
As our sales and production rates vary greatly over short periods of time and well pressures are very low, it is almost impossible to follow testing procedures as outlined in the testing manual except by venting gas to the air while testing.

The venting of gas to air constitutes a waste of valuable natural resources. We feel that no useful purpose can be served by annual potential tests of wells in a unit operation of this kind. Therefore we are making this request that annual tests be deferred on all wells in the Pinta Dome Unit. This includes both the four producing wells and five temporarily shut in wells listed above.

Yours very truly,
Kerr-McGee Corporation

Otto C. Barton
Otto C. Barton
Division Superintendent of Oil & Gas Prod.
Box K-Sunray, Texas-79086

*Granted
5-29-68
JB*



Our File No. 80

May 12, 1964

Eastern Petroleum Company
Box 291
Carmi, Illinois

Attention: Mr. J. N. Edwards

Re: Eastern State #1-10
Section 10 - T19N - R26E, Apache County

Gentlemen:

Enclosed for your files is an executed copy, with approval date of May 11, 1964, of Operator's Certificate of Compliance and Authorization to Transport Oil or Gas From Lease in connection with captioned well.

Very truly yours,

John Bannister
Executive Secretary

JB/mkc
Encl.

DENVER OFFICE 2520 FIRST NATIONAL BANK BUILDING - MA 5259



EASTERN PETROLEUM CO.
EASTERN DRILLING, INC.

TELEPHONE 38-24104 - P. O. BOX 291 - CARMEL, ILLINOIS

May 6, 1964

Mr. John Petty, Petroleum Geologist
Oil and Gas Conservation Commission
Room 202
1624 West Adams St.
Phoenix, Arizona

Dear Mr. Petty:

Certificate of Compliance for the three Pinta Dome wells are enclosed.

No Certificates are enclosed for Navajo Springs as no gas is being transported at this time.

Yours very truly,

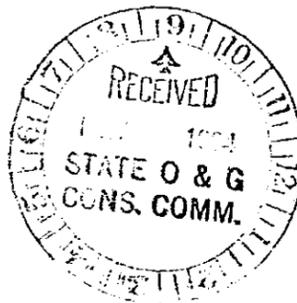
EASTERN PETROLEUM COMPANY


J. N. Edwards

JNE:mf

Encls.

Files Nos. 80 ✓
81
88





EASTERN PETROLEUM CO.
EASTERN DRILLING, INC.

2520 FIRST NAT'L BANK BLDG.
DENVER 2, COLORADO
MA 3-5259

December 1, 1961

Mr. C. F. Miller, Manager
Production Department
Kerr-McGee Oil Industries, Inc.
Kerr-McGee Building
Oklahoma City, Okla.

Re: State No. 1-10 (Unit X)
Pinta Dome, Arizona

Dear Charlie:

Pursuant to your letter of November 28th, enclosed is data pertaining to the recent testing of the above cited well by Geoelectric.

We recognize that the attached flow test data does not include a stabilized flow test at 70 psi. However, we do feel that it can be concluded from this test that (1) The well is capable of delivering gas against 70 pounds pressure and (2) That water does not appear to be a problem.

If you feel that it is necessary, we will continue testing and report to you and the Commission a stabilized flow rate against a specific back pressure of 70 pounds.

Respectfully yours,

EASTERN PETROLEUM COMPANY
Rocky Mountain Division

James W. Dean

JWD:JS
Enclosure ✓
Carbon Copy: Mr. D. A. Jerome ✓

C
O
P
Y

May 18, 1959

Mr. Phil Johnson, State Geologist
P.O. Box 4126
University of Arizona, Geological Building
Tucson, Arizona

Re: Pinta Dome Area, Drilling Permits

Dear Phil:

In reference to our phone conversation of May 15 concerning the water sands in the drilling program which we have set up for the above captioned area, this letter will set out my understanding of your desires and our obligations.

Since we anticipate drilling with air, we will be limited to the amount of water that we can encounter and still continue air drilling operations. Therefore, if we are successful with our air drilling, it will mean that we have not encountered any great water problems. If, however, we are not successful with air, we will then mud up and continue drilling operations with mud as a drilling medium. It will be our obligation to carry our mud in such condition as to keep the waters confined within the sands.

In the event of a dry hole or production, we will of course consult with you on the plugging of the hole or on the running or setting of the production string. At this time you will advise us as to the plugging or covering of the water sands with cement if such conditions are encountered.

Trusting that this letter fulfills the requirements and understanding of this situation, I am

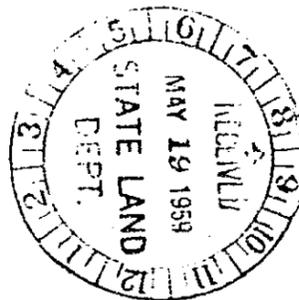
Respectfully yours,

EASTERN PETROLEUM COMPANY
Rocky Mountain Division

Paul Fullop
Division Engineer - Partner

Carbon Copy: Mr. Frederick C. Ryan, Supervisor
Oil and Gas Conservation
Capital Annex Office Building
Phoenix, Arizona

PF:JS



80 9

