WF

7-23s-11w

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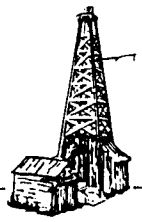

WHITEHALL EXPLORATION
CORPORATION

Wellsite Geological Consulting & Complete Well Logging

GEOLOGICAL ANALYSIS & WELL REPORT

GENERAL ATLANTIC RESOURCES, INC.

Fritzemeyer No. 1

600' FSL & 600' FEL
Section 7-Township 23 South-Range 11 West
Stafford County, Kansas

API #15-185-22955

April 19, 1994

87 DeFrance Way • Golden, Colorado 80401 • (303) 279-6894

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GENERAL INFORMATION

API#15-185-22955

Elevation:	K.B. 1,832' G.L. 1,824' (All measurements are from K.B.)
Field:	Brock
Contractor:	Duke Drilling Co., Inc.
Rig:	No. 2
Surface Casing:	8 5/8" set at 420'
Total Depth:	3,800' LTD 3,800' RTD
Drilling Time:	3,000' to 3,800' RTD
Samples Saved:	3,000' to 3,800' RTD
Samples Examined:	3,000' to 3,800' RTD
Wellsite Geologist:	Richard J. Hall-CPG No. 4749 Wellsite Geological Consultant Whitehall Exploration Corp.
Mudlogging Unit:	None
Type Unit:	None
Mudlogging Geologist:	None
Drilling Consultant:	Tom Larson - Larson Engineering
DST Company/Tester:	Trilobite Testing Inc. - Gary Pevoteaux
Number of Tests:	Three (3)
Mud Company/Engineer:	Mud Co., Inc / Jim Wiesner
Mud Up/Displace Hole:	3,022'
Electric Logging Company:	Atlas Wireline Services
Type Logs:	•Dual Induction -Focused Log (Surf csg.-3,800') •Z Densilog Comp. Neutron (2,800'-3,800') •BHC Acoustilog-GR/Caliper (Surf. csg.-3,800') •Minilog-GR (2,800'-3,800') •Dip Log (Surf. csg.-3,800')
Total Depth Formation:	Arbuckle
Samples:	Sent to Kansas Geological Survey Sample Library - Wichita, KS
Well Status:	Dry and abandoned

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DAILY DRILLING CHRONOLOGY

1994 DATE	7:00 A.M. DEPTH	24 HOUR FOOTAGE	7:00 A.M. OPERATION; 24 HOUR ACTIVITY
4/09	0	0	MIRU; drill rathole, spud @ 1:30 p.m., drop dev. survey, trip for bit, run 10 jts new 8 5/8" 25# csg, tally 409.55, set @ 420' w/275 sx cement, WOC, drill out cement plug @ 2:00 a.m. 4/10/94, drilling.
4/10	820'	820'	Drilling ahead; drilling.
4/11	2,160'	1,340'	Drilling ahead; drilling, 30" rig repair, drilling, mud up @ 3,022', drilling.
4/12	3,040'	880'	Drilling ahead; drilling, 15" rig repair, drilling, circ @ 3275'-wait on Geologist, drilling, CFS @ 3275', drilling, CFS @ 3401', WOO 30", short trip 10 stands (30"), CTCH 1', drop dev. survey, trip for bit, pick up DST tool, trip in w/DST #1, run DST #1.
4/13	3,401'	361'	FSIP on DST #1; trip out w/DST #1, lay down test tool, trip in w/bit looking for hole in pipe, CTCH 1', drilling, CFS @ 3454', drilling, CFS @ 3490', trip for bit, 45" rig repair, finish trip for bit, make up DST tool, trip in w/DST #2, run DST #2, trip out w/DST #2, break down DST tool, trip in w/bit, drilling.
4/14	3,547'	146'	Drilling ahead; CFS @ 3695', drilling, CFS @ 3717', trip for bit, make up DST tool, trip in and run DST #3, trip out w/DST #3, break down DST tool, trip in w/bit, drilling, reach 3,800' RTD, CFS, trip out w/bit.
4/15	3,800'	253'	Tripping out for e. logs; rig up and run e. logs, prepare to plug and abandon.

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REFERENCE WELLS

Reference Well "A": Sloan Oil & Gas Co.
Brock No. 1
NW-NE-SE
Section 7-Township 23 South-Range 11 West
Stafford County, Kansas
Elevation: 1,824' K.B.
Total Depth Formation: Arbuckle
LTD: 3,698'
Status: Arbuckle oil producer
IP 39 BOPD + 72% Water

Reference Well "B": Edwards Oil Inc.
Brock No. 1-A
NW-NW-SE
Section 7-Township 23 South-Range 11 West
Stafford County, Kansas
Elevation: 1,828' K.B.
Total Depth Formation: Arbuckle
LTD: 3,696'
Status: Arbuckle oil producer
IP 28 BOPD + 242 BWPD

DEVIATION RECORD

Survey Depth	Deviation (Degrees)	Method
420'	1	drop
3,401'	3/4	drop
3,800'	0	drop

CORES

None

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FORMATION TOPS

FORMATION	SAMPLE TOPS	Fritzemeyer ELECTRIC LOG TOPS	DATUM	Brock 1 REFERENCE WELL "A"	Brock 1-A REFERENCE WELL "B"	DIFFERENCE TO REFERENCE WELL "A"	"B"
Anhydrite	553	574	1258	NA	NA	NA	NA
Heebner	3135	3130	-1298	-1302	-1305	4	7
Toronto	3154	3148	-1316	-1319	-1323	3	7
Douglas Shale	3170	3165	-1333	-1336	-1339	3	6
Brown Lime	3273	3270	-1438	-1441	-1443	3	5
Lansing	3308	3300	-1468	-1472	-1473	4	5
"G" Zone	3394	3390	-1558	-1559	-1564	1	6
"J" Zone	3472	3470	-1638	-1639	-1642	1	4
B/Kansas City	3562	3556	-1724	-1728	-1729	4	5
Viola	3607	3593	-1761	-1773	-1786	12	25
Simpson Shale	3645	3642	-1810	-1814	-1816	4	6
Simpson Ss	3665	3666	-1834	-1840	-1838	6	4
Arbuckle	3706	3702	-1870	-1872	-1868	2	-2

NA = Not Available

MUD PROPERTIES

1994 DATE	DEPTH (FT)	TIME	WEIGHT (lbs)	VISCOSITY	FILTRATE	pH	YIELD POINT	CHLORIDES (p.p.m.)	LCM (lbs)
10-Apr	1,180	11:00 AM	Native Mud & Water					100	
11-Apr	2,300	11:05 AM	9.7	28	NC			84,000	0
11-Apr	3,022		Mud Up / Displace Hole						
12-Apr	3,035	6:40 AM	8.8	40	8	11	12	4,000	0
13-Apr	3,401	7:30 AM	9.3	41	8.8	10.5	14	6,000	0
14-Apr	3,545	6:40 AM	9.2	41	12	9.5	17	8000	0

No lost cirulation was encountered.

DRILL STEM TESTS

DST No. 1

Lansing F-G
Conventional Open Hole Test
Test Interval: 3,375'-3,401'
Anchor: 26'
Test Times: 15"-30"-60"-90"

FLOW PERIODS & SURFACE OBSERVATIONS:

Initial Flow Period: Weak surface blow increasing to 2 1/2"
Final Flow Period: Weak surface blow increasing to 3 1/2"

Shut in periods: No blow.

Mud Level Changes During Test: None

DRILL PIPE RECOVERY:

Total Gas In Pipe:	None
Total Fluid Recovery:	875 feet
Type Recovery:	725 feet of Slightly Gas Cut Mud (3% gas, 97% mud)
	150 feet of Muddy Water (96% water, 4% mud)

MUD PROPERTIES-BEFORE DST:

Weight:	9.1 lbs/gal.
Viscosity:	40 cp/sec.
Filtrate:	8.0 cc
LCM:	0
Chloride Content:	4,000 p.p.m.

DST PRESSURES-OFFICE READINGS:

IHP:	1618.8 p.s.i.
IFP:	411.7-428.4 p.s.i.
ISIP:	1186.1 p.s.i.
FFP:	444.0-472.9 p.s.i.
FSIP:	1183.9 p.s.i.
FHP:	1593.7 p.s.i.

Bottom Hole Temperature:	106 Degrees F
Resistivity of Recovery on DST :	Rw 0.59 @ 70 Degrees F
Chloride Content-Recovery:	24,000 p.p.m.
Mud Pit Sample Resistivity:	NA
Chloride Content-Mud Pit:	4,000 p.p.m.

DST No. 2

Kansas City "J" Zone
Conventional Open Hole Test

3,467'-3,490'
23' Anchor
15"-30"-15"-30"

FLOW PERIODS & SURFACE OBSERVATIONS:

Initial Flow Period: Weak 1/4" blow, died in 10".
Final Flow Period: No blow.

Shut in periods: No blow.

Mud Level Changes During Test: None

DRILL STEM RECOVERY:

Total Gas In Pipe:	None
Total Fluid Recovery:	3 feet
Type Recovery:	3 feet drilling mud.

MUD PROPERTIES-BEFORE DST:

Weight:	9.3 lbs/gal.
Viscosity:	41 cp/sec.
Water Loss:	8.8 cc/30 min.
LCM:	0 lbs/bbl.
Chloride Content:	6000 p.p.m.

DST PRESSURES-OFFICE READINGS:

IHP:	1,651.6 p.s.i.
IFP:	28.7-28.7 p.s.i.
ISIP:	910.4 p.s.i.
FFP:	32.1-32.1 p.s.i.
FSIP:	914.8 p.s.i.
FHP:	1,645.1 p.s.i.

Bottom Hole Temperature: 107 Degrees F

Resistivity of Recovery on DST :	NA
Chloride Content-Recovery:	6000 p.p.m.
Mud Pit Sample Resistivity:	NA
Chloride Content-Mud Pit:	6000 p.p.m.

DST No. 3

Arbuckle
Conventional Open Hole Test
3,708'-3,717'
9' Anchor
15"-30"-60"-60"

FLOW PERIODS & SURFACE OBSERVATIONS:

Initial Flow Period: Strong blow off bottom of bucket in 3 1/2".
Final Flow Period: Strong blow off bottom of bucket in 4".

Shut in periods: No return blow.

Mud Level Changes During Test: None

DRILL STEM RECOVERY:

Total Gas In Pipe:	None
Total Fluid Recovery:	1,240 feet
Type Recovery:	Thin layer of oil on top of pipe recovery.
	60 feet of muddy water with oil specks (80% water, 20% mud)
	1,180 feet sulfer water (99% water, 1% mud)

MUD PROPERTIES-BEFORE DST:

Weight:	9.3 lbs/gal.
Viscosity:	42 cp/sec.
Water Loss:	12.0 cc/30 min.
LCM:	0 lbs/bbl.
Chloride Content:	8000 p.p.m.

DST PRESSURES-OFFICE READINGS:

IHP:	1,804.9 p.s.i.
IFP:	66.3-156.0 p.s.i.
ISIP:	1,212.3 p.s.i.
FFP:	203.4-543.8 p.s.i.
FSIP:	1,210.1 p.s.i.
FHP:	1,734.8 p.s.i.

Bottom Hole Temperature: 112 Degrees F

Resistivity of Recovery on DST :	Rw 0.62 ohms at 70 degrees F
Chloride Content-Recovery:	18,000 p.p.m.
Mud Pit Sample Resistivity:	NA
Chloride Content-Mud Pit:	8,000 p.p.m.

ZONES OF INTEREST

Formation	Log Depth	Lithologic & Show Descriptions, Remarks
Lansing "G" Zone	3,382'-3,390'	Limestone, off white, fine crystalline, grainstone in part to 90% oolitic shoal pieces, slightly chalky, good scattered micro vugs/interoolitic porosity; occasional light gray pieces, very fine-fine crystalline, moderately chalky, fair-good intercrystalline porosity, GOOD SHOW QUALITY: spotty dark brown stain in part, fair show dark brown oil when fragments broken, spotty bright yellow fluorescence in part, fair very slow dull yellow streaming cut (unbroken cutting) to excellent immediate-bright yellow flash cut (broken fragments), intermediate to bright yellow dried residual cut. This zone recorded a penetration rate of 2-3 minutes per foot.
	3,390'-3,398'	Limestone, tan-dark brown micro-crystalline, pelletal/oolitic, oolmoldic in part, excellent vuggy porosity, no visual intercrystalline porosity. No fluorescence, show or cut. This zone drilled at 1-1 1/2 minutes per foot. Electric logs show this interval has maximum 18% crossplot porosity with a maximum 10 ohms deep induction resistivity. DST No. 1 covered this zone and recovered 725 feet of slightly gas cut mud (3% gas, high mud recovery due to hole in drill pipe) and 150 feet of muddy water.
Lansing "J" Zone	3,470'-3,490'	Limestone, buff, fine-very fine crystalline, moderately chalky, fine-hard, fair intercrystalline porosity, FAIR SHOW QUALITY: spotty brown stain in part, slight show free brown oil, spotty yellow flourescence, fair-good medium streaming dull yellow cut, good medium-bright yellow dried residual cut; Limestone, light gray, very fine crystalline, up to 60% of cuttings calcite, slightly chalky, fair intercrystalline porosity in part; VERY GOOD SHOW QUALITY: good dark brown oil stain in part, very good show light brown oil, fair yellow fluorescence, excellent bright yellow slow streaming cut, excel-lent bright yellow dried residual cut. This interval drilled at 3-4 minutes per foot at the top of the zone drilling off to 1-2 minutes per foot from 3,380-3,386

		feet, and was covered on DST #2, testing extremely tight recovering 3 feet of mud. Electric logs show the top of this zone is very tight.
Viola Formation	3,594'-3,600'	Dolomite, off white-light gray, occasionally tan, very fine crystalline, rare glauconite inclusions, no sucrosic texture, tight, no visual porosity, FAIR-MEDIUM QUALITY SHOW: brown staining in part (30-60%), predominately no to trace gold fluorescence in part, no show free oil, predominately no cut to rare slight very slow gold streaming cut, fair dull gold dried residual cut. This interval drilled at 3-4 minutes per foot and is tight averaging 5 percent cross plot porosity.
	3,600'-3,643'	Chert, white-off-white, opaque, tight gray, light tan, rare calcite filled fracture, tight no visual porosity, MEDIUM SHOW QUALITY: predominately no to 20% of cuttings with scattered brown-dark brown stain in part, occasional pieces with bands of brown staining, no show free oil, trace of odor, no to spotty gold fluoresence, occasional intermediate spotty yellow fluorescence, good yellow normal cut, faint pale gold to very good bright yellow dried residual cut. This zone drilled at 1-2 minutes per foot and has 13-24% crossplot porosity. Due to the lack of any free oil shown or visual porosity, this zone was not drill stem tested.
Arbuckle Formation	3,702'-3,707'	Dolomite, buff-tan, very fine crystalline, dense, non-sucrosic, rare pyrite inclusion, fair intercrystalline porosity, FAIR SHOW QUALITY: predominately no to uneven oil staining, good dull yellow/slightly greenish fluorescence, no normal cut, faint yellowish dried residual cut. This interval recorded a penetration rate of 2-4 minutes per foot, with neutron density crossplot porosity of approx-imately 4-10 percent and maximum deep induction resistivity of 28 ohms.
	3,707'-3,717'	Dolomite, buff-tan, rare light gray, fine to rare medium crystalline, firm, fine-medium sucrosic texture, sub-rhombohedral in part, grading to oolmoldic, off white in part/light gray-tan, fine-micro crystalline 100% oolitic (non-oolmoldic) pieces, scattered glauconite inclusions,

very good intercrystalline porosity, EXCELLENT QUALITY SHOW: very good oil odor, near saturated-saturated very light brown staining, fair-good show free brown oil, excellent show free oil in scattered oil filled oolmoldic vugs, good dull yellowish to excellent bright yellow fluorescence, excellent intermediate-fast bright yellow streaming cut, excellent bright yellow dried residual cut.

This interval drilled at 1-3 minutes per foot. Electric logs show this interval has maximum 16 percent crossplot porosity and 10-28 ohms deep induction resistivity.

Drill Stem test No. 3 tested the porosity development from 3,707'-3,717' and recovered 1,240 feet of sulpher water with oil specks (with thin layer of clean oil on top of pipe recovery). This is an excellent developed reservoir with flow pressures of 66.3-156.0 psi and 203.4-543.8 psi, and shut in pressures of 1212.3-1210.1 psi recorded.

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WELL AND GEOLOGIC SUMMARY

General

The Fritzemeyer No. 1 was drilled as a southeastern step out well from the Lansing/Kansas City and Arbuckle producing Brock Field located in Section 7-T23S-R11W. The Fritzemeyer No. 1 was based on 3-D seismic control in an attempt to to find a seperate Arbuckle Formation structural closure.

Primary objectives for this well included the Lansing/Kansas City Formation and the Arbuckle Formation, with secondary objectives in the Viola Formation and Simpson Sandstone Formation.

The Fritzemeyer No. 1 was spudded April 9, 1994 and R.T.D. was reached April 15, 1994, at a rotary depth of 3,800 feet. The well was plugged and abandoned April 15-16, 1994. Three (3) drill stem tests were performed in the Fritzemeyer No. 1 (Lansing "G" Zone, Kansas City "J" Zone, and Arbuckle Formation).

Ten (10) foot drilling samples were caught by the drilling crews from 3,000-3,800 feet. Lithologic descriptions were lagged by the consulting wellsite geologist. The Fritzemeyer No. 1 was under geologic supervision from 3,000-3,800 feet.

Reference wells used for control and correlation for this report are the:

Reference Well "A":
Sloan Oil & Gas Co.
Brock No. 1
NW-NE-SE
Section 7-Township 23 South-Range 11 West
Stafford County, Kansas
Elevation: 1,824' K.B.
Total Depth Formation: Arbuckle
LTD: 3,698'
Status: Arbuckle oil producer
IP 39 BOPD + 72% Water

Reference Well "B":
Edwards Oil Inc.
Brock No. 1-A
NW-NW-SE
Section 7-Township 23 South-Range 11 West
Stafford County, Kansas
Elevation: 1,828' K.B.
Total Depth Formation: Arbuckle
LTD: 3,696'
Status: Arbuckle oil producer
IP 28 BOPD + 242 BWPD

Hydrocarbon Shows

Several hydrocarbon sample shows were observed in the portion of the well under geological supervision, with the most significant shows, ranging from Poor to Excellent Quality, occurring in the Lansing "G" Zone, Kansas City "J" Zone, Viola Formation, and Arbuckle Formation.

No sample shows were observed in the lower Topeka Formation or Upper Lansing Formation.

The Lansing "G" Zone had a Good Quality sample oil show recorded as: spotty dark brown stain in part, fair show dark brown free oil, spotty bright yellow fluorescence, fair dull yellow very slow streaming cut-excellent bright yellow flash cut, and bright yellow dried residual cut (Drill Stem Test No. 1 covered this show); the Kansas City "H" Zone had a Poor Quality Show consisting of very good dull gold to bright yellow fluorescence (no free oil or cut); and the Kansas City "J" Zone had a Very Good Quality show recorded as: good spotty dark brown oil staining, very good show free oil, fair yellow fluorescence, excellent bright yellow slow streaming cut and dried residual cut (Drill Stem Test No. 2 covered this show/zone).

The Viola Formation recorded a Fair-Intermediate Quality Show consisting of brown staining in part (30-60%), trace of odor, none to spotty gold fluorescence in part, occasional intermediate spotty yellow fluorescence, no show free oil, no cut to slight very slow gold streaming cut and rare yellow normal cut, fair dull gold to good bright yellow dried residual cut. This show appeared tight and was not considered significant enough to demand a drill stem test.

The Simpson Sandstone recorded an insignificant show consisting of dead oil staining and dead oil show, trace of fluorescence, slight very slow pale gold streaming cut, trace-fair pale gold dried residual cut. This zone was not drill stem tested.

The Arbuckle Formation recorded the best oil show in the well consisting of: very good oil odor, near saturated-saturated very light brown staining, fair-good show free oil, scattered oil filled oolmoldic vugs, good dull yellow-excellent bright yellow fluorescence, excellent intermediate to fast bright yellow/milky streaming cut, excellent bright yellow dried residual cut. Drill Stem Test No. 3 covered the top of this formation.

Structure

The Fritzemeyer No. 1 ran structurally high to Reference Wells "A" and "B" throughout the well (from +1 to +25 feet)

with the exception of the Arbuckle Formation top in Reference Well "B", where the Fritzemeyer No. 1 runs 2 feet low.

In relation to Reference Well "A" and Reference Well "B": the Lansing Formation ran +4 and +5 feet high respectively, the Kansas City "J" Zone ran +1 and +4 feet high respectively, the Viola Formation ran +12 and +25 feet high respectively and the Arbuckle Formation ran +2 and -2 feet respectively.

Please refer to Page 4 of this report for complete Formation Tops & Structural Comparison to Reference Wells.

Stratigraphy

All of the Lansing-Kansas City Formation Zones which carried free oil shows in the samples were observed to be generally of poor-fair reservoir quality and tested tight (Drill Stem Tests No. 1 and No. 2).

The primary objective Kansas City "J" Zone, which tested commercial quantities of oil on a drill stem test in Reference Well "A", is very tight in the Fritzemeyer No.1 as evidenced by the 3 feet of drilling mud recovery on Drill Stem Test No. 2.

The Arbuckle Formation has a very well developed reservoir with excellent porosity and permeabilty, but tested wet (Drill Stem Test No. 3).

Summary

Therefore, based on the lower than anticipated structural position of the primary objective Arbuckle Formation in relation to Reference Wells "A" and "B" which both produced oil and water from the Arbuckle Formation, the lack of any hydrocarbon recovery on any of the Drill Stem Tests, and the poor reservoir development of the Lansing/Kansas City and Viola Formations where sample shows were observed, the Fritzemeyer No. 1 was plugged and abandoned as a dry hole.

Respectively Submitted,

Richard J. Hall
Certified Petroleum Geologist No. 4749
Wellsite Consulting Geologist
Whitehall Exploration Corp.