

API No. 45-027-20428-00-03 VDMR Well Rep. No. W-6713

DMQ File No. BU-205

Operator COLUMBIA GAS TRANSMISSION CORPORATION

Farm PITTSTON COMPANY

Co. Well No. 20227

County BUCHANAN Quadrangle HARMAN-7 $\frac{1}{2}$ '

Location (UTM) N4,124,000; E391,870 UTM Zone 17

(Lat. and Long.) _____

Field _____ Province APPALACHIAN PLATEAUS

Elev. (specify) 1923.42' GR. TD 4877' Form. at TD DEVONIAN

INITIAL FLOW - 94,000 CU. FT. Age DEVONIAN

Date compl. or abandoned DECEMBER 14, 1981

Result GAS WELL

Gas Shows 4877'

Gas Pays 4758' to 4777'

Main Production 4758' to 4777' Prod. Form. BEREA

Age MISSISSIPPIAN

Treatment: 75 Q FOAM FRACTURED BEREA WITH 500 GALLONS OF MUD ACID, 796

BARRELS TOTAL TREATING FLUID, 30,000 POUNDS OF 80/100 SAND, 22,000

POUNDS OF 20/40 SAND, AND 341,000 SCF N2.

Initial Production FINAL FLOW - 1,237,000 CU. FT.

Oil shows _____

Water FW _____ at _____ at _____ at _____

SW _____ at _____ at _____ at _____

Coal _____

Plat X Plotted X Completion Report X

Drillers Log X Geologic Log _____

Samples X Interval Sheet X

Sample Interval 0 - 4800

Remarks _____

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

Density X Sonic _____ Other TEMPERATURE

Stratigraphic Data Source _____

<u>Formation</u>	<u>Top</u>	<u>Datum (Subsea)</u>	<u>Thickness</u>
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____

Remarks _____

References _____

Released to Open File: Completion MARCH 14, 1982

Samples YES

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

Commonwealth of Virginia
DEPARTMENT OF LABOR AND INDUSTRY
Division of Mines
Big Stone Gap, Virginia

~~XXXXXXXXXX~~
NOTICE OF INTENTION TO DRILL ~~XXXXXX~~ GAS WELL
~~XXXXXXXXXX~~

(One copy of this report and three identical copies of a plat or map, on a scale not smaller than 400 feet to the inch, and showing information required by Section 45-114, Code of Virginia, 1950, must be submitted to the Division of Mines, and copies sent by registered mail to all persons defined in above law, prior to obtaining a permit to drill.)

TO: DIVISION OF MINES Charleston, W. Va.
BIG STONE GAP, VIRGINIA Place
May 11, _____, 19 81
Date

Gentlemen:

The undersigned proposes to begin as soon as a permit therefor is obtained from the Division of Mines, to drill, ~~xxxxxxx~~ (strike out two) a well for ~~xxxxxx~~ gas on the Pittston Company Farm, comprising 28,810 acres, in the Prater District of Buchanan County, Virginia, having the fee title thereto, or as the case may be, under grant or lease dated 6-2-70, made by Pittston Company to Columbia Gas Trans. Corp. and recorded on the --- day of ---, 19 -- in the office of the County Clerk for said County in Book 195, page 198.

The proposed location of the well, as shown on the attached plat or map, is about 12,200 feet South of Latitude 37° 17' 30" and about 3,200 feet West of Longitude 82° 12' 30".

It is proposed to drill this well to a depth of about 4750 feet. Samples or cuttings therefrom ~~will~~ be available for examination by a member of the staff of the Virginia Geological Survey. Cuttings ~~will~~ be furnished the Survey.

A plat or map, in triplicate, on a scale not smaller than 400 feet to the inch, showing the proposed location of the well and other information, required in Section 45-114, Code of Virginia, 1950, is attached hereto. Copies of the plat and notice of intention to drill, redrill or deepen the aforementioned well have been sent to all interested persons as required by Section 45-114, above cited, as follows (List names and mail address of each. Use back of sheet if additional space is required):

- The Pittston Company, Dante, Virginia 24327
- Harman Mining Company, Harman, Virginia 24618
- _____
- _____
- _____
- _____

Very truly yours,

Signature of officer or certifying party:
[Signature]
Name
Director, Exploration & Development
Title

Columbia Gas Transmission Corporation
Drilling Company or Operator
P. O. Box 1273
Street Address
Charleston, W. Va. 25325
City or Town, and State

File _____ Date Received _____ Well No. 20227



COMMONWEALTH OF VIRGINIA
 DIVISION OF MINES AND QUARRIES
 DEPARTMENT OF LABOR AND INDUSTRY
 BIG STONE GAP, VIRGINIA

~~XXXXXXXX~~
 APPLICATION FOR PERMIT TO DRILL ~~OIL OR~~ GAS WELL
~~XXXXXXXX~~

(Required by Section 45-115, Code of Virginia, 1950. To be accompanied by Permit fee of twenty-five dollars and bond and surety therefor, as specified by Section cited. To be submitted in duplicate, one copy to be returned to applicant after action by Division of Mines and Quarries.)

TO: DIVISION OF MINES AND QUARRIES
 BIG STONE GAP, VIRGINIA

Charleston, W. Va.
 Place
May 11, 1981
 Date

Gentlemen:

The undersigned hereby makes application for a Permit to drill, ~~and drill, or deepen~~ (strike out two) a well for ~~oil or~~ gas on the Pittston Company Farm, comprising 28,810 acres, in the Prater District of Buchanan County, Virginia, having the fee title thereto, or as the case may be, under grant or lease dated 6-2, 19 70 made by The Pittston Company to Columbia Gas Transmission Corporation and recorded on the -- day of --, 19 -- in the office of the County Clerk for the said County in Book 195 page 198.

The proposed location of the well is shown on a location plat or map submitted to the Division of Mines and Quarries, by the undersigned, together with Notice of Intention to Drill, ~~XXXXXXXX~~ ~~XXXXXX~~ a Well for ~~OIL OR~~ Gas (Form 2) on the 11th day of May, 19 81.

The proposed well will be known as Well No. 20227 of Columbia Gas Transmission Corp. (company, etc.) It is proposed to drill this well to a depth of about 4750 feet.

The proposed location is about 2700 feet distant from the nearest property or lease line; about -- feet distant from the nearest mining opening, or quarry (strike out words not applicable); and/or about 3100 feet distant from the nearest ~~drilling, abandoned,~~ producing, ~~or applied for~~ (strike out words not applicable) ~~oil or~~ gas (strike out words not applicable) well.

There is enclosed herewith a certified check or U. S. Postal Money Order, in the amount of twenty-five (\$25.00), payable to the Treasurer of Virginia, covering fee for a Permit to Drill a Well for Oil or Gas, as required by Section 45-115, Code of Virginia, 1950.

Bond and surety therefor to insure compliance with the provisions of Chapter 8, Title 45, Code of Virginia, 1950, for this well, in the amount of \$ 9,000.00 is submitted herewith of (give status of) Policy No. 907352

Correspondence regarding this well should be addressed to Mr. J. R. Henning,
P. O. Box 1273, Charleston, W. Va.

Signature of officer or certifying party:

Very truly yours,

J. R. Henning
 Name
Director, Exploration & Development
 Title

Columbia Gas Transmission Corporation
 Drilling Company or Operator
P. O. Box 1273
 Street
Charleston
 City of Town
West Virginia 25325
 State

Space below this line is for the use of the Board only.
 ACTION OF DIVISION OF MINES AND QUARRIES

Received on May 18, 19 81.
 Approved and Permit (No. 428) granted on June 8, 19 81.
 Denied _____
 Reasons for denial _____

DIVISION OF MINES AND QUARRIES
 By B. J. Fuhrer State Island Gas Inc.
 Title

File No. BU-205 Well No. 20227 Permit No. 428

(To be filled in by
Division of Mines)

COMMONWEALTH OF VIRGINIA
DEPARTMENT OF LABOR AND INDUSTRY

(To be filled in by
Division of Mines)

BUCHANAN
County

DIVISION OF MINES

Well No. 20227

PRATER
District

BIG STONE GAP, VIRGINIA

Permit No. 428

HARMAN
Quadrangle

DEEPENED
OIL AND GAS WELL COMPLETION REPORT
ABANDONMENT

County Code 027

BU-205
File

Well
Classification DEVELOPMENT

(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 Columbia Gas Transmission Corp.

Address P. O. Box 1273
Charleston, WV

Farm Pittston Coal Company

Acres 28,810.88

County Buchanan

District Prater

Well No. (Company) 20227

Elevation (ground surface) 1923.42 ft.

Location: (Give direction and distance in feet from two (2) map coordinates (Latitude and Longitude) shown
on location plat or map previously filed with the Division of Mines or shown on quadrangle topo-
graphic map of area.)

4600 feet Northeast of Mouth of Cindy Fork of Greenbrier Creek and

8390 feet Northwest of Mouth of Deel Branch of Greenbrier Creek

Surface of tract is owned in fee simple by Pittston Coal Company

Address Dante, VA 24327

Mineral rights are owned by Pittston Coal Company

Address Dante, VA 24327

Location made by Columbia Gas Transmission Corporation

Drilling commenced November 12, 1981

Drilling contractor Ray Resources

Drilling completed November 23, 1981

Address 500 Commerce Sq. - Charleston, WV

Well completed as ^{gas}~~oil~~ well on December 14, 1981

Well abandoned at _____ feet on _____: Reason _____

Well plugged on _____, 19____ Affidavit filed _____, 19____

Total depth 4877 feet. Steel line measurement _____ feet.

Commenced producing on _____, 19____

Oil Well

Initial production, _____ Barrels per day.

Stimulation Record _____

Breakdown Pressure _____ psi; Average Injection Pressure _____ psi;

Average Injection Rate _____ BPM; Instant Shut-in Pressure _____ psi;

Min. Shut-in Pressure _____ psi;

Final Production _____ Barrels per day.

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 5 /10ths. Water in 2 inch.

Initial open flow, gas: _____ /10ths. Mercury in _____ inch.

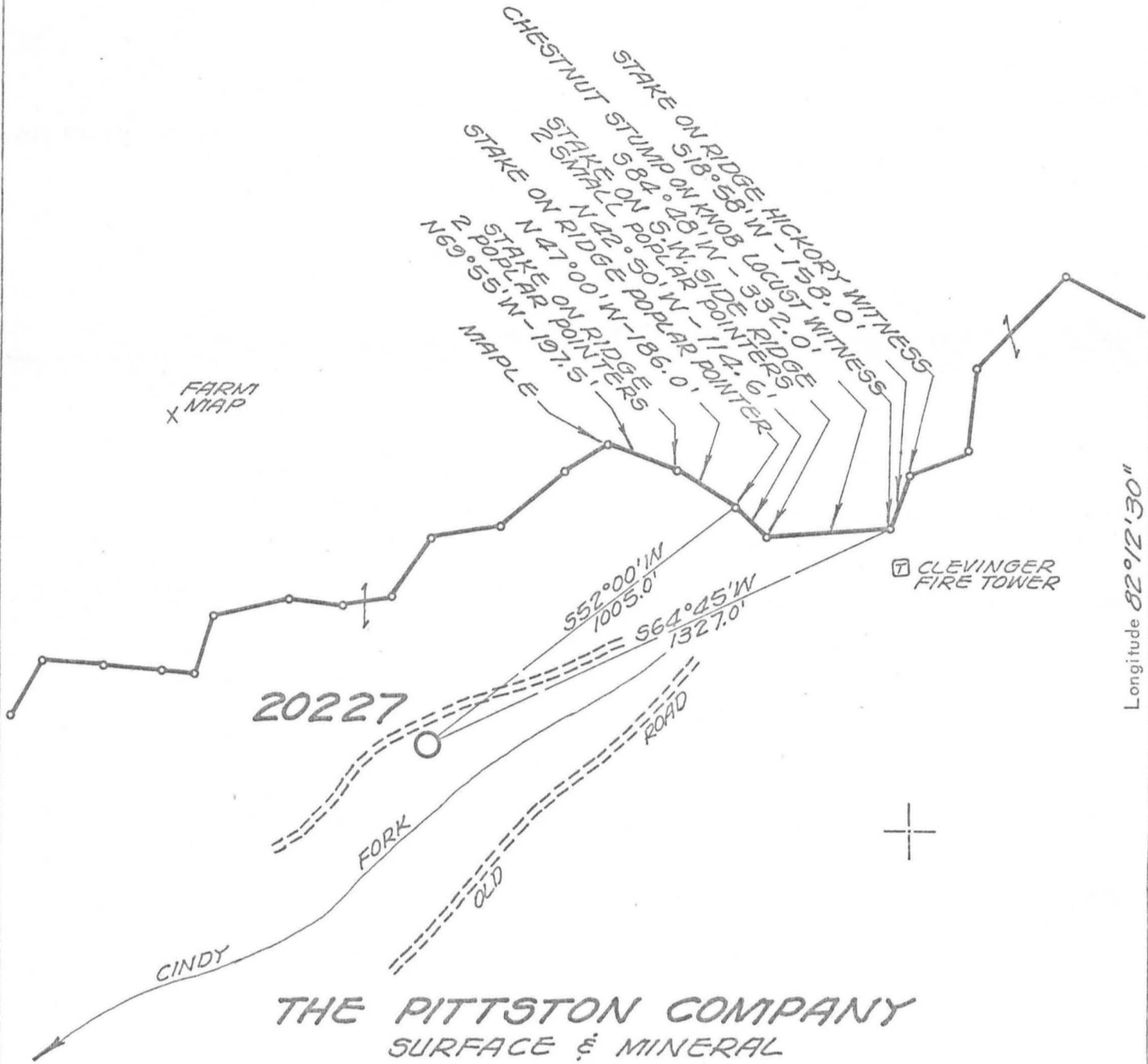
Volume 94 Mcf.; Rock Pressure _____ lbs. _____ hrs.

LOG

Furnished by _____ Date _____

Compiled by J. L. Osbourn Date 1-21-82

GEOLOGIC AGE	FORMATION	GENERAL LITHOLOGY	COLOR	TOP (feet)	BOTTOM (feet)	THICKNESS (feet)	REMARKS OIL, GAS WATER DEPTHS SHUT DOWN FISHING, ETC.
	Sand & Shale			0	145	145	
	Sand			145	175	30	
	Sand & Shale			175	275	100	
	Sand			275	310	35	
	Shale			310	340	30	
	Sand			340	396	56	
	Shale			396	542	146	
	Sand			542	572	30	
	Sand & Shale			572	743	171	
	Sand			743	780	37	
	Shale			780	920	140	
	Sand			920	940	20	
	Sand & Shale			940	1073	133	
	Sand			1073	1138	65	
	Shale			1138	1180	42	
	Sand			1180	1203	23	
	Shale			1203	1258	55	
	Sand			1258	1268	10	
	Shale			1268	1357	89	
	Sand & Shale			1357	1463	106	
	Sand			1463	1633	170	
	Sand & Shale			1633	1810	177	
	Sand			1810	1880	70	
	Shale			1880	2014	134	
	Sand			2014	2173	159	
	Sand & Shale			2173	2252	79	
	Shale			2252	2346	94	
	Sand & Shale			2346	2542	196	
	Shale			2542	2766	224	
	Sand & Shale			2766	3054	288	
	Sand			3054	3106	52	
	Shale			3106	3130	24	
	Sand			3130	3154	24	
	Sand & Shale			3154	3262	108	
	Maxon			3262	3413	151	
	Sand & Shale			3413	3583	170	
	L. Lime			3583	3637	54	
	Shale			3637	3646	9	
	B. Lime			3646	4115	469	
	Shaly Sand			4115	4324	209	
	Shale			4324	4730	406	
	Coffee Shale			4730	4747	17	
	Berea			4747	4836	89	
	Shale			4836	4877	41	
					4877		Gas Check @ T.D. 94 Mcf T.D.



FARM MAP X

20227

CLEVINGER FIRE TOWER

THE PITTSTON COMPANY SURFACE & MINERAL

—COAL NOTE—

COAL OWNED BY CLINCHFIELD COAL CO. CLINTWOOD SEAM (ELEV. 1900' ±) AND LOWER SEAMS LEASED TO HARMAN MINING COMPANY NOT OPERATED AT PRESENT

"I, the undersigned, hereby certify that this map is correct to the best of my knowledge and belief and shows all the information required by the rules and regulations of the oil and gas section of the mining laws of VIRGINIA
 Minimum degree of accuracy is one part in 200

- New Location
- Storage
- Drill Deeper
- Abandonment
- Re-Drill/Fracture

Signed: *Wayne C. Spivey*

LAND SURVEYOR LICENSE No 99 (W.VA.)

FORM 1495 CE 4 CSD (REV. 3-79)

COLUMBIA GAS SYSTEM
 COLUMBIA GAS TRANSMISSION CORPORATION
 WELL LOCATION MAP
 STATE OF VIRGINIA

(+) Denotes Values of Well On United States Topographic Maps

Scale 15' 7-1/2'

Company COLUMBIA GAS TRANS. CORP.
 Address BOX 1273 CHARLESTON, W. VA.
 Farm THE PITTSTON COMPANY
 Lease 64340 Acres 28,810.88 ac
 Well Farm No. _____ Ser. No. 20227
 Elevation - Spirit Level 1923.42'
 Quadrangle HARMAN, VA.
 Township or District PRATER
 County BUCHANAN
 Sec., Lot, Qr. _____ T _____ R _____
 Coordinates LAT. 37°15'29" LONG. 82°13'10"
 File No. 30-393 Dwg. No. _____
 Date 4-14-81 Scale 1" = 400'

Longitude 82°12'30"

12,200'

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

INTERVAL SHEET

Page 1 of 2

Well Repository No.: W- 6713

Date rec'd: Date Processed:

Sample Interval: from 0 to: 4800

PROPERTY: Pittston Co. Well #20227

Number of samples: 311

COMPANY: Columbia Gas Transmission Corp.

Total Depth: 4877

COUNTY: Buchanan

Oil or Gas: Water: Exploratory:

From-To	From-To	From-To	From-To	From-To
0 - 30	1030 - 1060	2080 - 2110	2600 - 2610	2950 - 2960
30 - 60	1060 - 1090	2110 - 2140	2610 - 2620	2960 - 2970
60 - 90	1090 - 1120	2140 - 2170	2620 - 2630	2970 - 2980
90 - 120	1120 - 1150	2170 - 2200	2630 - 2640	2980 - 2990
120 - 150	1150 - 1180	2200 - 2230	2640 - 2650	2990 - 3000
150 - 180	1180 - 1210	2230 - 2240	2650 - 2660	3000 - 3010
180 - 210	1210 - 1240	2240 - 2250	2660 - 2670	3010 - 3020
210 - 240	1240 - 1270	2250 - 2260	2670 - 2680	3020 - 3030
240 - 270	1270 - 1300	2260 - 2270	2680 - 2690	3030 - 3040
270 - 300	1300 - 1330	2270 - 2280	2690 - 2700	3040 - 3050
300 - 330	1330 - 1360	2280 - 2290	2700 - 2710	3050 - 3060
330 - 360	1360 - 1390	2290 - 2300	2710 - 2720	3060 - 3070
360 - 390	1390 - 1430	2300 - 2310	2720 - 2730	3070 - 3080
390 - 420	1430 - 1460	2310 - 2320	2730 - 2740	3080 - 3090
420 - 450	1460 - 1490	2320 - 2330	2740 - 2750	3090 - 3100
450 - 480	1490 - 1520	-	2750 - 2760	3100 - 3110
480 - 510	1520 - 1550	-	2760 - 2770	3110 - 3120
510 - 540	1550 - 1580	2420 - 2430	2770 - 2780	3120 - 3130
540 - 570	1580 - 1610	2430 - 2440	2780 - 2790	3130 - 3140
570 - 600	1610 - 1640	2440 - 2450	2790 - 2800	3140 - 3150
600 - 630	1640 - 1670	2450 - 2460	2800 - 2810	3150 - 3160
630 - 660	1670 - 1700	2460 - 2470	2810 - 2820	3160 - 3170
660 - 690	1700 - 1730	-	2820 - 2830	3170 - 3180
690 - 720	1730 - 1760	2480 - 2490	2830 - 2840	3180 - 3190
720 - 750	1760 - 1790	2490 - 2500	2840 - 2850	3190 - 3200
750 - 780	1790 - 1820	2500 - 2510	2850 - 2860	3200 - 3210
780 - 810	1820 - 1850	2510 - 2520	2860 - 2870	3210 - 3220
810 - 840	1850 - 1880	2520 - 2530	2870 - 2880	3220 - 3230
840 - 870	1880 - 1910	2530 - 2540	2880 - 2890	3230 - 3240
870 - 900	1910 - 1940	2540 - 2550	2890 - 2900	3240 - 3250
-	1940 - 1970	2550 - 2560	2900 - 2910	3250 - 3260
-	1970 - 2000	2560 - 2570	2910 - 2920	3260 - 3270
1004 - 1007	2000 - 2030	2570 - 2580	-	3270 - 3280
1007 - 1010	2030 - 2060	2580 - 2590	2930 - 2940	3280 - 3290
1010 - 1030	-	2590 - 2600	2940 - 2950	3290 - 3300

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

INTERVAL SHEET
 Continued

Page 2 of 2

Well Repository No.: W- 6713

From-To	From-To	From-To	From-To	From-To
3300 - 3310	3700 - 3710	4100 - 4110	4500 - 4510	-
3310 - 3320	3710 - 3720	4110 - 4120	4510 - 4520	-
3320 - 3330	3720 - 3730	4120 - 4130	4520 - 4530	-
3330 - 3340	3730 - 3740	4130 - 4140	4530 - 4540	-
3340 - 3350	3740 - 3750	4140 - 4150	4540 - 4550	-
3350 - 3360	3750 - 3760	4150 - 4160	4550 - 4560	-
3360 - 3370	3760 - 3770	4160 - 4170	4560 - 4570	-
3370 - 3380	3770 - 3780	4170 - 4180	4570 - 4580	-
3380 - 3390	3780 - 3790	4180 - 4190	4580 - 4590	-
3390 - 3400	3790 - 3800	4190 - 4200	4590 - 4600	-
3400 - 3410	3800 - 3810	4200 - 4210	4600 - 4610	-
3410 - 3420	3810 - 3820	4210 - 4220	4610 - 4620	-
3420 - 3430	3820 - 3830	4220 - 4230	-	-
3430 - 3440	3830 - 3840	4230 - 4240	-	-
3440 - 3450	3840 - 3850	4240 - 4250	-	-
3450 - 3460	3850 - 3860	4250 - 4260	4670 - 4680	-
3460 - 3470	3860 - 3870	4260 - 4270	4680 - 4690	-
3470 - 3480	3870 - 3880	4270 - 4280	4690 - 4700	-
3480 - 3490	3880 - 3890	4280 - 4290	4700 - 4710	-
3490 - 3500	3890 - 3900	4290 - 4300	4710 - 4720	-
3500 - 3510	3900 - 3910	4300 - 4310	4720 - 4730	-
3510 - 3520	3910 - 3920	4310 - 4320	4730 - 4740	-
3520 - 3530	3920 - 3930	4320 - 4330	-	-
3530 - 3540	3930 - 3940	4330 - 4340	4750 - 4760	-
3540 - 3550	3940 - 3950	4340 - 4350	4760 - 4770	-
3550 - 3560	3950 - 3960	4350 - 4360	-	-
3560 - 3570	3960 - 3970	4360 - 4370	4780 - 4790	-
3570 - 3580	3970 - 3980	4370 - 4380	4790 - 4800	-
3580 - 3590	3980 - 3990	4380 - 4390	-	-
3590 - 3600	3990 - 4000	4390 - 4400	-	-
3600 - 3610	4000 - 4010	4400 - 4410	-	-
3610 - 3620	4010 - 4020	4410 - 4420	-	-
3620 - 3630	4020 - 4030	4420 - 4430	-	-
3630 - 3640	4030 - 4040	4430 - 4440	-	-
3640 - 3650	4040 - 4050	4440 - 4450	-	-
3650 - 3660	4050 - 4060	4450 - 4460	-	-
3660 - 3670	4060 - 4070	4460 - 4470	-	-
3670 - 3680	4070 - 4080	4470 - 4480	-	-
3680 - 3690	4080 - 4090	4480 - 4490	-	-
3690 - 3700	4090 - 4100	4490 - 4500	-	-

WASHED ONLY