



WHITEHALL EXPLORATION

WELLSITE GEOLOGIC CONSULTING AND COMPLETE WELL LOGGING

GEOLOGICAL ANALYSIS AND WELL REPORT

DOMINION EXPLORATION AND PRODUCTION, INC.

Blout No. 7-5

760' FSL & 1,880' FEL
Approx. SW-SE
Section 5 - Township 33 South - Range 42 West
Morton County, Kansas

April 8, 2003

GENERAL INFORMATION

Elevation: G.L. 3,523' K.B. 3,533'
All measurements are from KB.

Field: Mustang East

Drilling Contractor/Rig No.: Cheyenne Drilling Co./ No.1

Total Depth: RTD 4,750' LTD 4,742'

Surface Casing: 8 5/8" set @ 1,402'

Production Casing: 5 1/2" set @ 4,752' KB

Drill Time Kept: 2,500' to 4,750' RTD

Samples Examined: 2,500' to 4,750' RTD

Samples Saved: 2,500' to 4,750' RTD

Consulting Wellsite Geologist: Richard J. Hall-CPG
Consulting Geologist
Whitehall Exploration-Golden, CO

Mudlogging Unit: MBC Leasing- Unit No. M-2

Unit Type: Standard Hotwire/Standard Chromatograph

Mudlogging Geologist: Richard J. Hall (unmanned unit)

Consulting Drilling Engineer: John Schick

Drill Stem Test Company/ Tester: Trilobite Testing/Blake Wallace

Number of Tests: 1 - Upper Morrow Sandstone

Test Type: Conventional open hole test

Mud Company/Engineer: M-I, LLC/John Mathes

Mud Type: Chemical

Core Driller/Core Analysis: John Wood/Stim Lab

Electric Logging Company:	Schlumberger
Type Logs:	Platform Express -High Definition Induction/GR/SP -Compensated Neutron Density/GR -BHC Sonic -FMI
Total Depth Formation:	Middle Morrow Shale (approximately 140 feet below the Upper Morrow Sandstone)
Samples:	One (1) dry cut from 2,500'-4,750' sent to Kansas Geological Survey Sample Library- Wichita, Kansas
Well Status:	Production casing set to further evaluate and commercially produce the Upper Morrow Sandstone

DAILY DRILLING CHRONOLOGY

<u>2003 Date</u>	<u>7:00 A.M. Total Depth</u>	<u>24 Hour Footage</u>	<u>7:00 A.M. Operation; 24 Hour Activity</u>
03/25/03	0	0	MIRU; drill rat & mouse holes, spud 12 1/4" hole @ 1:15 AM-3/26/03, drilling.
03/26/03	497'	497'	Drilling ahead; survey, drilling, survey, drilling, survey, drilling, circ./condition hole 15", run survey, circ. 30", trip out of hole, lay down drill collars, rig up csg. crew, run 32 jts 8 5/8" surf. csg., set @ 1402', cmt w/465 sx, plug down @ 7:00 AM-3/27/03.
03/27/03	1,405'	908'	WOC 8'; nipple up BOP, trip in hole, test BOP, drill 65' of cement, mud pump repair, drilling, survey, drilling, rig repair, survey, drilling.
03/28/03	2,200'	795'	Drilling ahead; survey, drilling, switch mud pumps, drilling, survey, TOH-bit trip, TIH-break circ., ream 19' to bottom & clean up junk in hole, drilling, survey, drilling.
03/29/03	2,990'	790'	Drilling ahead; drilling.
03/30/03	3,680'	690'	Drilling ahead; drilling.
03/31/03	4,210'	530'	Drilling ahead; survey, drilling, CFS @ 4,573' (11:00 PM) 3/4', short trip 51 stands to surf. csg. & break circ. twice (3.5'), 22' fill on bottom, circ. 1.25', survey, trip out of hole strapping pipe (3.25').
04/01/03	4,573'	363'	Tripping out of hole; make up core barrel & trip in hole (4.5'), coring @ 12:30 PM, coring.
04/02/03	4,629'	56'	Coring; complete core @ 7:30 AM, trip out of hole & lay down core barrel & core (5 hrs), trip in hole & break circ. twice, drilling @ 4:45 PM, reach 4,750' RTD, CFC/circ. 2', survey, trip out of hole, WO loggers 2.75 hrs, rig up loggers.

04/03/03	4,750'	122'	First log on bottom @ 7:00 AM; logging, rig down loggers @ 1:45 PM, trip in hole-break circ., 12' fill, circ. 2', trip out of hole, pick up test tool, trip in hole & pick up 10 jts drill pipe, open DST No. 1 @ 1:15 AM, run DST, trip out of hole.
04/04/03	4,750'	0'	Tripping out of hole w/DST No. 1; lay down test tool, trip in hole, circ. 2', lay down drill pipe & collars, rig up casing crew, run 5 1/2" prod. csg, circ. 30", cement casing, rig released 4/5/03.

REFERENCE WELLS

Reference Well "A": Dominion Oklahoma Texas Exp. & Prod., Inc.
Blout No. 6-5
330' FSL & 330' FEL
SE-SE-SE
Section 5-T33S- R42W
Morton County, Kansas
Elevation: KB 3,524'
Date Drilled: September 2002
LTD: 5,020'
TD Formation: Mississippian Chester
Status: Upper Morrow Sandstone Gas Producer

Reference Well "A": Dominion Oklahoma Texas Exp. & Prod., Inc.
Blout No. 2-5
2000' FSL & 1500' FEL
Section 5-T33S- R42W
Morton County, Kansas
Elevation: KB 3,529'
Date Drilled: April 2002
LTD: 5,078'
TD Formation: Mississippian Chester
Status: Upper Morrow Sandstone Oil/Gas Producer

DEVIATION SURVEYS

<u>Depth</u>	<u>Degree (s)</u>	<u>Methods</u>
591'	1	wireline
1,178'	1/2	wireline
1,395'	3/4	drop
1,858'	misrun	wireline
1,920'	3/4	wireline
2,541'	misrun	wireline
2,910'	3/4	wireline
4,210'	1	wireline
4,548'	1 1/2	drop
4,734' RTD	2 1/2	drop

FORMATION TOPS

FORMATION	Blout 7-5 ELECTRIC LOG		Blout 6-5 REFERENCE	Blout 2-5 REFERENCE	DIFFERENCE TO REFERENCE WELL	
	TOPS	DATUM	WELL "A"	WELL "B"	"A"	"B"
PENNSYLVANIAN						
Wabaunsee	2662	871	860	861	11	10
Topeka	2902	631	627	618	4	13
Heebner	3246	287	298	265	-11	22
Lansing	3387	146	150	117	-4	29
Marmaton	3924	-391	-380	-415	-11	24
Morrow Shale	4448	-915	-885	-940	-30	25
Upper Morrow Ss.	4590	-1057	-1026	-1083	-31	26

DRILL STEM TESTS

One (1) open hole drill stem test was run over the Upper Morrow Sandstone after Schlumberger wire line logs.

Times: 30"-60"-60"-120"

Recovery: maximum gas flow of 834 MCF
655' of gas cut mud (5% gas, 95% mud)

Please refer to the "Drill Stem Test" section of this report.

CORES

Core No. 1: Upper Morrow Sandstone interval

6 1/4 inch X 60-foot core barrel with 7 27/32 inch core bit

Recovered 56.5 feet of core from 4,573'-4,629'.

Core driller: John Wood

Core Analysis: Stim Lab-Duncan, OK



TRILOBITE
TESTING, INC.

DRILL STEM TEST REPORT

Dominion Expl & Prod

Blout #7-5

14000 Quail Springs Parkway Ste 600 Oklahoma
City OK 73134

5-33-42

Job Ticket: 15874

DST#: 1

ATTN: John Schick

Test Start: 2003.04.03 @ 21:14:40

GENERAL INFORMATION:

Formation: **Lwr Morrow SS**

Deviated: **No** Whipstock **ft (KB)**

Time Tool Opened: 01:13:25

Time Test Ended: 10:33:55

Test Type: **Conventional Bottom Hole**

Tester: **Blake Wallace**

Unit No: **20**

Interval: **4445.00 ft (KB) To 4750.00 ft (KB) (TVD)**

Total Depth: **4750.00 ft (KB) (TVD)**

Hole Diameter: **7.78 inches** Hole Condition: **Good**

Reference Elevations: **3353.00 ft (KB)**

3341.00 ft (CF)

KB to GR/CF: **12.00 ft**

Serial #: **3030**

Inside

Press@RunDepth: **261.72 psig @ 4448.00 ft (KB)**

Start Date: **2003.04.03**

End Date:

2003.04.04

Capacity: **7000.00 psig**

Last Calib.: **1899.12.30**

Start Time: **21:14:40**

End Time:

10:33:55

Time On Btm: **2003.04.04 @ 01:12:55**

Time Off Btm: **2003.04.04 @ 05:51:10**

TEST COMMENT:

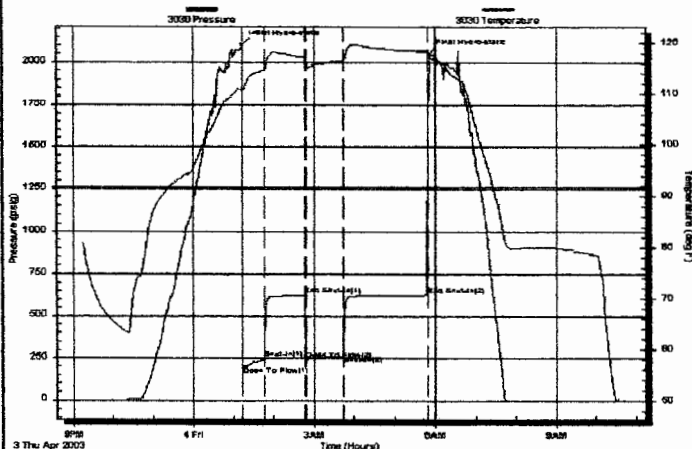
IF-strong blow BOB 1 min GTS 5 min

ISI- after 18 min blow back built to 8 inches

FF-strong blow BOB as soon as open

FSI-blow back built to 10 inches started to die off after 1.25 hrs died back to s

Pressure vs. Time



PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2106.10	111.06	Initial Hydro-static
1	144.68	111.06	Open To Flow (1)
33	244.09	114.61	Shut-in (1)
94	620.10	117.23	End Shut-in (1)
95	236.78	116.53	Open To Flow (2)
152	261.72	116.43	Shut-in (2)
275	624.25	118.42	End Shut-in (2)
279	2054.53	118.08	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
655'	5% Gas 95% mud	6.80

Gas Rates Table

Flow Period	Elapsed Time	Choke (mm)	Pressure (kPa)	Gas Rate (m³/d)
1	10	0.38	20.00	126.02
1	20	0.38	36.00	184.63
1	30	0.38	42.00	208.61
2	15	0.75	34.00	756.00
2	20	0.75	34.00	756.00
2	30	0.75	35.00	771.62
2	40	0.75	36.00	787.24
2	50	0.75	38.00	818.48
2	60	0.75	39.00	834.10
0	0	0.13	0.00	5.39

Trilobite Testing, Inc

ZONES OF INTEREST

<u>Formation</u>	<u>Log Depth</u>	<u>Lithology & Show Descriptions, Remarks</u>
Upper Morrow Sandstone	4,590'-4,600'	<p>Sandstone, light gray-tan, moderately friable, mostly fine-fine upper grained, some very fine grained, rounded-sub angular, very well sorted, fair-medium cemented, scattered discontinuous black paper thin shale laminations, minor pyrite inclusions, minor white clay filling in part, fair-good intergranular porosity, Very Good Show: good uneven light yellowish hydrocarbon fluorescence, good odor, fair-good spotty brown oil stain, good fast yellowish-white streaming live cut, good-excellent bright yellowish-white residual cut; grading to:</p> <p>Sandstone, light gray-tan, hard-dense, medium-coarse lower grained, rounded-subangular, fair-well sorting, well cemented, moderately clay filled in part, mostly frosted individual grains, very good intergranular porosity, excellent vuggy intergranular porosity, Very Good Show: good uneven light yellowish hydrocarbon fluorescence, good odor, fair spotty brown oil stain, good fast yellowish-white streaming live cut grading to bright milky live cut, good-excellent bright yellowish-white residual cut.</p> <p>A maximum hotwire gas increase of 51 units to 71 units total was recorded over this zone with associated chromatograph readings of C₁= 60 units, C₂=22 units, and C₃=6 units (no heavy gas components were recorded). This sandstone was covered on Drill Stem Test No. 1.</p> <p>Electric logs indicate this interval is very well developed with good SP and mud cake development, maximum density porosity of 27%, maximum neutron porosity of 24%, good neutron/density crossover gas effect from 4,593'-4602', and maximum deep induction resistivity of 40+ ohms.</p>
Upper Morrow Sandstone	4,600'-4,604'	<p>Sandstone, light gray with tan in part, clear and frosted individual grains, dense, coarse-very coarse lower grained, fair-well sorting, rounded-subangular moderately-very clay filled, well cemented, fair-good intergranular porosity, Very Good Show:</p>

good odor, very good uneven dull yellowish fluorescence, good brown oil stain in part, no show free oil, good moderately fast dull streaming live cut, grading to bright white milky cut, excellent bright yellow-white dried residual cut. A hotwire gas recording of 45 units total and associated chromatograph readings of $C_1=32$ units, $C_2=15$ units, and $C_3=4$ units were recorded over this zone (no heavy gas components were recorded). This interval was covered on DST No. 1.

Electric logs indicate this interval has a clean gamma ray, medium SP development, has 7-16% density porosity, no gas effect, and maximum deep induction resistivity of 170 ohms.

Upper Morrow 4,604'-4,609'
Sandstone

Sandstone, light-dark gray, very friable, coarse upper-very coarse grained, well sorting, subrounded to rounded, very poorly cemented, abundant quartz overgrowths with abundant subhedral development, moderately-very shaley in part, very pyritic in part, abundant clay filling in part, good-excellent vuggy intergranular porosity, Very Good Show: good odor, good uneven dull yellowish fluorescence, scattered brown oil stain, no show of free oil, very fast streaming live cut grading rapidly to excellent white bright milky cut, excellent bright yellow-white dried residual cut. A hotwire gas recording of 45 units total and associated chromatograph readings of $C_1=30$ units, $C_2=14$ units, and $C_3=1$ unit were recorded over this zone, with no heavy gas components recorded. This interval was covered on DST No. 1.

Electric logs indicate this interval has a shaley gamma ray in part, very poor/slight SP development, 17-22% density porosity with moderate neutron/density crossover gas effect from 4,606' - 4,608', and maximum deep induction resistivity of 35 ohms.

SUMMARY

The Dominion Exploration & Production Blout No. 7-5 was the seventh well, and sixth producer, drilled on the Blout lease (S/2-Sec. 5-T33S-R42W). The Blout No. 7-5 was drilled as an in-fill development well within the Mustang East Field in the southern portion of the field. The Blout No. 7-5 is surrounded by commercial Upper Morrow Sandstone producers, including the Dominion Blout No. 1-5 discovery well to the west, the Dominion Blout No. 3-5 to the northwest, the Dominion Blout No. 2-5 to the north, the Dominion Blout No. 5-5 to the northeast, the Dominion Blout No. 6-5 to the southeast, and the Oxy USA Henschel No.1 "B" to the south (NW-NW-NE-Sec. 8-T33S-R42W).

The Blout No. 7-5's primary objective was the Upper Morrow Sandstone, which was cored and drill stem tested in this well. A secondary objective was the Lansing Formation. Due to existing well control in the field indicating the Lower Morrow Sandstones and Keyes Sandstones would not be prospective at this location, the well was drilled to a total depth approximately 140 feet below the Upper Morrow Sandstone.

The Blout No. 7-5 is located approximately 15 miles north Elkhart, Kansas and is approximately 3/8th's mile west of Kansas Highway 27. The Mustang Field is located on the western edge of the Hugoton Embayment in west central Morton County in extreme southwestern Kansas in an area of prolific Morrow Sandstone production.

The Blout No. 7-5 was spudded on March 25, 2003 and was drilled trouble free to a RTD of 4,750 feet. A core was taken over the Upper Morrow Sandstone interval. Production casing was set on April 5, 2003. An open hole drill stem test was run over the Upper Morrow Sandstone after Schlumberger logs were run in this well. It was under 24-hour geological supervision and mud gas detection (hotwire and chromatograph) from 2,500' to 4,750' RTD. Ten-foot (10') wet and dry drilling samples were caught from 2,500' to 4,750' by the drilling crews and lagged to true depth by the consulting wellsite geologist.

Hydrocarbon Shows

Very good-excellent hydrocarbon core sample shows and associated mud gas increases were recorded over the Upper Morrow Sandstone from 4,590'-4,609'. The Upper Morrow Sandstone recorded a maximum hotwire total gas increase of 51 units to 71 units total and maximum chromatograph readings of C₁=60 units, C₂=22 units, and C₃=7 units. A drill stem test run over the Upper Morrow Sandstone recovered gas at a maximum gauge of 834 MCF. Complete detailed hydrocarbon core sample shows and associated mud gas increases can be found in the "Zones of Interest" section of this report.

Several significant total gas increases of interest were recorded over porosity

zones in the Wabaunsee and Topeka Formations. There were no significant gas increases recorded in the Lansing Formation.

Structure/Stratigraphy

As compared structurally to Reference Well "A"/Dominion Blout No. 6-5, the Blout No. 7-5 ran structurally high at the Wabaunsee and Topeka Formations, then structurally low throughout the rest of the well (-4 to -31 feet). Compared to Reference Well "B"/Dominion Blout No. 2-5, the Blout No. 7-5 ran structurally high throughout the well from +10 feet to +29 feet.

Compared to Reference Wells "A" and "B", respectively, the Blout No. 7-5 is -30 feet low and +25 feet high at the Morrow Shale, and -31 feet low and +26 feet high at the Upper Morrow Sandstone.

Complete Formation Tops picks and structural comparisons to Reference Wells "A" and "B" can be found in the "Formation Tops" table within this geologic report.

Summary

The Blout No. 7-5 was drilled as an in-fill development well within the Mustang East Field attempting to get higher structurally than the Blout No. 1-5, 2-5 and 3-5 wells and still remain predominately in the oil leg of the sandstone reservoir. As predicted, the Blout No. 7-5 did encounter the Upper Morrow Sandstone structurally high (+18 feet) to the Dominion Blout No. 2-5/Reference Well "A" and structurally low (-31 feet) to the Dominion Blout No. 6-5/Reference Well "B". The Upper Morrow Sandstone consists of 19 feet of gross sandstone and recovered gas with no oil on Drill Stem Test No. 1.

Therefore, based on the well developed Upper Morrow Sandstone, it's favorable structural position compared to the Reference Wells, the very good hydrocarbon sample shows observed from the sandstone core, the corresponding good mud gas increases recorded, the gas recovery and bottomhole pressures of DST No. 1, and the confirming electric log analysis, production casing was set to further test and produce the Upper Morrow Sandstone.

Respectfully Submitted,



Richard J. Hall
Certified Petroleum Geologist
Wellsite Consulting Geologist
Whitehall Exploration