

20792-0000 ORIGINAL

STATE CORPORATION COMMISSION OF KANSAS
OIL & GAS CONSERVATION DIVISION
WELL COMPLETION FORM
ACO-1 WELL HISTORY
DESCRIPTION OF WELL AND LEASE

API No. 15- 033-20072-0000
County Comanche
- - NW - SE Sec. 14 Twp. 34S Rge. 20 X W

Operator: License # 3882

2080 Feet from South Line of Section

Name: SAMUEL GARY JR. & ASSOCIATES, INC.

1980 Feet from East Line of Section

Address 1670 BROADWAY
SUITE 3300

Footages calculated from nearest outside section corner: SE

City/State/Zip DENVER, CO 80202-4838

Lease Name Lemon Ranch Well # 14-10

Purchaser: _____

Field Name LEMON RANCH

Operator Contact Person: TOM FERTAL

Producing Formation _____

Phone (303) 831-4673

Elevation: Ground 1755' KB 1767'

Contractor: Name: TRIAD DRILLING

Total Depth 6530' PBTB _____

License: 7345

Amount of Surface Pipe Set and Cemented at 670' Feet

Wellsite Geologist: Tim McCoy

Multiple Stage Cementing Collar Used? Yes x No

Designate Type of Completion
 X New Well Re-Entry Workover

If yes, show depth set _____ Feet

If Alternate II completion, cement circulated from _____

 Oil SWD SLOW Temp. Abd.
 Gas ENHR SIGW
 X Dry Other (Core, WSW, Expl., Cathodic, etc.)

feet depth to _____ w/ _____ sx cmt.

If Workover/Re-Entry: Old well info as follows:

Drilling Fluid Management Plan DIA 8-9-99 JK
(Data must be collected from the Reserve Pit)

Operator: _____

Chloride content _____ ppm Fluid Volume _____ bbls

Well Name: _____

Dewatering method used Allowed to dry and back filled

Comp. Date _____ Old Total Depth _____

Location of fluid disposal if hauled offsite: _____

 Deepening Re-Perf. Conv. To Inj/SWD
 Plug Back PBTB

Operator Name _____

 Commingled Docket No. _____

Lease Name _____

 Dual Completion Docket No. _____

 Other (SWD or Inj?) Docket No. _____

Quarter Sec. _____ Twp. _____ Rng. _____ W

 9/21/90 10/3/90 10/9/90
Spud Date Date Reached TD Completion Date

County _____ Docket No. _____

INSTRUCTIONS: An original and two copies of this information shall be filed with the Kansas Corporation Commission, 130 South Market, Room 2078, Wichita, Kansas 67202, within 120 days of the spud date, recompletion, workover or conversion of a well. Rule 82-3-130, 82-3-196 and 82-3-107 apply. Information on side two of this form will be held confidential for a period of 12 months if requested in writing and submitted with the form (see rule 82-3-107 for confidentiality in excess of 12 months). One copy of all wireline logs and geological well report shall be attached with this form. ALL CEMENTING TICKETS MUST BE ATTACHED. Submit CP-4 with all plugged wells. Submit CP-111 form with all temporarily abandoned wells.

All requirements of the statutes, rules and regulations promulgated to regulate the oil and gas industry have been fully complied with an the statements herein are complete and correct to the best of my knowledge.

Signature Thomas Fertal

Title Senior Geologist Date 8/3/99

Subscribed and sworn to before me this 3rd day of August, 1999

Notary Public Debra O'Shea

Date Commission Expires 8-24-02

| K.C.C. OFFICE USE ONLY | | | | | |
|-------------------------------------|-------------------------------------|------------------------------------|---------|--------------------------|-------|
| F | <input type="checkbox"/> | Letter of Confidentiality Attached | | | |
| C | <input checked="" type="checkbox"/> | Wireline Log Received | | | |
| C | <input checked="" type="checkbox"/> | Geologist Report Received | | | |
| Distribution | | | | | |
| <input checked="" type="checkbox"/> | KCC | <input type="checkbox"/> | SWD/Rep | <input type="checkbox"/> | NGPA |
| <input type="checkbox"/> | KGS | <input type="checkbox"/> | Plug | <input type="checkbox"/> | Other |
| (Specify) | | | | | |

Operator Name Samuel Gary Jr. & Associates, Inc. Lease Name Lemon Ranch Well # 14-10

Sec. 14 Twp. 34 S Rge. 20 East West

County Comanche

Instructions: Show important tops and base of formation penetrated. Detail all cores. Report all drill stem tests giving interval tested, time tool open and closed, flowing and shut-in pressures, whether shut-in pressure reached static level, hydrostatic pressures, bottom hole temperature, fluid recovery, and flow rates if gas to surface during test. Attach extra sheet if more space is needed. Attach copy of log.

| | | | | | | |
|---|---|--|---|--|------|--|
| Drill Stem Tests Taken (Attach Additional Sheets.) | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input checked="" type="checkbox"/> Log | Formation (Top), Depth and Datum Name | Top | <input type="checkbox"/> Sample Datum |
| Sample Sent to Geological Survey | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | | Stone Corral | 774 | +993 |
| Cores Taken | <input type="checkbox"/> Yes | <input checked="" type="checkbox"/> No | | Wabaunsee | 3200 | -1433 |
| Electric Log Run (Submit Copy.) | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | | Base Heebner Shale | 4153 | -2386 |
| List all E. Logs Run: | Dual Induction | | | Lansing | 4331 | -2564 |
| | Comp. Neutron-Density | | | Cherokee | 5033 | -3266 |
| | BHC Sonic | | | Mississippian | 5140 | -3373 |
| | | | | Viola | 6097 | -4330 |
| | | | | Arbuckle | 6431 | -4664 |

CASING RECORD New Used

Report all strings set - conductor, surface, intermediate, production, etc.

| Purpose of string | Size Hole Drilled | Size Casing Set (in O.D.) | Weight Lbs./Ft. | Setting Depth | Type of Cement | # Sacks Used | Type and Percent Additives |
|-------------------|-------------------|---------------------------|-----------------|---------------|----------------|--------------|----------------------------|
| Conductor | 30" | 20" | | 62' | | 5 yds. | concrete |
| Surface Casing | 12 1/4 " | 8 5/8" | | 670' | | 425 sx | |

ADDITIONAL CEMENTING/SQUEEZE RECORD

| Purpose: | Depth | | Type of Cement | # Sacks Used | Type and Percent Additives |
|---|-------|--------|----------------|--------------|----------------------------|
| | Top | Bottom | | | |
| <input type="checkbox"/> Perforate | | | | | |
| <input type="checkbox"/> Protect Casing | | | | | |
| <input type="checkbox"/> Plug Back TD | | | | | |
| <input type="checkbox"/> Plug Off Zone | | | | | |

| Shots per Foot | PERFORATION RECORD - Bridge Plugs Set/Type... | Acid. Fracture, Shot, Cement, Squeeze Record | |
|----------------|---|--|-------|
| | Specify Footage of Each Interval Perforated | (Amount and Kind of Material Used) | Depth |
| | RECEIVED STATE CORPORATION COMMISSION | | |
| | AUG - 6 1989 8-6-89 | | |
| | CONSERVATION DIVISION Wichita, Kansas | | |

| | | | | |
|---------------|------|--------|-----------|--|
| TUBING RECORD | Size | Set At | Packer At | Liner Run |
| | | | | <input type="checkbox"/> Yes <input type="checkbox"/> No |

| | |
|--|--|
| Date of First, Resumed Production, SWD or Inj. | Producing Method |
| D & A | <input type="checkbox"/> Flowing <input type="checkbox"/> Pumping <input type="checkbox"/> Gas Lift <input type="checkbox"/> Other (Explain) |

| | | | | | | | | |
|-----------------------------------|-----|-------|-----|-----|-------|-------|---------------|---------|
| Estimated Production Per 24 Hours | Oil | Bbls. | Gas | Mcf | Water | Bbls. | Gas-Oil Ratio | Gravity |
|-----------------------------------|-----|-------|-----|-----|-------|-------|---------------|---------|

Disposition of Gas Vented Sold Used on Lease (If vented, submit ACO-18).

METHOD OF COMPLETION Open Hole Perf. Dually Comp. Commingled Other (Specify) _____

Production Interval _____

AL



HALLIBURTON SERVICES

REMIT TO:
P.O. BOX 951046
DALLAS, TX 75395-1046

INVOICE

A Halliburton Company

| | |
|-------------|------|
| INVOICE NO. | DATE |
|-------------|------|

000160 10/09/19

| | | | | | |
|---------------------------|--------------------|---------------------|----------------------|---------------|------------------|
| WELL/LEASE NO./PLANT NAME | | WELL/PLANT LOCATION | | STATE | WELL/PLANT OWNER |
| LEMON 14-10 | | COMANCHE | | KS | SAME |
| SERVICE LOCATION | CONTRACTOR | JOB PURPOSE | | TICKET DATE | |
| PRATT | TRIAD DRILLING #19 | PLUG TO ABANDON | | 10/09/19 | |
| ACCT NO | CUSTOMER AGENT | VENDOR NO | CUSTOMER P.O. NUMBER | SHIPPED VIA | FILE NO |
| 315450 | STEVE POWLESS | | | COMPANY TRUCK | 03: |

DIRECT CORRESPONDENCE TO:

SAM GARY JR. & ASSOC.
1775 SHERMAN STREET
SUITE 1925
DENVER, CO 80203

SUITE 1300
LIBERTY TOWER
100 BROADWAY AVENUE
OKLAHOMA CITY, OK 73102-0000

| PRICE REF NO. | DESCRIPTION | QUANTITY | UM | UNIT PRICE | AMOUNT |
|---|--------------------------------|----------|-----|------------|-------------------|
| PRICING AREA - MID CONTINENT | | | | | |
| 000-117 | MILEAGE | 54 | MI | 2.35 | 126.90 |
| | | 1 | UNT | | |
| 090-910 | MISCELLANEOUS PUMPING JOB | 1 | TRK | 370.00 | 370.00 |
| 090-928 | MISCELLANEOUS PUMP JOB-ADD HRS | 5 | HR | 84.00 | 420.00 |
| | | 1 | TRK | | |
| 504-308 | STANDARD CEMENT | 132 | SK | 5.35 | 706.20 |
| 506-105 | POZMIX A | 88 | SK | 2.79 | 245.52 |
| 506-121 | HALLIBURTON-GEL 2% | 4 | SK | .00 | N/C |
| 507-277 | HALLIBURTON-GEL BENTONITE | 8 | SK | 13.75 | 110.00 |
| 500-207 | BULK SERVICE CHARGE | 236 | CFT | 1.10 | 259.60 |
| 500-306 | MILEAGE CMTG MAT DEL OR RETURN | 541.49 | TMI | .75 | 406.12 |
| INVOICE SUBTOTAL | | | | | 2,644.34 |
| DISCOUNT-(BID) | | | | | 483.01 |
| INVOICE BID AMOUNT | | | | | 2,161.33 |
| *-KANSAS STATE SALES TAX | | | | | 91.86 |
| *-PRATT COUNTY SALES TAX | | | | | 21.62 |
| INVOICE TOTAL - PLEASE PAY THIS AMOUNT | | | | | \$2,274.81 |

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Wichita, Kansas

OCT 16 1990

TERMS INVOICES PAYABLE NET BY THE 20TH OF THE FOLLOWING MONTH AFTER DATE OF INVOICE. UPON CUSTOMER'S DEFAULT IN PAYMENT OF CUSTOMER'S ACCOUNT BY THE LAST DAY OF THE MONTH FOLLOWING THE MONTH IN WHICH THE INVOICE IS DATED, CUSTOMER AGREES TO PAY INTEREST THEREON AFTER DEFAULT AT THE HIGHEST LAWFUL CONTRACT RATE APPLICABLE BUT NEVER TO EXCEED 18% PER ANNUM. IN THE EVENT IT BECOMES NECESSARY TO EMPLOY AN ATTORNEY TO ENFORCE COLLECTION OF SAID ACCOUNT, CUSTOMER AGREES TO PAY ALL COLLECTION COSTS AND ATTORNEY FEES IN THE AMOUNT OF 20% OF THE AMOUNT OF THE UNPAID ACCOUNT.

STATE OF KANSAS
STATE CORPORATION COMMISSION
200 Colorado Derby Building
Wichita, Kansas 67202

WELL PLUGGING RECORD
K.A.R.-82-3-117

20792-0000
API NUMBER 15-033-20972

LEASE NAME Lemon Ranch

WELL NUMBER #14-10

SPOT LOCATION NWSE

SEC. 14 TWP. 34 RGE. 20 (E) or (W)

COUNTY Comanche

Date Well Completed 10/09/90

Plugging Commenced 10/09/90

Plugging Completed 10/09/90

TYPE OR PRINT
NOTICE: Fill out completely
and return to Cons. Div.
office within 30 days.

LEASE OPERATOR Samuel Gary Jr. & Associates, Inc.

ADDRESS 1775 Sherman Street, Suite 1925, Denver, CO 80203

PHONE # (303) 831-4673 OPERATORS LICENSE NO. 3882

Character of Well D&A
(Oil, Gas, D&A, SWD, Input, Water Supply Well)

Did you notify the KCC/KDHE Joint District Office prior to plugging this well? Yes

Which KCC/KDHE Joint Office did you notify? Dodge City

Is ACO-1 filed? No If not, is well log attached? No

Producing formation N/A Depth to top _____ bottom _____ T.D. _____

Show depth and thickness of all water, oil and gas formations.

OIL, GAS OR WATER RECORDS

CASING RECORD

| Formation | Content | From | To | Size | Put In | Pulled out |
|-----------|-----------|------|------|------|--------|------------|
| Swope | Oil/Water | 4757 | 4886 | | | |
| Viola | Water | 6081 | 6278 | | | |
| Simpson | Water | 6278 | 6432 | | | |
| Arbuckle | Water | 6432 | 6530 | | | |

Describe in detail the manner in which the well was plugged, indicating where the mud fluid was placed and the method or methods used in introducing it into the hole. If cement or other plugs were used state, the character of same and depth placed, from _____ feet to _____ feet each set.

4940 ft. (90 sx 60-40 poz & 6% gel)

700 ft. (50 sx 60-40 poz & 6% gel)

350 ft. (20 sx 60-40 poz & 6% gel)

40 ft. (10 sx 60-40 poz & 6% gel)

Rathole (15 sx) Mousehole (10 sx)

(If additional description is necessary, use BACK of this form.)

Name of Plugging Contractor Halliburton/Pratt, Kansas License No. 1051337

Address _____

STATE OF Colorado COUNTY OF Denver, ss.

DAN HALL

(employee of operator) or (operator) of above-described well, being first duly sworn on oath, says: That I have knowledge of the facts, statements, and matters herein contained and the log of the above-described well as filed that the same are true and correct, so help me God.

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Wichita, Kansas

(Signature) Dan Hall

(Address) 1775 Sherman St Suite 1925
Denver, CO 80203

SUBSCRIBED AND SWORN TO before me this 11th day of October, 19 90

Jean S. Lucero
Notary Public

My Commission expires: _____

MY COMMISSION EXPIRES DEC. 30, 1991

SAMUEL GARY JR. & ASSOCIATES, INC.
1775 SHERMAN STREET, SUITE 1925
DENVER, COLORADO 80203
(303) 831-4673

WELL HISTORY

Operator: Samuel Gary Jr. & Associates, Inc.
Well Name: #14-10 Lemon Ranch
Location: NW/4SE/4 Section 14-T34S-R20W
County: Comanche
State: Kansas
Prospect: BOBWHITE
(Receive Daily Drilling Reports from Joanie - (303) 831-4673)

DATE DEPTH PROGRESS HISTORY

09/22/90 Spud @ 8:00 p.m. 09/21/90. Drlg @ 670' made 608'
in 24 hrs. Bit #1 12-1/4" S33SF depth in 62' avg.
76'/hr. 120 RPM, pump #1: 700 psi, 6" liner, 110
SPM, 269 GPM, MW 9.5, VIS 34, LCM 6.

.25 hr. TIH
.50 hr. circ premix
.50 hr. surveys
.75 hr. unplug flowline
8.00 hrs. drilling
14.00 hrs. RURT mix spud mud

Surveys:

1/4° @ 190'
1/2° @ 420'

09/23/90 Drlg @ 1,370' made 700' in 24 hrs. RU ran 16 jts.
8-5/8" csg @ 670', circ. cement plug down @ 9:45
a.m., 09/22/90. Bit #2: 2-7/8" S33S, depth in 670'
avg. 97'/hr., 120 RPM, pump #1: 900 psi, 6" liner,
110 SPM, 269 GPM.

.25 hr. service rig
.25 hr. survey
1.00 hr. circ cement plug down
1.25 hrs. run csg.
1.50 hrs. TIH
1.50 hrs. drlg plug & cement
3.00 hrs. cutoff weldhead
4.00 hrs. WOC
4.00 hrs. NUBOP & Test
7.25 hrs. Drlg.

Survey:

1° @ 1,037'.

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09/24/90 Drlg @ 2,205', made 835' in 24 hrs. Bit #2: 7-7/8"
S33S, depth in 670', depth out 1,889', 1,219' in 16
hrs. drlg. avg. 76'/hr. Bit #3: 7-7/8" A4J11C
depth in 1,889', avg. 39.5'/hr., 88 RPM, pump #1:
1,400 psi, 6" liner, 110 SPM, 269 GPM, MW 9.5, VIS
28

SAMUEL GARY, JR. & ASSOCIATES, INC.

LEMON RANCH #14-10

NW SE SEC 14 T34S R20W

COMANCHE COUNTY, KANSAS

WELLSITE GEOLOGIST'S REPORT

DISCUSSION

WELL DATA

FORMATION TOPS

SUMMARY OF SHOWS AND LITHOLOGY

DRILL STEM TEST

SERVICES

DAILY OPERATIONS

MUD RECORD

BIT RECORD

DEVIATIONS

DRILLING CURVE

DRILLING TIME LOG

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CONSERVATION DIVISION
Wichita, Kansas

T. M. McCOY & CO., INC.
CONSULTING GEOLOGISTS

Samuel Gary, Jr. & Associates, Inc.
Lemon Ranch #14-10

WELL DATA

OPERATOR: Samuel Gary, Jr. & Associates, Inc.

WELL NAME: Lemon Ranch #14-10

LOCATION: 2080' fsl 1980' fel
NW SE Sec. 14 T34S R20W
Comanche County, Kansas

ELEVATIONS: 1755' GL 1767' KB

FIELD: Lemon Ranch Field

ROAD DIRECTIONS: From Protection, S 7 miles on gravel road; E 1 mile;
S 0.5 mile; W & S 0.5 mile on lease road.

SURFACE CASING: 8 5/8" set at 670' KB with 425 sx.

SPUD DATE: 21 September 1990 8:00 PM

DRILLING COMPLETED: 8 October 1990 5:15 PM

TOTAL DEPTH: 6530' Driller 6536' Logger

MAXIMUM TEMPERATURE: 119 deg F (Logger)

LAST FORMATION
PENETRATED: Ordovician Arbuckle

WELL STATUS: Plugged and abandoned.

OPERATOR
REPRESENTATIVES: Tom Fertal - Geologist
Dan Hall - Engineer

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SUMMARY OF SHOWS AND LITHOLOGY

The following descriptions are interpretive and are tied to the wireline logs. Rig personnel collected unlagged 10-ft samples from 5000' to 6530' rig TD. Sample quality was good to 5620'. Below that depth cuttings were recirculated while shaker was bypassed to carry LCM; resulting sample quality varied from poor to fair.

Grain size was determined by use of the American Stratigraphic Company comparator. Colors of dry cuttings were determined from the Rock-Color Chart distributed by the Geological Society of America. 10% HCl was used in acid-reaction tests.

Significant shows are marked in the left margin; lesser indications of hydrocarbons are contained in sample descriptions or are noted as "No show". Cut tests were performed with 1,1,1-trichloroethane. Samples were examined for fluorescence with a Corvascope.

5000' - 5015' Limestone; pinkish to light brownish gray; crypto- to micro- to some very fine crystalline; firm; clean; trace cherty; no visible porosity. No show.

5015' - 5020' Shale; dark gray, grayish black; firm; non- to slightly calcareous; platy, subblocky. No show.

5020' - 5032' Limestone; pinkish to light brownish gray; crypto- to micro- to some very fine crystalline; firm; clean, few contacts with grayish black shale; trace cherty white, light brownish to brownish gray; no to trace visible porosity. No show.

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CHEROKEE/ATOKA

TOP: 5032' DATUM: -3265'

5032' - 5038' Shale; dark gray, grayish black; smooth to slightly silty; firm; non- to slightly calcareous; trace pyrite; platy, subblocky. No sample show (325 units total gas).

5038' - 5082' Limestone; some pinkish gray, increasingly light brownish to some brownish gray; crypto- and microcrystalline, partly chalky, little very fine crystalline; firm, some moderately hard; mostly clean, some slightly argillaceous; little is cherty, white to brownish gray; one crinoid fragment; no to

SUMMARY OF SHOWS AND LITHOLOGY

rare fair visible porosity. Interbedded Shale; medium light to dark gray, some grayish black, some light olive to olive gray; smooth, little is silty; firm; non- to slightly calcareous; trace micaceous; minor coaly laminae downhole; platy, some subblocky. No sample show (peaks of 160 and 120 units total gas).

5082' - 5140'

Thin beds. Increased Shale, medium light to dark gray, some grayish black, light olive to olive gray, brownish gray, and greenish gray; mostly smooth, some silty; firm; non- to slightly calcareous; platy, some subblocky. Limestone; pinkish gray to light brownish to brownish gray; crypto- to microcrystalline; firm, some moderately hard; clean to argillaceous; trace pyrite; few microfossils; minor part cherty, white to light brownish to brownish gray; mostly no visible porosity. No sample show (185 units total gas at 5128' log depth).

MISSISSIPPIAN

TOP: 5140' DATUM: -3373'

5140' - 5170'

Limestone; pinkish gray, some nearly white, little light brownish gray; microcrystalline, partly chalky, little fine crystalline; firm; clean; trace pyritic; no visible porosity. Minor Chert; white to light gray; hard, sharp cuttings. No significant show.

5170' - 5182'

Limestone; pinkish gray, some nearly white to minor light gray; micro- to some fine crystalline; firm; clean; few chips contain many microfossils; mostly no visible porosity to some fair intercrystalline and minor small vug and pinpoint porosity. Minor Chert; white to light gray.

Show:

Poor to fair overall. No to trace spotty light brown stain. 30% exhibits bright spotty to solid bluish yellow fluorescence. Moderately fast non- to slightly streaming cut fluorescence dries to moderate bluish yellow halos. Under white light, no cut and no oil ring. Total gas: 42 to 228 to 95 units.

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SUMMARY OF SHOWS AND LITHOLOGY

- 5182' - 5264' Limestone; pinkish gray, some nearly white; micro-crystalline to little fine crystalline; firm; clean; rare green inclusions; slightly pyritic; some is cherty; mostly no visible porosity. 5% - 20% Chert; white to light gray, partly translucent; hard. No significant sample show; minor gas increases from 40 units background to 140 units at best.
- 5264' - 5268' Log PE curve suggests Dolomite--not evident in samples-- or Chert. Drilling break does correlate with increased neutron-density porosity. Trace sample show is restricted to Limestone.
- 5268' - 5308' Limestone; pinkish gray, increasing light brownish gray; crypto- to micro- to minor fine crystalline; firm, some hard and dense; clean; less cherty. No show.
- 5308' - 5342' Limestone; pinkish gray; micro- to some fine crystalline; part granular; firm; clean; no to poor visible inter-crystalline porosity; faster drilling correlates to fair log porosity. No significant show.
- 5342' - 5502' Limestone; pinkish gray, some very light gray; mostly micro- to some very fine crystalline, partly chalky, and firm; some cryptocrystalline and moderately hard; clean; part cherty; mostly no visible porosity. Trace Chert; white to light gray, part translucent; hard. No show.
- 5502' - 5547' Minor Dolomite; pinkish gray to very light gray; micro- to very fine crystalline; firm; clean; no to little fair intercrystalline and small vug porosity. Mostly Limestone; pinkish gray to very light gray; micro-crystalline; partly dolomitic; firm; clean; no to poor visible porosity. No show.
- 5547' - 5570' Poor sample quality. Logs indicate Limestone.
- 5570' - 5668' Limestone; pinkish gray, some very light gray; micro- to some very fine crystalline; firm; clean; minor part is dolomitic; few microfossils; toward base slightly argillaceous and trace green inclusions--may result from diminishing quality of samples; no to some fair visible intercrystalline and vug porosity. Trace Dolomite; very light gray; very fine crystalline. No show.

Remark: Bypassed shaker at 5630' to carry LCM.

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SUMMARY OF SHOWS AND LITHOLOGY

OSAGE TOP: 5668' DATUM: -3901'

5668' - 5802' Gradational, interbedded. Uphole, some Limestone; mottled pinkish gray and medium light gray; microcrystalline; firm; slightly to moderately argillaceous; glauconite common; no visible porosity. Dominantly Siltstone; medium light to medium gray, minor light gray; dispersed very fine dolomite crystals and very fine quartz sand; argillaceous; subblocky. Grades to Shale; medium light to medium gray; silty; very fine grained sandy; dispersed dolomite crystals; subblocky. No significant sample show; hot-wire total gas increases to 195 units appear related to aired-up mud.

5802' - 5990' Siltstone; light to medium gray; numerous dispersed very fine crystals of dolomite, most chips remain intact in acid; part siliceous; part argillaceous; few chips cut by translucent chert; subblocky. Less interbedded Shale; medium light to medium gray; silty; very fine grained sandy; dolomitic; subblocky. Trace Chert; very light gray, white; partly translucent; hard. No show.

5990' - 6081' Gradational, interbedded. Siltstone; some light gray, mostly medium light to medium gray, commonly tinted olive; firm to medium hard; dolomitic--numerous dispersed silt-size to very fine sand-size crystals--chips remain intact in acid; largely argillaceous and partly very fine grained sandy; some siliceous patches, trace light gray translucent chert; probable crinoid stem fragment set in one chip of siltstone; subblocky, some blocky. Particularly at base, Shale; medium to medium dark gray, tinted olive; silty; firm; dolomitic--dispersed crystals; subblocky; few chips show lamination with lighter colored siltstone; may be slightly micaceous. No show.

Note: Twisted off at 6029'. Added 50 bbls crude while fishing.

VIOLA TOP: 6081' DATUM: -4314'

6081' - 6108' Thin beds: Minor Chert; white to very light gray; opaque to translucent; few chips contact dolomite. Minor Siltstone and Shale; medium light to medium gray; dolomitic; similar to abundant Osage cavings but with white cherty patches and trace grayish black laminae. Limestone 6090' - 6093' shown on logs is not distinguished from

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SUMMARY OF SHOWS AND LITHOLOGY

cavings in samples: pinkish to some light gray; micro- to fine crystalline; faint granular texture in part; partly dolomitic; clean; no to trace visible porosity. Minor Shale; brownish to grayish black, olive tint in part; firm; calcareous to dolomitic; moderately smooth to silty; platy, subblocky. Minor Dolomite; white to light gray, faint greenish to olive tint common; micro- to very fine crystalline; part calcitic; firm, moderately hard; clean to slightly argillaceous and silty (light colored insoluble residue); mostly no visible porosity. No sample show; 380 units total gas.

Note: Tripped at 6099' rig depth for bad pump pressure gauge.

6108' - 6141' Dolomite; very light to medium gray, some tinted pinkish to light brownish gray; micro- to fine crystalline; some sucrosic; firm to hard and dense; clean, some slightly argillaceous; part is cherty or siliceous; trace pyritic; no to minor good visible intercrystalline porosity--fair fast 6-ft drilling break correlates to best log porosity at 6120'. 5% - 10% Chert; white to very light gray; opaque to translucent; some contacts with dolomite; trace pyrite. Virtually no sample show; no hot-wire total gas increase.

DST #1 & #2: 6111' - 6141' log depth, 6105' - 6135' rig depth. Recovered 245 ft of mud and 30 ft of filtrate on DST #1; 150 ft of mud, 180 ft of filtrate cut mud, and 90 ft of salt water on DST #2.

6141' - 6176' Dolomite; light to medium gray, some faintly pinkish to light brownish gray; micro- to fine crystalline; moderately hard; clean to slightly argillaceous; slightly calcitic in part; mostly no visible porosity. 5% - 15% Chert; white to light gray; mostly opaque. No show.

6176' - 6190' Dolomite; light brownish gray; mostly very fine crystalline; firm; slightly silty, slightly argillaceous; staining shows minor calcite; trace pyrite; slight visible intercrystalline porosity--no good drilling break. Decreased Chert; white to light gray. No show.

6190' - 6278' Dolomite; light brownish gray, some medium light to medium gray; micro- to some fine crystalline; moderately hard; clean to slightly argillaceous; cherty; some is calcitic; no to slight intercrystalline porosity. 10% - 30% Chert; light brownish to brownish gray, some white and medium light to medium gray; contacts with carbonate common; fine dispersed brown specks do not fluoresce or cut trace

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CONSERVATION DIVISION
Wichita Kansas

SUMMARY OF SHOWS AND LITHOLOGY

pyritic; hard. No show (only commercially insignificant slow nonstreaming bluish yellow cut fluorescence).

SIMPSON

TOP: 6278' DATUM: -4511'

6278' - 6301'

Dolomite; light brownish to brownish gray; micro- to fine crystalline; calcitic; very fine to lower coarse grained subrounded quartz sand in some chips; slightly to very argillaceous; firm to moderately hard; no to trace visible porosity. Minor Shale and Siltstone; dusky yellowish brown and brownish gray to brownish black; firm; dolomitic, calcareous; part sandy; platy, subblocky. Trace Sandstone; brownish gray; very fine to fine grained; subrounded; moderately sorted; appears dirty; carbonate cement; no visible porosity. No fluorescence; slight streaming cut fluorescence from brown gray limy dolomite.

6301' - 6314'

Limestone; pinkish gray (buff), slightly mottled medium gray; fine to medium crystalline; firm; partly dolomitic; clean; no to trace visible intercrystalline porosity. No show.

6314' - 6350'

Dolomite; pinkish gray (buff) to some light brownish gray, very light to light gray toward base; very fine to fine crystalline, medium crystalline toward base; partly calcitic uphole; clean; commonly sucrosic; some slightly pyritic; intercrystalline and some vug porosity varies from slight to excellent, generally improves downhole; good drilling break. 5% - 10% medium bright yellow fluorescence but virtually no cut fluorescence.

6350' - 6374'

Dolomite; very light to light gray (light brownish to brownish gray cuttings are believed to be recirculated); fine to medium crystalline; moderately hard; clean; no to slight intercrystalline porosity. No show.

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SUMMARY OF SHOWS AND LITHOLOGY

SIMPSON SHALE

TOP: 6374' DATUM: -4607'

6374' - 6416'

5% Shale; dark greenish gray (3 GY 4/1 to 5 G 4/1) to some greenish gray; smooth, part waxy; firm; noncalcareous; trace pyrite; platy to splintery, some subblocky. No show.

6416' - 6432'

2% Sandstone; very light gray; fine to coarse grained; moderately well sorted in rare clusters; rounded to well rounded where medium to coarse grained; mostly loose; trace pyrite; rare red-orange grains; silica and some dolomite cement; low visible porosity in rare clusters.

Show:

Few clusters and trace loose grains show brown oil stain; bright yellow solid to spotty fluorescence; moderately fast slightly streaming bluish yellow cut fluorescence that dries to moderate bluish yellow halo. No cut or oil ring under white light.

No significant increase in hot-wire total gas: 210 - 220 units background, 10 - 12 units C1, trace C2.

ARBUCKLE

TOP: 6432' DATUM: -4665'

6432' - 6452'

Dolomite; pinkish gray (buff); very fine to fine crystalline; firm to moderately hard; clean; slight to fair intercrystalline and small vug porosity.

Show:

No stain. Uphole, 15% of total sample displays uniform goldish yellow fluorescence. Slow weak nonstreaming cut fluorescence to virtually no cut fluorescence; rare chips produced moderately fast streaming cut fluorescence that dries to bright yellow halos. No cut or oil ring under white light. Downhole, only trace fluorescence.

6452' - 6500'

Dolomite; pinkish gray (buff) to light brownish gray, some light to medium gray; trace dark gray to black streaks and inclusions; some micro- to mostly very fine and fine crystalline to some medium crystalline; firm, some moderately hard; clean, some slightly argillaceous; few thin sandstones and minor sandy dolomite, mostly indicated by

STATE CONSERVATION COMMISSION

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CONSERVATION DIVISION
Wichita, Kansas

Samuel Gary, Jr. & Associates, Inc.
Lemon Ranch #14-10

SUMMARY OF SHOWS AND LITHOLOGY

trace pyrite; trace to some good visible intercrystalline porosity, trace fair to good visible vug porosity.

Show: No stain. 20% of total sample displays uniform fluorescence and trace cut fluorescence as above, one chip with spotty bright bluish yellow fluorescence produced cut fluorescence equal to group of 15 chips.

Also Dolomite; white to light gray; fine to medium crystalline; firm to moderately hard; clean; trace gray outlines around crystals where gray and not white; no to fair visisble intercrystalline porosity. No show.

6500' - 6536' TD Dolomite; light brownish to brownish gray; micro- to very fine crystalline; moderately hard; slightly argillaceous; no to slight intercrystalline porosity. Trace Shale; dusky yellowish brown to brownish black; firm; dolomitic; subblocky. 10% uniform goldish yellow fluorescence; minor slow nonstreaming yellow cut fluorescence from nonfluorescent as well as from some fluorescent chips dries to weak to fair yellow fluorescent halos: no substantial show.

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Wichita, Kansas

SAMUEL GARY JR. AND ASSOCIATES

LEASE : LEMON

WELL NO.: 14-10

TEST NO.: 1

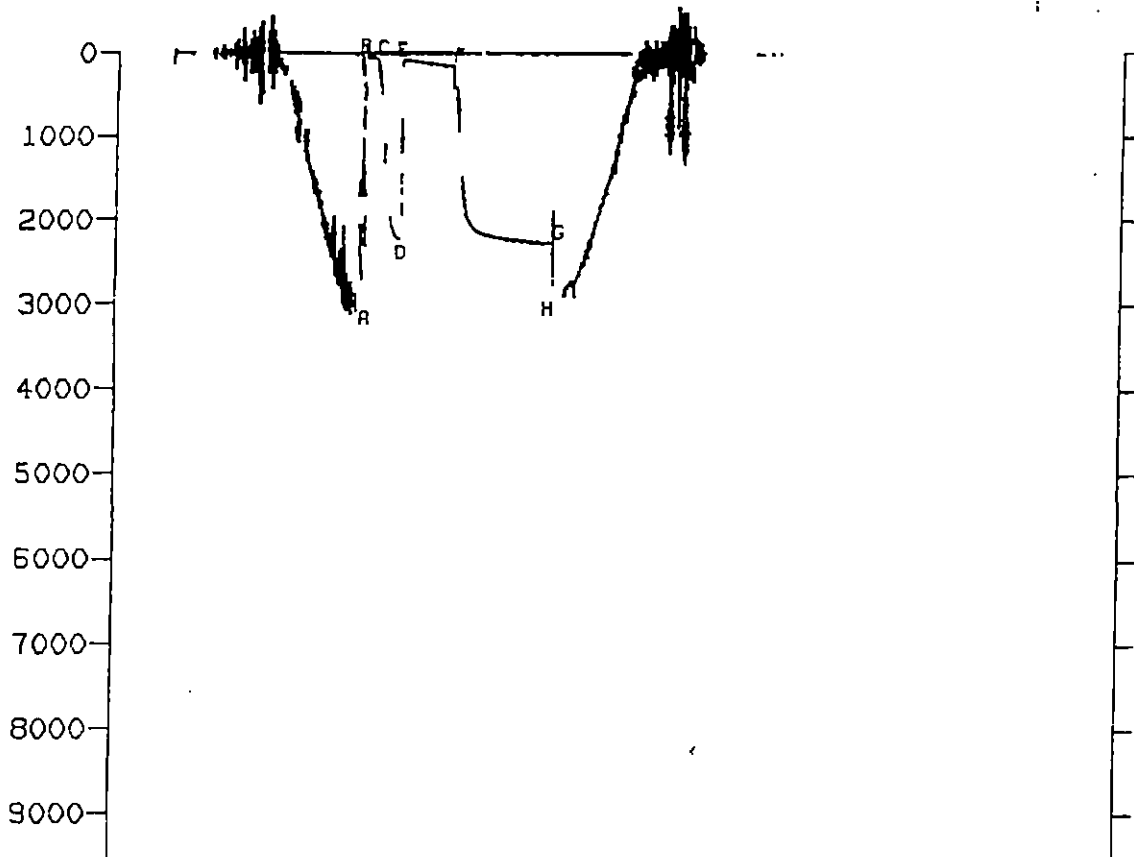
TICKET NO. 00827301
07-OCT-90
ENID.

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CONSERVATION DIVISION
 Wichita, Kansas

| | | | | | | | | | |
|-----------------------------------|------------------------|---------------|------------------|----------|----------|-----------------|-----------------|--------------------------|--------------------------------|
| LEGAL LOCATION SEC - TRP - RMC | S 14 - T 34 S - R 20 W | FIELD RFB# | SOUTH PROTECTION | COUNTY | COMANCHE | STATE | KANSAS | DDF | |
| LEASE NAME | LEMON | WELL NO. | 14-10 | TEST NO. | 1 | TESTED INTERVAL | 6105.2 - 6135.0 | LEASE OWNER/COMPANY NAME | SAMUEL GARY JR. AND ASSOCIATES |



GAUGE NO: 1912 DEPTH: 6084.3 BLANKED OFF: NO HOUR OF CLOCK: 24

| ID | DESCRIPTION | PRESSURE | | TIME | | TYPE |
|----|--------------------------|----------|------------|----------|------------|------|
| | | REPORTED | CALCULATED | REPORTED | CALCULATED | |
| A | INITIAL HYDROSTATIC | | 3014.7 | | | |
| B | INITIAL FIRST FLOW | | 45.4 | | | |
| C | FINAL FIRST FLOW | | 84.4 | 20.0 | 20.0 | F |
| C | INITIAL FIRST CLOSED-IN | | 84.4 | | | |
| D | FINAL FIRST CLOSED-IN | | 2260.5 | 40.0 | 39.7 | C |
| E | INITIAL SECOND FLOW | | 104.7 | | | |
| F | FINAL SECOND FLOW | | 172.3 | 80.0 | 79.7 | F |
| F | INITIAL SECOND CLOSED-IN | | 172.3 | | | |
| G | FINAL SECOND CLOSED-IN | | 2304.7 | 160.0 | 160.5 | C |
| H | FINAL HYDROSTATIC | | 2912.5 | | | |

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Wichita, Kansas



GAUGE NO: 162 DEPTH: 6132.0 BLANKED OFF: YES HOUR OF CLOCK: 24

| ID | DESCRIPTION | PRESSURE | | TIME | | TYPE |
|----|--------------------------|----------|------------|----------|------------|------|
| | | REPORTED | CALCULATED | REPORTED | CALCULATED | |
| A | INITIAL HYDROSTATIC | | 3048.0 | | | |
| B | INITIAL FIRST FLOW | | 57.2 | | | |
| C | FINAL FIRST FLOW | | 85.9 | 20.0 | 20.0 | F |
| C | INITIAL FIRST CLOSED-IN | | 85.9 | | | |
| D | FINAL FIRST CLOSED-IN | | 2285.8 | 40.0 | 39.7 | C |
| E | INITIAL SECOND FLOW | | 118.4 | | | |
| F | FINAL SECOND FLOW | | 185.4 | 80.0 | 79.7 | F |
| F | INITIAL SECOND CLOSED-IN | | 185.4 | | | |
| G | FINAL SECOND CLOSED-IN | | 2326.9 | 160.0 | 160.5 | C |
| H | FINAL HYDROSTATIC | | 2943.7 | | | |

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EQUIPMENT & HOLE DATA

FORMATION TESTED: VIOLA
 NET PAY (ft): 8.0
 GROSS TESTED FOOTAGE: 29.8
 ALL DEPTHS MEASURED FROM: K.B.
 CASING PERFS. (ft): _____
 HOLE OR CASING SIZE (in): 7.800
 ELEVATION (ft): 1757.0 K.B.
 TOTAL DEPTH (ft): 6135.0
 PACKER DEPTH(S) (ft): 6099. 6105
 FINAL SURFACE CHOKE (in): _____
 BOTTOM HOLE CHOKE (in): 0.750
 MUD WEIGHT (lb/gal): 8.80
 MUD VISCOSITY (sec): 56
 ESTIMATED HOLE TEMP. (°F): 131
 ACTUAL HOLE TEMP. (°F): _____ @ _____ ft

TICKET NUMBER: 00827301
 DATE: 10-7-90 TEST NO: 1
 TYPE DST: OPEN HOLE
 FIELD CAMP: ENID.
 TESTER: CHARLES E. ANDERSON
 WITNESS: STAN NISSEN
TIM MCCOY
 DRILLING CONTRACTOR: TRIAD DRILLING RIG NO 19

FLUID PROPERTIES FOR RECOVERED MUD & WATER

| SOURCE | RESISTIVITY | CHLORIDES |
|---------|----------------------|------------------|
| MUD PIT | <u>0.207 @ 65 °F</u> | <u>16500 ppm</u> |
| SAMPLER | <u>0.080 @ 65 °F</u> | <u>19833 ppm</u> |
| _____ | _____ @ _____ °F | _____ ppm |
| _____ | _____ @ _____ °F | _____ ppm |
| _____ | _____ @ _____ °F | _____ ppm |
| _____ | _____ @ _____ °F | _____ ppm |

SAMPLER DATA

Psig AT SURFACE: 100.0
 cu.ft. OF GAS: _____
 cc OF OIL: _____
 cc OF WATER: 1700.0
 cc OF MUD: _____
 TOTAL LIQUID cc: 1700.0

HYDROCARBON PROPERTIES

OIL GRAVITY (°API): _____ @ _____ °F
 GAS/OIL RATIO (cu.ft. per bbl): _____
 GAS GRAVITY: _____

CUSHION DATA

| TYPE | AMOUNT | WEIGHT |
|-------|--------|--------|
| _____ | _____ | _____ |
| _____ | _____ | _____ |

RECOVERED :

275 FT TOTAL RECOVERY :
 245 FT MUD
 30 FT MUD FILTRATE

MEASURED FROM TESTER VALVE

REMARKS :

TESTER REPORTED SAMPLER MANDREL WAS PLUGGED OFF WITH L.C.M.

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TICKET NO: 00827301

GAUGE NO: 1912

CLOCK NO: 8533 HOUR: 24

DEPTH: 6084.3

| REF | MINUTES | PRESSURE | ΔP | $\frac{P \times \Delta t}{t \times \Delta t}$ | $\log \frac{P \times \Delta t}{t \times \Delta t}$ |
|-----------------|---------|----------|--------|---|--|
| FIRST FLOW | | | | | |
| B 1 | 0.0 | 45.4 | | | |
| 2 | 2.0 | 46.0 | 0.6 | | |
| 3 | 3.0 | 46.3 | 0.3 | | |
| 4 | 4.0 | 49.1 | 2.8 | | |
| 5 | 5.0 | 51.6 | 2.5 | | |
| 6 | 6.0 | 53.6 | 2.0 | | |
| 7 | 7.0 | 55.1 | 1.5 | | |
| 8 | 8.0 | 56.0 | 0.9 | | |
| 9 | 9.0 | 57.8 | 1.9 | | |
| 10 | 10.0 | 59.4 | 1.6 | | |
| 11 | 11.0 | 51.7 | 2.3 | | |
| 12 | 12.0 | 63.9 | 2.3 | | |
| 13 | 13.0 | 64.9 | 1.0 | | |
| 14 | 14.0 | 66.0 | 1.1 | | |
| 15 | 15.0 | 72.2 | 6.2 | | |
| 16 | 16.0 | 73.0 | 0.8 | | |
| 17 | 17.0 | 73.8 | 0.8 | | |
| 18 | 18.0 | 74.6 | 0.8 | | |
| 19 | 19.0 | 78.9 | 4.3 | | |
| C 20 | 20.0 | 84.4 | 5.5 | | |
| FIRST CLOSED-IN | | | | | |
| C 1 | 0.0 | 84.4 | | | |
| 2 | 1.0 | 133.3 | 48.9 | 1.0 | 1.322 |
| 3 | 2.0 | 160.5 | 76.0 | 1.8 | 1.041 |
| 4 | 3.0 | 199.9 | 115.5 | 2.6 | 0.885 |
| 5 | 4.0 | 253.1 | 168.6 | 3.3 | 0.778 |
| 6 | 5.0 | 315.3 | 230.9 | 4.0 | 0.699 |
| 7 | 6.0 | 375.7 | 292.3 | 4.6 | 0.637 |
| 8 | 7.0 | 455.9 | 371.4 | 5.2 | 0.585 |
| 9 | 12.0 | 1087.2 | 1002.7 | 7.5 | 0.425 |
| 10 | 14.0 | 1338.4 | 1254.0 | 8.2 | 0.385 |
| 11 | 22.0 | 1996.3 | 1911.9 | 10.5 | 0.281 |
| 12 | 24.0 | 2095.3 | 2010.8 | 10.9 | 0.263 |
| 13 | 25.0 | 2146.6 | 2062.2 | 11.3 | 0.248 |
| 14 | 28.0 | 2178.8 | 2094.3 | 11.7 | 0.234 |
| 15 | 30.0 | 2207.4 | 2123.0 | 12.0 | 0.222 |
| 16 | 35.0 | 2243.0 | 2158.6 | 12.7 | 0.195 |
| D 17 | 39.7 | 2260.5 | 2176.0 | 13.3 | 0.177 |
| SECOND FLOW | | | | | |
| E 1 | 0.0 | 104.7 | | | |
| 2 | 4.0 | 94.4 | -10.3 | | |
| 3 | 8.0 | 99.6 | 5.1 | | |
| 4 | 12.0 | 104.7 | 5.2 | | |
| 5 | 16.0 | 108.7 | 4.0 | | |
| 6 | 20.0 | 111.0 | 2.3 | | |
| 7 | 24.0 | 116.6 | 5.7 | | |

| REF | MINUTES | PRESSURE | ΔP | $\frac{P \times \Delta t}{t \times \Delta t}$ | $\log \frac{P \times \Delta t}{t \times \Delta t}$ |
|-------------------------|---------|----------|--------|---|--|
| SECOND FLOW - CONTINUED | | | | | |
| 8 | 28.0 | 119.6 | 3.0 | | |
| 9 | 32.0 | 125.2 | 5.6 | | |
| 10 | 36.0 | 129.9 | 4.6 | | |
| 11 | 40.0 | 133.7 | 3.9 | | |
| 12 | 44.0 | 136.4 | 2.6 | | |
| 13 | 48.0 | 141.7 | 5.4 | | |
| 14 | 52.0 | 146.3 | 4.6 | | |
| 15 | 56.0 | 149.7 | 3.4 | | |
| 16 | 60.0 | 153.0 | 3.3 | | |
| 17 | 64.0 | 156.7 | 3.7 | | |
| 18 | 68.0 | 161.4 | 4.7 | | |
| 19 | 72.0 | 164.6 | 3.2 | | |
| 20 | 76.0 | 168.9 | 4.2 | | |
| F 21 | 79.7 | 172.3 | 3.5 | | |
| SECOND CLOSED-IN | | | | | |
| F 1 | 0.0 | 172.3 | | | |
| 2 | 5.0 | 425.6 | 253.3 | 4.8 | 1.321 |
| 3 | 6.0 | 476.9 | 304.6 | 5.7 | 1.246 |
| 4 | 7.0 | 569.8 | 397.4 | 6.5 | 1.183 |
| 5 | 8.0 | 714.0 | 541.7 | 7.4 | 1.129 |
| 6 | 9.0 | 850.3 | 677.9 | 8.3 | 1.082 |
| 7 | 10.0 | 975.3 | 803.0 | 9.1 | 1.041 |
| 8 | 16.0 | 1592.7 | 1420.4 | 13.8 | 0.859 |
| 9 | 18.0 | 1702.3 | 1530.0 | 15.2 | 0.816 |
| 10 | 20.0 | 1853.3 | 1681.0 | 16.7 | 0.777 |
| 11 | 22.0 | 1937.9 | 1765.6 | 18.0 | 0.743 |
| 12 | 24.0 | 1953.2 | 1820.9 | 19.3 | 0.712 |
| 13 | 26.0 | 2036.5 | 1864.2 | 20.6 | 0.685 |
| 14 | 28.0 | 2066.3 | 1894.0 | 21.8 | 0.659 |
| 15 | 30.0 | 2091.1 | 1918.8 | 23.1 | 0.636 |
| 16 | 35.0 | 2130.6 | 1958.2 | 25.9 | 0.585 |
| 17 | 40.0 | 2157.5 | 1985.2 | 28.6 | 0.543 |
| 18 | 45.0 | 2176.6 | 2004.3 | 31.0 | 0.507 |
| 19 | 50.0 | 2191.6 | 2019.3 | 33.3 | 0.476 |
| 20 | 55.0 | 2205.8 | 2033.5 | 35.5 | 0.449 |
| 21 | 60.0 | 2215.6 | 2043.3 | 37.5 | 0.425 |
| 22 | 70.0 | 2231.7 | 2059.3 | 41.1 | 0.385 |
| 23 | 80.0 | 2246.9 | 2074.6 | 44.4 | 0.352 |
| 24 | 90.0 | 2259.7 | 2087.3 | 47.3 | 0.324 |
| 25 | 100.0 | 2268.6 | 2096.3 | 49.9 | 0.300 |
| 26 | 110.0 | 2277.5 | 2105.2 | 52.3 | 0.280 |
| 27 | 120.0 | 2284.2 | 2111.9 | 54.5 | 0.263 |
| 28 | 135.0 | 2293.9 | 2121.6 | 57.4 | 0.240 |
| 29 | 150.0 | 2300.8 | 2128.5 | 59.9 | 0.221 |
| G 30 | 160.6 | 2304.7 | 2132.4 | 61.5 | 0.210 |

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REMARKS:

CONSERVATION DIVISION
Wichita, Kansas

TICKET NO: 00827301
 CLOCK NO: 6607 HOUR: 24















GAUGE NO: 162
 DEPTH: 6132.0

| REF | MINUTES | PRESSURE | ΔP | $\frac{t \cdot \Delta t}{t + \Delta t}$ | $\log \frac{t + \Delta t}{\Delta t}$ |
|-----------------|---------|----------|--------|---|--------------------------------------|
| FIRST FLOW | | | | | |
| B 1 | 0.0 | 57.2 | | | |
| 2 | 1.0 | 62.7 | 5.5 | | |
| 3 | 2.0 | 62.9 | 0.2 | | |
| 4 | 3.0 | 60.8 | -2.1 | | |
| 5 | 4.0 | 61.4 | 0.6 | | |
| 6 | 5.0 | 63.4 | 2.0 | | |
| 7 | 6.0 | 63.9 | 0.5 | | |
| 8 | 7.0 | 64.8 | 0.9 | | |
| 9 | 8.0 | 65.7 | 0.9 | | |
| 10 | 9.0 | 66.2 | 0.5 | | |
| 11 | 10.0 | 66.8 | 0.7 | | |
| 12 | 11.0 | 69.0 | 2.1 | | |
| 13 | 12.0 | 71.6 | 2.7 | | |
| 14 | 13.0 | 73.1 | 1.5 | | |
| 15 | 14.0 | 76.0 | 2.9 | | |
| 16 | 15.0 | 79.8 | 3.8 | | |
| 17 | 16.0 | 81.3 | 1.5 | | |
| 18 | 17.0 | 81.6 | 0.3 | | |
| 19 | 18.0 | 82.4 | 0.8 | | |
| 20 | 19.0 | 84.7 | 2.3 | | |
| C 21 | 20.0 | 85.3 | 1.2 | | |
| FIRST CLOSED-IN | | | | | |
| C 1 | 0.0 | 85.9 | | | |
| 2 | 7.0 | 399.9 | 314.0 | 5.2 | 0.566 |
| 3 | 8.0 | 458.5 | 382.6 | 5.7 | 0.544 |
| 4 | 16.0 | 1480.2 | 1394.3 | 8.9 | 0.352 |
| 5 | 18.0 | 1711.8 | 1625.9 | 9.5 | 0.325 |
| 6 | 20.0 | 1907.8 | 1821.9 | 10.0 | 0.301 |
| 7 | 22.0 | 2023.7 | 1937.8 | 10.5 | 0.281 |
| 8 | 28.0 | 2202.0 | 2116.1 | 11.7 | 0.234 |
| 9 | 30.0 | 2229.9 | 2144.0 | 12.0 | 0.222 |
| 10 | 37.0 | 2278.4 | 2192.5 | 13.0 | 0.188 |
| D 11 | 39.7 | 2285.8 | 2199.9 | 13.3 | 0.177 |
| SECOND FLOW | | | | | |
| E 1 | 0.0 | 118.4 | | | |
| 2 | 4.0 | 108.5 | -9.9 | | |
| 3 | 8.0 | 112.4 | 3.9 | | |
| 4 | 12.0 | 116.2 | 3.9 | | |
| 5 | 16.0 | 119.3 | 3.1 | | |
| 6 | 20.0 | 124.4 | 5.1 | | |
| 7 | 24.0 | 129.2 | 4.8 | | |
| 8 | 28.0 | 134.7 | 5.5 | | |
| 9 | 32.0 | 136.8 | 2.1 | | |
| 10 | 36.0 | 142.3 | 5.5 | | |
| 11 | 40.0 | 145.4 | 3.0 | | |
| 12 | 44.0 | 151.1 | 5.7 | | |

| REF | MINUTES | PRESSURE | ΔP | $\frac{t \cdot \Delta t}{t + \Delta t}$ | $\log \frac{t + \Delta t}{\Delta t}$ |
|-------------------------|---------|----------|--------|---|--------------------------------------|
| SECOND FLOW - CONTINUED | | | | | |
| 13 | 48.0 | 153.4 | 2.4 | | |
| 14 | 52.0 | 158.9 | 5.4 | | |
| 15 | 56.0 | 161.9 | 3.1 | | |
| 16 | 60.0 | 165.6 | 3.7 | | |
| 17 | 64.0 | 170.8 | 5.2 | | |
| 18 | 68.0 | 174.4 | 3.6 | | |
| 19 | 72.0 | 178.9 | 4.5 | | |
| 20 | 76.0 | 182.4 | 3.5 | | |
| F 21 | 79.7 | 185.4 | 3.0 | | |
| SECOND CLOSED-IN | | | | | |
| F 1 | 0.0 | 185.4 | | | |
| 2 | 9.0 | 821.0 | 635.6 | 8.2 | 1.083 |
| 3 | 10.0 | 946.6 | 761.3 | 9.1 | 1.040 |
| 4 | 12.0 | 1216.9 | 1031.5 | 10.7 | 0.969 |
| 5 | 16.0 | 1582.4 | 1397.1 | 13.8 | 0.859 |
| 6 | 20.0 | 1866.7 | 1681.3 | 16.7 | 0.777 |
| 7 | 22.0 | 1959.8 | 1774.5 | 18.0 | 0.743 |
| 8 | 24.0 | 2022.8 | 1837.4 | 19.3 | 0.712 |
| 9 | 26.0 | 2064.2 | 1878.8 | 20.6 | 0.685 |
| 10 | 28.0 | 2092.1 | 1906.7 | 21.9 | 0.659 |
| 11 | 30.0 | 2114.9 | 1929.6 | 23.1 | 0.635 |
| 12 | 35.0 | 2155.2 | 1969.9 | 25.9 | 0.585 |
| 13 | 40.0 | 2182.7 | 1997.4 | 28.6 | 0.543 |
| 14 | 45.0 | 2200.9 | 2015.5 | 31.0 | 0.507 |
| 15 | 50.0 | 2216.9 | 2031.5 | 33.3 | 0.476 |
| 16 | 55.0 | 2228.2 | 2042.8 | 35.5 | 0.449 |
| 17 | 60.0 | 2239.3 | 2053.9 | 37.5 | 0.425 |
| 18 | 70.0 | 2257.2 | 2071.8 | 41.1 | 0.385 |
| 19 | 80.0 | 2270.8 | 2085.5 | 44.4 | 0.352 |
| 20 | 90.0 | 2282.2 | 2096.9 | 47.3 | 0.324 |
| 21 | 100.0 | 2292.2 | 2106.9 | 49.9 | 0.300 |
| 22 | 110.0 | 2300.4 | 2115.0 | 52.3 | 0.280 |
| 23 | 120.0 | 2313.2 | 2127.8 | 54.5 | 0.263 |
| 24 | 135.0 | 2321.1 | 2135.8 | 57.4 | 0.240 |
| 25 | 150.0 | 2324.4 | 2139.1 | 59.9 | 0.221 |
| G 26 | 160.6 | 2326.9 | 2141.5 | 61.5 | 0.210 |

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 AUG - 6 1990
 STATE COMMISSION
 Topeka, Kansas

REMARKS:

| | | O.D. | I.D. | LENGTH | DEPTH | |
|-------------|---|----------------------------------|-------|--------|--------|--------|
| 1 |  | DRILL PIPE..... | 4.500 | 3.825 | 5505.3 | |
| 3 |  | DRILL COLLARS. | 6.000 | 2.500 | 560.0 | |
| 5 |  | CROSSOVER..... | 5.750 | 2.870 | 0.7 | |
| 50 |  | IMPACT REVERSING SUB..... | 5.750 | 2.750 | 1.0 | 5055.0 |
| 11 |  | HANDLING SUB & CHOKE ASSEMBLY... | 5.750 | 2.250 | 4.6 | |
| 13 |  | DUAL CIP SAMPLER..... | 5.000 | 0.750 | 5.9 | |
| 60 |  | HYDROSPRING TESTER..... | 5.000 | 0.750 | 5.0 | 5082.4 |
| 80 |  | AP RUNNING CASE..... | 5.000 | 2.250 | 4.1 | 5084.3 |
| 15 |  | JAR..... | 5.000 | 1.750 | 5.0 | |
| 16 |  | VR SAFETY JOINT..... | 5.000 | 1.000 | 2.8 | |
| 70 |  | OPEN HOLE PACKER..... | 6.750 | 1.530 | 5.8 | 5099.4 |
| 70 |  | OPEN HOLE PACKER..... | 6.750 | 1.530 | 5.8 | 5105.2 |
| 20 |  | FLUSH JOINT ANCHOR..... | 5.000 | 2.370 | 24.0 | |
| 81 |  | BLANKED-OFF RUNNING CASE..... | 5.000 | | 4.1 | 5132.0 |
| TOTAL DEPTH | | | | | | 5135.0 |

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CONSERVATION DIVISION
Wichita, Kansas

EQUIPMENT DATA

SAMUEL GARY JR. AND ASSOCIATES

LEASE : LEMON

WELL NO. : 14-10

TEST NO. : 2

TICKET NO. 00827401
 07-OCT-90
 ENID.

LEMON
 LEASE NAME
 14-10
 WELL NO.
 2
 TEST NO.
 5 14 - T 34 S - R 20 W
 LEGAL LOCATION
 SEC. - TWP. - RANG.
 FIELD AREA
 SOUTH PROTECTION
 COUNTY
 COMANCHE
 STATE
 KANSAS
 DDE
 6105.0 - 6135.0
 TESTED INTERVAL
 SAMUEL GARY JR. AND ASSOCIATES
 LEASE OWNER/CORPORATE NAME

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 STATE COMMISSION

AUG - 6 - 90

CONSERVATION DIVISION
 Wichita, Kansas

EQUIPMENT & HOLE DATA

FORMATION TESTED: VIOLA
 NET PAY (ft): 8.0
 GROSS TESTED FOOTAGE: 29.8
 ALL DEPTHS MEASURED FROM: K.B.
 CASING PERFS. (ft): _____
 HOLE OR CASING SIZE (in): 7.800
 ELEVATION (ft): 1767.0 K.B.
 TOTAL DEPTH (ft): 6135.0
 PACKER DEPTH(S) (ft): 6099. 6105
 FINAL SURFACE CHOKE (in): _____
 BOTTOM HOLE CHOKE (in): 0.750
 MUD WEIGHT (lb/gal): 8.80
 MUD VISCOSITY (sec): 56
 ESTIMATED HOLE TEMP. (°F): 131
 ACTUAL HOLE TEMP. (°F): _____ @ _____ ft

TICKET NUMBER: 00827301
 DATE: 10-7-90 TEST NO: 1
 TYPE DST: OPEN HOLE
 FIELD CAMP: _____
 _____ ENID.
 TESTER: CHARLES E. ANDERSON
 WITNESS: STAN NISSEN

 _____ TIM MCCOY
 DRILLING CONTRACTOR: _____
 _____ TRIAD DRILLING, RIG NO 19

FLUID PROPERTIES FOR RECOVERED MUD & WATER

| SOURCE | RESISTIVITY | CHLORIDES |
|---------|------------------|-----------|
| MUD PIT | 0.207 @ 65 °F | 16500 ppm |
| SAMPLER | 0.080 @ 65 °F | 19833 ppm |
| _____ | _____ @ _____ °F | _____ ppm |
| _____ | _____ @ _____ °F | _____ ppm |
| _____ | _____ @ _____ °F | _____ ppm |
| _____ | _____ @ _____ °F | _____ ppm |

SAMPLER DATA

Psig AT SURFACE: 100.0
 cu.ft. OF GAS: _____
 cc OF OIL: _____
 cc OF WATER: 1700.0
 cc OF MUD: _____
 TOTAL LIQUID cc: 1700.0

HYDROCARBON PROPERTIES

OIL GRAVITY (°API): _____ @ _____ °F
 GAS/OIL RATIO (cu.ft. per bbl): _____
 GAS GRAVITY: _____

CUSHION DATA

| TYPE | AMOUNT | WEIGHT |
|-------|--------|--------|
| _____ | _____ | _____ |
| _____ | _____ | _____ |

RECOVERED :

275 FT TOTAL RECOVERY.
 245 FT MUD
 30 FT MUD FILTRATE

MEASURED FROM
 TESTER VALVE

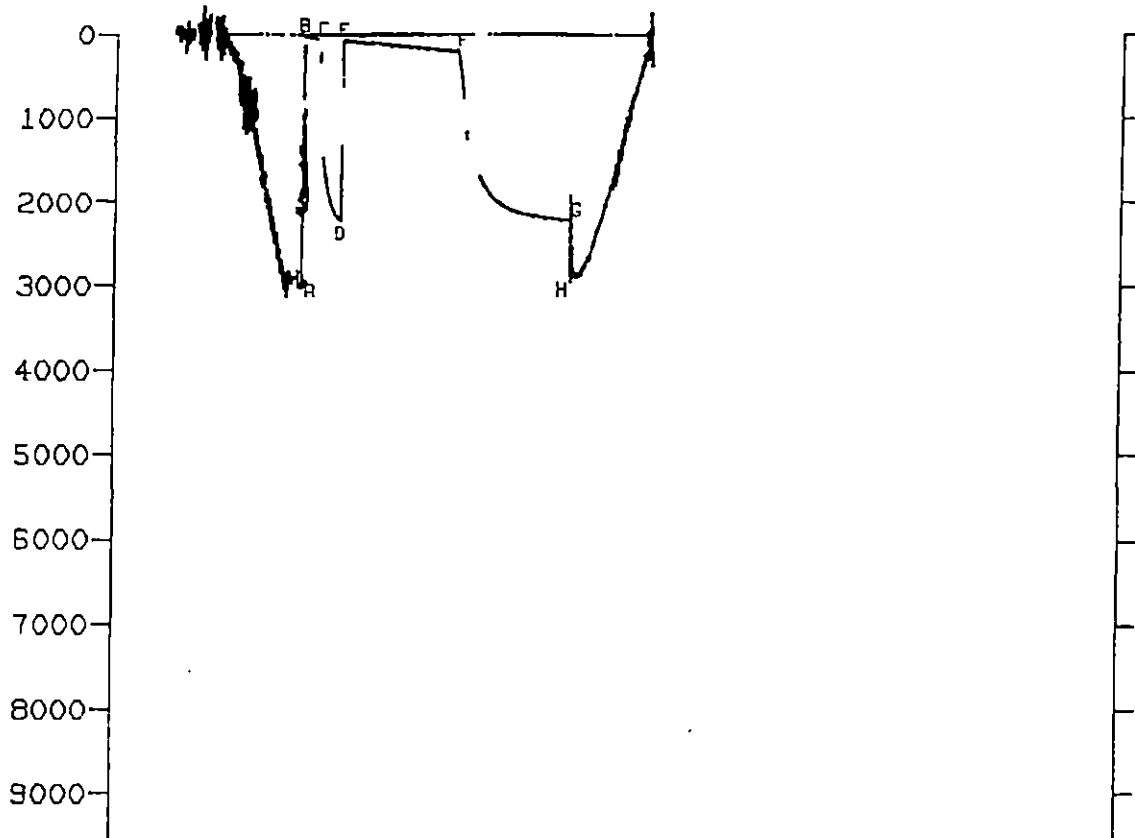
REMARKS :

TESTER REPORTED SAMPLER MANDREL WAS PLUGGED OFF WITH L.C.M.

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 Wichita, Kansas



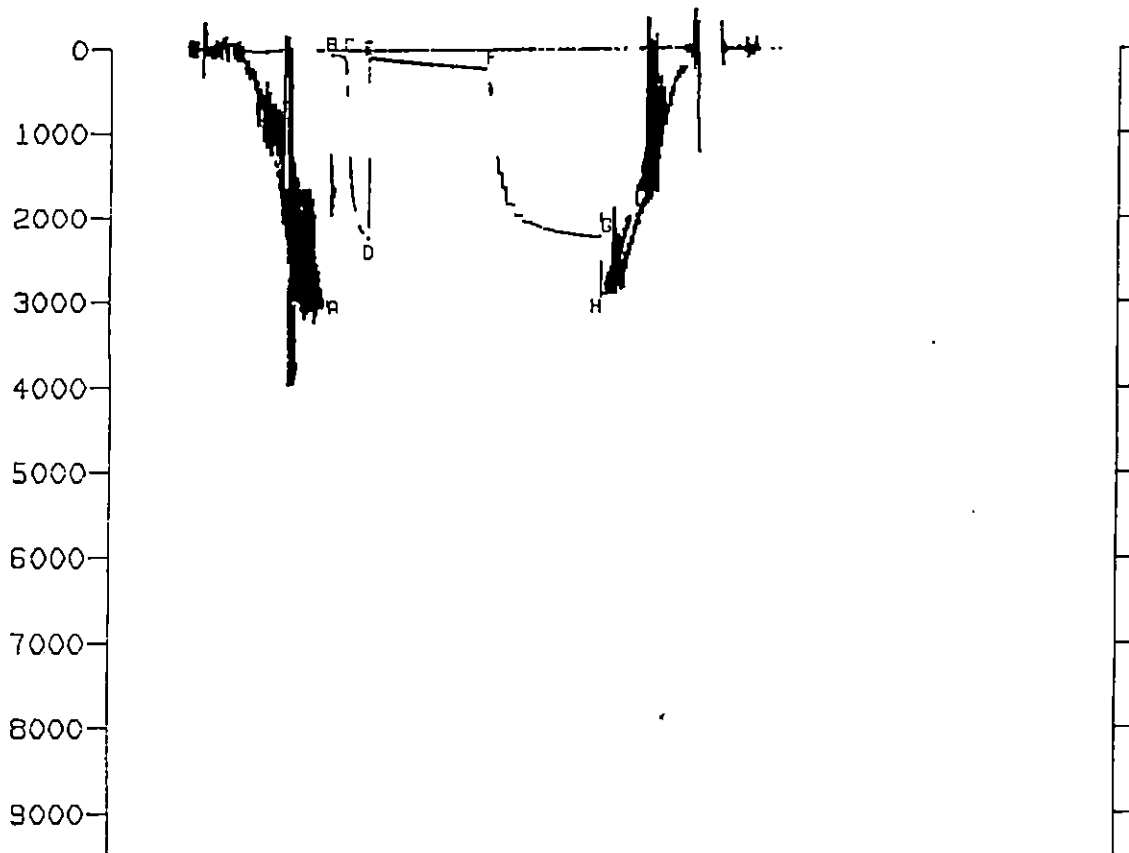
GAUGE NO: 1912 DEPTH: 6084.3 BLANKED OFF: NO HOUR OF CLOCK: 24

| ID | DESCRIPTION | PRESSURE | | TIME | | TYPE |
|----|--------------------------|----------|------------|----------|------------|------|
| | | REPORTED | CALCULATED | REPORTED | CALCULATED | |
| A | INITIAL HYDROSTATIC | | 2914.7 | | | |
| B | INITIAL FIRST FLOW | | 25.4 | | | |
| C | FINAL FIRST FLOW | | 59.5 | 20.0 | 20.4 | F |
| C | INITIAL FIRST CLOSED-IN | | 59.5 | 40.0 | 39.1 | C |
| D | FINAL FIRST CLOSED-IN | | 2235.3 | | | |
| E | INITIAL SECOND FLOW | | 75.6 | | | |
| F | FINAL SECOND FLOW | | 213.5 | 180.0 | 179.9 | F |
| F | INITIAL SECOND CLOSED-IN | | 213.5 | 180.0 | 180.6 | C |
| G | FINAL SECOND CLOSED-IN | | 2240.9 | | | |
| H | FINAL HYDROSTATIC | | 2901.3 | | | |

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CONSERVATION DIVISION
Wichita, Kansas



GAUGE NO: 162 DEPTH: 6132.0 BLANKED OFF: YES HOUR OF CLOCK: 24

| ID | DESCRIPTION | PRESSURE | | TIME | | TYPE |
|----|--------------------------|----------|------------|----------|------------|------|
| | | REPORTED | CALCULATED | REPORTED | CALCULATED | |
| A | INITIAL HYDROSTATIC | | 2943.6 | | | |
| B | INITIAL FIRST FLOW | | 66.2 | | | |
| C | FINAL FIRST FLOW | | 85.7 | 20.0 | 20.4 | F |
| C | INITIAL FIRST CLOSED-IN | | 85.7 | 40.0 | 39.1 | C |
| D | FINAL FIRST CLOSED-IN | | 2281.8 | | | |
| E | INITIAL SECOND FLOW | | 115.0 | | | |
| F | FINAL SECOND FLOW | | 244.7 | 180.0 | 179.9 | F |
| F | INITIAL SECOND CLOSED-IN | | 244.7 | 180.0 | 180.6 | C |
| G | FINAL SECOND CLOSED-IN | | 2279.2 | | | |
| H | FINAL HYDROSTATIC | | 2937.0 | | | |

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CONSERVATION DIVISION
Wichita, Kansas

| EQUIPMENT & HOLE DATA | TICKET NUMBER: <u>00827401</u> |
|--|--|
| FORMATION TESTED: <u>VIOLA</u> | DATE: <u>10-7-90</u> TEST NO: <u>2</u> |
| NET PAY (ft) <u>8.0</u> | TYPE DST: <u>OPEN HOLE</u> |
| GROSS TESTED FOOTAGE: <u>30.0</u> | FIELD CAMP: <u>ENID</u> |
| ALL DEPTHS MEASURED FROM: <u>K.B.</u> | TESTER: <u>CHARLES E. ANDERSON</u> |
| CASING PERFS. (ft): _____ | WITNESS: <u>STAN NISSEN</u> <u>TIM MCCOY</u> |
| HOLE OR CASING SIZE (in): <u>7.800</u> | DRILLING CONTRACTOR: <u>TRIAD DRILLING RIG NO 19</u> |
| ELEVATION (ft) <u>1767.0</u> | |
| TOTAL DEPTH (ft) <u>6135.0</u> | |
| PACKER DEPTH(S) (ft): <u>6099, 6105</u> | |
| FINAL SURFACE CHOKE (in): _____ | |
| BOTTOM HOLE CHOKE (in) <u>0.750</u> | |
| MUD WEIGHT (lb/gal) <u>8.80</u> | |
| MUD VISCOSITY (sec): <u>55</u> | |
| ESTIMATED HOLE TEMP. (°F) <u>131</u> | |
| ACTUAL HOLE TEMP. (°F): _____ @ _____ ft | |

FLUID PROPERTIES FOR RECOVERED MUD & WATER

| SOURCE | RESISTIVITY | CHLORIDES |
|-----------------|----------------------|-------------------|
| <u>MUD PIT</u> | <u>0.207 @ 65 °F</u> | <u>17600 ppm</u> |
| <u>SAMPLE #</u> | <u>0.084 @ 65 °F</u> | <u>119000 ppm</u> |
| _____ | _____ @ _____ °F | _____ ppm |
| _____ | _____ @ _____ °F | _____ ppm |
| _____ | _____ @ _____ °F | _____ ppm |
| _____ | _____ @ _____ °F | _____ ppm |

SAMPLER DATA

Psig AT SURFACE: 155.0

cu.ft. OF GAS: _____

cc OF OIL: _____

cc OF WATER: 1925.0

cc OF MUD: _____

TOTAL LIQUID cc: 1925.0

HYDROCARBON PROPERTIES

OIL GRAVITY (°API): _____ @ _____ °F

GAS/OIL RATIO (cu.ft. per bbl): _____

GAS GRAVITY: _____

CUSHION DATA

| TYPE | AMOUNT | WEIGHT |
|-------|--------|--------|
| _____ | _____ | _____ |
| _____ | _____ | _____ |

RECOVERED :

- 150 FT MUD
- 180 FT MUD CUT SALT WATER
- 90 FT SALT WATER

MEASURED FROM
TESTER VALVE

REMARKS :

GAUGE NO. 162 STAIRSTEPPING DURING SECOND CLOSED-IN PERIOD.

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CONSERVATION DIVISION
Wichita, Kansas

TICKET NO: 00827401

GAUGE NO: 1912

CLOCK NO: 8533 HOUR: 24

DEPTH: 6084.3

| REF | MINUTES | PRESSURE | AP | $\frac{t \times \Delta t}{t + \Delta t}$ | $\log \frac{t + \Delta t}{\Delta t}$ |
|------------------------|---------|----------|--------|--|--------------------------------------|
| FIRST FLOW | | | | | |
| B | 1 | 0 0 | 25.4 | | |
| | 2 | 1.0 | 24.8 | -0.6 | |
| | 3 | 2.0 | 24.1 | -0.7 | |
| | 4 | 3.0 | 24.8 | 0.7 | |
| | 5 | 4.0 | 26.0 | 1.2 | |
| | 6 | 5.0 | 27.2 | 1.2 | |
| | 7 | 6.0 | 32.8 | 5.6 | |
| | 8 | 7.0 | 34.2 | 1.5 | |
| | 9 | 8.0 | 35.7 | 1.5 | |
| | 10 | 9.0 | 39.7 | 3.9 | |
| | 11 | 10.0 | 41.4 | 1.7 | |
| | 12 | 11.0 | 43.1 | 1.7 | |
| | 13 | 12.0 | 44.6 | 1.5 | |
| | 14 | 13.0 | 45.6 | 1.1 | |
| | 15 | 14.0 | 45.8 | 0.1 | |
| | 16 | 15.0 | 47.0 | 1.2 | |
| | 17 | 16.0 | 48.5 | 1.5 | |
| | 18 | 17.0 | 49.5 | 1.0 | |
| | 19 | 18.0 | 51.1 | 1.6 | |
| | 20 | 19.0 | 53.7 | 2.6 | |
| | 21 | 20.0 | 57.8 | 4.2 | |
| C | 22 | 20.4 | 59.5 | 1.6 | |
| FIRST CLOSED-IN | | | | | |
| C | 1 | 0.0 | 59.5 | | |
| | 2 | 4.0 | 227.8 | 168.4 | 3.3 0.786 |
| | 3 | 5.0 | 347.6 | 288.1 | 4.0 0.706 |
| | 4 | 12.0 | 1596.2 | 1536.8 | 7.6 0.432 |
| | 5 | 14.0 | 1713.3 | 1653.9 | 8.3 0.391 |
| | 6 | 16.0 | 1825.1 | 1765.6 | 9.0 0.357 |
| | 7 | 18.0 | 1912.1 | 1852.6 | 9.6 0.329 |
| | 8 | 20.0 | 1976.5 | 1917.1 | 10.1 0.306 |
| | 9 | 22.0 | 2033.6 | 1974.1 | 10.5 0.285 |
| | 10 | 24.0 | 2076.6 | 2017.1 | 11.0 0.267 |
| | 11 | 26.0 | 2113.1 | 2053.6 | 11.4 0.252 |
| | 12 | 28.0 | 2146.9 | 2087.4 | 11.8 0.238 |
| | 13 | 30.0 | 2169.5 | 2110.0 | 12.2 0.225 |
| | 14 | 35.0 | 2210.4 | 2150.9 | 12.9 0.200 |
| D | 15 | 39.1 | 2235.3 | 2175.9 | 13.4 0.183 |
| SECOND FLOW | | | | | |
| E | 1 | 0.0 | 75.6 | | |
| | 2 | 9.0 | 77.1 | 1.5 | |
| | 3 | 18.0 | 84.7 | 7.6 | |
| | 4 | 27.0 | 95.9 | 11.2 | |
| | 5 | 36.0 | 102.1 | 6.2 | |
| | 6 | 45.0 | 111.8 | 9.6 | |
| | 7 | 54.0 | 119.3 | 7.5 | |

| REF | MINUTES | PRESSURE | AP | $\frac{t \times \Delta t}{t + \Delta t}$ | $\log \frac{t + \Delta t}{\Delta t}$ |
|--------------------------------|---------|----------|--------|--|--------------------------------------|
| SECOND FLOW - CONTINUED | | | | | |
| | 8 | 63.0 | 126.4 | 7.1 | |
| | 9 | 72.0 | 133.8 | 7.4 | |
| | 10 | 81.0 | 140.2 | 6.4 | |
| | 11 | 90.0 | 147.9 | 7.7 | |
| | 12 | 99.0 | 154.7 | 6.7 | |
| | 13 | 108.0 | 162.6 | 7.9 | |
| | 14 | 117.0 | 168.1 | 5.5 | |
| | 15 | 126.0 | 176.3 | 8.2 | |
| | 16 | 135.0 | 180.8 | 4.5 | |
| | 17 | 144.0 | 188.6 | 7.8 | |
| | 18 | 153.0 | 195.4 | 6.8 | |
| | 19 | 162.0 | 199.1 | 3.7 | |
| | 20 | 171.0 | 206.5 | 7.4 | |
| F | 21 | 179.9 | 213.5 | 6.9 | |
| SECOND CLOSED-IN | | | | | |
| F | 1 | 0.0 | 213.5 | | |
| | 2 | 1.0 | 233.0 | 19.5 | 1.0 2.304 |
| | 3 | 2.0 | 259.7 | 45.3 | 2.0 2.005 |
| | 4 | 3.0 | 293.8 | 80.3 | 3.0 1.831 |
| | 5 | 4.0 | 336.1 | 122.6 | 3.9 1.708 |
| | 6 | 5.0 | 375.9 | 162.5 | 4.9 1.613 |
| | 7 | 6.0 | 410.4 | 197.0 | 5.8 1.536 |
| | 8 | 7.0 | 472.3 | 258.9 | 6.8 1.472 |
| | 9 | 8.0 | 543.6 | 330.1 | 7.7 1.416 |
| | 10 | 9.0 | 625.8 | 412.4 | 8.6 1.367 |
| | 11 | 10.0 | 712.1 | 498.7 | 9.5 1.323 |
| | 12 | 15.0 | 1202.0 | 988.6 | 14.8 1.131 |
| | 13 | 18.0 | 1280.1 | 1056.7 | 15.5 1.084 |
| | 14 | 40.0 | 1771.9 | 1558.4 | 33.3 0.779 |
| | 15 | 45.0 | 1840.8 | 1627.4 | 36.7 0.737 |
| | 16 | 50.0 | 1899.6 | 1686.1 | 40.0 0.700 |
| | 17 | 55.0 | 1950.7 | 1737.2 | 43.2 0.667 |
| | 18 | 60.0 | 1987.5 | 1774.0 | 46.2 0.637 |
| | 19 | 70.0 | 2052.1 | 1838.6 | 51.9 0.587 |
| | 20 | 80.0 | 2095.5 | 1882.0 | 57.2 0.545 |
| | 21 | 90.0 | 2123.9 | 1910.4 | 62.1 0.509 |
| | 22 | 100.0 | 2149.6 | 1936.2 | 66.7 0.478 |
| | 23 | 110.0 | 2169.5 | 1956.0 | 71.0 0.450 |
| | 24 | 120.0 | 2182.4 | 1968.9 | 75.0 0.426 |
| | 25 | 135.0 | 2201.3 | 1987.8 | 80.6 0.395 |
| | 26 | 150.0 | 2217.0 | 2003.5 | 85.8 0.368 |
| | 27 | 165.0 | 2228.2 | 2014.7 | 90.5 0.345 |
| G | 28 | 180.6 | 2240.9 | 2027.5 | 95.0 0.324 |

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CORPORATION DIVISION
Wichita, Kansas

REMARKS:

TICKET NO: 00827401
 CLOCK NO: 6607 HOUR: 24

GAUGE NO: 162
 DEPTH: 6132.0

| REF | MINUTES | PRESSURE | ΔP | $\frac{t \times \Delta P}{t + \Delta P}$ | $\log \frac{t + \Delta P}{\Delta P}$ |
|-----------------|---------|----------|--------|--|--------------------------------------|
| FIRST FLOW | | | | | |
| B 1 | 0.0 | 66.2 | | | |
| 2 | 1.0 | 65.2 | 0.0 | | |
| 3 | 2.0 | 64.6 | -1.5 | | |
| 4 | 3.0 | 65.8 | 1.2 | | |
| 5 | 4.0 | 67.4 | 1.5 | | |
| 6 | 5.0 | 68.3 | 0.9 | | |
| 7 | 6.0 | 68.8 | 0.5 | | |
| 8 | 7.0 | 68.6 | -0.2 | | |
| 9 | 8.0 | 70.9 | 2.3 | | |
| 10 | 9.0 | 72.6 | 1.7 | | |
| 11 | 10.0 | 73.0 | 0.4 | | |
| 12 | 11.0 | 73.3 | 0.4 | | |
| 13 | 12.0 | 74.0 | 0.6 | | |
| 14 | 13.0 | 77.4 | 3.4 | | |
| 15 | 14.0 | 79.4 | 2.1 | | |
| 16 | 15.0 | 80.4 | 0.9 | | |
| 17 | 16.0 | 81.3 | 0.9 | | |
| 18 | 17.0 | 81.5 | 0.1 | | |
| 19 | 18.0 | 80.7 | -0.6 | | |
| 20 | 19.0 | 83.2 | 2.5 | | |
| 21 | 20.0 | 85.2 | 2.1 | | |
| C 22 | 20.4 | 85.7 | 0.4 | | |
| FIRST CLOSED-IN | | | | | |
| C 1 | 0.0 | 85.7 | | | |
| 2 | 1.0 | 95.9 | 11.2 | 1.0 | 1.331 |
| 3 | 2.0 | 151.4 | 65.7 | 1.8 | 1.050 |
| 4 | 3.0 | 191.5 | 105.8 | 2.6 | 0.892 |
| 5 | 4.0 | 241.0 | 155.3 | 3.3 | 0.786 |
| 6 | 5.0 | 513.7 | 428.0 | 4.6 | 0.644 |
| 7 | 10.0 | 1389.6 | 1304.0 | 6.7 | 0.483 |
| 8 | 12.0 | 1593.3 | 1507.7 | 7.6 | 0.432 |
| 9 | 14.0 | 1717.6 | 1631.9 | 8.3 | 0.391 |
| 10 | 16.0 | 1841.4 | 1755.8 | 9.0 | 0.357 |
| 11 | 18.0 | 1928.2 | 1842.6 | 9.6 | 0.329 |
| 12 | 25.0 | 2146.4 | 2060.8 | 11.4 | 0.252 |
| 13 | 28.0 | 2180.9 | 2095.2 | 11.8 | 0.238 |
| 14 | 30.0 | 2210.7 | 2125.0 | 12.2 | 0.225 |
| D 15 | 39.1 | 2281.8 | 2196.2 | 13.4 | 0.183 |
| SECOND FLOW | | | | | |
| E 1 | 0.0 | 115.0 | | | |
| 2 | 9.0 | 111.9 | -3.1 | | |
| 3 | 18.0 | 117.5 | 5.6 | | |
| 4 | 27.0 | 127.5 | 10.1 | | |
| 5 | 36.0 | 136.2 | 8.7 | | |
| 6 | 45.0 | 142.9 | 6.7 | | |

| REF | MINUTES | PRESSURE | ΔP | $\frac{t \times \Delta P}{t + \Delta P}$ | $\log \frac{t + \Delta P}{\Delta P}$ |
|-----------------------------|---------|----------|--------|--|--------------------------------------|
| SECOND FLOW - CONTINUED | | | | | |
| 7 | 54.0 | 150.9 | 8.0 | | |
| 8 | 63.0 | 157.3 | 6.4 | | |
| 9 | 72.0 | 163.2 | 5.9 | | |
| 10 | 81.0 | 172.6 | 9.4 | | |
| 11 | 90.0 | 179.6 | 7.0 | | |
| 12 | 99.0 | 185.2 | 5.6 | | |
| 13 | 108.0 | 191.7 | 6.5 | | |
| 14 | 117.0 | 198.6 | 6.9 | | |
| 15 | 126.0 | 206.1 | 7.5 | | |
| 16 | 135.0 | 212.7 | 6.6 | | |
| 17 | 144.0 | 219.3 | 6.6 | | |
| 18 | 153.0 | 224.8 | 5.4 | | |
| 19 | 162.0 | 231.7 | 7.0 | | |
| 20 | 171.0 | 237.4 | 5.7 | | |
| F 21 | 179.9 | 244.7 | 7.2 | | |
| SECOND CLOSED-IN | | | | | |
| F 1 | 0.0 | 244.7 | | | |
| 2 | 5.0 | 412.4 | 167.7 | 4.9 | 1.613 |
| 3 | 6.0 | 453.0 | 218.3 | 5.8 | 1.536 |
| 4 | 7.0 | 522.8 | 278.1 | 6.8 | 1.472 |
| 5 | 8.0 | 573.0 | 328.3 | 7.7 | 1.416 |
| 6 | 18.0 | 1317.4 | 1072.8 | 16.5 | 1.084 |
| <input type="checkbox"/> 7 | 19.1 | 1357.0 | 1112.4 | 17.5 | 1.059 |
| <input type="checkbox"/> 8 | 19.1 | 1501.0 | 1256.4 | 17.5 | 1.059 |
| <input type="checkbox"/> 9 | 24.5 | 1519.7 | 1275.0 | 21.9 | 0.962 |
| <input type="checkbox"/> 10 | 24.5 | 1658.4 | 1413.8 | 21.9 | 0.962 |
| <input type="checkbox"/> 11 | 31.3 | 1689.2 | 1444.5 | 27.1 | 0.869 |
| <input type="checkbox"/> 12 | 31.5 | 1877.0 | 1632.3 | 27.2 | 0.866 |
| <input type="checkbox"/> 13 | 45.1 | 1894.6 | 1650.0 | 36.8 | 0.736 |
| <input type="checkbox"/> 14 | 45.2 | 2009.8 | 1765.1 | 36.9 | 0.735 |
| <input type="checkbox"/> 15 | 58.3 | 2027.4 | 1782.7 | 45.1 | 0.647 |
| <input type="checkbox"/> 16 | 59.1 | 2095.7 | 1851.1 | 45.6 | 0.642 |
| <input type="checkbox"/> 17 | 71.0 | 2109.0 | 1864.4 | 52.4 | 0.582 |
| 18 | 80.0 | 2136.6 | 1892.0 | 57.2 | 0.545 |
| 19 | 90.0 | 2166.9 | 1922.2 | 62.1 | 0.509 |
| 20 | 100.0 | 2190.2 | 1945.5 | 66.7 | 0.478 |
| 21 | 110.0 | 2207.3 | 1962.6 | 71.0 | 0.450 |
| 22 | 120.0 | 2223.4 | 1978.7 | 75.0 | 0.426 |
| 23 | 135.0 | 2239.8 | 1995.1 | 80.6 | 0.395 |
| 24 | 150.0 | 2256.9 | 2012.2 | 85.8 | 0.368 |
| 25 | 165.0 | 2267.5 | 2022.9 | 90.5 | 0.345 |
| G 26 | 180.6 | 2279.2 | 2034.5 | 95.0 | 0.324 |















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AUG - 6 1990

CONSTRUCTION DIVISION
 WICHITA, KANSAS

LEGEND:
 STAIR-STEP

REMARKS:

| | | O.D. | I.D. | LENGTH | DEPTH | |
|-------------|---|----------------------------------|-------|--------|--------|--------|
| 1- |  | DRILL PIPE..... | 4.500 | 3.826 | 5505.3 | |
| 3 |  | DRILL COLLARS..... | 6.000 | 2.500 | 560.0 | |
| 5 |  | CROSSOVER..... | 5.750 | 2.870 | 0.7 | |
| 50 |  | IMPACT REVERSING SUB.... | 5.750 | 2.750 | 1.0 | 6066.0 |
| 11 |  | HANDLING SUB & CHOKE ASSEMBLY... | 5.750 | 2.250 | 4.6 | |
| 13 |  | DUAL CIP SAMPLER..... | 5.000 | 0.750 | 6.9 | |
| 60 |  | HYDROSPRING TESTER..... | 5.000 | 0.750 | 5.0 | 6082.4 |
| 80 |  | AP RUNNING CASE..... | 5.000 | 2.250 | 4.1 | 6084.3 |
| 15 |  | JAR..... | 5.000 | 1.750 | 5.0 | |
| 16 |  | VR SAFETY JOINT..... | 5.000 | 1.000 | 2.8 | |
| 70 |  | OPEN HOLE PACKER..... | 6.750 | 1.530 | 5.8 | 6099.4 |
| 70 |  | OPEN HOLE PACKER..... | 6.750 | 1.530 | 5.8 | 6105.2 |
| 20 |  | FLUSH JOINT ANCHDR..... | 5.000 | 2.370 | 24.0 | |
| 81 |  | BLANKED-OFF RUNNING CASE..... | 5.000 | | 4.1 | 6132.0 |
| TOTAL DEPTH | | | | | | 6135.0 |

EQUIPMENT DATA