

Nora Q

(To be filled in by
Division of Mines)

COMMONWEALTH OF VIRGINIA
DEPARTMENT OF LABOR AND INDUSTRY

(To be filled in by
Division of Mines)

DICKENSON
County
ERVINTON
District
NORA QUAD
Map
D1-89
File

DIVISION OF MINES

BIG STONE GAP, VIRGINIA

DEEPENED
OIL AND GAS WELL COMPLETION REPORT
ABANDONMENT

Well No. P-10
Permit No. 17-2
Office No. D1-89
Location Plat

(This report and a copy of electrical log, if made, must
be submitted to the Division of Mines within 30 days after
abandonment or completion of well, as required by Section
45-113, Code of Virginia, 1950.)

Company Philadelphia Oil Company Address P. O. Box 313
Nora, Virginia 24272
Farm David Smith - Clinchfield Coal Co. Acres 789.42
County Dickenson District Ervinton
Well No. (Company) P-10 Elevation (ground surface) 1622.62 ft.

Location: (Give direction and distance in feet or tenths of a mile from two (2) location reference points or map coordinates shown on location plat or map previously filed with the Division of Mines or shown on quadrangle topographic map of area.)

1300 feet SW of Ervinton High School and
1900 feet SW of Open Fork Church

Surface of tract is owned in fee simple by Clinchfield Coal Company
Address Dante, Virginia
Mineral rights are owned by Clinchfield Coal Company
Address Dante, Virginia
Location made by Mr. B. C. Spradlin June 11, 1973
Drilling commenced 1-3-74 Drilling contractor Union Drilling, Incorporated
Drilling completed 1-24-74 Address P. O. Drawer 40, Buckhannon, W.Va. 26201

Well completed as gas well on April 11, 1974
oil

Well abandoned at - feet on - : Reason -
Well plugged on -, 19- Affidavit filed -, 19-
Total depth 4847 (KB) feet. Steel line measurement - feet.
Commenced producing on Not connected to pipeline, 19-

Oil Well
Initial production, oil: 1st 24 hours - bbls.; 2nd 24 hours - bbls.
After shot on - from - feet to - feet with - lbs. qts.
After shot on - from - feet to - feet with - lbs. qts.
1st 24 hours - bbls.; 2nd 24 hours - bbls. days
Settled production - bbls. per day after producing - weeks
Gravity and grade of oil -
Oil pays at (1) - feet to - feet. Oil shows at (1) - feet to - feet.
(2) - feet to - feet. (2) - feet to - feet.
(3) - feet to - feet. (3) - feet to - feet.
(4) - feet to - feet. (4) - feet to - feet.
Main production at - feet to - feet. (5) - feet to - feet.

Gas Well Gaged /10ths. Water in - inch.
Initial open flow, gas: /10ths. Mercury in - inch.
Volume 419 MCF cu. ft.
After shot on - from - feet to - feet with - lbs. qts.
After shot on - from - feet to - feet with - lbs. qts.
1st 24 hours - cu. ft., 2nd 24 hours - cu. ft.

Rock pressure: Initial lbs.; after hours lbs. days
 Settled production cu. ft. per day after producing weeks

Gas pays at (1) 4680 feet to 4772 feet. Gas shows at (1) feet to feet.
 (2) 2494 feet to 2502 feet. (2) feet to feet.
 (3) feet to feet. (3) feet to feet.
 (4) feet to feet. (4) feet to feet.
 Main production feet to feet. (5) feet to feet.

Final open flow Berea - 267 MCF Ravenscliff - 239 MCF Total - 506 MCF
 Fresh water at (1) feet, GPM; (2) feet, GPM; (3) feet, GPM.
 Salt water at (1) feet; (2) feet; (3) feet; (4) feet.
 Coal: from 429 feet inches to 434 feet inches; from 1819 feet inches to 1822 feet inches; from feet inches, to feet inches.
 Well acidized from feet to feet with (quantity) of acid.
 from feet to feet with (quantity) of acid.
 from feet to feet with (quantity) of acid.
 Remarks: Fractured Berea Formation 2-11-74 with 500 gal. MA, 2500 gals 28% Acid, 8,000# 20/40 sand & 21,000# 10/20 sand, 994 bbls. sand laden fluid from 4678' to 4768' through 19 perforations. Fractured Ravenscliff formation 2-11-74 with 500 gals. Acid 5000# 20/40 sand, 250 bbls. sand laden fluid from 2491-2501 through 11 perforations.

CASING AND TUBING				PACKERS		
SIZE	USED IN DRILLING	LEFT IN WELL	PERFORATED	KIND	SIZE	SET AT
(inch)	(feet)	(feet)	(feet) to (feet)			
13 3/8	337	337			NONE	
9 5/8	1964 (KB)	1964 (KB)				
4 1/2	4831 (KB)	4831 (KB)				
			Berea 4678-4768 19 perfs			
			Ravenscliff 2491-2501 11 perfs.			
2	4678	4678				
					NONE	

LINERS			
SIZE	USED IN DRILLING	LEFT IN WELL	PERFORATED
(inch)	(ft.)	(ft.)	(ft. to ft.)

Casing Cemented: 13 3/8 inch. from 337 feet to surface feet. Date 1-9-74
 9 5/8 inch. from 1964 feet to surface feet. Date 1-16-74
 4 1/2 inch. from 4831 feet to 1980 feet. Date 1-24-74

Remarks: (Shut down, depths, dates; fishing jobs, depths, dates; caving; other notes)
 Set frac over bridge plug at 4652'

Samples or cuttings will be available for examination by a member of the Virginia Geological Survey Yes (Yes) (No)
 Will be furnished the Virginia Geological Survey upon request Yes (Yes) (No), if sacks for same are furnished by the Survey Yes (Yes) (No)
 Survey Yes (Yes) (No)

Electrical log made ...X... or not made (check which).
 Copy furnished herewith or will be submitted on or by as soon as available 19.....
 Depths
 Gamma-Density Philadelphia Oil Company
 Temperature P. O. Box 431
 Prestonsburg, Kentucky

The operator requests that information given herein and log or logs be kept confidential for a period of ninety days after completion of the well covered by this report Yes (Yes) (No)

Well No. P-10

File No. DI-89

Permit No. 172

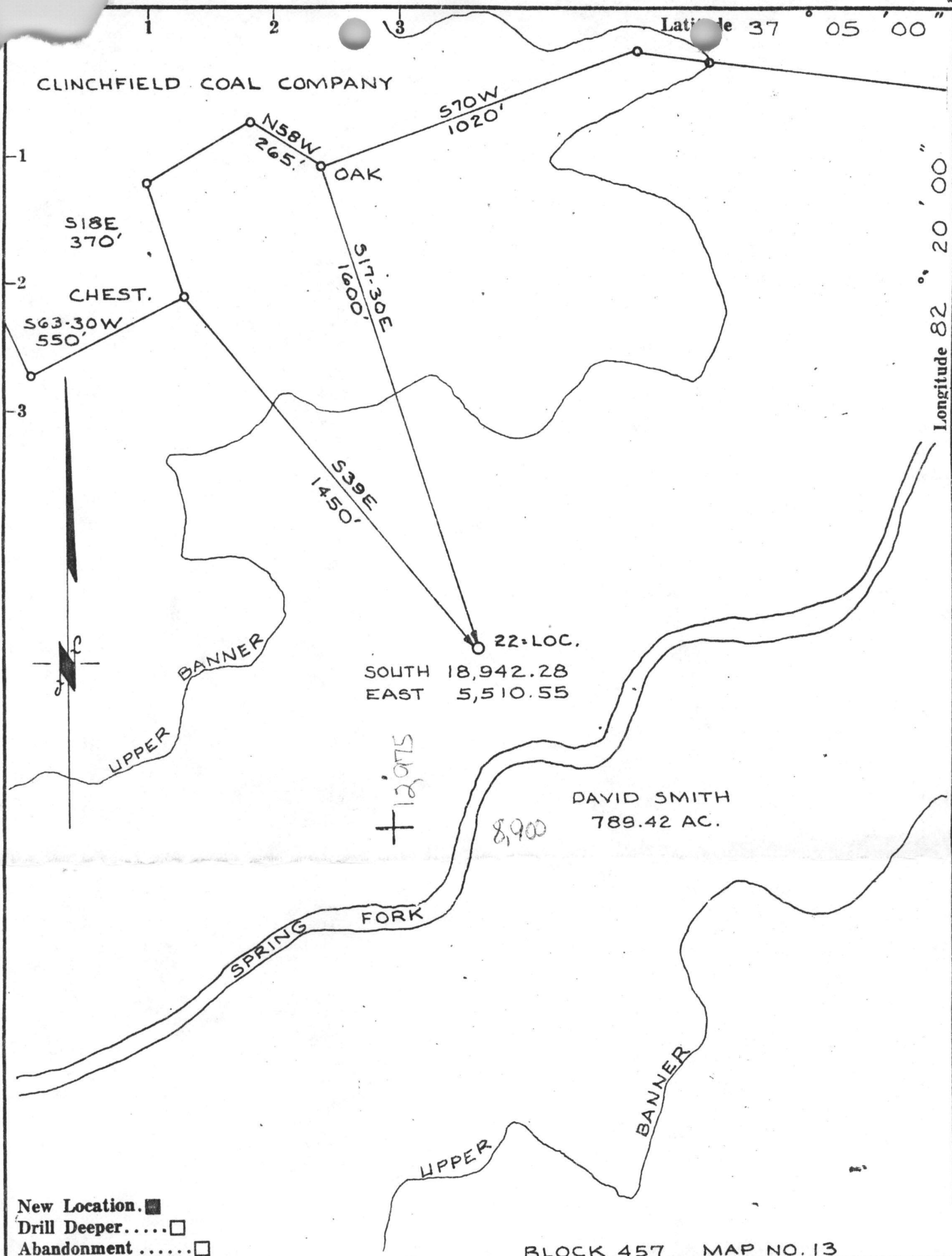
LOG

DI-89

Furnished by Date

Compiled by Date

SAMPLE No.	FORMATION	COLOR	HARD OR SOFT	TOP (feet)	BOTTOM (feet)	THICKNESS (feet)	REMARKS OIL, GAS, WATER DEPTHS SHUT DOWN FISHING, ETC.
	Surface soil			0	10	10	
	Sand			10	83	73	
	Shale			83	148	65	
	Broken Sand			148	180	32	
	Slate			180	250	70	
	Sand			250	310	60	
	Shale			310	395	85	
	Sand			395	429	34	
	Coal			429	435	6	
	Shale			435	523	88	
	Sand			523	570	37	
	Shale			570	670	100	
	Sand & Shale			670	850	180	
	Shale			850	1150	300	
	Sand			1150	1187	37	
	Shale			1187	1470	283	
	Broken Sand			1470	1819	349	
	Coal			1819	1822	3	
	Broken Sand			1822	1938	116	
	Red Rock			1938	1939	1	
	Sand			1939	1940	1	
	Red Rock			1940	2010	70	
	Shale			2010	2265	255	
	Broken Sand			2265	2350	85	
	Sand			2350	2730	380	
	Shale			2730	2780	50	
	Sand			2780	2910	130	
	Lime			2910	2955	45	
	Sand			2955	3060	105	
	Shale			3060	3400	340	
	Shale & Lime			3400	3450	50	
	Lime			3450	3463	13	
	Shale			3463	3530	67	
	Big Lime			3530	4025	495	
	Injun			4025	4100	75	
	Sand & Lime			4100	4290	190	
	Grey Shale			4290	4585	295	
	Brown Shale			4584	4664	79	
	Berea			4664	4778	114	
	Shale			4778	4840	62	
	Total Depth			4840			



New Location. ■
 Drill Deeper.....□
 Abandonment.....□

BLOCK 457 MAP NO. 13

Company	PHILADELPHIA OIL COMPANY
Address	PRESTONSBURG, KY.
Farm	DAVID SMITH
Tract	T-145 Acres 789.42 Lease No. P.O.-148
Well (Farm) No.	Serial No. P-10
Elevation (Spirit Level)	1622.62'
Quadrangle	NORA YA.
County	DICKENSON District ERVINTON
Engineer	Edward Owen Ray
Engineer's Registration No.	3084 L.S. 534- KY.
File No.	Drawing No.
Date	6-11-73 Scale 1"= 400'

COMMONWEALTH OF VIRGINIA
 DEPARTMENT OF LABOR & INDUSTRY
 DIVISION OF MINES
 BIG STONE GAP
WELL LOCATION MAP
 FILE NO. D1-89
 Well #P-10
 + Denotes location of well on United States Topographic Maps, scale 1 to 24,000, latitude and longitude lines being represented by border lines as shown.
 — Denotes one inch spaces on border line of original tracing.

(To be filled in by Division of Mines)

COMMONWEALTH OF VIRGINIA DEPARTMENT OF LABOR AND INDUSTRY

(To be filled in by Division of Mines)

DICKENSON County

DIVISION OF MINES

Well No. P-10

ERVINTON District

BIG STONE GAP, VIRGINIA

Permit No. 172

NORA Map

DEEPENED OIL AND GAS WELL COMPLETION REPORT ABANDONMENT

Office No.

Location Plat

DI-59 File

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Company Philadelphia Oil Company Address P. O. Box 313 Nora, Virginia 24272 Farm David Smith - Clinchfield Coal Co. Acres 789.42 County Dickenson District Ervinton Well No. (Company) P-10 Elevation (ground surface) 1622.62 ft.

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Surface of tract is owned in fee simple by Clinchfield Coal Company Dante, Virginia Address Clinchfield Coal Company Dante, Virginia Location made by Mr. B. C. Spradlin June 11, 1973 Drilling commenced 1-3-74 Drilling contractor Union Drilling, Incorporated Drilling completed 1-24-74 Address P. O. Drawer 40, Buckhannon, W.Va. 26201

Well completed as gas well on April 11, 1974

Well abandoned at feet on Reason Well plugged on 19 Affidavit filed 19 Total depth 4847 (KB) feet. Steel line measurement feet. Commenced producing on Not connected to pipeline 19

Oil Well Initial production, oil: 1st 24 hours bbls.; 2nd 24 hours bbls. After shot on from feet to feet with lbs. qts. After shot on from feet to feet with lbs. qts. 1st 24 hours bbls.; 2nd 24 hours bbls. days Settled production bbls. per day after producing weeks Gravity and grade of oil Oil pays at (1) feet to feet. Oil shows at (1) feet to feet. (2) feet to feet. (2) feet to feet. (3) feet to feet. (3) feet to feet. (4) feet to feet. (4) feet to feet. Main production at feet to feet. (5) feet to feet.

Gas Well Gaged /10ths. Water in inch. Initial open flow, gas: Volume 419 MCF cu. ft. /10ths. Mercury in inch. After shot on from feet to feet with lbs. qts. After shot on from feet to feet with lbs. qts. 1st 24 hours cu. ft., 2nd 24 hours cu. ft. Rock pressure: Initial lbs.; after hours lbs. days Settled production cu. ft. per day after producing weeks

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Final open flow - Berea - 267 MCF - Ravencliff - 239, Total - 506 MCF Fresh water at (1) feet, GPM; (2) feet, GPM; (3) feet, GPM. Salt water at (1) feet; (2) feet; (3) feet; (4) feet. Coal: from 429 feet inches to 434 feet inches; from 1819 feet inches to 1822 feet inches; from feet inches, to feet inches.

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Table with columns: CASING AND TUBING (SIZE, USED IN DRILLING, LEFT IN WELL, PERFORATED) and PACKERS (KIND, SIZE, SET AT). Includes rows for 13 3/8, 9 5/8, 4 1/2 inch casings and 2 inch casing.

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Remarks: (Shut down, depths, dates; fishing jobs, depths, dates; caving; other notes) Set frac over bridge plug at 4652'

Samples or cuttings will be available for examination by a member of the Virginia Geological Survey Yes (Yes) (No) Will be furnished the Virginia Geological Survey upon request Yes (Yes) (No), if sacks for same are furnished by the Survey Yes (Yes) (No) Electrical log made X or not made (check which). Copy furnished herewith or will be submitted on or by as soon as available, 19. Depths Gamma Density Philadelphia Oil Company Temperature P. O. Box 431 Prestonsburg, Kentucky 41653

The operator requests that information given herein and log or logs be kept confidential for a period of ninety days after completion of the well covered by this report Yes (Yes) (No)

Well No.

File No.

Permit No.

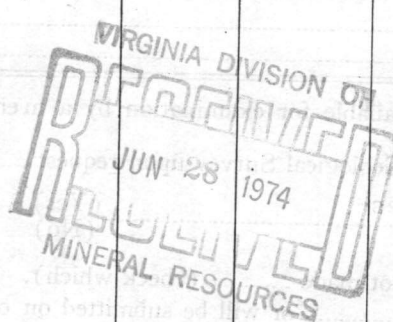
DEPARTMENT OF LABOR AND INDUSTRY

DIVISION OF MINES
LOG

Furnished by Date

Compiled by Date

SAMPLE No.	FORMATION	COLOR	HARD OR SOFT	TOP (feet)	BOTTOM (feet)	THICKNESS (feet)	REMARKS OIL, GAS, WATER DEPTHS SHUT DOWN FISHING, ETC.
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	Sand			2780	2910	130	
	Lime			2910	2955	45	
	Sand			2955	3060	105	
	Shale			3060	3400	340	
	Shale & Lime			3400	3450	50	
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	Brown Shale			4584	4664	79	
	Berea			4664	4778	114	
	Shale			4778	4840	62	
	Total Depth			4840			



THIS FORM MUST BE SIGNED BY AUTHORIZED PERSON:

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

INTERVAL SHEET

Page 1 of 5

Well Repository No: W-3896

Date rec'd: Date Processed: 6/9/74

Sample Interval: from 0 to: 4840'

PROPERTY: David Smith Well No. P-10

Number of samples: 471

COMPANY: Philadelphia Oil Co.

Total Depth: 4847' (KB)

COUNTY: Dickenson

✓ Oil or Gas: Water: Exploratory:

From-To	From-To	From-To	From-To
0 - 10	250 - 260	500 - 510	750 - 760
10 - 20	260 - 270	510 - 520	760 - 770
20 - 30	270 - 280	520 - 530	770 - 780
30 - 40	280 - 290	530 - 540	780 - 790
40 - 50	290 - 300	540 - 550	790 - 800
50 - 60	300 - 310	550 - 560	800 - 810
60 - 70	310 - 320	560 - 570	810 - 820
70 - 80	320 - 330	570 - 580	820 - 830
80 - 90	330 - 340	580 - 590	830 - 840
90 - 100	No Sample	590 - 600	840 - 850
100 - 110	350 - 360	600 - 610	850 - 860
110 - 120	360 - 370	610 - 620	860 - 870
120 - 130	370 - 380	620 - 630	870 - 880
130 - 140	380 - 390	No Sample	880 - 890
140 - 150	390 - 400	640 - 650	890 - 900
150 - 160	400 - 410	650 - 660	900 - 910
160 - 170	410 - 420	660 - 670	910 - 920
170 - 180	420 - 430	670 - 680	920 - 930
180 - 190	430 - 440	680 - 690	930 - 940
190 - 200	440 - 450	690 - 700	940 - 950
200 - 210	450 - 460	700 - 710	950 - 960
210 - 220	460 - 470	710 - 720	960 - 970
220 - 230	470 - 480	720 - 730	970 - 980
230 - 240	480 - 490	730 - 740	980 - 990
No Sample	490 - 500	740 - 750	990 - 1000

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

INTERVAL SHEET
 Continued

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Well Repository No.: W-3896

From-To	From-To	From-To	From-To
No Sample	1300 - 1310	1600-1610	1900 - 1910
1010 - 1020	1310 - 1320	1610-1620	1910 - 1920
1020 - 1030	1320 - 1330	1620-1630	1920 - 1930
1030 - 1040	1330 - 1340	1630-1640	1930 - 1940
1040 - 1050	1340 - 1350	1640-1650	1940 - 1950
1050 - 1060	1350 - 1360	1650-1660	1950 - 1960
1060 - 1070	1360 - 1370	1660-1670	1960 - 1970
1070 - 1080	1370 - 1380	1670-1680	1970 - 1980
1080 - 1090	1380 - 1390	1680-1690	1980 - 1990
No Sample	1390 - 1400	1690-1700	1990 - 2000
1100 - 1110	1400 - 1410	1700-1710	2000 - 2010
No Sample	1410 - 1420	1710-1720	2010 - 2020
1120 - 1130	1420 - 1430	1720-1730	2020 - 2030
1130 - 1140	1430 - 1440	1730-1740	2030 - 2040
1140 - 1150	1440 - 1450	1740-1750	2040 - 2050
1150 - 1160	No Sample	1750-1760	2050 - 2060
1160 - 1170	1460 - 1470	1760-1770	2060 - 2070
1170 - 1180	1470 - 1480	1770-1780	2070 - 2080
1180 - 1190	1480 - 1490	1780-1790	2080 - 2090
1190 - 1200	1490 - 1500	1790-1800	2090 - 2100
1200 - 1210	1500 - 1510	1800-1810	2100 - 2110
1210 - 1220	1510 - 1520	1810-1820	2110 - 2120
1220 - 1230	1520 - 1530	1820-1830	2120 - 2130
1230 - 1240	1530 - 1540	1830-1840	2130 - 2140
1240 - 1250	1540 - 1550	1840-1850	2140 - 2150
1250 - 1260	1550 - 1560	1850-1860	2150 - 2160
1260 - 1270	1560 - 1570	1860-1870	2160 - 2170
1270 - 1280	1570 - 1580	1870-1880	2170 - 2180
1280 - 1290	1580 - 1590	1880-1890	2180 - 2190
1290 - 1300	1590 - 1600	1890-1900	2190 - 2200

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

INTERVAL SHEET
 Continued

Page 3 of 5

Well Repository No.: W-3896

From-To	From-To	From-To	From-To
2200 - 2210	2500 - 2510	2800 - 2810	3100 - 3110
2210 - 2220	2510 - 2520	2810 - 2820	3110 - 3120
2220 - 2230	2520 - 2530	2820 - 2830	3120 - 3130
No Sample	2530 - 2540	2830 - 2840	3130 - 3140
2240 - 2250	2540 - 2550	2840 - 2850	3140 - 3150
2250 - 2260	2550 - 2560	2850 - 2860	3150 - 3160
2260 - 2270	2560 - 2570	2860 - 2870	3160 - 3170
2270 - 2280	2570 - 2580	2870 - 2880	3170 - 3180
No Sample	2580 - 2590	2880 - 2890	3180 - 3190
2290 - 2300	2590 - 2600	2890 - 2900	3190 - 3200
2300 - 2310	2600 - 2610	2900 - 2910	No Sample
2310 - 2320	2610 - 2620	2910 - 2920	No Sample
2320 - 2330	2620 - 2630	2920 - 2930	3220 - 3230
2330 - 2340	2630 - 2640	2930 - 2940	3230 - 3240
2340 - 2350	2640 - 2650	2940 - 2950	3240 - 3250
2350 - 2360	2650 - 2660	-	3250 - 3260
2360 - 2370	2660 - 2670	NO	3260 - 3270
2370 - 2380	2670 - 2680	-	3270 - 3280
2380 - 2390	2680 - 2690	Samples	3280 - 3290
2390 - 2400	2690 - 2700	2990 - 3000	3290 - 3300
2400 - 2410	2700 - 2710	3000 - 3010	3300 - 3310
2410 - 2420	2710 - 2720	3010 - 3020	3310 - 3320
2420 - 2430	2720 - 2730	3020 - 3030	3320 - 3330
2430 - 2440	2730 - 2740	3030 - 3040	3330 - 3340
2440 - 2450	2740 - 2750	3040 - 3050	3340 - 3350
2450 - 2460	No Samples	No Samples	3350 - 3360
2460 - 2470	No Samples	3060 - 3070	3360 - 3370
2470 - 2480	2770 - 2780	3070 - 3080	3370 - 3380
2480 - 2490	2780 - 2790	3080 - 3090	3380 - 3390
2490 - 2500	2790 - 2800	No Samples	3390 - 3400

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

INTERVAL SHEET
 Continued

Page 4 of 5

Well Repository No.: W-3896

From-To	From-To	From-To	From-To
3400 - 3410	3700 - 3710	4000-4010	4300 - 4310
3410 - 3420	3710 - 3720	4010-4020	4310 - 4320
3420 - 3430	3720 - 3730	4020-4030	4320 - 4330
3430 - 3440	3730 - 3740	4030-4040	4330 - 4340
3440 - 3450	3740 - 3750	4040-4050	4340 - 4350
3450 - 3460	3750 - 3760	4050-4060	4350 - 4360
3460 - 3470	3760 - 3770	4060-4070	4360 - 4370
3470 - 3480	3770 - 3780	4070-4080	4370 - 4380
3480 - 3490	3780 - 3790	4080-4090	4380 - 4390
3490 - 3500	3790 - 3800	4090-4100	4390 - 4400
3500 - 3510	3800 - 3810	4100-4110	4400 - 4410
3510 - 3520	3810 - 3820	4110-4120	4410 - 4420
3520 - 3530	3820 - 3830	4120-4130	4420 - 4430
3530 - 3540	3830 - 3840	4130-4140	4430 - 4440
3540 - 3550	3840 - 3850	4140-4150	4440 - 4450
3550 - 3560	3850 - 3860	4150-4160	4450 - 4460
3560 - 3570	3860 - 3870	4160-4170	4460 - 4470
3570 - 3580	3870 - 3880	4170-4180	4470 - 4480
3580 - 3590	3880 - 3890	4180-4190	4480 - 4490
3590 - 3600	3890 - 3900	4190-4200	4490 - 4500
3600 - 3610	3900 - 3910	4200-4210	No Sample
3610 - 3620	3910 - 3920	4210-4220	4510 - 4520
3620 - 3630	3920 - 3930	4220-4230	4520 - 4530
3630 - 3640	3930 - 3940	4230-4240	4530 - 4540
3640 - 3650	3940 - 3950	4240-4250	4540 - 4550
3650 - 3660	3950 - 3960	4250-4260	4550 - 4560
3660 - 3670	3960 - 3970	4260-4270	4560 - 4570
3670 - 3680	3970 - 3980	4270-4280	4570 - 4580
3680 - 3690	3980 - 3990	4280-4290	4580 - 4590
3690 - 3700	3990 - 4000	4290-4300	4590 - 4600

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

INTERVAL SHEET
 Continued

Page 5 of 5

Well Repository No.: W-3896

From-To	From-To	From-To	From-To
4600-4610	4790-4800	-	-
4610-4620	4800-4810	-	-
4620-4630	4810-4820	-	-
4630-4640	4820-4830	-	-
4640-4650	4830-4840	-	-
No Samples	-	-	-
No Samples	-	-	-
4670-4675	-	-	-
4675-4680	-	-	-
4680-4685	-	-	-
4685-4690	-	-	-
4690-4695	-	-	-
4695-4700	-	-	-
4700-4705	-	-	-
4705-4710	-	-	-
4710-4715	-	-	-
4715-4720	-	-	-
4720-4725	-	-	-
4725-4730	-	-	-
4730-4735	-	-	-
4735-4740	-	-	-
4740-4745	-	-	-
4745-4750	-	-	-
4750-4755	-	-	-
4755-4760	-	-	-
4760-4765	-	-	-
4765-4770	-	-	-
4770-4775	-	-	-
4775-4780	-	-	-
4780-4790	-	-	-

PHILADELPHIA OIL COMPANY

WELL NO. P-10
DAVID SMITH
ELEVATION - 1622.62

0- 10	Surface - coal waste, clay and soil
10- 20	Grey coarse grained orthoquartzitic sand
20- 30	Same
30- 40	"
40- 50	"
50- 60	"
60- 70	"
70- 80	"
80- 90	Grey fine grained Shale
90-100	Same
100-110	"
110-120	"
120-130	"
130-140	"
140-150	"
150-160	Grey orthoquartzitic sand and grey fine grained Shale.
160-170	Same
170-180	Same
180-190	Grey fine grained shale; few particles of orthoquartzitic sand

190-200	Grey fine grained Shale
200-210	Same
210-220	"
220-230	"
230-240	"
240-250	"
250-260	Grey coarse grained orthoquartzitic sand.
260-270	Same
270-280	"
280-290	"
290-300	"
300-310	"
310-320	Grey fine grained Shale
320-330	Same
330-340	"
340-350	"
350-360	"
360-370	"
370-380	"
380-390	"
390-400	Grey fine grained Shale and grey orthoquartzitic sand.
400-410	Grey coarse grained orthoquartzitic sand
410-420	Same
420-430	Same possible coal 420-434 - Few fragments of coal in sample

430-440	Grey fine grained Shale
440-450	Same
450-460	"
460-470	"
470-480	"
480-490	"
490-500	"
500-510	"
510-520	"
520-530	Grey orthoquartzitic coarse grained Sand
530-540	Same
540-550	"
550-560	"
560-570	"
570-580	Grey fine grained Shale
580-590	Same
590-600	"
600-610	"
610-620	"
620-630	"
630-640	"
640-650	"
650-660	Same
660-670	Same
670-680	Grey fine grained Shale; grey orthoquartzitic coarse grained sand.

680-690	Same
690-700	"
700-710	"
710-720	"
720-730	"
730-740	"
740-750	"
750-760	"
760-770	"
770-780	"
780-790	"
790-800	"
800-810	"
810-820	"
820-830	"
830-840	"
840-850	"
850-860	"
860-870	Grey fine grained Shale
870-880	Same
880-890	"
890-900	"
900-910	"
910-920	"

920- 930	Same
930- 940	"
940- 950	"
950- 960	"
960- 970	"
970 -980	"
980- 990	"
990-1000	Grey fine grained shale
100-1010	Same
1010-1020	"
1020-1030	"
1030-1040	"
1040-1050	"
1050-1060	" plus few fragments of coarse grained Sand
1060-1070	" "
1070-1080	" "
1080-1090	" No sand
1090-1100	" "
1100-1110	" "
1110-1120	" "
1120-1130	" "
1130-1140	" "
1140-1150	" "
1150-1160	Grey coarse grained orthoquartzitic sand
1160-1170	Same
1170-1180	"

1180-1190	Same
1190-1200	Grey fine grained Shale
1200-1210	Same
1210-1220	"
1220-1230	"
1230-1240	"
1240-1250	"
1250-1260	"
1260-1270	"
1270-1280	"
1280-1290	"
1290-1300	"
1300-1310	"
1310-1320	"
1320-1330	"
1330-1340	Grey fine grained Shale
1340-1350	Same
1350-1360	"
1360-1370	"
1370-1380	"
1380-1390	"
1390-1400	"
1400-1410	"
1410-1420	"
1410-1430	"
1430-1440	"

1440-1450	"
1450-1460	"
1460-1470	"
1470-1480	Grey, coarse grained orthoquartzitic sand and grey, fine grained shale.
1480-1490	Same
1490-1500	"
1500-1510	"
1510-1520	"
1520-1530	"
1530-1540	"
1540-1550	"
1550-1560	"
1560-1570	"
1570-1580	"
1580-1590	"
1590-1600	"
1600-1610	"
1610-1620	Grey, coarse grained orthoquartzitic sand.
1620-1630	Same
1630-1640	"
1640-1650	"
1650-1670	"
1670-1680	Grey, fine grained shale and grey, coarse grained orthoquartzitic sand.

1680-1690	Same
1690-1700	"
1700-1710	"
1710-1720	"
1720-1730	"
1730-1740	Grey, fine grained shale.
1740-1750	Same
1750-1760	"
1760-1770	"
1770-1780	" few fragments of orthoquartzitic sand.
1780-1790	Same
1790-1800	"
1800-1810	"
1810-1820	"
1820-1830	Grey, coarse grained sand; grey, fine grained shale; few small fragments of coal, possibly from 1819-1822.
1830-1840	Grey, coarse grained orthoquartzitic sand; grey, fine grained shale.
1840-1850	Same
1850-1860	"
1860-1870	Grey, fine grained shale; few small fragments of red rock.
1870-1880	Grey, fine grained shale; grey orthoquartzitic sand.
1880-1890	Same
1890-1900	"

1900-1920	"
1920-1930	"
1930-1940	" red rock approximately 1938-1940.
1940-1950	Red Rock, few fragments of grey orthoquartzitic sand.
1950-1960	Red Rock (no sand).
1960-1970	Same
1970-1980	"
1980-1990	"
1990-2000	Red Rock
2000-2010	Same
2010-2020	Grey, fine grained shale.
2020-2030	Same
2030-2040	"
2040-2050	"
2050-2060	"
2060-2070	"
2070-2080	"
2080-2090	"
2090-2100	"
2100-2110	"
2110-2120	"
2120-2130	"
2130-2140	"
2140-2150	"

2150 - 2160	Grey fine grained Shale
2160 - 2170	"
2170 - 2180	"
2180 - 2190	"
2190 - 2200	"
2200 - 2210	"
2210 - 2220	"
2220 - 2230	"
2230 - 2240	"
2240 - 2250	"
2250 - 2260	"
2260 - 2270	"
2270 - 2280	Grey fine grained Shale; grey and buff orthoquartzitic sand
2280 - 2290	Same
2290 - 2300	"
2300 - 2310	"
2310 - 2320	"
2320 - 2330	"
2330 - 2340	Same
2340 - 2350	"
2350 - 2360	Buff fine grained quartzitic sand
2360 - 2370	"
2370 - 2380	"

2380 - 2390	Same
2390 - 2400	"
2400 - 2410	"
2410 - 2420	"
2420 - 2430	"
2430 - 2440	"
2440 - 2450	"
2450 - 2460	"

PHILADELPHIA OIL COMPANY

WELL NO. P - 10 - MAXON PAY ZONE
(2500')

- 2460 - 2470 White crystalline quartzitic sand; grey fine grained Shale; Tan fine grained quartzitic sand; white crystalline lime highly reactive to hydrochloric acid, reddish-brown dolomitic material evident in the sand also visible porosity.
- 2470 - 2480 White crystalline lime; tan fine grained quartzitic sand; abundance of reddish brown dolomitic material. Grey massive dolomitic material.
- 2480 - 2490 White crystalline lime; tan fine grained quartzitic sand; grey massive dolomitic lime, reddish-brown dolomitic material.
- 2490 - 2500 Tan fine grained quartzitic sand; dark grey fine grained Shale; grey massive dolomite; abundance of reddish-brown dolomitic material; white calcitic lime, porosity is visible according to Schlumberger Temperature log this is a pay section.
- 2500 - 2510 Dark grey massive dolomite; few fragments of crystalline lime; many fragments exhibit evidence of dolomitization; few fragments of tan fine grained sand.
- 2510 - 2520 Same as 2500 - 2510
- 2520 - 2530 Grey massive dolomitic lime; white crystalline lime; tan fine grained quartzitic sand;
- 2530 - 2540 Grey dolomitic lime, white crystalline lime; tan fine grained quartzitic sand
- 2540 - 2550 White crystalline lime; tan fine grained quartzitic sand; reddish brown dolomitic residue on some fragments.

2550 - 2560	Grey orthoquartzitic sand; buff fine grained orthoquartzitic sand
2560 - 2570	Same
2570 - 2580	"
2580 - 2590	"
2590 - 2600	"
2600 - 2610	"
2610 - 2620	"
2620 - 2630	"
2630 - 2640	"
2640 - 2650	"
2650 - 2660	"
2660 - 2670	"
2670 - 2680	"
2680 - 2700	"
2700 - 2710	"
2710 - 2720	"
2720 - 2730	"
2730 - 2740	Grey fine grained Shale
2740 - 2750	Same
2750 - 2760	"
2760 - 2770	"
2770 - 2780	Grey fine grained Shale
2780 - 2790	Buff fine grained quartzitic sand

2790 - 2800	Same
2800 - 2810	"
2810 - 2820	"
2820 - 2830	"
2830 - 2840	"
2840 - 2850	"
2850 - 2860	"
2860 - 2870	"
2870 - 2880	"
2880 - 2890	"
2900 - 2910	"
2910 - 2920	Fine grained grey lime; grey fine grained Shale
2920 - 2930	Same
2930 - 2940	"
2940 - 2950	"
2950 - 2960	Buff fine grained quartzitic sand
2960 - 2970	Same
2970 - 2980	"
1980 - 2990	"
2990 - 3000	"
3000 - 3010	"
3010 - 3020	"
3020 - 3030	"
3030 - 3040	"

3040 - 3050	Same
3050 - 3060	"
3060 - 3070	Grey fine grained Shale
3070 - 3080	Same
3080 - 3090	"
3090 - 3100	"
3100 - 3110	"
3110 - 3120	"
3120 - 3130	Grey fine grained Shale
3130 - 3140	Same
3140 - 3150	"
3150 - 3160	"
3160 - 3170	"
3170 - 3180	"
3180 - 3190	"
3190 - 3200	"
3200 - 3210	"
3210 - 3220	"
3220 - 3230	"
3230 - 3240	"
3240 - 3250	"
3250 - 3260	"
3260 - 3270	"
3270 - 3280	"
3280 - 3290	"
3290 - 3300	"
3300 - 3310	"

3310 - 3320	Same
3320 - 3330	"
3330 - 3340	"
3340 - 3350	"
3350 - 3360	"
3360 - 3370	"
3370 - 3380	"
3380 - 3390	"
3390 - 3400	Grey fine grained Shale and grey fine grained lime
3400 - 3410	Same
3410 - 3420	"
3420 - 3430	"
3430 - 3440	"
3440 - 3450	"
3450 - 3460	Grey fine grained lime; few fragments of Shale
3460 - 3470	Same
3470 - 3480	Grey fine grained Shale
3480 - 3490	Same
3490 - 3500	"
3500 - 3510	"
3510 - 3520	"
3520 - 3530	Top of Big Lime 3530

PHILADELPHIA OIL COMPANY

WELL NO. P-10

BIG LIME SAMPLES - (3530 - 4020)

- 3520 - 3530 Grey fine grained Shale; grey massive lime, white fine grained calcitic matrix; grey fine grained quartzitic sand
- 3530 - 3540 Dark grey lime; few fragments of grey dolomitic lime; white calcitic lime.
- 3540 - 3550 Grey coarse grained lime; white fine grained calcitic matrix; few particles of white calcitic lime.
- 3550 - 3560 Grey massive lime; white fine grained calcitic lime; white crystalline lime; few particles show reddish brown dolomitic residue
- 3560 - 3570 Same as 3550 - 3560
- 3570 - 3580 Grey dolomitic lime, white fine grained calcitic matrix material; white crystalline lime; few fragments exhibit reddish-brown dolomitic material
- 3580 - 3590 Grey massive lime; grey dolomitic lime; white crystalline lime; no visible porosity
- 3590 - 3600 Same as 3580 - 3590
- 3600 - 3610 Grey dolomitic lime; white crystalline lime; few fragments of reddish-brown dolomitic material.
- 3610 - 3620 Same as 3600 - 3610
- 3620 - 3630 No sample
- 3630 - 3640 Light grey massive lime; grey dolomitic lime; white fine grained calcitic material; buff crystalline lime; no visible porosity.
- 3640 - 3650 Same as 3630 - 3640
- 3650 - 3660 Same as 3630 - 3640
- 3660 - 3670 Light grey massive lime; dark grey lime with white fine grained calcitic matrix; white crystalline lime; no visible porosity.

- 3670 - 3680 Light grey crystalline lime; white calcitic lime; no visible porosity
- 3680 - 3690 Dark grey dolomitic lime, white fine grained calcitic matrix; light grey crystalline lime; few particles exhibit reddish-brown dolomitic residue.
- 3690 - 3700 Same as 3680 - 3690
- 3700 - 3710 Grey dolomitic lime; white fine grained calcitic matrix; few fragments of white crystalline lime few particles of reddish-brown dolomitic residue that show porosity.
- 3710 - 3720 Same as 3700 - 3710
- 3720 - 3730 Same as 3700 - 3710
- 3730 - 3740 Grey dolomitic lime; grey massive lime; each have interfingerings of white fine grained calcitic material; few fragments of white crystalline lime; very little visible porosity.
- 3740 - 3750 Same as 3730 - 3740
- 3750 - 3760 Grey fine grained lime; white calcitic lime; little dolomitic material; no visible porosity
- 3760 - 3770 Same as 3750 - 3760
- 3770 - 3780 Grey massive dolomitic lime; grey fine grained lime with white calcitic matrix material; white crystalline lime; few particles of reddish-brown dolomitic material.
- 3780 - 3790 Grey massive lime; white fine grained calcitic lime; white crystalline lime; few particles show dolomitization and visible porosity.
- 3790 - 3800 Same as 3780 - 3790
- 3800 - 3810 " "
- 3810 - 3820 Grey massive lime; white calcitic lime, white crystalline lime; few particles show reddish-brown dolomitic residue
- 3820 - 3830 Same as 3810 - 3820
- 3830 - 3840 " "
- 3840 - 3850 Buff massive lime; white crystalline lime; white fine grained calcitic material; very little dolomitic material, no visible porosity

- 3850 - 3860 Same as 3840 - 3850; plus few fragments of reddish-brown dolomitic material which exhibit small amounts of porosity
- 3860 - 3870 Buff massive lime; white crystalline lime; white fine grained calcitic material, no visible porosity
- 3870 - 3880 Buff massive lime with white fine grained calcitic stringers throughout; white crystalline lime; few particles of reddish-brown dolomitic material which show porosity
- 3880 - 3890 Same as 3870 - 3880
- 3890 - 3900 Buff massive lime with stringers of white fine grained calcitic lime; white crystalline lime; no visible porosity.
- 3900 - 3910 Same as 3890 - 3900
- 3910 - 3920 Buff massive lime; white crystalline lime (more finely ground than above samples) white fine grained calcitic material
- 3920 - 3930 Same
- 3930 - 3940 Buff massive lime with stringers of white fine grained calcitic material; white crystalline lime; few particles of reddish-brown dolomitic material which exhibit visible porosity.
- 3940 - 3950 Same as 3930 - 3940
- 3950 - 3960 Same as 3930 - 3940
- 3960 - 3970 Buff massive lime with stringers of white fine grained calcitic lime; buff crystalline lime; few particles of reddish-brown dolomitic material which exhibit porosity.
- 3970 - 3980 Same as 3960 - 3970
- 3980 - 3990 Same
- 3990 - 4000 Buff massive lime with stringers of white fine grained calcitic lime; buff crystalline lime; white calcitic lime; few particles of reddish-brown dolomitic material which exhibit porosity.

4000 - 4010	Same
4010 - 4020	Grey massive lime with stringers of white fine grained calcitic material. Red fine grained quartzitic sand (Injun Sand) Bottom of Big Lime - 4020
4020 - 4030	Red fine grained Shale
4030 - 4040	Same
4040 - 4050	"
4050 - 4060	"
4060 - 4070	"
4070 - 4080	"
4080 - 4090	"
4090 - 4100	"
4100 - 4110	Grey orthoquartzitic sand; dark grey fine grained lime
4110 - 4120	Same
4120 - 4130	"
4140 - 4140	"
4140 - 4150	"
4150 - 4160	"
4160 - 4170	"
4170 - 4180	"
4180 - 4190	"
4190 - 4200	Same - plus small amounts of grey fine grained Shale
4200 - 4210	Same as 4190 - 4200
4210 - 4220	"
4220 - 4230	"
4230 - 4240	"

4240 - 4250	Same
4250 - 4260	"
4260 - 4270	"
4270 - 4280	"
4280 - 4290	"
4290 - 4300	Grey fine grained Shale
4300 - 4310	Same
4310 - 4320	"
4320 - 4330	"
4330 - 4340	"
4340 - 4350	"
4350 - 4360	"
4360 - 4370	Grey fine grained Shale
4370 - 4380	Same
4380 - 4390	"
4390 - 4400	"
4400 - 4410	"
4410 - 4420	"
4420 - 4430	"
4430 - 4440	"
4440 - 4450	"
4450 - 4460	"
4460 - 4470	"
4470 - 4480	"
4480 - 4490	"

PHILADELPHIA OIL COMPANY
WELL NO. P-10
BEREA SAMPLES
4664-4778

- 4665-4670 Grey fine grained shale; few fragments of grey fine grained quartzitic sand; (This sample not cut because of small amount caught)
- 4670-4675 Grey fine grained quartzitic sand; few fragments of grey dolomitic lime and white crystalline lime; few fragments exhibit reddish-brown dolomitic residue.
- 4675-4680 Grey fine grained quartzitic sand; few fragments of grey massive dolomitic lime; particles of reddish-brown dolomitic residue.
- 4680-4685 Grey fine grained quartzitic sand; few fragments of grey lime; abundant mica content; few particles exhibit reddish-brown dolomitic residue; most of the sand fragments contain fine grained white calcitic matrix material.
- 4685-4690 Grey fine grained quartzitic sand; abundant amount of reddish-brown dolomitic material; porosity visible in some fragments.
- 4690-4695 Grey fine grained quartzitic sand, white fine grained calcitic matrix, white crystalline lime fragments, very little dolomitic material.
- 4695-4700 Grey fine grained quartzitic sand; grey massive dolomitic lime; few fragments of white crystalline lime; few fragments show reddish-brown dolomitic residue.
- 4700-4705 Grey fine grained quartzitic sand; white calcitic lime; many fragments of reddish-brown dolomitic material.
- 4705-4710 Grey fine grained quartzitic sand; white crystalline lime; porosity noted in the lime particles; reddish-brown dolomitic residue and porosity in these fragments.

- 4710-4715 Same as 4705-4710
- 4715-4720 Grey fine grained quartzitic sand; grey fine grained Shale; white crystalline lime; fine grained white lime matrix material; reddish-brown dolomitic residue.
- 4720-4725 Grey fine grained quartzitic sand; grey fine grained Shale; light grey massive lime; white crystalline lime; reddish-brown dolomitic residue; fine grained white lime matrix material.
- 4725-4730 Grey fine grained quartzitic sand; grey fine grained Shale; abundant mica and white crystalline lime; fine grained white calcitic matrix; very little reddish-brown dolomitic material.
- 4730-4735 Same as 4725-4730
- 4735-4740 Grey fine grained quartzitic sand; white crystalline lime; reddish-brown dolomitic material.
- 4740-4745 Grey fine grained Sand; white crystalline lime; abundant mica and reddish-brown dolomitic material; porosity visible in dolomitic fragments. Fine grained white calcitic matrix material.
- 4745-4750 Same as 4740-4745
- 4750-4755 Grey fine grained quartzitic sand; white crystalline lime; reddish-brown dolomitic material; white fine grained calcitic matrix.
- 4755-4760 Same as 4750-4755
- 4760-4765 Grey fine grained quartzitic sand; white crystalline lime; reddish-brown dolomitic material, porosity visible in grains of dolomite.
- 4765-4770 Grey fine grained quartzitic sand; grey fine grained Shale; white crystalline lime; fine grained white calcitic matrix material; reddish-brown dolomitic material.
- 4770-4775 Grey fine grained quartzitic sand; white crystalline lime and white fine grained lime matrix material; abundant reddish-brown dolomitic residue and good porosity note in the dolomite.

4775-4780

Grey fine grained quartzitic sand; grey fine
grained Shale; reddish-brown dolomitic material
Bottom of Berea 4778

SUMMARY OF BEREA IN P-10

Gas pays noted by Schlumberger Temperature log occur throughout the entire 114' of Berea Sand. This is substantiated by the fact that every sample had a recognizable amount of lime and dolomitic material which is usually present in Berea pay zones.

4490 - 4500	Same
4500 - 4510	"
4510 - 4520	"
4520 - 4530	"
4530 - 4540	"
4540 - 4550	"
4550 - 4560	"
4560 - 4570	"
4570 - 4580	"
4580 - 4590	Grey and dark brown fine grained Shale
4590 - 4600	Same
4600 - 4610	"
4610 - 4620	"
4620 - 4630	"
4630 - 4640	"
4640 - 4650	"
4650 - 4660	"
4660 - 4664	" Top of Berea 4664'
4778 - 4780	Dark grey fine grained Shale
4780 - 4790	Same
4790 - 4800	"
4800 - 4810	"
4810 - 4820	"
4820 - 4830	"
4830 - 4840	"
4840	Total Depth - Gauged gas - 96/10 W - 2" - 413 M

OIL AND GAS WELL
SUMMARY REPORT

API No. 45-051-20142-00-03 VDMR Well Rep. No. W-3896
DMQ File No. DI-89

Operator PHILADELPHIA OIL COMPANY
Farm DAVID SMITH - CLINCHFIELD COAL COMPANY
Co. Well No. P-10

County DICKENSON Quadrangle NORA - 7-1/2'
Location (UTM) N 4,100,850; E 378,670 UTM Zone 17
(Lat. and Long.) _____
Field _____ Province APPALACHIAN PLATEAUS

Elev. (specify) 1622.62' GR. TD 4847' Form. at TD DEVONIAN SHALE
INITIAL FLOW - 419,000 CU. FT. Age DEVONIAN
Date compl. or abandoned APRIL 11, 1974
Result GAS WELL
Gas Shows _____
Gas Pays 4680' to 4772'; 2494' to 2502'
Main Production _____ Prod. Form. RAVEN CLIFF AND BEREA
Age MISSISSIPPIAN

Treatment: FRACTURED BEREA FORMATION ON 2-11-74 WITH 500 GALLONS OF MA, 25,000
GALLONS OF 28% ACID, 8,000 POUNDS OF 20/40 SAND AND 21,000 POUNDS OF 10/20
SAND 944 BARRELS OF SAND LADEN FLUID FROM 4678' to 4768' THROUGH 19 PERFORATIONS.
FRACTURED RAVENCLIFF FORMATION ON 2-11-74 WITH 500 GALLONS OF ACID, 5,000 POUNDS
Initial Production 20/40 SAND, 250 BARRELS OF SAND LADEN FLUID FROM 2491' to 2501'
FINAL FLOW - 506,000 CU. FT. THROUGH 11 PERFORATIONS.

Oil shows _____
Water FW _____ at _____ at _____ at _____
SW _____ at _____ at _____ at _____
Coal 429' to 435'; 1819' to 1822'

Plat X Plotted X Completion Report X
Drillers Log X Geologic Log _____
Samples X Interval Sheet X
Sample Interval 0' to 4840'
Remarks _____

Geophysical Logs S.P. _____ Res _____ Gamma _____ Neutron _____
Density _____ Sonic _____ Other _____

