

KANSAS CORPORATION COMMISSION
OIL & GAS CONSERVATION DIVISION

Form ACO-1
September 1999
Form Must Be Typed

WELL COMPLETION FORM
WELL HISTORY - DESCRIPTION OF WELL & LEASE

COPY

Operator: License # 31722
Name: Glacier Petroleum Company, OKLA, Inc.
Address: 5530 North Western
City/State/Zip: Oklahoma City, Oklahoma 73118
Purchaser: NA
Operator Contact Person: K. W. Throgmorton
Phone: (405) 840 - 2625
Contractor: Name: Mendenhall Drlg.
License: 32590
Wellsite Geologist: Hendrickson

Designate Type of Completion:

☒ New Well ☐ Re-Entry ☐ Workover
☐ Oil ☐ SWD ☐ SIOW ☐ Temp. Abd.
☐ Gas ☐ ENHR ☐ SIGW
☒ Dry ☐ Other (Core, WSW, Expl., Cathodic, etc)

If Workover/Re-entry: Old Well Info as follows:

Operator: _____
Well Name: _____
Original Comp. Date: _____ Original Total Depth: _____
☐ Deepening ☐ Re-perf. ☐ Conv. to Enhr./SWD
☐ Plug Back ☐ Plug Back Total Depth
☐ Commingled Docket No. _____
☐ Dual Completion Docket No. _____
☐ Other (SWD or Enhr.?) Docket No. _____

1-21-02	2-6-02	NA
Spud Date or Recompletion Date	Date Reached TD	Completion Date or Recompletion Date

API No. 15 - 191-22373
County: Sumner
N NE NE Sec. 29 Twp. 32S S. R. 3 ☐ East ☒ West
330 feet from S N (circle one) Line of Section
990 feet from E W (circle one) Line of Section

Footages Calculated from Nearest Outside Section Corner:

(circle one) NE SE NW SW
Lease Name: ANDRAE Well #: 1
Field Name: NA

Producing Formation: NA
Elevation: Ground: 1189 Kelly Bushing: 1200
Total Depth: 4395 Plug Back Total Depth: NA
Amount of Surface Pipe Set and Cemented at 292 Feet
Multiple Stage Cementing Collar Used? ☐ Yes ☒ No
If yes, show depth set _____ Feet
If Alternate II completion, cement circulated from _____
feet depth to _____ w/ _____ sx cmt.

Drilling Fluid Management Plan Att 1 EH 6/8/02
(Data must be collected from the Reserve Pit)
Chloride content 16000 ppm Fluid volume 3800 bbls
Dewatering method used Dewater, Dry and Cover
Location of fluid disposal if hauled offsite: _____
Operator Name: Patton Tank Trucks
Lease Name: _____ License No.: _____
Quarter _____ Sec. _____ Twp. _____ S. R. _____ ☐ East ☐ West
County: _____ Docket No.: _____

INSTRUCTIONS: An original and two copies of this form shall be filed with the Kansas Corporation Commission, 130 S. Market - Room 2078, Wichita, Kansas 67202, within 120 days of the spud date, recompletion, workover or conversion of a well. Rule 82-3-130, 82-3-106 and 82-3-107 apply. Information of 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 geologist well report shall be attached with this form. ALL CEMENTING TICKETS MUST BE ATTACHED. Submit CP-4 form 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 and the statements herein are complete and correct to the best of my knowledge.

Signature: [Signature]
Title: President Date: 3/11/02
Subscribed and sworn to before me this 11th day of March, 2002
Notary Public: [Signature]
Date Commission Expires: 11-10-2004

KCC Office Use ONLY

☒ NO Letter of Confidentiality Attached
If Denied, Yes ☐ Date: _____
☒ Wireline Log Received
☒ Geologist Report Received
☐ UIC Distribution

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Operator Name: Glacier Petroleum Company, OKLA, Inc Lease Name: ANDRAE Well #: 1
 Sec. 29 Twp. 32S S. R. 3 ☐ East ☒ West County: Sumner

INSTRUCTIONS: Show important tops and base of formations penetrated. Detail all cores. Report all final copies of drill stems 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 test, along with final chart(s). Attach extra sheet if more space is needed. Attach copy of all Electric Wireline Logs surveyed. Attach final geological well site report.

Drill Stem Tests Taken ☒ Yes ☐ No
 (Attach Additional Sheets)

Samples Sent to Geological Survey ☐ Yes ☒ No

Cores Taken ☐ Yes ☒ No

Electric Log Run ☒ Yes ☐ No
 (Submit Copy)

List All E. Logs Run:

Dual Induction
 Compensated Density

☒ Log Formation (Top), Depth and Datum ☐ Sample

Name	Top	Datum
osage	1550'	
Lansing	2953	
Stalnaker	3033	
Mississippi	3941	
Simpson	4359	

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
Surface	12.25	8.625	20#	292	A	200	3% CC

ADDITIONAL CEMENTING / SQUEEZE RECORD

Purpose:	Depth Top Bottom	Type of Cement	#Sacks Used	Type and Percent Additives
___ Perforate				
___ Protect Casing				
___ Plug Back TD				
___ Plug Off Zone				

Shots Per Foot	PERFORATION RECORD - Bridge Plugs Set/Type Specify Footage of Each Interval Perforated	Acid, Fracture, Shot, Cement Squeeze Record (Amount and Kind of Material Used)	Depth

TUBING RECORD	Size	Set At	Packer At	Liner Run ☐ Yes ☐ No
Date of First, Resumed Production, SWD or Enhr.	Producing Method ☐ Flowing ☐ Pumping ☐ Gas Lift ☐ Other (Explain)			
Estimated Production Per 24 Hours	Oil Bbls.	Gas Mcf	Water Bbls.	Gas-Oil Ratio Gravity

Disposition of Gas METHOD OF COMPLETION Production Interval

☐ Vented ☐ Solid ☐ Used on Lease
 (If vented, Sumit ACO-18.)

☐ Open Hole ☐ Perf. ☐ Dually Comp. ☐ Commingled
☐ Other (Specify) _____

SHALLOW ZONES

A manned mud logging unit was utilized from 1700' (above the shallowest zone of potential) to 3,960' (slightly into the Mississippian Limestone). Unfortunately, no shallow zones exhibited any potential in the Andre #1 well. Some of the shallow zones were absent, being highly erratic in their deposition, while the rest were conclusively evaluated as water bearing by sample examination, lack of show on the gas analyzer and log analysis.

MISSISSIPPIAN LIMESTONE 3,941' to 4,270'

The Mississippian Limestone in the Andre #1 was light beige to tan, finly crystalline to dense, cherty limestone that at times was dolomitic to highly dolomitic. Most of the Mississippian was too tight to be considered a potential reservoir but several zones of notable porosity were developed. Unfortunately, these zones were conclusively evaluated as wet by sample examination, lack of gas analyzer shows and ultimately, log analysis.

SIMPSON SANDSTONE 4,359'

When the top of the Simpson was encountered by the Andre #1, a drilling break was observed. The drilling went from approximately 4.5"/foot down to 2.5"/foot. Six feet was cut from the start of the break when drilling was stopped and samples were circulated up at 4,366'. Samples indicated a sandstone, clear to white, fine grained, sub-rounded with moderate sphericity. Additionally, the samples indicated great variation in sorting, most being fairly well sorted but some exhibiting very poor sorting. Matrix material appeared to be slightly calcareous to dolomitic with the samples indicating fair intergranular porosity. Some unconsolidated sand grains were also observed in the sample. Approximately 25% of the sandstone chips exhibited medium yellow fluorescence with fair stain, fair odor, milky to instant streaming cut with fair to good ring development. No shows were noted on the gas analyzer. One other characteristic that was noted at the time was the packing of the sandstone grains. It was distinctive how the sandstone grains were tightly packed, even interlocking, leaving very little porosity between sandstone grains.

At the time of drilling, it was thought that we were running 4' higher than were actually were and that a drill stem test at that depth would be flat to the initial one run in the Drumhiller #1. The initial one run in the Drumhiller recovered some gas in the pipe but exceedingly low pressures and indicated a tight, non-productive rock was tested. It was felt that the Andre was structurally flat with this Drumhiller test but that the Andre drilling break and samples indicated better reservoir rock. Therefore, a drill stem test was run but recovered only 30' of mud with low flow pressures (little more than 20#) and shut in pressures that initially were 1,517# but down to 721# after the final flow period. All indications were that the reservoir was tight. Ultimately, logs showed this sandstone to have 8 to 10% porosity but permeability is apparently very poor, likely due to the observed exceedingly close packing of this sandstone, note Exhibit #1. This sandstone calculates in excess of 80% saltwater using an $R_w = .04$.

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ORIGINAL

Another six feet were cut and again circulated up at 4,372'. The gas analyzer indicated a brief 46 unit show. The sandstone looked basically as before but was clear and carried slightly fewer chips with shows. The sandstone was slightly more friable (less cementation and thus a clearer quartz sandstone) but still perfectly packed. This sandstone did not drill off nearly as well (4"/foot) and with decreasing sample shows so it was determined that a drill stem test was not warranted. Noting **Exhibit #1**, logs indicate this zone to have up to 13% porosity but with only 4 ohms associated with it. This zone calculates slightly better than the previous one with saltwater concentration of approximately 70%, hence the small gas show, but still obviously wet and very likely too tight to produce anything.

Drilling was resumed on the Andre well and after 10 feet another drilling break was noted. The well had been drilling at 6" to 7"/foot and two feet was cut at 2.5"/foot. Drilling was stopped and samples circulated up at 4,384'. This sandstone was distinctively different than that previously described. This sandstone was a *snow white, very fine grained* sandstone which was slightly friable to firm. Some chips of this sandstone contained 20% chlorite grains, other chips carried up to 35% pyrite and still other chips (and the majority of the chips) carried 25% dark, angular clasts that appeared to be Chatanooga Shale (Woodford). These three types of chips (chloritic/pyritic/shale clastic) were largely mutually exclusive. This sandstone gave up no show on the gas analyzer and carried no shows in the samples. Due to stacking of the logging tools and the fact that this zone is so close to total depth, full log coverage was not afforded. **Exhibit #1** indicates this sandstone carried less than two ohms and although porosity was not measured, it is clear this zone is wet. At this point the Andre was low to all the drill stem tests on the Drumhiller, including the one that made a slight amount of saltwater, so no drill stem test was warranted.

The well was drilled slightly deeper so that logs could be run across the Simpson zones of interest and drilling was stopped while still in Simpson Sandstone.

Pressure Test Report

COMPANY INFORMATION

Company Name Glacier Petroleum Co. Okla. Inc.
Representative
Phone
Fax
Address

E-Mail Address
Service Company

WELL INFORMATION

Well Name Andrae #1
Well Location 29 -32W-3W NW_NE_NE
Field and Pool
Status (Oil, Gas, Water, Injection) Oil& GAS
Perforated Intervals
Mid-point of Perforated Intervals (MPP)
Drilling Rig Number Mendenhall Rig #3
Elevations
 Kelly Bushing (KB)
 Casing Flange (CF)
 KB-CF
 Ground Level
Plug Back Total Depth
Total Depth 4360'
Production Casing
Production Tubing

TEST INFORMATION

Type of Test DST#1
Date(s) of Test 2-5-02
Dead-weight Gauge Tubing Pressure
Dead-weight Gauge Casing Pressure
Shut-in Date (Duration)
Date / Time on Bottom 2-5-02 10:52 PM
Date / Time off Bottom 2-6-02 12:32 AM

Probe Serial Number Z43
Probe Offset from End of Tool String
Run Depth at Probe Pressure Port

PRESSURE TEST RESULTS

Maximum Recorded Probe Pressure 2203.4 psig
Maximum Recorded Probe Temperature 126.7 deg F
Final Buildup Pressure
Gradient Survey Information
 Extrapolated Pressure to MPP
 Final Gradient at Depth
Job Number