

Drillers Log: Geologic Log: X

Samples: X Interval Sheet: X

Sample Interval: 130' TO 2150' 640-4350

Geophysical Logs S.P. Res Gamma: Neutron: X

Density: X Sonic Other: FRACTURE IDENTIFICATION, DUAL INDUCTION,
PERFORATION DEPTH CONTROL

Stratigraphic Data Source: THOMAS H. BIGGS
BARTLETT ENERGY EXPLORATION, INC.

<u>Formation</u>	<u>Top</u>	<u>Datum (Subsea)</u>	<u>Thickness</u>
COPPER RIDGE	0	1670.2	182
PINE MOUNTAIN FAULT			
CLINTON	182	1488.2	337
POOR VALLEY RIDGE	519	1151.2	91
HAGAN	610	1060.2	51
SEQUATCHIE	661	1009.2	291
REEDSVILLE	952	718.2	340
TRENTON	1292	378.2	578
EGGLESTON	1870	- 199.8	130
HARDY CREEK	2000	- 329.8	128
BEN HUR	2128	- 457.8	22

Remarks:

References:

Released to Open File: Completion: JUNE 21, 1984
Samples: YES

(Note: UTM measurements in meters, all others in feet)

VIRGINIA DIVISION OF MINERAL RESOURCES
 Box 3667, Charlottesville, VA 22903

INTERVAL SHEET

Page 1 of 2

Well Repository No.: W-6801

Date rec'd: 2/21/86 Date Processed: 2/21/86

Sample Interval: from 130 to:2150

PROPERTY: Morgon Hansley

Number of samples: 202

COMPANY: Stonewall Gas Co.

Total Depth: 2150

COUNTY: Lee

Oil or Gas:XX Water: Exploratory:

From-To	From-To	From-To	From-To	From-To
130 - 140	430 - 440	730 - 740	1030 - 1040	1330 - 1340
140 - 150	440 - 450	740 - 750	1040 - 1050	1340 - 1350
150 - 160	450 - 460	750 - 760	1050 - 1060	1350 - 1360
160 - 170	460 - 470	760 - 770	1060 - 1070	1360 - 1370
170 - 180	470 - 480	770 - 780	1070 - 1080	1370 - 1380
180 - 190	480 - 490	780 - 790	1080 - 1090	1380 - 1390
190 - 200	490 - 500	790 - 800	1090 - 1100	1390 - 1400
200 - 210	500 - 510	800 - 810	1100 - 1110	1400 - 1410
210 - 220	510 - 520	810 - 820	1110 - 1120	1410 - 1420
220 - 230	520 - 530	820 - 830	1120 - 1130	1420 - 1430
230 - 240	530 - 540	830 - 840	1130 - 1140	1430 - 1440
240 - 250	540 - 550	840 - 850	1140 - 1150	1440 - 1450
250 - 260	550 - 560	850 - 860	1150 - 1160	1450 - 1460
260 - 270	560 - 570	860 - 870	1160 - 1170	1460 - 1470
270 - 280	570 - 580	870 - 880	1170 - 1180	1470 - 1480
280 - 290	580 - 590	880 - 890	1180 - 1190	1480 - 1490
290 - 300	590 - 600	890 - 900	1190 - 1200	1490 - 1500
300 - 310	600 - 610	900 - 910	1200 - 1210	1500 - 1510
310 - 320	610 - 620	910 - 920	1210 - 1220	1510 - 1520
320 - 330	620 - 630	920 - 930	1220 - 1230	1520 - 1530
330 - 340	630 - 640	930 - 940	1230 - 1240	1530 - 1540
340 - 350	640 - 650	940 - 950	1240 - 1250	1540 - 1550
350 - 360	650 - 660	950 - 960	1250 - 1260	1550 - 1560
360 - 370	660 - 670	960 - 970	1260 - 1270	1560 - 1570
370 - 380	670 - 680	970 - 980	1270 - 1280	1570 - 1580
380 - 390	680 - 690	980 - 990	1280 - 1290	1580 - 1590
390 - 400	690 - 700	990 - 1000	1290 - 1300	1590 - 1600
400 - 410	700 - 710	1000 - 1010	1300 - 1310	1600 - 1610
410 - 420	710 - 720	1010 - 1020	1310 - 1320	1610 - 1620
420 - 430	720 - 730	1020 - 1030	1320 - 1330	1620 - 1630

VIRGINIA DIVISION OF MINERAL RESOURCES
 Box 3667, Charlottesville, VA 22903

INTERVAL SHEET
 Continued

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Well Repository No.: W-6801

From-To	From-To	From-To	From-To	From-To
1630 - 1640	2030 - 2040	-	-	-
1640 - 1650	2040 - 2050	-	-	-
1650 - 1660	2050 - 2060	-	-	-
1660 - 1670	2060 - 2070	-	-	-
1670 - 1680	2070 - 2080	-	-	-
1680 - 1690	2080 - 2090	-	-	-
1690 - 1700	2090 - 2100	-	-	-
1700 - 1710	2100 - 2110	-	-	-
1710 - 1720	2110 - 2120	-	-	-
1720 - 1730	2120 - 2130	-	-	-
1730 - 1740	2130 - 2140	-	-	-
1740 - 1750	2140 - 2150	-	-	-
1750 - 1760	-	-	-	-
1760 - 1770	-	-	-	-
1770 - 1780	-	-	-	-
1780 - 1790	-	-	-	-
1790 - 1800	-	-	-	-
1800 - 1810	-	-	-	-
1810 - 1820	-	-	-	-
1820 - 1830	-	-	-	-
1830 - 1840	-	-	-	-
1840 - 1850	-	-	-	-
1850 - 1860	-	-	-	-
1860 - 1870	-	-	-	-
1870 - 1880	-	-	-	-
1880 - 1890	-	-	-	-
1890 - 1900	-	-	-	-
1900 - 1910	-	-	-	-
1910 - 1920	-	-	-	-
1920 - 1930	-	-	-	-
1930 - 1940	-	-	-	-
1940 - 1950	-	-	-	-
1950 - 1960	-	-	-	-
1960 - 1970	-	-	-	-
1970 - 1980	-	-	-	-
1980 - 1990	-	-	-	-
1990 - 2000	-	-	-	-
2000 - 2010	-	-	-	-
2010 - 2020	-	-	-	-
2020 - 2030	-	-	-	-

VIRGINIA DIVISION OF MINERAL RESOURCES
 Box 3667, Charlottesville, VA 22903

INTERVAL SHEET

Page 1 of 2

Well Repository No.: W-6816

Date Rec'd: 9/19/86 Date Processed: 9/19/86

Sample Interval: From: 640 To: 4350

Property: Morgan Hensley #1

Number of Samples: 293

Company: Stonewall Gas Company

Total Depth: 4350'

County: Lee

Oil or Gas: Water: Exploratory:

From-To	From-To	From-To	From-To	From-To
640 - 650	930 - 940	1250 - 1260	2140 - 2150	2440 - 2450
650 - 660	940 - 950	1260 - 1270	2150 - 2160	2450 - 2460
660 - 670	950 - 960	1270 - 1280	2160 - 2170	2460 - 2470
670 - 680	960 - 970	1280 - 1290	2170 - 2180	2470 - 2480
-	970 - 980	1290 - 1300	2180 - 2190	2480 - 2490
680 - 690	980 - 990	1300 - 1310	2100 - 2200	2490 - 2500
690 - 700	990 - 1000	1310 - 1320	2200 - 2210	2500 - 2510
700 - 710	1000 - 1010	1320 - 1330	2210 - 2220	2510 - 2520
710 - 720	1010 - 1020	1330 - 1340	2220 - 2230	2520 - 2530
720 - 730	1020 - 1030	XXXX - XXXX	2230 - 2240	2530 - 2540
730 - 740	1030 - 1040	1350 - 1360	2240 - 2250	2540 - 2550
740 - 750	1040 - 1050	1360 - 1370	2250 - 2260	2550 - 2560
750 - 760	1050 - 1060	1370 - 1380	2260 - 2270	2560 - 2570
760 - 770	1060 - 1070	1380 - 1390	2270 - 2280	XXXX - XXXX
770 - 780	1070 - 1080	1390 - 1400	2280 - 2290	2580 - 2590
780 - 790	1080 - 1090	1400 - 1410	2290 - 2300	2590 - 2600
790 - 800	1090 - 1100	1410 - 1420	2300 - 2310	2600 - 2610
800 - 810	1100 - 1110	1420 - 1430	2310 - 2320	2610 - 2620
810 - 820	1110 - 1120	1430 - 1440	2320 - 2330	2620 - 2630
820 - 830	1120 - 1130	1440 - 1450	2330 - 2340	2630 - 2640
830 - 840	XXXX - XXXX	XXXX - XXXX	2340 - 2350	2640 - 2650
XXX - XXX	1160 - 1170	2050 - 2060	2350 - 2360	2650 - 2660
850 - 860	1170 - 1180	2060 - 2070	2360 - 2370	2660 - 2670
860 - 870	1180 - 1190	2070 - 2080	2370 - 2380	2670 - 2680
870 - 880	1190 - 1200	2080 - 2090	2380 - 2390	2680 - 2690
880 - 890	1200 - 1210	2090 - 2100	2390 - 2400	2690 - 2700
890 - 900	1210 - 1220	2090 - 2110	2400 - 2410	2700 - 2710
900 - 910	1220 - 1230	2110 - 2120	2410 - 2420	2710 - 2720
910 - 920	1230 - 1240	2120 - 2130	2420 - 2430	2720 - 2730
920 - 930	XXXX - XXXX	2130 - 2140	2430 - 2440	2730 - 2740

VIRGINIA DIVISION OF MINERAL RESOURCES
Box 3667, Charlottesville, VA 22903

INTERVAL SHEET
Continued

Page 2 of 2

Well Repository No.: W- 6815

From-To	From-To	From-To	From-To	From-To
2740 - 2750	3140 - 3150	3550 - 3560	3960 - 3970	-
2750 - 2760	3150 - 3160	3560 - 3570	3970 - 3980	-
2760 - 2770	3160 - 3170	3570 - 3580	3980 - 3990	-
XXXX - XXXX	3170 - 3180	3580 - 3590	3990 - 4000	-
2780 - 2790	3180 - 3190	3590 - 3600	4000 - 4010	-
2790 - 2800	3190 - 3200	3600 - 3610	4010 - 4020	-
2800 - 2810	3200 - 3210	3610 - 3620	4020 - 4030	-
2810 - 2820	3210 - 3220	3620 - 3630	4030 - 4040	-
XXXX - XXXX	3220 - 3230	3630 - 3640	4040 - 4050	-
2830 - 2840	3230 - 3240	3640 - 3650	4050 - 4060	-
2840 - 2850	3240 - 3250	3650 - 3660	4060 - 4070	-
2850 - 2860	3250 - 3260	3660 - 3670	4070 - 4080	-
2860 - 2870	3260 - 3270	3670 - 3680	4080 - 4090	-
2870 - 2880	3270 - 3280	3680 - 3690	4090 - 4100	-
2880 - 2890	3280 - 3290	3690 - 3700	XXXX - XXXX	-
2890 - 2900	3290 - 3300	3700 - 3710	4120 - 4130	-
2900 - 2910	3300 - 3310	3710 - 3720	4130 - 4140	-
2910 - 2920	3310 - 3320	XXXX - XXXX	4140 - 4150	-
2920 - 2930	3320 - 3330	3730 - 3740	4150 - 4160	-
2930 - 2940	3330 - 3340	3740 - 3750	4160 - 4170	-
2940 - 2950	3340 - 3350	3750 - 3760	4170 - 4180	-
2950 - 2960	3350 - 3360	3760 - 3770	4180 - 4190	-
2960 - 2970	XXXX - XXXX	3770 - 3780	4190 - 4200	-
2970 - 2980	3380 - 3390	3780 - 3790	4200 - 4210	-
2980 - 2990	3390 - 3400	3790 - 3800	4210 - 4220	-
2990 - 3000	3400 - 3410	3800 - 3810	4220 - 4230	-
3000 - 3010	3410 - 3420	3810 - 3820	4230 - 4240	-
3010 - 3020	3420 - 3430	3820 - 3830	4240 - 4250	-
3020 - 3030	3430 - 3440	3830 - 3840	4250 - 4260	-
3030 - 3040	3440 - 3450	3840 - 3850	XXXX - XXXX	-
3040 - 3050	3450 - 3460	3850 - 3860	4270 - 4280	-
3050 - 3060	3460 - 3470	3860 - 3870	4280 - 4290	-
3060 - 3070	3470 - 3480	XXXX - XXXX	4290 - 4300	-
3070 - 3080	3480 - 3490	3890 - 3900	XXXX - XXXX	-
3080 - 3090	3490 - 3500	3900 - 3910	4340 - 4350	-
3090 - 3100	3500 - 3510	3910 - 3920	-	-
3100 - 3110	3510 - 3520	3920 - 3930	-	-
3110 - 3120	3520 - 3530	3930 - 3940	-	-
3120 - 3130	3530 - 3540	3940 - 3950	-	-
3130 - 3140	3540 - 3550	3950 - 3960	-	-

VIRGINIA DIVISION OF MINERAL RESOURCES
 Box 3667, Charlottesville, VA 22903

INTERVAL SHEET

Page 1 of 5

Date Rec'd: Date Processed:

Property: Morgan Hensley #1

Company: Stonewall Gas Company

County: Lee

Well Repository No.: W- ^{Sam} 6816

Sample Interval: From: 640 To: 435

Number of Samples: 293

Total Depth:

Oil or Gas: XX Water: Exploratory:

From-To	From-To	From-To	From-To	From-To
20-40	620-640	1220-1240	1840-1860	2460-2480
40-60	640-660	1240-1260	1860-1880	2500 -2560
60-80	660-680	1260-1280	1880-1900	2560-2580
80-100	680-700	1300-1320	1900-1920	2580-2600
100-120	700-720	1320-1340	1920-1940	2600-2620
120-140	720-740	1340-1360	1940-1960	2620-2640
140-160	740-760	1360-1380	1960-1980	2640-2660
160-180	760-780	1380-1400	1980-2000	2660-2680
180-200	780-800	1400-1420	2000-2020	2680-2700
200-220	800-820	1420-1440	2020-2040	2700 2720
220-240	820-840	1440-1460	2060-2080	2740-2760
240-260	840-860	1460-1480	2080-2100	2760-2780
260-280	860-880	1480-1500	2100-2120	2870-2880
280-300	880-900	1500-1520	2120-2140	2880-2890
300-320	900-920	1520-1540	2140-2160	2890-2900
320-340	920-940	1540-1560	2160-2180	2900-2910
340-360	940-960	1560-1580	2180-2200	2910-2920
360-380	960-980	1580-1600	2200-2220	2920-2930
380-400	980-1000	1600-1620	2220-2240	2930-2940
400-420	1000-1020	1620-1640	2240-2260	2940-2950
420-440	1020-1040	1640-1660	2260-2280	2950-2960
440-460	1040-1060	1660-1680	2280-2300	2960-2970
460-480	1060-1080	1680-1700	2300-2320	2970-2980
480-500	1080-1100	1700-1720	2320-2340	2990-3000
500-520	1100-1120	1720-1740	2340-2360	-
520-540	1120-1140	1740-1760	2360-2380	-
540-560	1140-1160	1760-1780	2380-2400	-
560-580	1160-1180	1780-1800	2400-2420	-
580-600	1180-1200	1800-1820	2420-2440	-
600-620	1200-1220	1820-1840	2440-2460	-

Added samples
 Four boxes on top shale

LE-128

(FOR OFFICE USE ONLY: API Well No. 45 -105 20578 State County Permit

Date: 28 December, 1982

Operator's Well No. #1 MORGAN Hensley

VIRGINIA OIL AND GAS INSPECTOR DEPARTMENT OF LABOR AND INDUSTRY DIVISION OF MINES 219 Wood Avenue Big Stone Gap, Virginia 24219-1799 Phone 703-523-0335

LE-128

WELL PLAT

+ Denotes location of well on United States Topographic Maps, scale 1 to 24,000. Latitude and longitude lines are represented by border lines as shown.

This plat is new [checked] updated []

This plat is [] is not [checked] based on a mine coordinate system established for the areas of the well location.

Well operator Stonewall Gas Co.

Address Buckhannon, West Virginia Farm Morgan Hensley Tract Acres 29.5 Lease No. Elevation 1670.2'± Quadrangle Rose Hill County Lee District Rose Hill Registered Engineer Registration No. Certified Land Surveyor [checked] Cert. No. 001412 File No. Drawing No. 0- Date Dec. 28, 1982 Scale 1"=200'

Certification of Well Plat

I, the undersigned, hereby certify that this plat is correct to the best of my knowledge and belief, and shows all the information required by law and the regulations of the Virginia Well Review Board.

Jerry A. Carter Registered Engineer or Certified Land Surveyor in Charge



OK

ROSE HILL
9-46

API No. 45-105-20578-00-03 VDMR Well Rep. No. W-6801 6816

DMQ File No. LE-128

Operator STONEWALL GAS COMPANY

Farm MORGAN HENSLEY

Co. Well No. #1 MORGAN HENSLEY

County LEE Quadrangle ROSE HILL - 7 1/2'

Location (UTM) N4,058,600; E290,100 UTM Zone 17

(Lat. and Long.) _____

Field ROSE HILL Province VALLEY AND RIDGE

Elev. (specify) 1670.2' GR TD 2150 Form. at TD BEN HUR

Age ORDOVICIAN

Date compl. or abandoned MARCH 21, 1983

Result OIL WELL

Gas Shows _____

Gas Pays _____

Main Production _____ Prod. Form. TRENTON

Age ORDOVICIAN

Treatment: 1698' TO 1781' - TRENTON LIMESTONE: 10,000 GALLONS OF 15% RETARDED HCL WITH 38 PERFORATION BALLS; 36 PERFORATIONS.

Initial Production NONE

FINAL PRODUCTION - 35 TO 40 BARRELS PER DAY

Oil shows _____

Water FW _____ at _____ at _____ at _____

SW _____ at _____ at _____ at _____

Coal _____

Plat _____ Plotted _____ Completion Report _____ X

Drillers Log _____ Geologic Log _____ X

Samples X Interval Sheet X

Sample Interval 130' TO 2150' 640-4350

Remarks _____

Geophysical Logs S.P. _____ Res _____ Gamma _____ Neutron X

Density X Sonic _____ Other FRACTURE IDENTIFICATION, DUAL INDUCTION, PERFORATION DEPTH CONTROL.

Stratigraphic Data Source

THOMAS H. BIGGS

BARTLETT ENERGY EXPLORATION, INC.

<u>Formation</u>	<u>Top</u>	<u>Datum (Subsea)</u>	<u>Thickness</u>
COPPER RIDGE	0	1670.2	182
PINE MOUNTAIN FAULT			
CLINTON	182	1488.2	337
POOR VALLEY RIDGE	519	1151.2	91
HAGAN	610	1060.2	51
SEQUATCHIE	661	1009.2	291
REEDSVILLE	952	718.2	340
TRENTON	1292	378.2	578
EGGLESTON	1870	- 199.8	130
HARDY CREEK	2000	- 329.8	128
BEN HUR	2128	- 457.8	22

Remarks

References

Released to Open File: Completion JUNE 21, 1984

Samples YES

(Note: UTM measurements in meters, all others in feet)

OIL AND GAS WELL SUMMARY REPORT

API No.: 45-105-20578-00-03 VDMR Well Rep. No.: W-6801 & 6816

Div. Gas & Oil File No.: LE-128

Operator: STONEWALL GAS COMPANY

Farm: MORGAN HENSLEY

County: LEE Co. Well No.: #1 MORGAN HENSLEY

Quadrangle: ROSE HILL - 7-1/2'

Location (UTM): N 4,058,600; E 290,100 UTM Zone: 17

Field: ROSE HILL Province: VALLEY AND RIDGE

Elev. (specify): 1670.2' GR TD: 2150' Formation at TD: BEN HUR

Initial Gas Flow Age: ORDOVICIAN

Date compl. or abandoned: MARCH 21, 1983

Result: OIL WELL

Gas Shows

Gas Pays

Main Production Producing Formation: TRENTON

Final Gas Flow Age: ORDOVICIAN

Treatment: 1698' TO 1781' - TRENTON LIMESTONE: 10,000 GALLONS OF 15%
RETARDED HCL WITH 38 PERFORATION BALLS: 36 PERFORATIONS.

Initial Oil Production: NONE

Final Production: 35 TO 40 BARRELS PER DAY

Oil Shows

Water	FW	at	at	at
	SW:	at:	at	at

Coal

Plat Plotted Completion Report: X

Drillers Log: X

Geologic Log: X

Samples: X

Interval Sheet: X

Sample Interval: 130' TO 2150' 640-4350

Geophysical Logs

S.P.

Res

Gamma:

Neutron: X

Density: Sonic

Other: FRACTURE IDENTIFICATION, DUAL
INDUCTION, PERFORATION DEPTH CONTROL

Stratigraphic Data Source: THOMAS BIGGS
BARTLETT ENERGY EXPLORATION, INC.

<u>Formation</u>	<u>Top</u>	<u>Datum (Subsea)</u>	<u>Thickness</u>
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BEN HUR	2128	- 457.8	22

Remarks:

References:

Release to Open File: Completion: JUNE 21, 1984
Samples: YES

(Note: UTM measurements in meters, all others in feet)

OIL AND GAS WELL
SUMMARY REPORT

API No. 45-105-20578-00-03

VDMR Well

Rep. No. 6801 ; 6816

DMQ File No. LE-128

Operator STONEWALL GAS COMPANY

Farm MORGAN HENSLEY

Co. Well No. # 1 MORGAN HENSLEY

County LEE Quadrangle ROSE HILL - 7 1/2'

Location (UTM) N4,058,600; E 290,100 UTM Zone 17

(Lat. and Long.) _____

Field ROSE HILL Province VALLEY AND RIDGE

Elev. (specify) 1670.2'GR TD 2150 Form. at TD BEN HUR
Age ORDOVICIAN

Date compl. or abandoned MARCH 21, 1983

Result OIL WELL

Gas Shows _____

Gas Pays _____

Main Production _____ Prod. Form. TRENTON

Age ORDOVICIAN

Treatment: 1698' TO 1781' - TRENTON LIMESTONE: 10,000 GALLONS OF 15% RETARDED
HCL WITH 38 PERFORATION BALLS: 36 PERFORATIONS.

Initial Production NONE

FINAL PRODUCTION - .35 TO 40 BARRELS PER DAY

Oil shows _____

Water FW _____ at _____ at _____ at _____
SW _____ at _____ at _____ at _____

Coal _____

Plat _____ Plotted _____ Completion Report X

Drillers Log _____ Geologic Log X

Samples X Interval Sheet X

Sample Interval 130' TO 2150'

Remarks _____

Geophysical Logs S.P. _____ Res _____ Gamma _____ Neutron _____

Density _____ Sonic _____ Other _____

BARTLETT ENERGY EXPLORATION, INC.

Formation	Top	Datum (Subsea)	Thickness
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BEN HUR	2128	- 457.8	22

Remarks

References

Released to Open File: Completion JUNE 21, 1984Samples YES

(Note: UTM measurements in meters, all others in feet)

CERTIFICATION OF LOCATION OF A NEW WELL

I, the undersigned, hereby certify that I am familiar with the well plat showing the permitted location of the new well referenced on the obverse hereof; and that I am the engineer___/ surveyor___/ who verified that the actual surface location of the replaced stake___/ well___/, after the well site was cleared and readied, does in fact comply with the standard of Regulation 4.02 of the Regulations under the Virginia Oil and Gas Act, as follows:

_____ within three feet of the location designated on the well plat in an area underlain by known coal seams identified by the Chief of the Division of Mines pursuant to Code of Virginia § 45.1-333, or

_____ within ten feet of the location designated by the well plat in other areas.

(Name)

State County Permit

CASING AND TUBING PROGRAM

PRELIMINARY INFORMATION

Is the subject well underlaid by the red shales? Yes ___ / No X /
If "Yes", was a coal protection string set to the red shales? Yes ___ / No X /

PROGRAM DETAILS

Size	Top	Bottom	Length	Perforated	
				From	To
<u>Conductor</u>					
9 5/8"	surface	75'	75'		
<u>Casing circulated and cemented in to the surface:</u>					
7"	surface	456'	456'		

Coal protection casing set under the special rule of Code of Virginia § 45.1-334.B:

NA

Other casing and tubing left in the well:

4 1/2"	cement above 1400'	2103'	2103'	1698'-1781'
2 3/8"	surface	1770'	1770'	

Liners left in well, under Code of Virginia § 45.1-336 or otherwise:

None

Other casing used in drilling but not left in the well:

None

<u>Packers or bridge plugs:</u>	<u>Kind</u>	<u>Size</u>	<u>Set At</u>
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REMARKS (SHUT DOWN DEPTHS, DATES; FISHING JOB DEPTHS, DATES; CAVING; ETC.)

SAMPLES AND CUTTINGS

will X / will not ___ / be available for examination by a member of the Virginia Geological Survey;
will X / will not ___ / be furnished the Virginia Geological Survey upon request;
will X / will not ___ / require sacks to be furnished by the Survey.

DRILLER'S LOG

Compiled by Thomas H. Biggs, Bartlett Energy Exploration, Inc.

<u>Geologic Age</u>	<u>Formation</u>	<u>General Lithology</u>	<u>Color</u>	<u>Depth (feet)</u>		<u>Thickness</u>	<u>Remarks</u>
				<u>Top</u>	<u>Bottom</u>		
Cambrian	Copper Ridge	Dolostone	Gray	surface	182'	182'	
	PINE MOUNTAIN FAULT	breccia	-		182'		
Silurian	Clinton	Siltstone	Vari-	182'	519'	337'	
Silurian	Poor Valley Ridge	Sandstone	white/ gray	519'	610'	91'	
Silurian	Hagan	Shale	Dk.Gray	610'	661'	51'	
Ordovician	Sequatchie	Limestone/ mudstone	red/gray	661'	952'	291'	
Ordovician	Reedsville	Shale	dk.gray	952'	1292'	340'	
Ordovician	Trenton	Limestone	gray	1292'	1870'	578'	oil @ 1725'
Ordovician	Eggleston	Limestone	gray/ brown	1870'	2000'	130'	
Ordovician	Hardy Creek	Limestone	brown	2000'	2128'	128'	
Ordovician	Ben Hur	Limestone	brown	2128'	2150'	inc.	

(All tops taken from electric logs, corrected to surface elevation)

(Complete on supplemental sheets as necessary.)

APPENDIX--TYPE D

API Well No. 45 - State County Permit

Date March 21, 19 83

Operator's Well No. #1 Morgan Hensley

APPENDIX TO REPORT OF COMPLETION OF WELL WORK ON A WELL DRILLED IN SEARCH OF OIL OR GAS

DISCOVERY OF OIL OR INDICATIONS THEREOF

Indicated potential flow before stimulation 0 BOD Gravity and grade

DISCOVERY OF GAS OR INDICATIONS THEREOF

Indicated potential flow before stimulation MCFD Rock pressure: psig hour test

RECORD OF STIMULATION

Full description of stimulation:

Zone 1: 1698'-1781' Formation: Trenton Limestone 10,000 gals. 15% retarded HCl with 38 perf balls; 36 perforations .39 dia. Breakdown 300 psig; Avg. Injection 1300 psig; Avg. Injection Rate 10 BPM; ISIP 750 psig; 15-Min. Shut-In NA psig.

Zone 2: Formation: Breakdown psig; Avg. Injection psig; Avg. Injection Rate BPM; ISIP psig; 15-Min. Shut-In psig.

Zone 3: Formation: Breakdown psig; Avg. Injection psig; Avg. Injection Rate BPM; ISIP psig; 15-Min. Shut-In psig.

Final production (check one) (X) after stimulation, () natural.

Table with 5 columns: BOD, MCFD, Hours Tested, Rock pressure psig., Hours Tested. Rows for Zone 1, Zone 2, Zone 3.

Final production if gas zones are comingled: MCFD, hours tested; psig, hours tested.