

15-109-20487

17-12s-33w

BEREN CORPORATION
JANICE -3
FINAL GEOLOGICAL WELL REPORT

EXTRA

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1.0 GENERAL INFORMATION

1.1 SUMMARY SHEET

1.2 WELL HISTORY

1.1 SUMMARY SHEET

Well Name: Janice -3

Classification: Field Development (Janice)

Operator: Beren Corporation

State: Kansas

County: Logan

Acreage: N/2 SEC. 17-T12S-R33W

Location: N/2 SEC. 17-T12S-R33W Logan Co.

Coordinates: X: 2,640' FWL
Y: 3,960' FSL

Elevations: KB: 3,130 feet
GL: 3,125 feet

Spud Date: April 17, 1990

T.D. Date: April 25, 1990

Rig Release: April 27, 1990

Total Depth: Driller: 4,770' RKB (7 7/8" hole)
Logger: 4,773' RKB

Casing Shoes: 8 5/8" at 328 feet RKB (12 1/4" hole)

Hole Size: 12 1/4" from surface to 329' RKB
(driller) 7 7/8" from 329' to 4,770' RKB

Status: Waiting on completion tools.

1.2 - WELL HISTORY

Drilling commenced on 4/17/90 with a fresh-water native mud system to a depth of 329' RKB then surface casing was run. No problems were encountered while drilling the surface hole.

New 24# 8 5/8" surface casing was run with casing shoe set at a depth of 328' RKB and cemented with approximately 225 sacks of 60-40 Pozmix with 3% Calcium Chloride. Cement was circulated to surface during cementing operations.

Out from under surface casing a 7 7/8" hole was drilled to a total depth of 4,770 RTD. A fresh-water native mud was used to a depth of 3,701'. At 3,701' a chemical gel mud system replaced the native mud to improve drilling conditions and insure good hole conditions during drillstem testing and anticipated wireline logging below 3,700'.

Four conventional drillstem tests were run and one straddle test was run, all during drilling operations (see DST summary, section 4.6 for details).

Great Guns Logging Services rigged up for Logging Job #1 and commenced on April 25, 1990, the following logs were run: DUAL IND.-GR-SP, DUAL POROSITY-CA-GR, no major problems were encountered during run NO. 1. Run two was commenced shortly after run one with the following: MICRO RESISTIVITY LOG, GR-MICROCALIPER.

The intervals covered by each tool is as follows:

DUAL IND.:	2:100 from 4,772.5' to 290'.
(SP-GR)	5:100 from 4,772.5' to 3,790'.

DUAL POROSITY:	5:100 from 4,753' to 3,800'.
(CAL-GR)	

MICRO	
RESISTIVITY LOG:	5:100 from 4,771' to 3,800'.

After E-log evaluation and DST (straddle) test No. 5 the decision was made to further evaluate the Lansing "E" zone and Middle Pennsylvanian Johnson zone through perforations.

2.1 GEOLOGIC RESULTS

The Janice -3 was drilled to a total depth of 4,770' RKB, terminating in Mississippian sediments. Scattered live oil shows were recorded in the following zones: Oread Limestone resulting in DST #1, Toronto Limestone resulting in DST #2, Lansing Kansas City; "E", "H" and "I" zones also resulting in DSTs and live oil shows were also observed in the Johnson zone resulting in a DST. Scattered oil shows were also observed during drilling operations in the Lansing/Kansas City, Pawnee and Fort Scott but were not drillstem tests, evaluation with the E-logs however found these zones to be non productive. Prospective reservoirs were also encountered in the Topeka, Marmaton and Basal Pennsylvanian Sand but sample shows were not observed while drilling and petrophysical analysis indicate these zones to be wet. For details of the open-hole drillstem tests see section (4.6 DST summary).

2.2 LITHOSTRATIGRAPHIC TABLE (taken from E-log tops)

LITHOSTRATIGRAPHY RKB RMSL	TOP (FT)	TOP RELATIVE TO SEC. 17 NE NW/4 Janice #1 (+ = HI; - = LO)	
Heebner	4012	- 882	+03
*Toronto	4034	- 904	+06
Lansing "A"	4052	- 902	+06
Lansing "E"	4130	-1000	+05
*Lansing "H"	4220	-1090	+02
*Lansing "I"	4250	-1120	+04
*Lansing "K"	4305	-1175	+05
Pawnee	4480	-1350	+03
Fort Scott	4538	-1408	+02
*Johnson	4611	-1481	+01
Penn. Sand	4667	-1537	-02
*Mississippi	4686	-1556	even
* OBJECTIVES			

3.0 GEOLOGIC PERSONNEL AND SERVICES

3.1 GEOLOGIC PERSONNEL

3.2 ENGINEERING PERSONNEL

3.3 MUDLOGGING SERVICES

3.4 OPEN-HOLE WIRELINE LOGGING SERVICES

3.5 DRILLSTEM TESTING SERVICES

3.1 GEOLOGIC PERSONNEL

Wellsite Geologists

Jim Hall, Consulting Geologist, was responsible for all geological operations on the well and worked in close coordination with the drilling crew and Mr. Harry McMahon of Beren Corp. during drilling operations.

3.2 ENGINEERING PERSONNEL

All engineering decisions were made by Mr. McMahon during all drilling and testing operations.

3.3 MUDLOGGING SERVICES

No mud logging unit was used by the wellsite geologist during drilling.

3.4 OPEN-HOLE WIRELINE LOGGING SERVICES

Great Guns Logging Services performed all the wireline logging services on the well, using Service Unit 35 (Great Bend). Mr. Bob Harrell was the logging engineer and operated the unit during the logging.

3.5 DRILLSTEM TESTING SERVICES

The open-hole drillstem tests were performed by Western Testers Company out of Colby Kansas. The test engineer (Mr. Rich Horinek) was at the wellsite to monitor the tests and assist in the evaluation of the results.

4.0 DATA COLLECTION AND DISTRIBUTION

4.1 CUTTINGS SAMPLES

4.2 CONVENTIONAL CORING SUMMARY

4.3 SIDEWALL CORING SUMMARY

4.4 OPEN-HOLE WIRELINE LOGGING SUMMARY

4.5 LITHOLOGY LOG

4.6 OPEN-HOLE DRILLSTEM TEST SUMMARY

4.1 CUTTINGS SAMPLES

Cutting samples were collected at 10' intervals from 3600' to 4,770'. 5' wet samples were collected and examined just prior to and through our anticipated zones of interest and zones with drilling breaks. Circulated bottoms up samples were also taken at selected intervals to better evaluate potential zones of interest.

Washed Wet Cuttings

A complete set of cuttings were washed, and placed in plastic cups, to be used by the wellsite geologist for examination while drilling. This set was essential for the description of sample color and to detect the presents of any live oil and gas prior to artificial drying of the samples.

Washed and Dried Cuttings

A set of washed and dried samples were collected for the purpose of future use if necessary and the examination of sample structure and porosity that can not be seen in the wet set of cuttings. This set was placed in cloth bags and delivered to the Kansas Sample Library.

4.2 CONVENTIONAL CORING SUMMARY

No conventional cores were taken.

4.3 SIDEWALL CORING SUMMARY

No sidewall cores were taken.

4.4 OPEN-HOLE WIRELINE LOGGING SUMMARY

Great Guns Logging Services ran open-hole wireline logs in the 7 7/8" hole. Logs were recorded at 2:100 and 5:100 scales on film and magnetic tape.

LOG JOB #1

After drilling a 7 7/8" hole to a depth of 4,770', the logging unit was rigged up and the Dual IND.-SP-GR, along with the Dual Porosity logging tools were run on trip number one from 4,772.5 to 3,800' with the GR-SP-DIL continuing to a depth of 290'.

The last trip in the hole was the Micro Resistivity Log with GR-CAL curves included, the intervals covered were from 4,771' to 3,800'.

Field prints of the wireline logs and geologic strip were taken to the Beren company office for distribution to partners.

Petrophysical calculations were done at the wellsite by Jim Hall and the results given to Mr. McMahon prior to making the decision to run casing on the Janice -3.

4.5 LITHOLOGY LOG

The wellsite geologist strip log was constructed on a the same scale as the large scale E-log from 3,700' to 4,770' RKB. The Lithology Log was constructed on right reading milar and field prints were made by the wellsite geologist and sent to Beren Corporation in Wichita.

4.6 OPEN-HOLE DRILLSTEM TEST SUMMARY

Three open-hole DSTs' were taken to estimate the productivity of Oread, Toronto, Lansing "E", "H" and "I" and Johnson zone. Noncommercial conditions were established for all zones except the Lansing "E" and the Johnson zone.

DST #1 Oread: 3,960' - 3,986' (Conventional)

Results:

Flowed well for a total of 60 mins. with no gas or fluid to surface, but recovered 5 feet of mud in pipe. The well was shut-in for a total of 60 mins. The charts indicating tight bottom hole pressures and poor transmissibility. The pressure breakdown is as follows:

PRESSURE BREAKDOWN

INITIAL HYDROSTATIC MUD:	1921#
INITIAL FIRST FLOW PRESSURE:	45#
INITIAL FINAL FLOW PRESSURE:	45#
INITIAL SHUT-IN PRESSURE:	768#
SECOND FIRST FLOW PRESSURE:	48#
SECOND FINAL FLOW PRESSURE:	48#
FINAL SHUT-IN PRESSURE:	611#
FINAL HYDROSTATIC MUD:	1907#

DST #2 Toronto: 4,018' - 4,050' (Conventional)

Results:

Flowed well for a total of 60 mins. with no gas or fluid to surface, but recovered 138 feet of mud and 2,150' of salt water (CL: 42,000 ppm.) in pipe. The well was shut-in for a total of 90 mins. The charts indicating good bottom hole pressures and very good transmissibility. The pressure breakdown is as follows:

PRESSURE BREAKDOWN

INITIAL HYDROSTATIC MUD:	1937#
INITIAL FIRST FLOW PRESSURE:	345#
INITIAL FINAL FLOW PRESSURE:	558#
INITIAL SHUT-IN PRESSURE:	1235#
SECOND FIRST FLOW PRESSURE:	677#
SECOND FINAL FLOW PRESSURE:	1085#
FINAL SHUT-IN PRESSURE:	1235#
FINAL HYDROSTATIC MUD:	1891#

DST #3 Lansing "H" & "I" zones: 4,202' - 4,270' (Conventional)

Results:

Flowed well for a total of 60 mins. with no gas or fluid to surface, but recovered 160 feet of mud with slight show of oil in pipe. The well was shut-in for a total of 120 mins. The charts indicating normal bottom hole pressures and poor transmissibility with some damage to the reservoir. The pressure breakdown is as follows:

PRESSURE BREAKDOWN

INITIAL HYDROSTATIC MUD:	2101#
INITIAL FIRST FLOW PRESSURE:	89#
INITIAL FINAL FLOW PRESSURE:	92#
INITIAL SHUT-IN PRESSURE:	1277#
SECOND FIRST FLOW PRESSURE:	104#
SECOND FINAL FLOW PRESSURE:	137#
FINAL SHUT-IN PRESSURE:	1271#
FINAL HYDROSTATIC MUD:	2058#

DST #4 Johnson Zone: 4,608' - 4,645' (Conventional)

Results:

Flowed well for a total of 60 mins. with no gas or fluid to surface, but recovered 120 feet of mud cut gassy oil (90% oil) in pipe. The well was shut-in for a total of 120 mins. The charts indicating pressure depletion from offset production and a tight bottom hole pressures and poor transmissibility. The pressure breakdown is as follows:

PRESSURE BREAKDOWN

INITIAL HYDROSTATIC MUD:	2313#
INITIAL FIRST FLOW PRESSURE:	55#
INITIAL FINAL FLOW PRESSURE:	60#
INITIAL SHUT-IN PRESSURE:	364#
SECOND FIRST FLOW PRESSURE:	69#
SECOND FINAL FLOW PRESSURE:	76#
FINAL SHUT-IN PRESSURE:	364#
FINAL HYDROSTATIC MUD:	2058#

DST #5 Lansing "E" & "F" zones: 4,119' - 4,155' (Straddle)

Results:

Flowed well for a total of 60 mins. with no gas or fluid to surface, but recovered 50 feet of clean oil (31 API.), 125 feet of oil cut mud (10% oil). The well was shut-in for a total of 120 mins. The charts indicating normal bottom hole pressures and poor transmissibility with some damage to the reservoir. The pressure breakdown is as follows:

PRESSURE BREAKDOWN

INITIAL HYDROSTATIC MUD:	2065#
INITIAL FIRST FLOW PRESSURE:	59#
INITIAL FINAL FLOW PRESSURE:	75#
INITIAL SHUT-IN PRESSURE:	1257#
SECOND FIRST FLOW PRESSURE:	87#
SECOND FINAL FLOW PRESSURE:	114#
FINAL SHUT-IN PRESSURE:	1268#
FINAL HYDROSTATIC MUD:	2014#

APPENDIX "A"

PETROPHYSICAL ANALYSIS

The following SW analysis were made using a combination of parameters and steps to arrive at the below listed calculations for the zones of interest and intervals exhibiting potential based upon; drill off, sedimentary structure, oil shows and or E-log anomalies.

SW values for the Pennsylvanian and Mississippian were calculated using the standard equations for oolitic limestones, sandstones and limestones.

RW values used were from published literature. A modified Pickett cross plot was also utilized in the development of RW and m. (the author did not have RW values from the surrounding producing wells).

A cementation factor of 2 was used for the majority of the carbonate calculations, but a cementation value of 2.15 was used for the basal Pennsylvanian sand (reflecting the lack of structural clay and hard matrix. To reflect the tortuosity in oolitic and oolitic zones a cementation factor of 2.2 was used in all zones with 15% or greater porosity.

Great Guns chart books were also utilized as reference material. No SW or RW calculations were made without careful consideration of the individual rock properties for each zone.

Pennsylvanian Zones

A) RW: 0.09 was used.

B) Porosity: cross plot using Bulk Density, Density and Neutron Porosity readings.

Pennsylvanian Sand

A) RW: 0.068 was used.

B) Porosity: cross plot using Bulk Density, Density, Neutron Porosity readings.

Mississippian

A) RW: 0.09 was used.

B) Porosity: cross plot using Bulk Density, Density, Neutron Porosity readings.

ZONES OF INTEREST PETROPHYSICAL SUMMARY:

<u>DEPTH</u>	<u>SW</u>	<u>LITHOLOGY</u>
4135-40'	59%	Packstone and occasional Grainstone: buff, white, scattered visible porosity, spotty to even stain, light brown free oil, fair odor, fair bright fluorescence and cut.
4610-17	49%	Mudstone: tan, good odor, scattered visible porosity, visible dark and light free oil, poor fluorescence, very good cut and residual ring.