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Duane Stecklein

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KCC WICHITA

Petroleum Geologist
2519 Henry Dr.
Hays, Kansas 67601
785 - 625 - 2708

GEOLOGICAL REPORT

A & A Production
Bethell No 1
2300' FSL & 2050' FWL
N/2 of NE - SW
SEC. 31 TWP. 7s RGE. 23w
Graham County, Kansas

COMMENCED: 9 - 29 - 03
COMPLETED: 10 - 7 - 03
CONTRACTOR: A & A Production
SURFACE PIPE: 8 5/8 at 218'
PRODUCTION PIPE: none - D & A

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Formation Data

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Elevation: (2337 K.B.) - (2332 G.L.)

All top formations measured from 2337 K.B.

<u>FORMATION</u>	<u>SAMPLE TOPS</u>	<u>SEA-LEVEL DATUM</u>
Topeka	3364	-1027
Heebner	3575	-1238
Toronto	3602	-1265
Lansing-K.C.	3617	-1280
Base-K.C.	3821	-1484
Conglomerate	3830	-1493
R.T.D.	3845	-1508

<u>FORMATION</u>	<u>LOG TOPS</u>	<u>SEA-LEVEL DATUM</u>
Topeka	3365	-1028
Heebner	3573	-1236
Toronto	3599	-1262
Lansing-K.C.	3618	-1281
Base-K.C.	3819	-1482
Conglomerate	3830	-1493
R.T.D.	3845	-1508

All samples were examined and described by me on actual location and did not start until a depth of 3440' was reached. All zones and sample tops examined are all true and accurate according to drillers depth.

One foot drilling time was logged from a depth of 3300' to 3845', and all zones were examined by ten foot samples at a rotary depth of 3300' to 3600'. Five foot samples were examined from a rotary depth of 3605' to 3845'.

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SAMPLE DESCRIPTION

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Following are the pertinent geological formation and all zones of subject well Bethell No. 1.

THE FOLLOWING ZONES WERE NOTED:

TOPEKA	3197 - 3202	Limestone - Off-white to cream and light gray, very dense lime to a fine crystalline in part. Slightly chalky, very poor inter porosity. No shows or odor. Did not warrant testing.
DEER CREEK	3420 - 3455	Limestone - Gray to off-white and cream, dense to fine crystalline, chalky in part. No inter porosity, poorly developed. No shows or odor. Did not warrant testing
LECOMPTON	3465 - 3524	Limestone - Cream, fine to medium crystalline, poor inter crystalline porosity. Slightly friable in part. No shows or odor. Did not warrant testing.
OREAD LIME	3530 - 3545	Limestone - Cream, fine to medium crystalline in part. No shows or odor. Did not warrant testing.
	3552 - 3575	Limestone - Cream to tan, dense to a fine crystalline, fossiliferous. Poor inter porosity. No shows or odor. Did not warrant testing.
TORONTO	3602 - 3609	Limestone - Cream to tan, dense, cherty to a fine and medium crystalline. Very poor inter porosity. No shows or odor. Did not warrant testing.
LANSING-K.C.	3617 - 3624	Limestone - Cream, dense to a fine and medium crystalline in part. Very poor inter porosity. No shows or odor. Did not warrant testing.
(B - Zone)	3628 - 3640	Limestone - White to cream, dense to chalky in part. Very poor inter porosity. No shows or odor.
(C - Zone)	3646 - 3650	Limestone - Cream, fine tight crystalline with a poor inter crystalline porosity. Fair show of oil stain and saturation. Free oil when broken. No odor noted.

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DRILL STEM TEST No. 1

(B and C zones) 3630 - 3650

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Tool open 45 minutes with a weak blow.

Tool closed 45 minutes.

Tool open 45 minutes with a weak blow and increasing.

Tool closed 45 minutes.

Recovery: 120 ' of muddy water with a trace of oil on top.

ISIP: 990 psi

FSIP: 1002 psi

IFP: 35 - 35 psi

FFP: 58 - 58 psi

(D - Zone)

3664 - 3670 Limestone - Cream to buff, dense to cherty.
Medium crystalline in part to a slightly vuggy
porosity. Very tight with a poor inter porosity.
Fair show of oil stain with a heavy free oil when
broken. No odor noted.

(F - Zone)

3684 - 3690 Limestone - Same as the D - zone.

DRILL STEM TEST No. 2

(D and F zones) 3660 - 3690

Tool open 15 minutes Very weak blow dead in 4 minutes.

Tool closed 15 minutes.

Tool open 15 minutes, no blow.

Tool closed No time.

Recovery: 2' of drilling mud

ISIP 270 psi

FSIP no psi

IFP 7 - 7

(F - Zone)

3691 - 3696 Limestone - White to cream, dense to a fine and
medium crystalline in part with a show of oolitic
lime. No inter porosity, no shows or odor. Did not
warrant testing.

(G - Zone)

3697 - 3726 Limestone - White to cream, very dense , no visible
porosity. Tight , cherty and chalky in part, poorly
developed. No shows or odor. Did not warrant
testing.

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(H - Zone)

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3746 - 3758

Limestone - Cream, tan and gray, very dense, cherty. Poorly developed, no inter porosity. No shows or odor. Did not warrant testing.

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(I - Zone)

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3766 - 3770

Limestone - White to cream, dense to a fine and medium crystalline. Very tight to a poor inter porosity. Show of oil stain and free oil. Very faint odor.

(J - Zone)

3783 - 3788

Limestone - Cream, very dense with a poor inter porosity. Show of oil stain and free oil with a fair odor.

DRILL STEM TEST No. 3

(I and J zone) 3763 - 3793

Tool open 30 minutes, very weak blow.

Tool closed 45 minutes.

Tool open 45 minutes, very weak blow.

Tool closed 45 minutes.

Recovery: 10' of free oil, 10' of oil cut mud.

ISIP 1094 psi

FSIP 1094 psi

IFP 7 - 7 psi

FFP 7 - 7 psi

(K - Zone)

3800 - 3808

Limestone - White, fine tight crystalline to a dense lime. Very poor inter porosity. Show of black residual stain, dead oil, no odor. Did not warrant testing.

(L - Zone)

3814 - 3821

Limestone - White to buff, very dense to no crystalline porosity. No inter porosity, no shows or odor. Did not warrant testing.

CONGLOMERATE

3830 - 3845

Shale, red and gray, chert, white to opaque. No shows or odor. Did not warrant testing.

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REMARKS AND CONCLUSION

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During the drilling of the Bethell No. 1, minor oil shows were noted in the Lansing-Kansas City, C-zone. A drill stem test was taken. The results were negative, with no oil recovery. Minor oil shows were noted in the D and F zones. A second drill stem test was taken with negative results. The third drill stem test was taken in the I and J zones with a recovery of 10' of free oil and 10' of oil cut mud. The lack of proper reservoir conditions is the condemning factor.

The Bethell No. 1 was open hole logged. It was decided to run a straddle test on the F-zone. The test had negative results, and therefore, A & A production decided to plug and abandon subject well Bethell No. 1 as a dry hole.

Respectfully submitted,



Duane Stecklein, Geologist

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KCC WICHITA DRILL-STEM TEST DATA

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Well Name	Bethell	KCC	Test No.	2
Well Number	1	OCT 31 2003	Zone Tested	KC
Company	A & A Production		Date	10/5/03
Comp. Rep.	D Stecklein	CONFIDENTIAL	Tester	Don Fabricius
Contractor	A & A Drig		Ticket No.	4109
Location	31-7-23		Elevation	

Recorder No. 3088 Clock Range 12 Recorder No. 4377 Clock Range 12

Depth 3682 Depth 3686

Initial Hydro Mud Press. 1900 Initial Hydro Mud Press. 1901

Initial Shut-in Press. 270 Initial Shut-in Press. 272

Initial Flow Press. 7.7 Initial Flow Press. 7.7

Final Flow Press. 7.7 Final Flow Press. 7.7

Final Shut-in Press. -- Final Shut-in Press. --

Final Hydro Mud Press. 1900 Final Hydro Mud Press. 1901

Temperature Tool Open Before I. S. I. 15 Mins.

Mud Weight 9.1 Viscosity 46.0 Initial Shut-in 15 Mins.

Fluid Loss 8.8 Flow Period 15 Mins.

Interval Tested 3660-90 Final Shut-in -- Mins.

Top Packer Depth 3655 Surface Choke Size 1

Bottom Packer Depth 3660 Bottom Choke Size 3/4

Total Depth 3690 Main Hole Size 7 7/8

Drill Pipe Size 4 1/2 XH Wt. 16.60 Rubber Size 6 3/4

Drill Collar I. D. Ft. Run

Recovery—Total Feet

Recovered 2 Feet Of Mud

Recovered Feet Of

Recovered Feet Of

Recovered Feet Of

Remarks

Very weak blow dead in 4 min

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It is expressly understood and agreed that Arrow Testing Company, shall not be bound by any agreement, not herein contained, and no agent or representative connected with or employed by Arrow Testing Company has authority to alter or extend the terms of this agreement. I have read and understand the terms of this agreement and represent that I am authorized to sign the same as agent of customer.

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KCC WICHITA DRILL-STEM TEST DATA

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Well Name	Bethell	KCC	Test No.	3
Well Number	1	OCT 31 2003	Zone Tested	KC
Company	A & A Production	CONFIDENTIAL	Date	10/6/03
Comp. Rep.	D Stecklein		Tester	Don Fabricius
Contractor	A & A Drlg		Ticket No.	4110
Location	31-7-23		Elevation	

Recorder No. 3088 Clock Range 12 Recorder No. 4377 Clock Range 12

Depth 3785 Depth 3789

Initial Hydro Mud Press. 1935 Initial Hydro Mud Press. 1935

Initial Shut-in Press. 1094 Initial Shut-in Press. 1093

Initial Flow Press. 7-7 Initial Flow Press. 7-7

Final Flow Press. 7-7 Final Flow Press. 7-7

Final Shut-in Press. 1094 Final Shut-in Press. 1093

Final Hydro Mud Press. 1935 Final Hydro Mud Press. 1935

Temperature Tool Open Before I. S. I. 30 Mins.

Mud Weight 9.1 Viscosity 46.0 Initial Shut-in 45 Mins.

Fluid Loss 8.8 Flow Period 45 Mins.

Interval Tested 3763-93 Final Shut-in 45 Mins.

Top Packer Depth 3758 Surface Choke Size 1

Bottom Packer Depth 3763 Bottom Choke Size 3/4

Total Depth 3793 Main Hole Size 7 7/8

Drill Pipe Size 4 1/2 XH Wt. 16.60 Rubber Size 6 3/4

Drill Collar I. D. Ft. Run

Recovery—Total Feet

Recovered 10 Feet Of Free oil

Recovered 10 Feet Of Oil cut mud

Recovered Feet Of

Recovered Feet Of

Remarks

Very weak blow thru-test

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DRILL-STEM TEST DATA

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Well Name	Bethell	KCC	Test No.	4
Well Number	1	OCT 31 2003	Zone Tested	KC
Company	A & A Production	CONFIDENTIAL	Date	10/7/03
Comp. Rep.	D Stecklein		Tester	Don Fabricius
Contractor	A & A Drlg		Ticket No.	4111
Location	31-7-23		Elevation	

Recorder No. 3088 Clock Range 12 Recorder No. 4377 Clock Range 12

Depth 3675 Depth 3841

Initial Hydro Mud Press. 1842 Initial Hydro Mud Press. 1844

Initial Shut-in Press. 1002 Initial Shut-in Press. 1000

Initial Flow Press. 11-11 Initial Flow Press. 11-11

Final Flow Press. 11-11 Final Flow Press. 11-11

Final Shut-in Press. 943 Final Shut-in Press. 945

Final Hydro Mud Press. 1842 Final Hydro Mud Press. 1844

Temperature Tool Open Before I. S. I. 30 Mins.

Mud Weight 9.1 Viscosity 46.0 Initial Shut-in 30 Mins.

Fluid Loss 8.8 Flow Period 30 Mins.

Interval Tested 3665-3845 Final Shut-in 30 Mins.

Top Packer Depth 3660 Surface Choke Size 1

Bottom Packer Depth 3665 Bottom Choke Size 3/4

Total Depth 3845 Main Hole Size 7 7/8

Drill Pipe Size 4 1/2 XH Wt. 16.60 Rubber Size 6 3/4

Drill Collar I. D. Ft. Run

Recovery—Total Feet

Recovered 40 Feet Of Very slightly oil cut mud

Recovered Feet Of

Recovered Feet Of

Recovered Feet Of

Remarks

Very weak blow thru-test

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DRILL-STEM TEST DATA

Well Name	Bethell	KCC	Test No.	1
Well Number	1	OCT 31 2003	Zone Tested	KC
Company	A & A Production	CONFIDENTIAL	Date	10/4/03
Comp. Rep.	D. Stecklein		Tester	Don Fabricius
Contractor	A & A Drlg		Ticket No.	4108
Location	31-7-23		Elevation	

Recorder No. 3088 Clock Range 12 Recorder No. 4377 Clock Range 12

Depth 3642 Depth 3646

Initial Hydro Mud Press. 1831 Initial Hydro Mud Press. 1835

Initial Shut-in Press. 990 Initial Shut-in Press. 990

Initial Flow Press. 35-35 Initial Flow Press. 35-35

Final Flow Press. 58-58 Final Flow Press. 58-58

Final Shut-in Press. 1002 Final Shut-in Press. 1000

Final Hydro Mud Press. 1831 Final Hydro Mud Press. 1833

Temperature Tool Open Before I. S. I. 45 Mins.

Mud Weight 9.1 Viscosity 46.0 Initial Shut-in 45 Mins.

Fluid Loss 8.8 Flow Period 45 Mins.

Interval Tested 3630-50 Final Shut-in 45 Mins.

Top Packer Depth 3625 Surface Choke Size 1

Bottom Packer Depth 3630 Bottom Choke Size 3/4

Total Depth 3650 Main Hole Size 7 7/8

Drill Pipe Size 4 1/2 XH Wt. 16.60 Rubber Size 6 3/4

Drill Collar I. D. Ft. Run

Recovery—Total Feet

Recovered 120 Feet Of Muddy water with a trace of oil on top

Recovered Feet Of

Recovered Feet Of

Recovered Feet Of

Remarks

Weak blow building thru-test

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