

OIL AND GAS WELL
SUMMARY REPORT

API No. 45-051-20847-00-03 VDMR Well
Rep. No. W-6808
DMQ File No. DI-257

Operator PHILADELPHIA OIL COMPANY
Farm WILLIAM GREEN
Co. Well No. P-211

County DICKENSON Quadrangle CANEY RIDGE - 7 1/2'
Location (UTM) N4,106,520; E375,000 UTM Zone 17
(Lat. and Long.) _____

Field _____ Province APPALACHIAN PLATEAUS

Elev. (specify) 1856.29' GR TD 4790 Form. at TD DEVONIAN

INITIAL FLOW NONE Age DEVONIAN

Date compl. or abandoned MARCH 26, 1986

Result GAS WELL

Gas Shows _____

Gas Pays _____

Main Production _____ Prod. Form. _____

FINAL FLOW ON 492,000 CU. FT. Age _____

Treatment: BEREA-STIMULATED WITH A 75 QUALITY FOAM USING 298 BARRELS OF FLUID,
601,000 SCF OF N2 AND 55,000 POUNDS OF 20/40 SAND.

Initial Production _____

Oil shows _____

Water FW YES at 72' at _____ at _____
SW _____ at _____ at _____ at _____

Coal 46' TO 48'; 413' TO 415'; 800' TO 804'

Plat _____ Plotted _____ Completion Report x

Drillers Log x Geologic Log _____

Samples x Interval Sheet x

Sample Interval 2190' TO 4870'

Remarks _____

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

Density _____ Sonic _____ Other _____

Stratigraphic Data Source

BRINT CAMP

Formation	Top	Datum (Subsea)	Thickness
SAND AND SHALE	0	+1856.29	2510
RAVENCLIFF	2510	- 653.71	130
LITTLE STONE GAP	2640	- 783.71	48
SHALE	2688	- 831.71	272
MAXON	2960	-1103.71	312
SHALE	3272	-1415.71	146
LITTLE LIME	3418	-1561.71	102
LIME AND SHALE	3520	-1663.71	106
BIG LIME	3626	-1769.71	419
KEENER	4045	-2188.71	15
WEIR	4060	-2203.71	451
Remarks COFFEE SHALE	4511	-2754.71	85
BEREA	4596	-2739.71	72
BROWN SHALE	4668	-2811.71	122

References

Released to Open File: Completion JULY 10, 1986Samples YES

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

API WELL NO. 45 - 051 - 20847
State County Permit

Date: April 1, 1986
Operator's Well
Name William Green (P-211)

*PHILA. OIL
WILLIAM GREEN
P-211*

DD-257

VIRGINIA OIL AND GAS INSPECTOR
205 W. MAIN STREET
ABINGDON, VA 24210
703-628-8115

*CANEY RIDGE-7 1/2
SUR. EL.-1856.29
DI-257*



REPORT OF COMPLETION OF WELL WORK

Pursuant to Regulation 4.06 of the Regulations under the Virginia Oil and Gas Act, the undersigned well operator reports completion of the type(s) of well work specified below on the referenced well in Ervington District, Dickenson County, Virginia on 26 day, 3 month, 19 86.

WELL TYPE: Oil ___/ Gas X/ Enhanced recovery ___/ waste Disposal ___/ If "Gas", Production X/ Underground Storage ___/ Exempt by Code Section 45.1-300.B.1. from general oil and gas conservation law: yes ___/ no ___/ WELL WORK: Drill X/ Deepen ___/ Redrill ___/ Stimulate ___/ Plug off old formation ___/ Perforate new formation ___/ Plug ___/ Replug ___/ Other physical change in well (specify _____)

The well work was done as shown in the Appendix(es) applicable to the type(s) of well work involved.

CONFIDENTIALITY STATUS UNDER CODE OF VIRGINIA SECTION 45.1-332.

- X Ninety days from the filing of this report OR
- Two years from _____, 19____, the date on which the referenced well was COMPLETED, the well being an exploratory well as defined in Code of Virginia Section 45.1-288.21.

APPLICANT: Philadelphia Oil Company
BY Brint Camp
ITS District Geologist
ADDRESS 1101 N. Eastman Rd., Kingsport, TN 37664
TELEPHONE 615-246-4332

Form 16
Appendix A, Sheet 1 (Reverse)
Continued from Obverse side

OTHER GENERAL INFORMATION

An electric log survey was ___/ was not ___/ conducted pursuant to Code of Virginia Section 45.1-333.B.2, at the coal owner's or operator's request.

An electric log survey was X/ was not ___/ run for other purposes. This survey did ___/ did not X/ disclose the vertical location of a coal seam.

Note: If a coal seam was located, the part of the survey from the surface through the coal is attached in accordance with Code of Virginia Section 45.1-333.B.3.

Deviation surveys were X/ were not ___/ required under Code of Virginia Section 45.1-333.C "to the bottom of the lowest published coal seam depth."

Note: If deviation surveys were required, the survey results are attached.

A continuous survey was ___/ was not X/ required under Code of Virginia Section 45.1-333.C.

Note: If a continuous directional survey was required, the survey results are attached.

CHANGES IN THE PERMITTED WELL WORK

The well operator did ___/ did not X/ make any change(s) in the permitted well work, verbally approved by the Inspector or Assistant Inspector under Regulation 4.03 of the Regulations under the Virginia Oil and Gas Act, for the purpose of insuring successful completion of the well work.

Note: The nature and purpose of each such change, if any, is set out below or on additional sheets if such are required.

FORM 16
APPENDIX A,
SHEET 1, (OBVERSE)

API WELL NO. 45 - 051 - 20847
State County Permit
Date: April 1, 1986
Operator's Well
Name William Green (P-211)

REPORT OF COMPLETION OF WELL WORK
IF DRILLING, REDRILLING, OR DEEPENING IS INVOLVED

DRILLING CONTRACTOR Union Drilling, Inc.
ADDRESS P. O. Drawer 40, Buchannon, WV 26201
TELEPHONE 304-472-4610

GEOLOGICAL TARGET FORMATION Berea
DEPTH OF COMPLETED WELL 4790 FEET
DATE DRILLING COMMENCED 2/27/86
DATE DRILLING COMPLETED 3/7/86
DRILLING RIG: ROTARY X / CABLE TOOL /

GEOLOGICAL DATA Depth Thickness
 Top Bottom

Fresh Water 72'

Salt water

Coal Seams 46-48
 413-415
 800-804

Name MINING IN AREA
 Yes ~~XXX~~ ~~XXXXXX~~ ~~XXXX~~

Oil Formation

Gas Formation

The data on depth of strata is based on the source(s) checked below:

- Applicant's own drilling experience in the area
- Information supplied by the coal operator in the area
- Information already in possession of the Inspector
- Other (as follows) _____

CASING AND TUBING PROGRAM

PRELIMINARY INFORMATION

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

	SIZE	TOP	BOTTOM	LENGTH	PERFORATIONS FROM TO
<u>CONDUCTOR:</u>	16"	0	19'	19'	
	11 3/4"	0	398'	398'	
<u>CASING CIRCULATED AND CEMENTED IN TO SURFACE:</u>	8 5/8"	0	2095'	2095'	
<u>COAL PROTECTION CASING SET UNDER SPECIAL RULE OF CODE OF VIRGINIA 45.1-334.B:</u>					
<u>OTHER CASING AND TUBING LEFT IN WELL;</u>	4 1/2"	0	4734'	4734'	4610-4666
	1 1/2"	0	4641'	4641'	

LINERS LEFT IN WELL UNDER
CODE OF VIRGINIA SECTION
45.1-336 OR OTHERWISE:

PACKERS OR BRIDGE PLUGS: KIND SIZE SET AT

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 DIVISION OF MINERAL RESOURCES
WILL X WILL NOT ___ BE FURNISHED THE VIRGINIA DIVISION OF MINERAL
RESOURCES UPON REQUEST
WILL ___ WILL NOT X REQUIRE SACKS TO BE FURNISHED BY THE VIRGINIA
DIVISION OF MINERAL RESOURCES.

DRILLER'S LOG

Compiled by Brint Camp

Geolo- gical Age	Formation	General Lithology	Color	Depth (feet)		Thickness	Remarks
				Top	Bottom		
Pennsylvanian	Sand & Shale			0	2510	2510	
Mississippian	Ravencliff			2510	2640	130	
"	Little Stone			2640	2688	48	
"	Shale			2688	2960	272	
"	Maxon Sands			2960	3272	312	
"	Shale			3272	3418	146	
"	Little Lime			3418	3520	102	
"	Lime and Shale			3520	3626	106	
"	Big Lime			3626	4045	419	
"	Keener			4045	4060	15	
"	Weir			4060	4511	451	
"	Coffee Shale			4511	4596	85	
"	Berea			4596	4668	72	
Devonian	Brown Shale			4668	4790	122	
	Logger's Total Depth				4790		

Complete on supplemental sheet as necessary

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 --- BOD
Gravity and grade: _____

DISCOVERY OF GAS OR INDICATIONS THEREOF

Indicated potential flow before stimulation --- MCFD
Rock pressure: N/A psig N/A hour test

RECORD OF STIMULATION

Full description of stimulation:

Zone 1: Berea Formation
was stimulated with a 75 Q foam using 298 BBL fluid, 601,000
Scf N₂ and 55,000# 20/40 sand.

Perforated 4610-4666 # Perfs. 17 Perf. Size .50
Breakdown 1900 psig. Avg. Injection _____ psig.
Avg. I.R. 11 BPM Init. S.I.P. 1800 psig 15 Min. S.I.P. _____ psig

Zone 2: _____ Formation

Perforated _____ # Perfs. _____ Perf. Size _____
Breakdown _____ psig. Avg. Injection _____ psig.
Avg. I.R. _____ BPM Init. S.I.P. _____ psig 15 Min. S.I.P. _____ psig

Zone 3: _____ Formation

Perforated _____ # Perfs. _____ Perf. Size _____
Breakdown _____ psig. Avg. Injection _____ psig.
Avg. I.R. _____ BPM Init. S.I.P. _____ psig 15 Min. S.I.P. _____ psig

Final production () natural (X) after stimulation

	BOD	MCFD	Hours Tested	Rock Pressure	Hours Tested
Zone 1:	<u>--</u>	<u>492</u>	<u>6</u>	<u>700</u>	<u>48</u>
Zone 2:	<u>_____</u>	<u>_____</u>	<u>_____</u>	<u>_____</u>	<u>_____</u>
Zone 3:	<u>_____</u>	<u>_____</u>	<u>_____</u>	<u>_____</u>	<u>_____</u>

Final production if gas zones are combined: _____ MCFD

_____ hours tested: _____ psig. _____ hours tested

DIRECTIONAL SURVEY

P-211

<u>DEPTH</u>	<u>DEGREES</u>
165	1/2
533	3/4
931	3/4
1243	0
1776	1/2
2054	1/2

DF-257

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

Date: November 8, 19 85

Operator's Well No. P-211

VIRGINIA OIL AND GAS INSPECTOR
DEPARTMENT OF LABOR AND INDUSTRY
DIVISION OF MINES
OIL AND GAS SECTION
205 W. MAIN STREET
ABINGDON, VIRGINIA 24210
PHONE 703 628-8115

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 X / updated /

This plat is X / is not / based on a mine coordinate system established for the areas of the well location.

Well operator Philadelphia Oil

Address 1101 N. Eastman Road Kingsport, Tenn
Farm William Green 37664
Tract T-48 Acres 378.32 Lease No. PO-148
Elevation 1856.29
Quadrangle Caney Ridge
County Dickenson District Ervinton
Registered Engineer Registration No.
Certified Land Surveyor ✓ Cert. No. Gr. 871
File No. Drawing No.
Date 11-8-85 Scale 1"=400'

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.

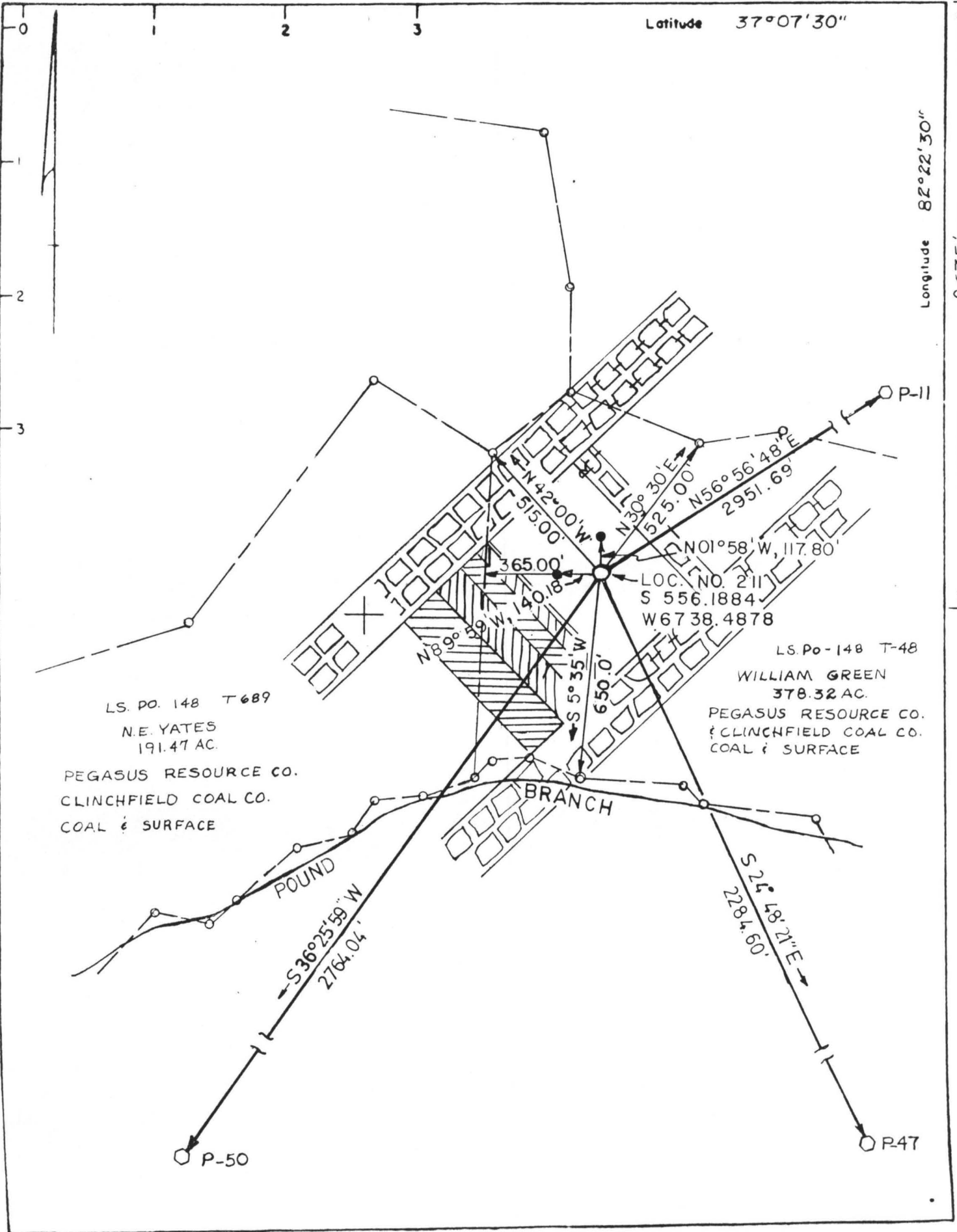
Lutley C. King, Jr. #871
Registered Engineer or Certified Land Surveyor
in Charge

9200'

Latitude 37°07'30"

Longitude 82°22'30"

9675'



LS. PO. 148 T 689
 N.E. YATES
 191.47 AC.

PEGASUS RESOURCE CO.
 CLINCHFIELD COAL CO.
 COAL & SURFACE

LS. PO-148 T-48
 WILLIAM GREEN
 378.32 AC.
 PEGASUS RESOURCE CO.
 & CLINCHFIELD COAL CO.
 COAL & SURFACE

P-50

P-47

P-11

LOC. NO. 211
 S 556.1884
 W 6738.4878

BRANCH

POUND

N 42°00' W 515.00'

N 30°30' E 525.00'

N 56°56'48" E 2951.69'

N 01°58' W 117.80'

N 8°9' 19" W 140.18'

S 5°35' W 650.0'

S 25°48'21" E 2284.60'

S 36°25'59" W 2764.04'

365.00'

0
1
2
3

DI-257

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

INTERVAL SHEET

Page 1 of 2

Well Repository No.: W-6808

Date rec'd: 4/22/86 Date Processed: 4/22/86

Sample Interval: from 2190 to: 4870

PROPERTY: William Green P-211

Number of samples: 251

COMPANY: Philadelphia Oil Company

Total Depth: 4870

COUNTY: Dickenson

Oil or Gas: XXX Water: Exploratory:

From-To	From-To	From-To	From-To	From-To
2190 - 2200	2490 - 2500	2790 - 2800	3100 - 3110	3370 - 3380
2200 - 2210	2500 - 2510	2800 - 2810	3110 - 3120	3380 - 3390
2210 - 2220	2510 - 2520	2810 - 2820	3120 - 3130	3390 - 3400
2220 - 2230	2520 - 2530	XXXX - XXXX	3130 - 3140	3400 - 3410
2230 - 2240	2530 - 2540	2840 - 2850	3140 - 3150	3400 - 3410
2240 - 2250	2540 - 2550	2850 - 2860	3150 - 3160	3410 - 3420
2250 - 2260	2550 - 2560	2860 - 2870	3160 - 3170	3420 - 3430
2260 - 2270	2560 - 2570	2870 - 2880	3160 - 3170	3430 - 3440
2270 - 2280	2570 - 2580	XXXX - XXXX	3170 - 3180	3440 - 3450
2280 - 2290	2580 - 2590	2890 - 2900	3170 - 3180	3450 - 3460
2290 - 2300	2590 - 2600	2900 - 2910	3180 - 3190	3460 - 3470
2300 - 2310	2600 - 2610	2910 - 2920	3180 - 3190	3470 - 3480
2310 - 2320	2610 - 2620	2920 - 2930	3190 - 3200	3480 - 3490
2320 - 2330	2620 - 2630	2930 - 2940	3200 - 3210	3490 - 3500
2330 - 2340	2630 - 2640	2940 - 2950	3210 - 3220	3500 - 3510
2340 - 2350	2640 - 2650	2950 - 2960	3220 - 3230	3510 - 3520
2350 - 2360	2650 - 2660	2960 - 2970	3230 - 3240	3520 - 3530
2360 - 2370	2660 - 2670	2970 - 2980	3240 - 3250	3530 - 3540
2370 - 2380	2670 - 2680	2980 - 2990	3250 - 3260	3540 - 3550
2380 - 2390	2680 - 2690	2990 - 3000	3260 - 3270	3550 - 3560
XXXX - XXXX	2690 - 2700	3000 - 3010	3270 - 3280	3560 - 3570
2400 - 2410	XXXX - XXXX	3010 - 3020	3280 - 3290	3570 - 3580
2410 - 2420	2710 - 2720	3020 - 3030	3290 - 3300	3580 - 3590
2420 - 2430	2720 - 2730	3030 - 3040	3300 - 3310	3590 - 3600
XXXX - XXXX	2730 - 2740	3040 - 3050	3310 - 3320	3600 - 3610
2440 - 2450	2740 - 2750	3050 - 3060	3320 - 3330	3610 - 3620
2450 - 2460	2750 - 2760	3060 - 3070	3330 - 3340	3620 - 3630
2460 - 2470	2760 - 2770	3070 - 3080	3340 - 3350	3630 - 3640
2470 - 2480	2770 - 2780	3080 - 3090	3350 - 3360	3640 - 3650
2480 - 2490	2780 - 2790	3090 - 3100	3360 - 3370	3650 - 3660

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

INTERVAL SHEET
Continued

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Well Repository No.: W-6808

From-To	From-To	From-To	From-To	From-To
3660 - 3670	4040 - 4050	4410 - 4420	-	-
3670 - 3680	4050 - 4060	4420 - 4430	-	-
3680 - 3690	4060 - 4070	4430 - 4440	-	-
3690 - 3700	4070 - 4080	4440 - 4450	-	-
3700 - 3710	4080 - 4090	XXXX - XXXX	-	-
3710 - 3720	4090 - 4100	4480 - 4490	-	-
XXXX - XXXX	4100 - 4110	4490 - 4500	-	-
3730 - 3740	4110 - 4120	4500 - 4510	-	-
3740 - 3750	4120 - 4130	XXXX - XXXX	-	-
3750 - 3760	4130 - 4140	4520 - 4530	-	-
3750 - 3760	4140 - 4150	XXXX - XXXX	-	-
XXXX - XXXX	4150 - 4160	4540 - 4550	-	-
3780 - 3790	4160 - 4170	4550 - 4560	-	-
3790 - 3800	4170 - 4180	XXXX - XXXX	-	-
3800 - 3810	4170 - 4180	4570 - 4580	-	-
3810 - 3820	4180 - 4190	4580 - 4590	-	-
3820 - 3830	4190 - 4200	4590 - 4600	-	-
3830 - 3840	XXXX - XXXX	XXXX - XXXX	-	-
3840 - 3850	4210 - 4220	4610 - 4620	-	-
3850 - 3860	4220 - 4230	4620 - 4630	-	-
3860 - 3870	4230 - 4240	4630 - 4640	-	-
3870 - 3880	4240 - 4250	4640 - 4650	-	-
3880 - 3890	4250 - 4260	4650 - 4660	-	-
3890 - 3900	4260 - 4270	4660 - 4670	-	-
XXXX - XXXX	4270 - 4280	4670 - 4680	-	-
3910 - 3920	4280 - 4290	4680 - 4690	-	-
3920 - 3930	4290 - 4300	4690 - 4700	-	-
3930 - 3940	4300 - 4310	4700 - 4710	-	-
3940 - 3950	4300 - 4310	4710 - 4720	-	-
3950 - 3960	4310 - 4320	4720 - 4730	-	-
3960 - 3970	4320 - 4330	4730 - 4740	-	-
3970 - 3980	4330 - 4340	4740 - 4750	-	-
3980 - 3990	4330 - 4340	4750 - 4760	-	-
3990 - 4000	4340 - 4350	4760 - 4770	-	-
4000 - 4010	4350 - 4360	4770 - 4780	-	-
4000 - 4010	4360 - 4370	XXXX - XXXX	-	-
4000 - 4010	XXXX - XXXX	4860 - 4870	-	-
4010 - 4020	4380 - 4390	-	-	-
4020 - 4030	4390 - 4400	-	-	-
4030 - 4040	4400 - 4410	-	-	-