



CONFIDENTIAL

ORIGINAL

WHITEHALL EXPLORATION

WELLSITE GEOLOGIC CONSULTING AND COMPLETE WELL LOGGING

RECEIVED

KCC

FEB 25 2004

FEB 23 2004

KCC WICHITA

CONFIDENTIAL

GEOLOGICAL ANALYSIS AND WELL REPORT

SHAKESPEARE OIL COMPANY, INC.

Moore-Teeter No. 1-10

2,654' FSL & 2,190' FEL
Section 10 - Township 13 South - Range 32 West
Logan County, Kansas

February 10, 2004

CONFIDENTIAL

RECEIVED

ORIGINAL

FEB 2 5 2004

KCC WICHITA

KCC

FEB 2 3 2004

GENERAL INFORMATION

Elevation: G.L. 3,014' K.B. 3,025'
All measurements are from KB.

Field: Wildcat

Drilling Contractor/Rig No.: Murfin Drilling Co./ No.20

Total Depth: RTD 4,688' LTD 4,689'

Surface Casing: 8 5/8" set @ 223'

Production Casing: None

Drill Time Kept: 3,700' to 4,688' RTD

Samples Caught/Examined: 3,700' to 4,688' RTD

Consulting Wellsite Geologist: Richard J. Hall-CPG No. 5820
Consulting Geologist
Whitehall Exploration-Golden, Colorado

Drill Stem Test Company: Trilobite Testers, Inc.

Tester: Shane McBride

Number of Tests: 7 Total:
Lansing "A" 4,019'-4,048' RTD
Kansas City "H" 4,168'-4,194' RTD
Kansas City "I" 4,194'-4,227' RTD
Kansas City "J" 4,227'-4,249' RTD
Kansas City "K" 4,252'-4,289' RTD
Marmaton 4,446'-4,474' RTD
Cherokee Johnson Zn. 4,562'-4,603' RTD

Test Type: Open Hole (All tests)

Mud Company/Engineer: Mud Co. /Reid Atkins

Mud Type: Chemical

Electric Logging Company: Log-Tech

CONFIDENTIAL

CONFIDENTIAL

ORIGINAL

Type Logs:

-Dual induction Log
-Compensated Neutron/Density
-Micro Log
-Sonic Log

KCC

FEB 23 2004

Total Depth Formation:

Mississippian

CONFIDENTIAL

Samples:

Not kept

Well Status:

Dry Hole - Plugged & Abandoned

RECEIVED

FEB 25 2004

KCC WICHITA

CONFIDENTIAL

RECEIVED

FEB 25 2004

KCC WICHITA

ORIGINAL**KCC**

FEB 23 2004

DAILY DRILLING CHRONOLOGY

<u>2004 Date</u>	<u>7:00 A.M. Total Depth</u>	<u>24 Hour Footage</u>	<u>7:00A.M. Operation; 24 Hour Activity</u>
01/29/04	0	0	MIRU; drill rat hole, spud @ 6:00 P.M., TOOH, survey, run 5 jts 8 5/8" surf. csg set @ 223' w/160 sx, plug down @ 10:00 P.M., WOC, drill out plug @ 6:30 A.M.-1/30/04.
1/30/04	223'	223'	Drilling ahead; jet, drilling, jet, drilling, jet, drilling, jet, drilling.
1/31/04	2,400'	2,177'	Drilling ahead; jet, drilling, lost circ. (50 bbls.) @ 2,957', pull 7 stands, run premix tank (2.5 hrs.), TIH w/7 stands, drilling.
2/01/04	3,325'	925'	Drilling ahead; jet, drilling, displace mud @ 3,715' and jet, drilling, CFS @ 3,946' (1'), drilling.
2/02/04	3,960'	635'	Drilling ahead; CFS @ 4,048' (1'), short trip 20 stands, CTCH (1'), TOOH-strap pipe, PU DST tool, TIH, run DST #1 (2.5' OB), TOH w/DST #1, break down test tool, TIH-break circ., drilling, CFS @ 4,143' (1').
2/03/04	4,143'	183'	CFS & WOO; drilling, CFS @ 4,194 (1'), TOH-strap pipe, PU DST tool, TIH, run DST #2 (2.5' OB), TOH, break down test tool, TIH-break circ., drilling, CFS @ 4,227' (1'), TOH, PU test tool, TIH.
2/04/04	4,227'	84'	TIH w/DST tool; run DST #3 (2.5' OB), TOH, break down test tool, TIH-break circ., drilling, CFS @ 4,249' (1'), TOH, PU test tool, TIH, run DST #4 (1.75' OB), TOOH, break down test tool, TIH - break circ.-circ. 45", drilling, CFS @ 4,289'.
2/05/04	4,289'	62'	CFS; TOH, PU DST tool, TIH, run DST #5, TOOH, break down test tool, TIH-break circ., drilling, CFS @ 4,474', 13 stand short trip.

CONFIDENTIAL

RECEIVED
CONFIDENTIAL FEB 25 2004
KCC WICHITA

KCC
FEB 23 2004
CONFIDENTIAL

ORIGINAL

2/06/04	4,474'	185'	Short trip 13 stands, circ. 1', survey, TOO H, PU DST tool, TIH, run DST #6, TOH, break down test tool, TIH - break circ., drilling, rig repair-mud pump (1 1/4'), drilling, CFS @ 4,603'.
2/07/04	4,603'	129'	TOOH w/bit; PU DST tool & TIH, run DST #7, TOO H, break down tool & TIH-break circ., drilling @ 6:30 P.M., lose circ. @ 4,639' @ 8:30 P.M., work on pump (3/4'), mix mud, resume drilling @ 11:15 P.M. w/ full returns, reach 4,688 RTD @ 2:00 A.M. (2/8/04), CFS 1', TOO H, RU and run logs @ 5:15 A.M.
2/08/04	4,688'	85'	Running wireline logs; rig down loggers, TIH, circ., TOH laying down drill pipe, set cement plugs, rig released.

CORES

None

CONFIDENTIAL**ORIGINAL**

RECEIVED

FEB 25 2004

KCC WICHITA

KCC

FEB 23 2004

CONFIDENTIAL**REFERENCE WELLS**

Reference Well "A":

Shakespeare Oil Co.
Teeter No. 2
660' FNL & 330' FEL
Section 10 - T13S - R32W
Logan County, Kansas
Elevation: KB 3,025'
Date Drilled: December, 2003
LTD: 4,732'
TD Formation: Mississippian
Status: Kansas City "H", Kansas City "J", and Cherokee
Johnson Zone Oil Producer

Reference Well "A":

Shakespeare Oil Co.
Teeter No. 1
330' FNL & 990' FEL
Section 10 - T13S - R32W
Logan County, Kansas
Elevation: KB 3,031'
Date Drilled: October, 2002
LTD: 4,728'
TD Formation: Mississippian
Status: Plugged and Abandoned

DRILL STEM TESTS

1) Lansing "A" Zone	4,019'-4,048'
2) Kansas City "H" Zone	4,168'-4,194'
3) Kansas City "I" Zone	4,194'-4,227'
4) Kansas City "J" Zone	4,227'-4,248'
5) Kansas City "K" Zone	4,252'-4,289'
6) Marmaton	4,446'-4,474'
7) Cherokee Johnson Zone	4,562'-4,603'

DEVIATION SURVEYS

<u>Depth</u>	<u>Degree(s)</u>	<u>Method</u>
223'	3/4	Dropped
4,048'	3/4	Dropped
4,474'	1	Dropped
4,688'	1/2	Dropped

CONFIDENTIAL

RECEIVED

FEB 25 2004

KCC WICHITA

KCC

FEB 23 2004

CONFIDENTIAL

ORIGINAL

FORMATION TOPS

FORMATION	Moore-TeeterNo. 1-10		Teeter No. 2		Teeter No. 1		REFERENCE		DIFFERENCE TO	
	SAMPLE	ELECTRIC LOG	TOPS	DATUM	REFERENCE	WELL "A"	REFERENCE	WELL "B"	WELL "A"	WELL "B"
	TOPS						WELL "C"			WELL "C"
PERMIAN										
Stone Corral Anhydrite			2506	519		503		514	16	5
PENNSYLVANIAN										
Topeka	3828		3821	-796		-807		-806	11	10
Heebner Shale	3984		3979	-954		-967		-969	13	15
Lansing "A"	4026		4024	-999		-1009		-1011	10	12
Kansas City "H"	4188		4188	-1163		-1167		-1171	4	8
Kansas City "J"	4238		4235	-1210		-1219		-1226	9	16
Stark Shale	4255		4254	-1229		-1237		-1238	8	9
Base/Kansas City	4325		4326	-1301		-1308		-1309	7	8
Marmaton Porosity Zn.	4457		4458	-1433		-1433		-1437	Flat	4
Cherokee Shale	4543		4541	-1516		-1517		-1520	1	4
Johnson Zone	4584		4585	-1560		-1558		-1563	-2	3
MISSISSIPPIAN										
Mississippian	4634		4638	-1613		-1603		-1609	-10	-4

CONFIDENTIAL

KCC ORIGINAL

RECEIVED

FEB 23 2004

ZONES OF INTEREST

FEB 25 2004

KCC WICHITA

CONFIDENTIAL

<u>Formation</u>	<u>Log Depth</u>	<u>Lithology & Show Descriptions, Remarks</u>
Topeka	3,934'-3,946'	Limestone, off white-light gray, buff, very fine-fine crystalline, firm, slightly chalky, minor grainstone development, poor inter-crystalline porosity, minor vugs, INTERMEDIATE SHOW: no odor, no fluorescence, spotty black heavy oil stain in part, fair-good show of heavy free oil when crushed, fair streaming live cut, fair-medium dull yellowish dried residual halo cut. Porosity development in this interval recorded a drill break to 1-2 minutes per foot from a background rate of penetration of 2-3 minutes per foot. This zone was not drill stem tested. Electric logs show this zone consists of a mostly clean chalky limestone with good SP development, 7-11% density porosity, 8-15% neutron porosity, no crossover gas effect, and 3.7-6 ohms deep resistivity.
Lansing "A"	4,024'-4,046'	Limestone, buff-light brown in part, mostly buff-tan, very fine-fine crystalline, firm, good grainstone development in part, moderately chalky when crushed, calcite inclusions, fair-intermediate inter-crystalline porosity, FAIR SHOW: no odor, fair pale yellow hydrocarbon fluorescence, spotty/uneven very light brown stain in part, trace show of free oil when crushed, intermediate milky live cut, fair-intermediate yellow/white dried residual halo cut. This zone recorded a maximum drill break of 1-2 minutes per foot from a background rate of penetration of 2-4 minutes per foot. This formation was drill stem tested (DST No.1) and recovered 420 feet of total fluid consisting of 120 feet of water cut mud (20% water, 80% mud) and 300 feet of water with shut in pressures of 1,201-1,209 p.s.i. Electric logs show this formation consists of clean limestone/gamma ray, fair-good SP development, maximum 7% density porosity, maximum 7+0% neutron porosity, and 17-32 ohms deep

CONFIDENTIAL

KCC

FEB 23 2004

RECEIVED

FEB 25 2004

ORIGINAL

CONFIDENTIAL
resistivity.

KCC WICHITA

Lansing "B" 4,057'-4,064'

Limestone, buff-off white, very fine-fine crystalline, hard, clean, slightly chalky, minor pyrite inclusion, moderately tight, very poor inter-crystalline porosity with fair inter-crystalline and slightly vuggy porosity in part, INTERMEDIATE-GOOD SHOW: no odor, intermediate dull yellow/gold hydrocarbon fluorescence, spotty black stain in part-20% of cutting, good show dark brown heavy free oil when crushed, very good fast streaming live cut grading to excellent milky cut, very good bright yellow dried residual halo cut.

A drilling break to 1-2 minutes per foot was recorded over this zone from a background rate of penetration of 2-4 minutes per foot. This formation was not drill stem tested.

Electric logs show this formation consists of mostly clean limestone/gamma ray with intermediate SP development, maximum 7.5% density porosity, maximum 10.5% neutron porosity, and maximum 9 ohms deep resistivity.

Kansas City "H" 4,187'-4,192'

Limestone, very light brown, very fine-fine crystalline, firm-hard, mottled, scattered oolites, calcite inclusions, clean, poor inter-crystalline porosity, INTERMEDIATE SHOW: fair odor, good dull yellowish fluorescence, intermediate near saturated brown stain, no show free oil, good slow streaming cut grading to intermediate pale thin milky cut, intermediate dull yellow/greenish dried residual halo cut.

This zone recorded a rate of penetration of 2-3 minutes per foot, the same as the background ROP. This zone was covered on DST No. 2 and tested tight recovering 3 feet of very slightly oil cut mud (2% oil, 98% mud) with shut in pressures of 964-1,171 p.s.i.

Electric logs indicate this interval has a slightly dirty to clean gamma ray, slight-no SP development, is tight with 4% crossplot porosity, and has maximum 35 ohms deep resistivity.

Kansas City "I" 4,217'-4,221'

Limestone, buff-light tan, fine-very fine crystalline, firm, moderately chalky, clean, intermediate inter-

CONFIDENTIAL

KCC
FEB 23 2024

ORIGINAL

RECEIVED
FEB 25 2024
KCC WICHITA

CONFIDENTIAL

crystalline porosity, some slightly vuggy porosity, INTERMEDIATE-GOOD SHOW: slight odor, intermediate very pale yellow fluorescence, good spotty dark brown stain in part, very good show free oil when crushed, intermediate-good pale live and dried residual halo cut.

This zone recorded a rate of penetration of 2-3.5 minutes per foot.

Drill Stem Test No. 3 covered this zone and tested tight recovering 2 feet of mud with shut in pressures of 406-537 p.s.i.

Electric logs show this zone is a thin clean thin limestone, has slight SP development, is tight with 3-4% crossplot porosity, and has maximum 27 ohms deep resistivity.

Kansas City "J" 4,235'-4,244'

Limestone, buff-light gray, mostly very fine with fine crystalline in part, very oolitic with some good oolitic shoal development, good fine grainstone development, none to moderately chalky in part, rare medium gray argillaceous pieces with staining to mostly clean, poor-spotty good in part inter-crystalline porosity, some pieces with very good inter-oolitic vuggy matrix porosity, EXCELLENT SHOW: good strong odor, excellent bright yellow hydrocarbon fluorescence, uneven dark brown stain in part, occasional pieces with very good brown inter-oolitic matrix staining, good show of free oil when crushed, good flash live cut and excellent moderate-fast streaming cut, grading to excellent blue-white milky cut, excellent bright yellow dried residual halo cut.

No porosity development is present in this zone. The rate of penetration recorded was 3-3.5 minutes per foot.

This formation was drill stem tested (DST No. 4) testing tight and recovering 3 feet of mud with oil spots with recorded shut in pressures of 396-212 p.s.i.

Electric logs show this formation consists of clean to shaley limestone/gamma ray with no to slight SP development, maximum 8% density porosity, maximum 12% neutron porosity, and 7-40 ohms deep resistivity.

CONFIDENTIAL

KCC
FEB 23 2004

ORIGINAL

CONFIDENTIAL

Kansas City "K" 4,263'-4,268'

RECEIVED

FEB 25 2004

KCC WICHITA

Limestone, buff-tan, light gray, very fine-fine crystalline, hard, clean, moderately-very chalky, poor-intermediate inter-crystalline porosity, fair pinpoint chalky porosity, VERY GOOD SHOW: excellent strong odor, very good bright yellow uneven fluorescence, spotty/uneven brown stain in part, some pieces with mostly saturated brown stain, fair-excellent show free oil when crushed, very slow pale streaming cut grading to pale milky cut, intermediate greenish dried residual halo cut.

This zone recorded a drilling break to 2-2.5 minutes per foot from a background rate of penetration of 3-5 minutes per foot.

This zone was covered on DST No. 5 and recovered 70 feet of total fluid consisting of 20 feet of slightly water cut mud with oil spots (15% water, 85% mud) and 50 feet of mud cut water with oil spots (70% water, 30% mud) with shut in pressures of 629-712 p.s.i.

Electric logs indicate this interval has a mostly clean gamma ray, fair SP development, fair-good mud cake development, maximum 7% density porosity, maximum 9% neutron porosity, and has 10-20 ohms deep resistivity.

Marmaton 4,460'-4,467'
Porosity

Limestone, off white-light gray, fine-predominately very fine crystalline, hard-dense, moderately tight, clean, fair inter-crystalline porosity, INTER-MEDIATE-GOOD SHOW: medium odor, uneven brown stain, medium show free oil when crushed, good spotty dull yellow fluorescence, very good slow bright milky cut, excellent bright yellow dried residual cut.

Limestone, buff, fine crystalline, soft-firm, good grainstone development in part, slightly chalky, clean, medium-good inter-crystalline porosity, GOOD SHOW: good odor, good pale yellow fluorescence, good mostly even brown stain, fair-medium show free oil when crushed, very good pale slow streaming cut grading to milky cut, good-very good bright yellow dried residual halo cut.

This zone recorded a rate of penetration of 1.5-3 minutes per foot from a background of 3-5 minutes per foot.

This interval was included on DST No. 6 and

CONFIDENTIAL

KCC

ORIGINAL

FEB 23 2004

CONFIDENTIAL

RECEIVED

FEB 25 2004

KCC WICHITA

recovered 80 feet of total fluid consisting of 20 feet of slightly water cut mud with oil spots (10% water, 90% mud), and 60 feet of water cut mud with oil spots (40% water, 60% mud) with shut in pressures of 1129-1130 p.s.i.

Electric logs indicate this zone has a clean gamma ray, good SP development, maximum 7.5% cross-plot porosity, neutron/density crossover gas effect, and deep resistivity of 10 ohms.

Cherokee 4,598'-4,602'
Johnson Zone

Limestone, light gray-tan, fine-mostly very fine crystalline, firm-hard, fair-intermediate grainstone development, moderately chalky, fair-intermediate inter-crystalline porosity, scattered vuggy porosity, EXCELLENT SHOW: excellent odor, good moderately bright yellow/green fluorescence, near saturated dark brown stain, excellent show free medium brown oil when crushed, rare bleeding gas bubbles, excellent fast milky white cut, excellent bright yellow-green dried residual halo cut.

This zone recorded a drill break to 2-2.5 minutes per foot from a background rate of penetration of 3-5 minutes per foot.

This porosity zone was covered on DST No. 7 and recovered 185 feet of total fluid consisting of 65 feet of slightly water cut mud with oil spots (10% water, 90% mud) and 120 feet of mud cut water with oil spots (50% water, and 50% mud) with shut in pressures of 1,098-1,105 p.s.i.

Electric logs show this zone has a moderately clean gamma ray, fair SP development, slight mud cake development, maximum 8% crossplot porosity with neutron/density crossover gas effect, and 25-30 ohms deep resistivity.

CONFIDENTIAL

KCC

ORIGINAL

RECEIVED

FEB 23 2004

FEB 25 2004

SUMMARY

CONFIDENTIAL

KCC WICHITA

The Moore-Teeter No. 1-10 was drilled as a wildcat test based on a 3-D seismic shoot in the area which identified a separate faulted structure near the center of Section 10-T13S-R32W. This seismic structure is interpreted to be a separate feature from the structure that the Shakespeare Oil Teeter No. 2 produces oil from. Seismic interpretation and geophysical mapping indicated that this structure should be significantly higher structurally than the Teeter No. 2 oil producer.

Based on observed hydrocarbon sample shows and/or the proven producing oil zones in Teeter No. 1 and Teeter No. 2 wells, the primary objectives in the Moore-Teeter No. 1-10 included multiple zones in the Lansing/Kansas City Formation, specifically the Kansas City "H", "J", and "K" Zones and the Cherokee Johnson Zone Formation, with secondary objectives in the Topeka, Lansing/Kansas City, Marmaton, and Cherokee (Limestone/Sandstone) Formations.

The Teeter No. 2 is located approximately 12.5 miles south of Oakley, Kansas and approximately 1/2 mile west of Highway 83 in east central Logan County, Kansas.

The Moore-Teeter No. 1-10 was spudded on January 29, 2004 and was plugged and abandoned on February 8, 2004. The only drilling problems encountered in this well were lost circulation at 2,957 feet (lost 50 barrels mud) and 4,639 feet. The well was under 24-hour geological supervision from 3,700 feet to 4,688 feet RTD. Wet and dry drilling samples were caught by the drilling crews from 3,700 feet to 4,688 feet RTD at 10-foot intervals. All lithologic descriptions were lagged to true depth by the consulting wellsite geologist.

A total of 7 open hole drill stem tests were run in this test well based on observed hydrocarbon sample shows in the Lansing "A" Zone, Kansas City "H", "I", "J", and "K" Zones, Marmaton Porosity Zone, and the Cherokee Johnson Zone.

Hydrocarbon Shows

Numerous significant observed hydrocarbon sample shows ranging in quality from Fair to Excellent were recorded throughout the primary and secondary objectives during the drilling of this well. These zones included the Topeka, Lansing, Kansas City, Marmaton and Cherokee Formations. The Lansing "A", Kansas City "H", "I", "J", and "K" Zones, Marmaton Porosity Zone, and the Cherokee Johnson Zone were all individually drill stem tested based on the quality of these hydrocarbon shows and/or associated rate of penetration drilling breaks.

Other minor hydrocarbon sample shows observed and not listed in the "Zones of Interest" included the Marmaton (4,490'-4,508'), and Cherokee Limestone (4,552'-4,555'). No hydrocarbon shows or porosity was present in the Mississippian Formation.

CONFIDENTIAL

KCC

FEB 23 2004

ORIGINAL

CONFIDENTIAL

Complete lithologic descriptions and hydrocarbon sample shows can be found in the detailed "Zones of Interest" portion of this geologic report.

RECEIVED

Structure/Stratigraphy

FEB 25 2004

Compared to the Teeter No.2/Reference Well "A", the Moore-Teeter No. 1-10 ran structurally high from the Permian aged Stone Corral Anhydrite through the Pennsylvanian aged Base/Kansas City, flat at the Marmaton Porosity Zone, then structurally low from the Cherokee Johnson Zone through the Mississippian Formation.

KCC WICHITA

Thickening in the Moore-Teeter No. 1-10 started in the Kansas City Formation with significant thickening occurring in the Upper Marmaton, and continuing through the Mississippian Formation. Specifically, the Moore-Teeter No. 1-10 runs structurally high at the Stone Corral (+16 feet), Heebner (+13 feet), Lansing (+10 feet), Stark Shale (+8 feet), and Base/Kansas City (+7 feet), flat at the Marmaton Porosity Zone, +1 foot high at the Cherokee Shale, then structurally low at the Cherokee Johnson Zone (-2 feet), and the Mississippian Formation (-10 feet).

Compared to the Teeter No. 1/Reference Well "B", the Moore-Teeter No. 1-10 runs structurally high throughout the well from the Stone Corral Anhydrite (+5 feet) through the Cherokee Johnson Zone (+3 feet), with only the Mississippian Formation running structurally low (-4 feet).

Complete structural comparison of the Formation Tops in relation to the Reference Well's "A" and "B" can be found in the "Formation Tops" table in this geological report.

Summary

The Moore-Teeter No. 1-10 was drilled as a wildcat test and was drilled on a closed faulted structural high as defined through 3-D seismic, and is a separate structure based on seismic from the structure which the Teeter No. 2 produces commercial oil from the Kansas City "H" Zone, Kansas City "J" Zone, and Cherokee Johnson Zone.

Although several of the primary and secondary objectives were encountered in a structurally high position relative to the Reference Well's "A" and "B", and specifically the Teeter No. 2 oil producer, all prospective zones were either tight with poor porosity development and/or no permeability development, or tested wet based on drill stem test results and/or wireline log analysis.

Therefore, based on the observed sample hydrocarbon shows, of which most were drill stem tested with negative fluid recoveries (tight or wet), the unfavorable thickening in this test well which resulted in a low structural position of the primary objective Cherokee Johnson Zone, and wireline log analysis/evaluation confirming the poor reservoir development of the primary and secondary objectives, and the thickening of the

CONFIDENTIAL

ORIGINAL

Lower Pennsylvanian portion of the well resulting in a low structural position in relation to the Teeter No. 2 commercial oil producer, the Moore-Teeter No. 1-10 wildcat test was plugged and abandoned as a dry hole.

Respectfully Submitted,

Richard J. Hall

Richard J. Hall

Certified Petroleum Geologist No. 5820

Wellsite Consulting Geologist

Whitehall Exploration

KCC

FEB 23 2004

CONFIDENTIAL

RECEIVED

FEB 25 2004

KCC WICHITA