

API NO. 45-105-21204
 WELL NAME: 8830
 DATE May 2, 1989

Virginia Oil and Gas Inspector
 P. O. Box 1416
 Abingdon, VA 24210
 703 628-8115

LE-164

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 Rose Hill District
Lee County, Virginia on 7th day, March month, 19 89.

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 X /
 WELL WORK: Drill X / Deepen ___ / Redrill ___ / Stimulate X / Plug Off Old Formation ___ / Perforate New Formation X /
 Plug X / 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

_____ Ninety days from the filing of this report

OR

X Two years from March 7, 1989, 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 Penn Virginia Resources Corporation

BY William M. Ryan *William M. Ryan*

ITS Senior Geologist

ADDRESS P.O. Box 386, Duffield, VA 24244

TELEPHONE (703) 431-2831



COMPLETION REPORT

WELL TYPE: Oil () Gas Production (X) Gas-Underground Storage () Enhanced Recovery () Waste Disposal ()

LOCATION

COUNTY Lee

DISTRICT Rose Hill

SURFACE ELEVATION: 1458.99'

QUADRANGLE Rose Hill

LATITUDE 14,900 'S 36° 40'

LONGITUDE 8,075 'W 83° 20'

DRILLING DATA

DATE DRILLING COMMENCED 1/6/89
 DATE DRILLING COMPLETED 1/19/89
 DATE WELL COMPLETED 3/6/89
 TOTAL DEPTH OF COMPLETED WELL 3692'

DRILLING CONTRACTOR Ray Resources Division
 ADDRESS P.O. Box 909, Poca, WV 25159
 TELEPHONE NUMBER (304) 755-8383
 RIG TYPE X ROTARY _____ CABLE TOOL _____

GEOLOGICAL DATA

FRESH WATER AT (1) None FEET _____ GPM: (2) _____ FEET _____ GPM
 SALT WATER AT (1) None FEET _____ GPM: (2) _____ FEET _____ GPM

COAL SEAMS:

NAME	TOP	BOTTOM	THICKNESS	MINING IN AREA		MINED OUT
				YES	NO	

OIL AND GAS SHOWS:

FORMATION	TOP	BOTTOM	THICKNESS	IFF (MCFD/EGFD)	PRESSURE	HOURS TESTED
<u>Trenton</u>	<u>1320'</u>	<u>1892'</u>	<u>572'</u>	<u>Slight Show Oil at 1500 & 1594'</u>	<u>Not Tested</u>	<u>Not Tested</u>

STIMULATION RECORD

ZONE (1) Stones River FORMATION STIMULATED WITH 4,000 gallons of 28% HCl and overflushed with 100 bbls. of treated water

PERFORATED 3004' TO 3096' NO. OF PERFORATIONS 50 PERFORATION SIZE .38
 FORMATION BROKE DOWN AT 2905 PSIG AVERAGE INJECTED RATE 8 BPM
 INITIAL SHUT IN PRESSURE 2833 PSIG 10 MINUTE SHUT IN PRESSURE 2421 PSIG

STIMULATION RECORD

ZONE (2) _____ FORMATION STIMULATED WITH _____

PERFORATED _____ TO _____ NO. OF PERFORATIONS _____ PERFORATION SIZE _____
 FORMATION BROKE DOWN AT _____ PSIG AVERAGE INJECTED RATE _____ BPM
 INITIAL SHUT IN PRESSURE _____ PSIG _____ MINUTE SHUT IN PRESSURE _____ PSIG

FINAL PRODUCTION: () NATURAL () AFTER STIMULATION

ZONE	EGD	MCFD	HOURS TESTED	ROCK PRESSURE	HOURS TESTED
ZONE (1)	<u>Show</u>	<u>75</u>	<u>6</u>		
ZONE (2)					

FINAL PRODUCTION IF GAS ZONES ARE COMBINED _____ MCFD _____ HOURS TESTED _____ PSIG _____ HOURS TESTED

CASING AND TUBING

	SIZE	TOP	BOTTOM	LENGTH	PERFORATIONS	PACKERS OR BRIDGE PLUGS		
					FEET TO FEET	KIND	SIZE	SET AT
CONDUCTOR	20"	0'	20'	20'				
CASING Circulated and Cemented to Surface								
WATER PROTECTION (Casing Set According to Section 45.1-334)	10 3/4"	0'	378'	378'				
COAL PROTECTION (Casing Set According to Section 45.1-334)	4 1/2"	0'	3264'	3264'				
OTHER CASING AND Tubing Left In Well								
LINERS Remaining in well								
OTHER used and not left								

Is the well underlain by Red Shales _____ Yes X No, If Yes, was coal protection string set to Red Shales?
 _____ Yes _____ No

REMARKS: Shut down, fishing jobs, depths and dates, caving, etc.

DRILLER'S LOG

Compiled by William M. Ryan

Geological Age	Formation	General Lithology	Color	Depth		Thickness	Remarks
				Top	Bottom		

(ATTACH DRILLER'S LOG IN THIS FORMAT)

<u>AGE</u>	<u>FORMATION</u>	<u>LITHOLOGY</u>	<u>COLOR</u>	<u>TOP</u>	<u>BOTTOM</u>	<u>THICKNESS</u>
Cambrian		Dolomite	Gray	0'	220'	220'
Silurian	Clinton	Shale	Red & Gray	220'	450'	230'
Silurian	Clinch	Sand	Gray & White	450'	565'	115'
Silurian	Hagan	Shale	Gray	565'	620'	55'
Ordovician	Sequatchie	Siltstone & Limestone	Gray	620'	930'	310'
Ordovician	Reedsville	Limestone & Shale	Gray	930'	1320'	390'
Ordovician	Trenton	Limestone	Gray	1320'	1842'	522'
Ordovician	Eggleston	Limestone	Gray	1842'	2056'	214'
Ordovician	Stones River	Limestone	Gray	2056'	3354'	1298'
Ordovician	Knox	Dolomite	Gray	3354'	3692'	338'

Samples and Cuttings

Will Will not _____ be available for examination by a member of the Virginia Division of Mineral Resources
Will Will not _____ be furnished to the Virginia Division of Mineral Resources upon request
Will _____ Will not require sacks to be furnished by the Virginia Division of Mineral Resources

Electric Logs and Surveys:

Type of Electric Log(s) Ran: LDT/SNP/GR, Cyberlook, Induction, Audio/Temp

Did log disclose vertical location of a coal seam? Yes _____ No N/A

Was log made at request of coal owner according to Section 45.1-333.B.1 of the Virginia Code? Yes _____ No N/A

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

Deviation Surveys:

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

Note: If a deviation survey(s) was/were required, the survey results are as follows:

<u>Depth of Survey</u>	<u>Feet/Degree Deviated From True Vertical</u>	<u>Depth of Survey</u>	<u>Feet/Degree Deviated From True Vertical</u>	<u>Depth of Survey</u>	<u>Feet/Degree Deviated From True Vertical</u>
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____

A continuous survey was _____ was not required, under Section 45.1-333.C of the Virginia Code.

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

Changes in the Permitted Well Work:

The well operator did _____ did not make any changes(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.

Confidentiality Status:

Confidentiality status under Section 45.1-332 of the Virginia Codes

The operator requests that information herein and log(s) be kept confidential (after COMPLETION DATE of the well) for a period of

_____ Ninety (90) days
 two (2) years, if the well is exploratory

PLUGGING AFFIDAVIT

STATE OF Virginia
COUNTY OF Scott, TO-WIT:
Larry Vleinckx AND William M. Ryan

being first duly sworn, depose and say that:

They are both experienced in the plugging of wells and participated in the plugging work which is the subject of this Affidavit on the referenced well.

THE PLUGGING WORK WAS FOR THE PURPOSE CHECKED BELOW:

- At the end of production or other use
- After drilling, re-drilling or deepening was unsuccessful, so that the well was plugged on the verbal permission of the Inspector or his designated representative under Code of Virginia Section 45.1-311.C.9.
- Partial plugging from the bottom of the hole to _____ feet below the surface, and continued operation by the well operator.
- Partial plugging from the bottom of the hole to _____ feet below the surface, for development as a water well under Section 45.1-350.
- Replug

THE MANNER OF PLUGGING OR REPLUGGING WHICH WAS COMMENCED ON 3/6/89 WAS IN THE MANNER PROVIDED BY LAW AS CHECKED BELOW

- 45.1-342 (Plugging a well that does not penetrate a coal seam)
- 45.1-343 (Plugging well penetrating coal seam without coal protection string provided in Section 45.1-344)
- 45.1-344 (Plugging wells with coal protection strings installed as provided in Section 45.1-344)
- 45.1-345 (Special plugging at the coal owner's request)
- 45.1-346 (Replugging a well previously plugged)

CHANGES IN THE PLUGGING AS PERMITTED

The well operator did _____ did not make any change(s) in the plugging as specified in the well work permit, which changes were 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 plugging work.

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

PLUGGING DETAILS

INTERVAL (from bottom of Hole)		FORMATION(S)	TYPES OF MATERIALS USED					CASING SIZE	FILLED LINER
FROM	TO		PLUGGING	FILLING	BRIDGE	OPEN HOLE			

(ATTACH PLUGGING DETAILS IN THIS FORMAT)

Finally, if this affidavit concerns a well that was abandoned after plugging, deponents have verified that, in accordance with Section 45.1-347 of the Code of Virginia, a permanent marker of concrete or _____ concrete and iron had been erected over the location.

[Signature]
First Signature
William M. Ryan
Second Signature

Subscribed and sworn to before me a notary public, in and for the Scott County, Virginia State, this 9th day of March, 1989

Karen S. Wallen My Commission Expires _____ My Commission Expires January 24, 1992
Notary Public

Commissioned as Karen S. Kinder

<u>FROM</u>	<u>TO</u>	<u>FORMATION</u>	<u>PLUGGING MATERIAL</u>	<u>BRIDGE PLUGS</u>	<u>OPEN HOLE</u>	<u>CASING</u>
3692'	3264'	Knox	Water		X	
3264'	3055'	Stones River	Water	3055'		4½"
3055'	2750'	Stones River	Cement			4½"
2750'	2645'	Stones River	Gel			4½" Cut at 2645'
2645'	1400'	Stones River Eggleston Trenton	Gel		X	
1400'	1300'	Trenton Reedsville	Cement		X	
1300'	430'	Reedsville Sequatchie Hagan Clinch Clinton	Gel		X	
430'	378'	Clinton	Cement		X	
378'	330'	Clinton	Cement			10 3/4" casing
330'	50'	Clinton Cambrian Dolomite	Gel			10 3/4"
50'	0'	Cambrian Dolomite	Cement			10 3/4"

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

LE-164

Date: 1 - 6, 1989

Operator's
Well No. 8830

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

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 / updated X /

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

Well operator PENN VIRGINIA RESOURCES CORPORATION

Address P. O. BOX 386, DUFFIELD, VA 24244

Farm CLEBERT SURBER ET. UX.

Tract Acres ±100.00 Lease No. 45-1141.00

Elevation 1458.99'

Quadrangle ROSE HILL

County LEE District ROSE HILL

Registered Engineer X Registration No. 13613

Certified Land Surveyor Cert. No.

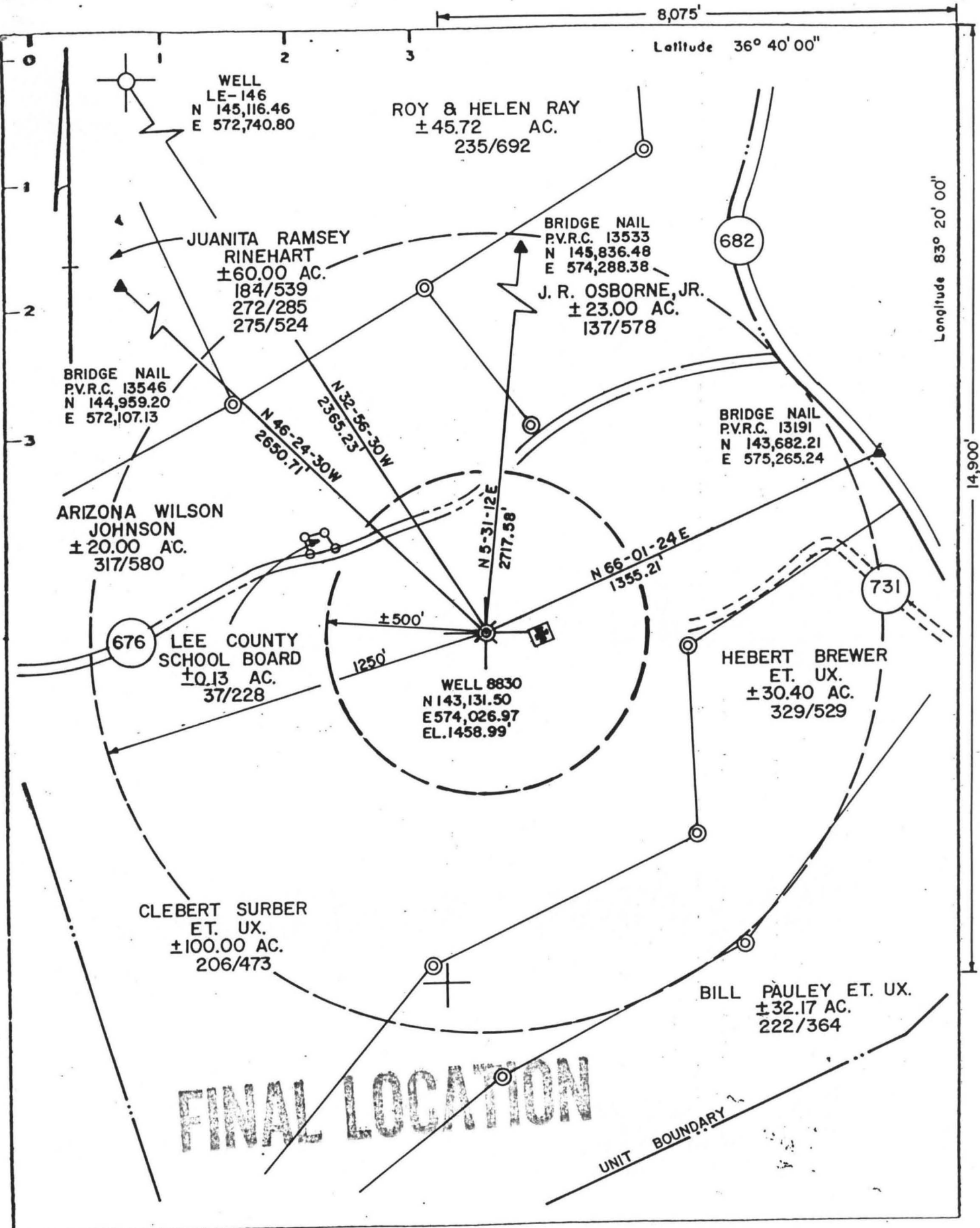
File No. Drawing No.

Date 8-30-88 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.

J. Bowers
Registered Engineer or Certified Land Surveyor
in Charge



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

INTERVAL SHEET

Page 1 of 2

Well Repository No.: W-7224

Date rec'd:

Date Processed: JUNE 1, 1991

Sample Interval: from 450 to: 3690

PROPERTY: Clebert Surber LE-164
 well # 8830

Number of samples: 324

COMPANY: Penn. VA. Resources

Total Depth: 3690'

COUNTY: LEE

Oil or Gas: Water: Exploratory:

From-To	From-To	From-To	From-To	From-To
-	750-760	1100-1110	1450-1460	1800-1810
-	760-770	1110-1120	1460-1470	1810-1820
- Nos Samples	770-780	1120-1130	1470-1480	1820-1830
-	780-790	1130-1140	1480-1490	1830-1840
-	790-800	1140-1150	1490-1500	1840-1850
450-460	800-810	1150-1160	1500-1510	1850-1860
460-470	810-820	1160-1170	1510-1520	1860-1870
470-480	820-830	1170-1180	1520-1530	1870-1880
480-490	830-840	1180-1190	1530-1540	1880-1890
490-500	840-850	1190-1200	1540-1550	1890-1900
500-510	850-860	1200-1210	1550-1560	1900-1910
510-520	860-870	1210-1220	1560-1570	1910-1920
520-530	870-880	1220-1230	1570-1580	1920-1930
530-540	880-890	1230-1240	1580-1590	1930-1940
540-550	890-900	1240-1250	1590-1600	1940-1950
550-560	900-910	1250-1260	1600-1610	1950-1960
560-570	910-920	1260-1270	1610-1620	1960-1970
570-580	920-930	1270-1280	1620-1630	1970-1980
580-590	930-940	1280-1290	1630-1640	1980-1990
590-600	940-950	1290-1300	1640-1650	1990-2000
600-610	950-960	1300-1310	1650-1660	2000-2010
610-620	960-970	1310-1320	1660-1670	2010-2020
620-630	970-980	1320-1330	1670-1680	2020-2030
630-640	980-990	1330-1340	1680-1690	2030-2040
640-650	990-1000	1340-1350	1690-1700	2040-2050
650-660	1000-1010	1350-1360	1700-1710	2050-2060
660-670	1010-1020	1360-1370	1710-1720	2060-2070
670-680	1020-1030	1370-1380	1720-1730	2070-2080
680-690	1030-1040	1380-1390	1730-1740	2080-2090
690-700	1040-1050	1390-1400	1740-1750	2090-2100
700-710	1050-1060	1400-1410	1750-1760	2100-2110
710-720	1060-1070	1410-1420	1760-1770	2110-2120
720-730	1070-1080	1420-1430	1770-1780	2120-2130
730-740	1080-1090	1430-1440	1780-1790	2130-2140
740-750	1090-1100	1440-1450	1790-1800	2140-2150

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

INTERVAL SHEET
 Continued

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Well Repository No.: W- 7224

From-To	From-To	From-To	From-To	From-To
2150 - 2160	2550 - 2560	2950 - 2960	3350 - 3360	-
2160 - 2170	2560 - 2570	2960 - 2970	3360 - 3370	-
2170 - 2180	2570 - 2580	2970 - 2980	3370 - 3380	-
2180 - 2190	2580 - 2590	2980 - 2990	3380 - 3390	-
2190 - 2200	2590 - 2600	2990 - 3000	3390 - 3400	-
2200 - 2210	2600 - 2610	3000 - 3010	3400 - 3410	-
2210 - 2220	2610 - 2620	3010 - 3020	3410 - 3420	-
2220 - 2230	2620 - 2630	3020 - 3030	3420 - 3430	-
2230 - 2240	2630 - 2640	3030 - 3040	3430 - 3440	-
2240 - 2250	2640 - 2650	3040 - 3050	3440 - 3450	-
2250 - 2260	2650 - 2660	3050 - 3060	3450 - 3460	-
2260 - 2270	2660 - 2670	3060 - 3070	3460 - 3470	-
2270 - 2280	2670 - 2680	3070 - 3080	3470 - 3480	-
2280 - 2290	2680 - 2690	3080 - 3090	3480 - 3490	-
2290 - 2300	2690 - 2700	3090 - 3100	3490 - 3500	-
2300 - 2310	2700 - 2710	3100 - 3110	3500 - 3510	-
2310 - 2320	2710 - 2720	3110 - 3120	3510 - 3520	-
2320 - 2330	2720 - 2730	3120 - 3130	3520 - 3530	-
2330 - 2340	2730 - 2740	3130 - 3140	3530 - 3540	-
2340 - 2350	2740 - 2750	3140 - 3150	3540 - 3550	-
2350 - 2360	2750 - 2760	3150 - 3160	3550 - 3560	-
2360 - 2370	2760 - 2770	3160 - 3170	3560 - 3570	-
2370 - 2380	2770 - 2780	3170 - 3180	3570 - 3580	-
2380 - 2390	2780 - 2790	3180 - 3190	3580 - 3590	-
2390 - 2400	2790 - 2800	3190 - 3200	3590 - 3600	-
2400 - 2410	2800 - 2810	3200 - 3210	3600 - 3610	-
2410 - 2420	2810 - 2820	3210 - 3220	3610 - 3620	-
2420 - 2430	2820 - 2830	3220 - 3230	3620 - 3630	-
2430 - 2440	2830 - 2840	3230 - 3240	3630 - 3640	-
2440 - 2450	2840 - 2850	3240 - 3250	3640 - 3650	-
2450 - 2460	2850 - 2860	3250 - 3260	3650 - 3660	-
2460 - 2470	2860 - 2870	3260 - 3270	3660 - 3670	-
2470 - 2480	2870 - 2880	3270 - 3280	3670 - 3680	-
2480 - 2490	2880 - 2890	3280 - 3290	3680 - 3690	-
2490 - 2500	2890 - 2900	3290 - 3300	-	-
2500 - 2510	2900 - 2910	3300 - 3310	-	-
2510 - 2520	2910 - 2920	3310 - 3320	-	-
2520 - 2530	2920 - 2930	3320 - 3330	-	-
2530 - 2540	2930 - 2940	3330 - 3340	-	-
2540 - 2550	2940 - 2950	3340 - 3350	-	-