

Well No.

1-28

Lease

Heinson

GAS

S 28 T 33 R 28 ^{EX} W

WELL LOG

Show all important zones of porosity and contents thereof; cored intervals, and all drill-stem tests, including depth interval tested, cushion used, time tool open, flowing and shut-in pressures, and recoveries.

SHOW GEOLOGICAL MARKERS, LOGS RUN, OR OTHER DESCRIPTIVE INFORMATION.

FORMATION DESCRIPTION, CONTENTS, ETC.

TOP

BOTTOM

NAME

DEPTH

DST #1 5711-5796 Misrun Morrow

DST #2 5799-5870 Chester

IF, FH: 2924, 2839

IF, FF: 51-51; 51-51

ISI, FSI: 2020, 2037

Rec. 70' GCM, GTS @ 17.2 mcf

DST #3 5560-5606 Misrun

DST #4 5570-5590 Cherokee

IH, FH: 2769, 2769

IF, FF: 48-65, 65-65

ISI, FSI: 274, 339

Rec. 130' DM

Wreford	2950
Heebner	4412
Toronto	4440
Lansing	4580
Marmaton	5200
Cherokee	5390
Morrow	5718
Chester	5772

USE ADDITIONAL SHEETS, IF NECESSARY, TO COMPLETE WELL RECORD.

Date Received

Brad Couch

Signature

Drilling Supervisor

Title

February 18, 1980

Date

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STATE OF KANSAS - CORPORATION COMMISSION
MULTIPOINT BACK PRESSURE TEST

FORM CG-1

TYPE TEST: Initial Annual Special TEST DATE: 2-13-80

COMPANY: Mesa Petroleum Co LEASE: Heinson WELL NO.: 1-28

COUNTY: Meade LOCATION: Chester SECTION: 28 TWP: 33S RNG: 28W ACRES: 14.4

FIELD: Chester PIPELINE CONNECTION: FEB 5 1980

COMPLETION DATE: PLUG BACK TOTAL DEPTH: 5890 PACKER SET AT: None AMARILLO PRODUCTION

CASING SIZE: 4 1/2 WT.: 10.5 ID: SET AT: 5880-90 PERF. TO: 5858-64

TUBING SIZE: 2-3/8 WT.: ID: SET AT: 5766 5848-52 PERF. TO: 5801-14 5830-36

TYPE COMPLETION (Describe): Single (Gas) TYPE FLUID PRODUCTION:

PRODUCING THRU: Tubing RESERVOIR TEMPERATURE F: BAR PRESS - P_a: 14.4 Psia

GAS GRAVITY - G_g: .646 % CARBON DIOXIDE: % NITROGEN: API GRAVITY OF LIQUID:

VERTICAL DEPTH (H): 5846 TYPE METER CONN.: (METER RUN) (PROVER) SIZE: 2" CFP

REMARKS: RECEIVED NOV 13 2006 KCC WICHITA

OBSERVED DATA DURATION OF SHUT-IN HR.

RATE No.	ORIFICE SIZE in.	PRESSURE psig	DIEP. (h _w) (hd)	FLOWING TEMP. t	WELL-HEAD TEMP. t	CASING WELLHEAD PRESS.		TUBING WELLHEAD PRESS.		DURATION HOURS	LIQUID PROD. Bbls.
						psig	(P _w)(P _t)(P _c) psia	psig	(P _w)(P _t)(P _c) psia		
SHUT IN						1620	1634.4	1620	1634.4		
1	3/32	1598		60		1600	1614.4	1598	1612.4	1 hr.	
2	1/8	1555		60		1568	1582.4	1555	1569.4	1 hr.	
3	3/16	1466		60		1490	1504.4	1466	1480.4	1 hr.	
4	1/4	1334		60		1364	1378.4	1334	1348.4	1 hr.	
5											

RATE OF FLOW CALCULATIONS

RATE NO.	COEFFICIENT (F _p)(F _p) Mcfd	(P _w)(P _t)(P _c) PRESSURE psia	EXTENSION $\sqrt{P_m x h_w}$	GRAVITY FACTOR F _g	FLOWING TEMP FACTOR F _t	DEVIATION FACTOR F _{pv}	RATE OF FLOW Q Mcfd	GOR	Q _m
1	0.1446	1612.4		1.244	1.0000	1.168	339		
2	0.2716	1569.4		1.244	1.0000	1.164	617		
3	0.6237	1480.4		1.244	0.9900	1.156	1315		
4	1.115	1348.4		1.244	0.9971	1.141	2128		
5									

PRESSURE CALCULATIONS

RATE NO.	P _t psia	P _c psia	P _w psia	(P _c) ² THOUSANDS	(P _w) ² THOUSANDS	PLOTING POINTS		100 $\left[\frac{P_w - P_a}{P_c - P_a} \right]$
						(P _c) ² - (P _w) ² THOUSANDS	Q Mcfd	
1				2671.3	2606.3	65	339	
2				2671.3	2504.0	167.3	617	
3				2671.3	2263.2	408.1	1315	
4				2671.3	1900.0	771.3	2128	
5								

INDICATED WELLHEAD OPEN FLOW 5400 Mcfd @ 14.65 psia "n" = .754

The undersigned authority, on behalf of the Company, states that he is duly authorized to make the above report and that he has knowledge of the facts stated therein, and that said report is true and correct.

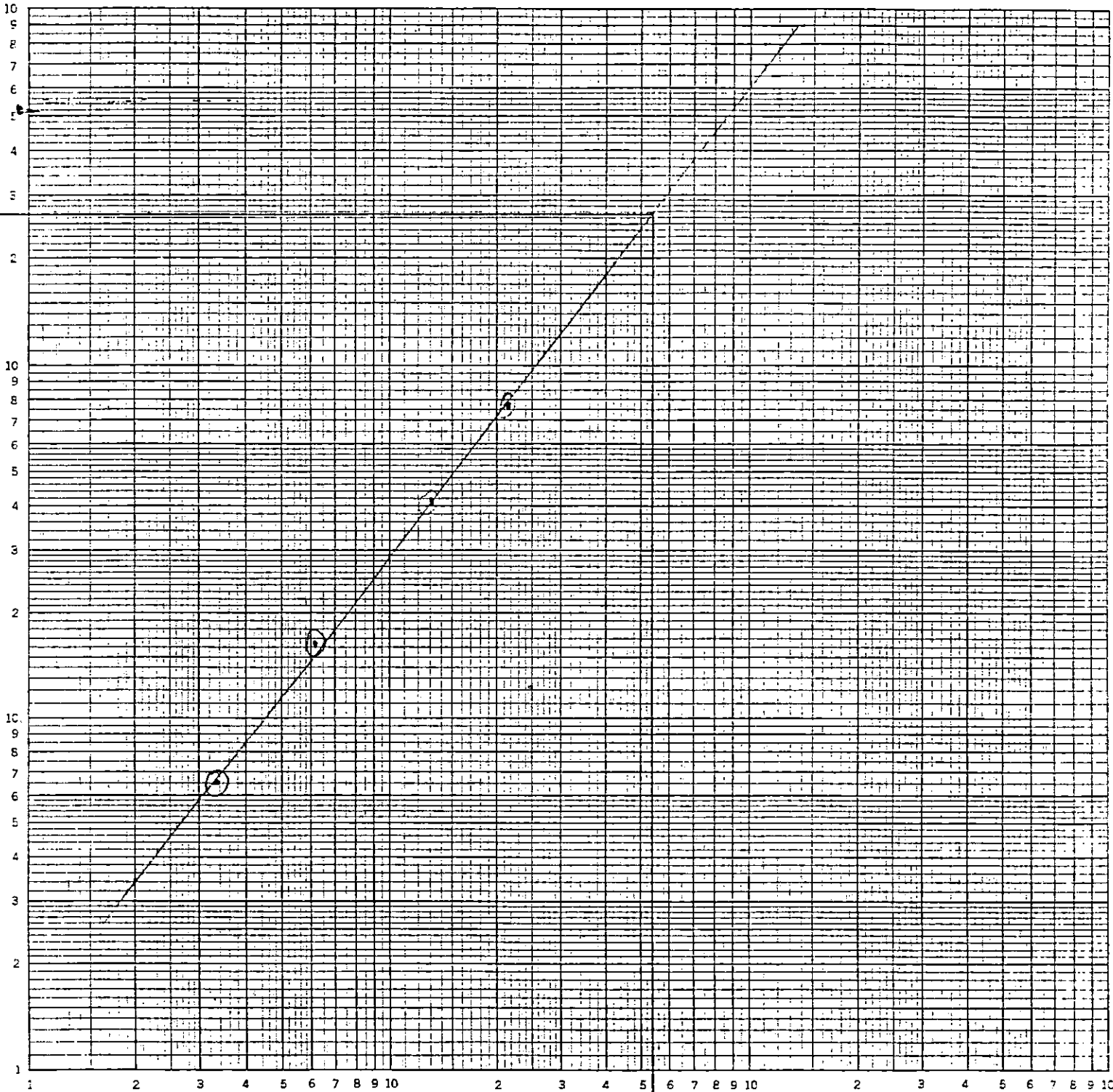
Executed this the 14 day of February, 19 80

Witness (if any) _____
For Commission _____
Thurmond-McGlothlin, Inc.
Checked by _____

OPERATOR: Mesa Petroleum Co
 LEASE: Heinson
 WELL NO.: #1-28
 DATE: 2-13-80

46 7402

LOGARITHMIC 3 X 3 CYCLES
 KEUFFEL & ESSER CO. MADE IN U.S.A.



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CCC WICHITA

○ → MCF/Day

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FEB 15 1980

AMARILLO PRODUCTION

AOE - 5400 MCF/Day
 O - 530
 IV - 1754

TYPE

NOTICE OF INTENTION TO DRILL

C-1
M.I.-1221

TO BE FILED WITH THE STATE CORPORATION COMMISSION
PRIOR TO COMMENCEMENT OF WELL

API Number 15-119-20,386
(For office use only)

1. Operator Mesa Petroleum
Address 50 Penn Place, Suite 1200
Oklahoma City, OK 73118

Starting Date Dec. 20, 1979
County Meade

2. Contractor Sage Drilling, Inc.
Address 222 Sutton Pl., Wichita, KS 67202

Sec 28 Twp 33 S Rge 28 ^{EX}W
Spot Location C NW SE

3. Type of Equipment: Rotary Cable Tool _____
4. Well to be Drilled for: Oil _____ Gas
Disposal _____ Input _____ Other _____
5. Depth of Deepest Fresh Water within 1 mile 300 ft.
6. Depth of Municipal Water Well within 3 miles none ft.
7. Depth to Protect all Fresh Water 450-550 ft.
8. Amount of Surface Casing to be set 1500 ft.
9. Alternate No. 1 No. 2 _____

Nearest Lease Line 1980 ft.
Lease Name Heinson
Well No. 1-28
Est. Total Depth 6200 ft.

REMARKS:

OPERATOR STATES THAT HE WILL COMPLY WITH K. S. A. 55-128

MAILED

Signature of Operator

C. Brad Crouch
C. Brad Crouch

DEC 11 1979

COPY SENT TO
AMARILLO PRODUCTION

CONSERVATION DIVISION
WICHITA, KANSAS

xc: KP+L

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DATA AND AFFIDAVIT

(On Cementing in Surface or Drive Pipe and required by Rule 82-2-123 of the Commission for compliance with Section 55-136, 55-137 and 55-138, 1947 Supplement to G. S. Kansas 1935)

LEASE OWNER Mesa Petroleum Co.

OFFICE ADDRESS 50 Penn Place, Suite 1200, Oklahoma City, Okla. 73118

LEASE NAME HEINSON WELL NO. 1-28 COUNTY Meade

EXACT SPOT LOCATION 1980' FSL & 1980' FEL SEC. 28 TWP. 33S RGE. 28W (W) (E)

CONTRACTOR Sage Drilling Co., Inc.

OFFICE ADDRESS 222 Sutton Place, Wichita, Kansas 67202

Drilled with ~~(XXXX)XXX~~ (Rotary) tools: Date pipe set December 22, 1979

SURFACE HOLE DATA

SURFACE PIPE DATA

Size of Hole 12 1/2" Csg. (new) ~~XXXXXXX~~ Size 8-5/8" wt. 24#

Depth 1518' Where set 1517'

METHOD OF CEMENTING

Cement: Amount and kind 700 sax 35/65 Poz, 2% CC; 200 sax Class H, 3% CC

Method: (By Service Co., Dump, Tog., etc.) Dowell

Est. Height Cement behind pipe Cement Circulated

GROUND WATER INFORMATION

Depth to bottom of lowest fresh water producing stratum 450'

Name of lowest fresh water producing stratum Unknown

Surface elevation of well Est. 2450'

ADDITIONAL INFORMATION

(Additional information may be submitted on separate sheet)

A F F I D A V I T

STATE OF KANSAS, COUNTY OF SEDGWICK SS,

I, John R. Bartholomew, of the Sage Drilling Company, being first duly sworn on oath, state: That I have knowledge of the facts, statements and matters herein contained and that the same are true and correct.

John R. Bartholomew

Subscribed and sworn to before me on this 27th day of December, 1979

My Commission Expires: November 26, 1982.

Louise K. Whitted
Notary Public Louise K. Whitted

COPY SENT TO
BARILLO PRODUCTION

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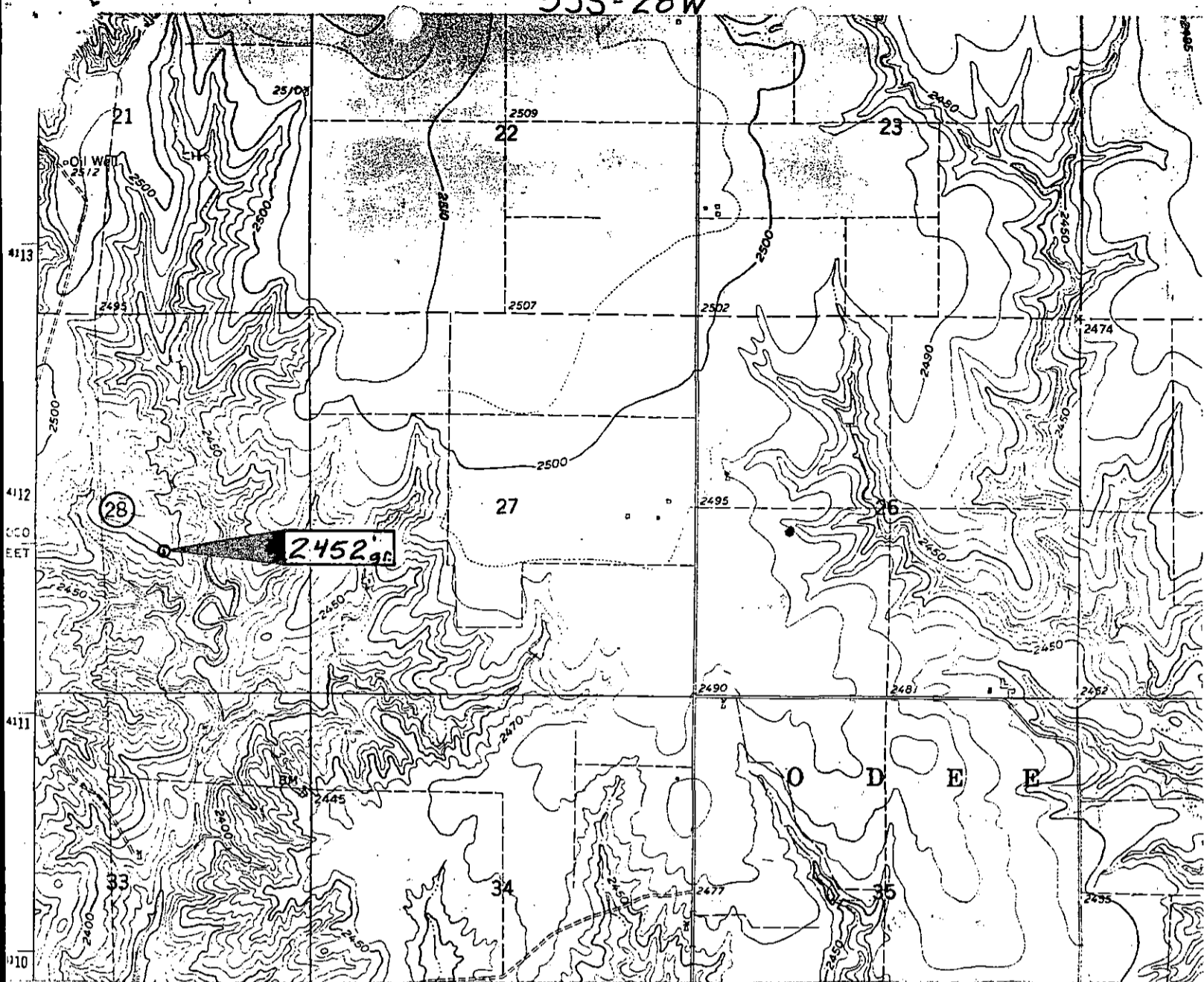
FEB 18 1980

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AMARILLO PRODUCTION KCC WICHITA

33S-28W



Map Scale: 1" = 2000'
 Contour Interval: 10'

NOTE: If there is any possible discrepancy in this elevation information, call Topographic Engineering Co. (405) 235-2363

Mesa Petroleum
 50 Penn Place
 Suite 1200
 OKC, Okla. 73118

WELL ELEVATION REPORT

MESA PETR.
 Operator

HEINSON # 1-28
 Lease Well No.

NW-SE Sec. 28-33S-28W
 Location

MEADE, KANSAS
 County State

ELEVATION:	<u>2462'</u>	Kelly Bushing
	<u>2460'</u>	Derrick Floor
	<u>2452'</u>	Ground

12-28-79 Yes No
 Date Left at Rig. **RDS**
 By

TOPOGRAPHIC ENGINEERING CO.
 409 Regency Tower, 333 N.W. 5th St.
 Phone: (405) 235-2363
 Oklahoma City, Oklahoma 73102

dist 25-80

Central Records
Accounting
Amarillo Production
M & M
D & M
Wayne Riddle
Kathy Massey

WELL RECORD

WELL NAME & OPERATOR Mesa Petroleum Co. Heinson 1-28

LOCATION 1980' FSL, 1980' FEL Sec. 28, T33S, R28W Meade Co., KS

SPUD DATE 12-21-79 ELEVATION 2452 GR, 2463 KB

PBTD 5994' DATE TD REACHED 1-5-80 TD 6000'

DATE DRILLING RIG MOVED OFF 1-8-80

DATE COMPLETION UNIT MOVED ON 1-13-80 DATE MOVED OFF 2-4-80

W.I. OWNERS Mesa 100%

CONTRACTOR Sage Drilling, Inc. PROSPECT Crooked Creek

TYPE WELL: OIL X GAS P&A'd OP NO. 07-KS-0031-21

PRODUCING FORMATION Chester

FIRST REPORT

- 12-21-79 MIRU
- 12-22-79 Spudded @ 5:30 PM 12-21-79. Drilling @ 1300' (1231')
- 12-23-79 @ 1515' (215') Rdbd., Ran 35 jts 8 5/8" 24# K55 (1517.78) set @ 1515'.
Cme'd w/700 sx 35:65 Poz 12% caCl 200 sx H 3% CaCl. Cmt. circ. PD @
4:05 PM 12-22-79
OART: WOC
- 12-24-79 @ 2586' (1071') LmSh, MW 9.1, Vis. 30. Prep to SD
OART: Drlg.
- 12-25-79 SD
- 12-26-79 SD
- 12-27-79 SD

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12-28-79 @ 3179' LmSh, MW 9.0, Vis. 31, Chlor. 71,000, LCM 3
OART: Drilling

12-29-79 @ 3835' (656') LmSh, MW 9.0, Vis. 32, Chlor. 15,000, LCM 3
Elevations: 2462 KB, 2460 DF, 2452 GL
OART: Drilling

12-30-79 @ 4385' (550') LmSh, MW 8.9, Vis. 46, Chlor 8,000, LCM 4
OART: Drilling

12-31-79 @ 4865' (480') LmSh, MW 9.0, Vis. 36, WL 20, Chlor. 5,000, LCM 3
OART: Drilling

1-1-80 @ 5225' (360') Lm, MW 9.0, Vis. 38, WL 12.5, Chl. 6,000, LCM 3
OART: Drilling

1-2-80 @ 5505' (280') LmSh, MW 9.0, Vis. 39, WL 13, Chl. 4,000, LCM 3
OART: Drilling

1-3-80 @ 5699' (194') LmSh, MW 9.0, Vis. 48, WL 10.4, Chl. 5,000, LCM 3
OART: Drilling

1-4-80 @ 5796' (97') SdSh, MW 9.0, Vis. 45, WL 9.8, Chl. 3,500, LCM 3
DST #1 5711-5796
IF: wk blow, dead in 30"
FF: no blow
OART: POH/DST #1

1-5-80 @ 5870' (74') Lm, MW 9.0, Vis. 50, WL 10, Chl. 4,000, Calcium 1
LCM 3
DST #2 5799-5870 (Chester) FF, GTS @ 17100

1-6-80 @ 6000' (130') ShLm, MW 9.1, Vis. 56, WL 9.2, Chl. 5,000, LCM 3
DST #2 Chester 5799-5870 30, 60, 60, 120
IH, FH: 2924, 2839
IF: 51-51
ISI: 2020
FF: 51-51 GTS in 5" stable @ 17.2 mcf
FSI: 2037
Rec. 70' GCM
OART: Circ. for logs

1-7-80 @ 6000' MW 9.1, Vis. 56, WL 9.2, Chl. 5,000, LCM 3
OART: TIH w/DST #3 tools

1-8-80 @ 6000' MW 9.0, Vis 55, WL 10, Chl. 5000, LCM 3
DST #3 Mis run 5560-5606
DST #4 5570-5598 30", 60", 60", 120"
IH, FH: 2769-2769
IF: 48-65 wk blow
ISI: 274
FF: 65-65 v wk blow
FSI: 339
Rec. 130' DM no shows
OART: Circ. for casing

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- 1-9-80 Ran 147 jts 4 1/2" 10.5 K55 ST&C (6006) set at 5999'. float @ 5957. Cmt'd w/50 sx H, 8% gel, 12 1/2# Kolite, 10% salt; 250 sx 50:50 Poz 4% gel, 18% sale, 12 1/2# Kolite 3/4% TIC; 150 sx 50:50 Poz. 18% salt 12 1/2# kolite, 3/4% TIC. PD @ 6:10 PM 1-8-80. Set slips. Released rig @ 7 PM 1-8-80
Did not bump plug. Float held. Drop from report until completion rig moves in.
- 1-14-80 MI & RU Completion Unit
- 1-15-80 Ran GRCL & CBL from PBDT 5994 to 3600 ct @ 3706. Unable to get down past 5894. Cleaned out 3' w/sand pump. Inst. 4 1/2" Orbit valve & perf'd Chester 5880-90, 5858-64, 5848-52, 5830-36 & 5801-14 Total 39 holes. SDFN.
This AM SICP 20 psi, Prep to RIH w/tbg & pkr & swab test.
- 1-16-80 SICP 20 psi. Installed WH & BOP Ran 2 3/8" tbg (185 jts) PSN & Baker Model "R" pkr. Set pkr @ 5773. RTS. Swabbed dry, 25' fluid entry in 1 hr. SDFN.
This AM SITP 220 psi, no fluid entry. Prep to acidize.
- 1-17-80 SITP 220 psi, 0 Fluid in hole, Acidized w/6000 gal 15% NE acid. Washed by perms 3 times 500 gals. Raised tbg, set pkr @ 5733' sq remaining 5500 gal w/ball sealers (60) Max treatment press 1300 psi, Max FR 4.0 BPM. ISIP 800 psi, 15 min 500 psi 175 BLWTR, RTS rec'd 20 bbls well kicked in. After 4 hrs FTP 50 psi, est. FR @ 600 mcf 5 BLWH 95 BLWTR. Left flowing overnite. This AM FTP 16 psi, FR 250 mcf 1 BWPH
- 1-18-80 FTP 16 psi, FR 250 mcf 1 BWPH Ran Swab - 50' Fluid in hole After 7 hrs FTP 12 psi FR 250 mcf 1/2 BWPH SIFN
This Am SITP 1360 psi, Prep to POH w/tbg & frac.
- 1-19-80 SITP 1360 blew well down POH w/tbg & pkr Rig Hal. to frac Chester int. w/81,000# 20-40 sand carried in 60,000 gal versagel + 700 SCF CO2/BBL. Max press 2900 - avg. 2500 psig. Avg. FR 38 BPM. Max sand cons. 3 lb/gal ISIP 1650 15 min. 1350. SI 4 hrs. CP 920 psi, opened on 1" ck after 3 hrs FCP 200 psig rec. 40 BLWPH Left flowing overnite.
- 1-20-80 FCP 50 psig 1" ck est. FR of 1220 mcf 2-3 BWPH. Est. 1050 BLWTR. SI for week end due to bad road conditions.
- 1-21-80 SI
- 1-22-80 SICP 1650 psig Opened on 1" ck. After 1 hr FTP 150 psig, 6 hr FTP 90 psig FR 1800 mcf + 2 BLWPH Left open overnite. This AM FTP 80 psi FR 1650 mcf 1-1 1/2 BLWPH RIH w/junk basket. Tagged fill @ 5885' (5' sand over bottom perf's) Prep to set ret. "D" pkr & perf Toronto zone.
- 1-23-80 FTP 80 psi FR 1640 MCFD. 1-1 1/2 BLWPH. RU Wireline. Ran 4 1/2" gauge ring. Tagged fill @ 5885 (5' fill over perms) ran Baker "Ret D" pkr w/plug set @ 5780'. Blew down csg, paker holding. Perf. Toronto 4474-84, 4452-62 w/3 1/8" csg gun w/1 SPF. RIH w/tbg & pkr, set @ 4434'. RTS. Swab dry, no fluid on gas entry. SDFN. This AM prep to acidize.

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- 1-24-80 SITP 20 psi. No fluid in hole. Spot sand on plug. POH w/tbg & pkr. RU GO WL perf'd additional Toronto intervals 4442-52' & 4464-74' using 3 1/8" csg gun X 1 SPF. RIH w/tbg & pkr. Set pkr @ 4434' RTS. Swab dry - light show of gas TSTM. SDFN. This AM SITP 20. Prep to acidize.
- 1-25-80 Acidized Toronto w/1750 gal 15% NE 4 BPM @ 1700#. Good ball action. ISDP 600#. 71 bbls total load. Swabbed 51 BLW w/show of gas. This AM SITP 60#, FL 3500'
- 1-26-80 Acidized Toronto w/2000 gal 15% acid. Washed 250 gasl. squeezed 1750 bals Max. press. 1700 psi, Max rate 4.0 BPM. Good ball action. ASDP 600 psi, 15 min 300 psi, 71 BLWTR RTS. Rec'd 47 BLW in 3 hrs. Rate dropped to 1 BLWPH 100' gas ahead of each swab. SDFN 20 BLWTR
- 1-27-80 SITP 80 psi, FL 3500', Swabbed 3 hrs. rec'd 8 BLW no gas. Prep to cement squeeze Toronto int. mixed 100 sax class H. Est. fuel rate of 4 BPM @ 1200 psi. Pumped cement, flushed to formation. Press. inc. w/11 1/2 bbls into formation. Attempted to stage in remainder of slurry unable to obtain squeeze. Cack washed hole clean. SDFN
- 1-28-80 SD. This AM Prep to resqueeze w/100 sx cement
- 1-29-80 RU Howco. Est. rate @ 4 BPM @ 1400 psi sq. w/100 sx class H @ 3.5 BPM 1200 psi slowed rate to 1.75 BPM @ 0 psi. Slowed to 1/2 BPM press. inc. to 50 psi. All slurry in formation did not obtain sq. Over flushed w/4 bbls wt circ. hole clean. Re-squeezed w/50 sx class H + 2% CC followed w/50 sx Class h w/15 bbls slurry in formation staged in 4 1/2 bbls increasing press to 1700 psi - obtained sq. released pkr, circ. hole clean. Pulled 4 jts tbg, set pkr & pressured to 1000 psi. Held OK. SDFN. This Am, prep to POH w/tbg & pkr.
- 1-30-80 Thaw out wellhead. Release pkr, POH w/tbg & pkr. Run 3 7/8" bit, scraper & 142 jts tbg. Top cmt 4430', clean out to 4494 and circ. hole clean. Test squeeze to 1000#, lost 200# in 5", 500# in 20". Pull 2 jts tbg. SDFN. Prep to resqueeze.
- 1-31-80 TOH w/tbg & bit. Ran tbg & pkr. Squeezed w/100 sxs "H" cmt to 2000 psi. Pulled 4 jts, reset pkr & press'd to 1000 psi. SION. This AM, prep to pull tbg & pkr drill out cmt.
- 2-1-80 POH w/tbg & pkr. TIH w/tbg & 3 7/8" bit & scraper. Tagged CT @ 4371. DOC to 4499'. Circ. hole clean. Press test csg to 1100 psi, held OK. RIH w/tbg & bit to 5780' (top of pkr) circ. sand off pkr. pulled 3 jt tbg. SDFN This AM POH w/tbg & bit & RIH w/prod. string.
- 2-2-80 POH w/tbg scraper & bit. TIH w/pkr ret. tool & 186 jts tbg. RU to circ, tbg plugged. TOH - plugged w/ball sealers & sand. TIH OE w/seal assembly. Knock out plug & circ. hole clean. SDFN
- 2-3-80 SITP 500#, CP 500#. Blew well down, well KO flowing. Killed well w/75 bbl KCl wtr. POH w/tbg. TIH w/ret. tool & 186 jts tbg, latched pkr & POH. Ran PSN & 186 jts tbg. Remove BOP, set tree w/SN @ 5801. Used total 185 bbl KCl wtr to keep well dead. SDFN
- 2-4-80 SD Sunday. This AM SITP 540, SICP 240 Prep to swab.

HEINSON 1-28

- 2-5-80 Pulled 3 swabs, well KO flowing. After 5 hrs FTP 190, CP 360, 1500 mcf, 6-8 BLWPH. Left flowing ON on 1/2" choke. This AM venting 1594 mcf, 1 BLWPH. SI. Drop from report until potential test run. Rig released 2-4-80.
- 2-19-80 FINAL REPORT CAOF 5400 mcf.

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