

COMMONWEALTH OF VIRGINIA
WATER WELL COMPLETION REPORT

BWCM No. 147-169

W-6784
C-229

State Water Control Board
P. O. Box 11143
2111 North Hamilton St.
Richmond, Va. 23230

(Certification of Completion/County Permit)

County/City James City

County/City Stamp

Virginia Plane Coordinates
N _____
E _____

Latitude & Longitude
37°25'06" N
076°51'17" W

Topo. Map No. 97A
Elevation 103 ft.
Formation KLP
Lithology SD
River Basin 2
Province _____
Type Logs DEC
Cuttings Yes
Water Analysis Yes
Aquifer Test No

Owner Observation Well #177A (SWCB)
Well Designation or Number Disposed Driscoll
Address _____
Phone _____
Drilling Contractor SWCB
Address _____
Phone _____

SWCB Permit _____
County Permit _____
Certification of inspecting official:
This well does _____ does not _____
meet code/low requirements.
S. _____
Date _____
For Office Use

Tax Map I.D. No. _____
Subdivision _____
Section _____
Block _____
Lot _____
Class Well I _____ IIA _____
IIB _____ IIIA _____ IIIB _____
IIIC _____ IIID _____ IIIE _____

Disposed (Observation Well #177A)
WELL LOCATION: (feet/miles _____ direction) of _____
and _____ feet/miles _____ (direction) of _____
(If possible please include map showing location marked)

Date started 9/84 • Date completed 10/84 Type rig Rotary

WELL DATA: New Reworked _____ Deepened _____
Total depth 1105 ft.
Depth to bedrock 1105 ft.

Well size (Also include reamed zones)
• 7 inches from C to 1105 ft.
• _____ inches from _____ to _____ ft.
• _____ inches from _____ to _____ ft.

Casing size (I.D.) and material
• 4 inches from C to 888 ft.
Material Steel

Wt. per foot _____ or wall thickness _____ in.
• 4 inches from 908 to 929 ft.
Material Steel

Wt. per foot _____ or wall thickness _____ in.
• _____ inches from _____ to _____ ft.
Material _____

Wt. per foot _____ or wall thickness _____ in.

Screen size and mesh for each zone (where applicable)
• 4 inches from 888 to 908 ft.

Mesh size 30 Type S

• _____ inches from _____ to _____ ft.
Mesh size _____ Type _____

• _____ inches from _____ to _____ ft.
Mesh size _____ Type _____

• _____ inches from _____ to _____ ft.
Mesh size _____ Type _____

• _____ inches from _____ to _____ ft.
Mesh size _____ Type _____

Grout
• From 0 to 50 ft. Type Cement
• From _____ to _____ ft. Type _____

2. WATER DATA • Water temperature _____
• Static water level (unpumped level measured) 158
• Stabilized measured pumping water level _____
• Stabilized yield _____ gpm after _____ hour
Natural Flow: Yes _____ No _____ flow rate _____ gpm
Comment on quality _____

3. WATER ZONES: From _____ To _____
From _____ To _____ From _____ To _____
From _____ To _____ From _____ To _____

4. USE DATA:
Type of use Drinking _____ Livestock Watering _____
Irrigation _____ Food processing _____ Household _____
Manufacturing _____ Fire safety _____ Cleaning _____
Recreation _____ Aesthetic _____ Cooling or heating _____
Injection _____ Other Observation
• Type of facility Domestic _____ Public water supply _____
Public institution _____ Farm _____ Industry _____
Commercial _____ Other Observation

5. PUMP DATA: Type _____ Rated H.P. _____
• Intake depth _____ Capacity _____ at _____ head

6. WELLHEAD: Type well seal _____
Pressure tank _____ gal. Loc _____
Sample tap _____ Measurement port _____
Well vent _____ Pressure relief valve _____
Gate valve _____ Check valve (when required) _____
Electrical disconnect switch on power supply _____

7. DISINFECTION: Well disinfected _____ yes _____ no _____
Date _____ Disinfectant used _____
Amount _____ Hours used _____

8. ABANDONMENT (where applicable) • yes _____ no _____
Casing pulled: yes _____ no _____ not applicable _____
Plugging grout From _____ to _____ material _____

110

5/29/85 SWCB (Smith)

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

INTERVAL SHEET

C# 229

Page 1 of 1

Well Repository No.: W- 6784

Date rec'd: 5/29/85 Date Processed: 5/30/85

Sample Interval: from 0 to: 1100

PROPERTY: SWCB (OW.177A)

Number of samples:

COMPANY: SWCB

Total Depth: 1105

COUNTY: JAMES CITY (Discontinued)

Oil or Gas: Water: X Exploratory:

From-To	From-To	From-To	From-To	From-To
0 - 10	300 - 10	600 - 10	900 - 10	-
10 - 20	310 - 20	610 - 20	910 - 20	-
20 - 30	320 - 30	620 - 30	920 - 30	-
30 - 40	330 - 40	630 - 40	930 - 40	-
40 - 50	340 - 50	640 - 50	940 - 50	-
50 - 60	350 - 60	650 - 60	950 - 60	-
60 - 70	360 - 70	660 - 70	960 - 70	-
70 - 80	370 - 80	670 - 80	970 - 80	-
80 - 90	380 - 90	680 - 90	980 - 90	-
90 - 100	390 - 400	690 - 700	990 - 1000	-
100 - 10	400 - 10	700 - 10	1000 - 10	-
110 - 20	410 - 20	710 - 20	1010 - 20	-
120 - 30	420 - 30	720 - 30	1020 - 30	-
130 - 40	430 - 40	730 - 40	1030 - 40	-
140 - 50	440 - 50	740 - 50	1040 - 50	-
150 - 60	450 - 60	750 - 60	1050 - 60	-
160 - 70	460 - 70	760 - 70	1060 - 70	-
170 - 80	470 - 80	770 - 80	1070 - 80	-
180 - 90	480 - 90	780 - 90	1080 - 90	-
190 - 200	490 - 500	790 - 800	1090 - 1100	-
200 - 10	500 - 10	800 - 10	-	-
210 - 20	510 - 20	810 - 20	-	-
220 - 30	520 - 30	820 - 30	-	-
230 - 40	530 - 40	830 - 40	-	-
240 - 50	540 - 50	840 - 50	-	-
250 - 60	550 - 60	850 - 60	-	-
260 - 70	560 - 70	860 - 70	-	-
270 - 80	570 - 80	870 - 80	-	-
280 - 90	580 - 90	880 - 90	-	-
290 - 300	590 - 600	890 - 900	-	-

ALL SAMPLES HAVE BOTH WASHED AND UNWASHED SPLITS

Owner: SWBC-177A

Driller: SWBC

County: James City

W# 6784

C# 229

Total depth: 1105'

Quad: Toano

Elev: 103'

<u>Depth</u> (feet)	<u>Description</u>
0-10	Sand, fine-to medium-grained, light yellowish orange, moderately sorted, subangular to subrounded, quartz, minor feldspar, glauconite, iron oxide, illmenite(?), garnet.
10-20	Sand, same as above.
20-30	Sand, fine-grained, light yellowish gray, well sorted, subrounded, quartz, minor glauconite, iron oxide, mollusca fragments, echinoid spines.
30-40	Sand, same as above, more iron oxide.
40-50	Sand, same as above, with 2% iron oxide.
50-60	Sand, same as above, with 1% glauconite.
60-70	Sand, fine-grained with granules, light olive gray, moderately well sorted, subangular to subrounded, quartz, glauconite 2-3%, iron oxide 5%, rare phosphate grains, mollusca fragments, minor clay.
70-80	Sand, fine-grained with scattered granules, light olive gray, moderately well sorted, subrounded to rounded, quartz, glauconite 5%, iron oxide, mollusca fragments, minor clay.
80-90	Sand, same as above.
90-100	Sand, same as above, echinoid spines.
100-110	Sand, same as above.
110-120	Sand, same as above, gypsum rosetts.
120-130	Sand, same as above, gypsum rosetts.
130-140	Sand, same as above, gypsum rosetts, echinoid spines.
140-150	Sand, same as above, gypsum

- 150-160 Sand, same as above, with echinoid spines, gypsum.
- 160-170 Sand, very fine-to-fine-grained, light olive gray, moderately sorted, subangular to subrounded, quartz, glauconite 2%, shell fragments 5-10%, moderate clay.
- 170-180 Sand, same as above, with 10% shell fragments, phosphate(?).
- 180-190 Sand, same as above, with 10-12% shell fragments, phosphate.
- 190-200 Sand, same as above, with 10% shell fragments, phosphate.
- 200-210 Sand, same as above, with 5% shell fragments, phosphate, rare glauconite.
- 210-220 Sand, same as above, with 2-5% shell fragments, phosphate, minor clay.
- 220-230 Sand, fine-to-medium-grained, light olive gray, moderately sorted, subrounded, quartz, brown and black glauconite 2-5%, some fragments of quartz/glauconite limestone (white); shell fragments 5%.
- 230-240 Sand, same as above.
- 240-250 Sand, fine-grained, salt and pepper, moderately sorted, subrounded, quartz 70±%; glauconite, coarse-grained, brown and black, 30%; limestone with glauconite and quartz grains; ^{abundant} shell fragments; pyrite
- 250-260 limestone, glauconite and quartz; white; sand, glauconite 90%, quartz 10%; abundant shell fragments; pink clay.

- 260-270 Sand, fine-to medium-grained, salt and pepper, poorly to moderately sorted, subrounded to rounded, quartz 70%, glauconite 30%, rare limestone fragment, shell fragments, minor gray clay.
- 270-280 Sand, ^{same} as above without clay.
- 280-290 Sand, ^{same} as above without clay.
- 290-300 Sand, very fine-to fine-grained, greenish black, moderately sorted, subrounded to rounded, glauconite 80%, quartz, 20%, rare shell fragments, glauconite all greenish black.
- 300-310 Sand, same as above with rare shell fragments and pyrite.
- 310-320 Sand, same as above with rare shell fragments and forams.
- 320-330 Sand, same as above with rare shell fragments and common forams and ostracodes.
- 330-340 Sand, same as above with ^{com} forams common, minor clay.
- 340-350 Sand, same as above with forams.
- 350-360 Sand, same as above except glauconite 70%, quartz 30%.
- 360-370 Sand, same as above except glauconite 50%, quartz 50%.
- 370-380 Sand, same as above except glauconite 50%, quartz 50%.
- 380-390 Sand, same as above with forams.
- 390-400 Sand, medium-to coarse-grained, white, moderately sorted, subangular to subrounded, milky ^{and smokey} quartz with white clay coatings, feldspar, garnet; glauconite, limestone and clay appears to be contamination; 90% quartz in samples above 390' is not milky.
- 400-410 Sand, same as above.
- 410-420 Sand, same as above.
- 420-430 Sand, same as above.
- 430-440 Sand, same as above.
- 440-450 Sand, same as above.
- 450-460 Sand, same as above.

- 460-470 Sand, same as above.
- 470-480 Sand, same as above with sand size rock fragments.
- 480-490 Sand, same as above.
- 490-500 Sand, same as above with sand size rock fragments.
- 500-510 Sand, same as above.
- 510-520 Sand, same as above.
- 520-530 Sand, same as above with sand size rock fragments.
- 530-540 Sand, medium-grained to granule, white, poorly sorted, subangular, milky quartz with white clay coatings, zeldspar, rock fragments.
- 540-550 Sand, same as above.
- 550-560 Sand, same as above.
- 560-570 Sand, same as above.
- 570-580 Sand, same as above.
- 580-590 Sand, same as above with rare garnet.
- 590-600 Sand, same as above with garnet.
- 600-610 Sand, same as above except fine- to medium-grained.
- 610-620 Sand, same as above with rare garnet.
- 620-630 Sand, same as above.
- 630-640 Sand, same as above.
- 640-650 Sand, same as above.
- 650-660 Sand, same as above.
- 660-670 Sand, same as above except fine- to coarse-grained, rare garnet.
- 670-680 Sand, same as above except fine- to coarse-grained, rare garnet and muscovite.
- 680-690 Sand, same as above.
- 690-700 Sand, same as above ^{with} rare garnet.
- 700-710 Sand, same as above with rare garnet.
- 710-720 Sand, same as above.
- 720-730 Sand, same as above.

- 730-740 Sand, same as above.
- 740-750 Sand, same as above with rare garnet and pyrite.
- 750-760 Sand, same as above.
- 760-770 Sand and gravel, sand, fine-grained to granule, white to light gray, poorly sorted, subangular to subrounded, quartz, feldspar, rock fragments, garnet; gravel, quartz and quartzite, rounded, up to $\frac{1}{2}$ inch.
- 770-780 Sand and gravel, same as above.
- 780-790 Sand and gravel, same as above.
- 790-800 Sand and gravel, same as above.
- 800-810 Sand and gravel, same as above.
- 810-820 Sand and gravel, same as above.
- 820-830 Sand and gravel, same as above.
- 830-840 Sand and gravel, same as above.
- 840-850 Sand, fine-grained to granule, white to light gray, poorly sorted, subangular to subrounded, ^{milky} quartz, feldspar, garnet, rock fragments.
- 850-860 Sand, same as above.
- 860-870 Sand, mostly fine-grained with coarse grains and granules, white to light gray, poorly sorted, subangular to rounded, milky quartz, feldspar, garnet, rock fragments.
- 870-880 Sand, same as above.
- 880-890 Sand, same as above with clay.
- 890-900 Sand, same as above.
- 900-910 Sand, same as above with clay.
- 910-920 Sand, same as above with clay and iron oxide.
- 920-930 Sand, same as above.
- 930-940 Sand, same as above.
- 940-950 Sand, same as above with hematite(?).

950-960	Sand, same as above.
960-970	Sand, same as above.
970-980	Sand, same as above with clay.
980-990	Sand, same as above.
990-1000	Sand, same as above.
1000-1010	Sand, same as above.
1010-1020	Sand, same as above.
1020-1030	Sand, same as above.
1030-1040	Sand, same as above with clay.
1040-1050	Sand, same as above with minor clay and iron oxide.
1050-1060	Sand, same as above.
1060-1070	Sand, same as above.
1070-1080	Sand, same as above.
1080-1090	Sand, same as above.
1090-1100	Sand, same as above.
1100-1105	No sample.

Logged By: Eugene K. Rader
June 12, 1985

P.S.

We have completed another station down near Emporia - I'll talk to you later about that one



Dick,

Here are the logs from the "Diascund" ground water research station. The map shows where they are from. The total depth shows as 1105' - this was the point where we encountered refusal of the drill string. We did not see any chips in the cuttings that would indicate basement, so we can only assume this depth to be basement.

I hope these logs prove interesting to you, and serve as full payment ^{in advance} for the cuttings analyses DMR has been working on.

Send those analyses when you get the chance. Thanks PJS Smith

Gene

OWNER: SWCB - 177A
DRILLER: SWCB
COUNTY: James City

W# 6784
C# 229
TOTAL DEPTH: 1105'
QUAD: Toano
ELEV.: 103'

<u>Depth</u> <u>(feet)</u>	DESCRIPTION
0 - 10	Sand, fine-to medium-grained, light yellowish orange, moderately sorted, subangular to subrounded, quartz, minor feldspar, glauconite, iron oxide, illmenite (?), garnet.
10 - 20	Sand, same as above.
20 - 30	Sand, fine-grained, light yellowish gray, well sorted, subrounded, quartz, minor glauconite, iron oxide, mollusca fragments, echinoid spines.
30 - 40	Sand, same as above, more iron oxide.
40 - 50	Sand, same as above, with 2% iron oxide.
50 - 60	Sand, same as above with 1% glauconite.
60 - 70	Sand, fine-grained with granules, light olive gray, moderately well sorted, subangular to subrounded, quartz, glauconite 2-3%, iron oxide 5%, more phosphate grains, mollusca fragments, minor clay.
70 - 80	Sand, fine-grained with scattered granules, light olive gray, moderately well sorted, subrounded to rounded, quartz, glauconite 5%, iron oxide, mollusca fragments, minor clay.
80 - 90	Sand, same as above.
90 - 100	Sand, same as above, echinoid spines.
100 - 110	Sand, same as above.
110 - 120	Sand, same as above, gypsum rosettes.
120 - 130	Sand, same as above, gypsum rosettes.
130 - 140	Sand, same as above, gypsum rosettes, echinoid spines.
140 - 150	Sand, same as above, gypsum
150 - 160	Sand, same as above, with echinoid spines, gypsum.
160 - 170	Sand, very fine-to fine-grained, light olive gray, moderately sorted, subangular to subrounded, quartz, glauconite 2%, shell fragments 5-10%, moderate clay.
170 - 180	Sand, same as above, with 10% shell fragments, phosphate (?).
180 - 190	Sand, same as above, with 10-12% shell fragments, phosphate.

- 190 -200 Sand, same as above, with 10% shell fragments, phosphate.
- 200 -210 Sand, same as above, with 5% shell fragments, phosphate, rare glauconite.
- 210 -220 Sand, same as above, with 2-5% shell fragments, phosphate, minor clay.
- 220 -230 Sand, fine-to medium-grained, light olive gray, moderately sorted, sub-rounded, quartz, brown and black glauconite 2-5%, some fragments of quartz/glauconite limestone (white); shell fragments 5%.
- 230 -240 Sand, same as above.
- 240 -250 Sand, fine-grained, salt and pepper, moderately sorted, subrounded, quartz 70 ± %; glauconite, coarse-grained, brown and black, 30%; limestone with glauconite and quartz grains; abundant shell fragments; pyrite.
- 250 -260 Limestone, glauconite and quartz; white; sand, glauconite 90%, quartz 10%; abundant shell fragments; pink clay.
- 260 -270 Sand, fine-to medium-grained, salt and pepper, poorly to moderately sorted, subrounded to rounded, quartz 70%, glauconite 30%, rare limestone fragment, shell fragments, minor gray clay.
- 270 -280 Sand, same as above without clay.
- 280 -290 Sand, same as above without clay.
- 290 -300 Sand, very fine-to fine-grained, greenish black, moderately sorted, sub-rounded to rounded, glauconite 80%, quartz, 20%, rare shell fragments, glauconite all greenish black.
- 300 - 310 Sand, same as above with rare shell fragments and pyrite.
- 310 - 320 Sand, same as above with rare shell fragments and forams.
- 320 - 330 Sand, same as above with rare shell fragments and common forams and ostracodes.
- 330 - 340 Sand, same as above with forams common, minor clay.
- 340 - 350 Sand, same as above with forams.
- 350 -360 Sand, same as above except glauconite 70%, quartz 30%.
- 360 -370 Sand, same as above except glauconite 50%, quartz 50%.
- 370 -380 Sand, same as above except glauconite 50%, quartz 50%.
- 380 -390 Sand, same as above with forams.
- 390 -400 Sand, medium-to coarse-grained, white, moderately sorted, subangular to subrounded, milky and smokey quartz with white clay coatings, feldspar, garnet; glauconite, limestone and clay appears to be contamination; 90% quartz in samples above 390' is not milky.

400 - 410 Sand, same as above.
410 - 420 Sand, same as above.
420 - 430 Sand, same as above.
430 - 440 Sand, same as above.
440 - 450 Sand, same as above.
450 - 460 Sand, same as above.
460 - 470 Sand, same as above.
470 - 480 Sand, same as above with sand size rock fragments.
480 - 490 Sand, same as above.
490 - 500 Sand, same as above with sand size fragments.
500 - 510 Sand, same as above.
510 - 520 Sand, same as above.
520 - 530 Sand, same as above with sand size rock fragments.
530 - 540 Sand, medium-grained to granule, white, poorly sorted, subangular, milky quartz with white clay coatings, feldspar, rock fragments.
540 - 550 Sand, same as above.
550 - 560 Sand, same as above.
560 - 570 Sand, same as above.
570 - 580 Sand, same as above.
580 - 590 Sand, same as above with rare garnet.
590 - 600 Sand, same as above with garnet.
600 - 610 Sand, same as above except fine-to medium-grained.
610 - 620 Sand, same as above with rare garnet.
620 - 630 Sand, same as above.
630 - 640 Sand, same as above.
640 - 650 Sand, same as above.
650 - 660 Sand, same as above.

- 660 - 670 Sand, same as above except fine-to coarse-grained, rare garnet.
- 670 - 680 Sand, same as above except fine-to coarse-grained, rare garnet & muscovite.
- 680 - 690 Same, same as above.
- 690 - 700 Sand, same as above with rare garnet.
- 700 - 710 Sand, same as above with rare garnet.
- 710 - 720 Sand, same as above.
- 720 - 730 Sand, same as above.
- 730 - 740 Sand, same as above.
- 740 - 750 Sand, same as above with rare garnet and pyrite.
- 750 - 760 Sand, same as above.
- 760 - 770 Sand and gravel, sand, fine-grained to granule, white to light gray, poorly sorted, subangular to subrounded, quartz, feldspar, rock fragments, garnet; gravel, quartz and quartzite, rounded, up to $\frac{1}{2}$ inch.
- 770 - 780 Sand and gravel, same as above.
- 780 - 790 Sand and gravel, same as above.
- 790 - 800 Sand and gravel, same as above.
- 800 - 810 Sand and gravel, same as above.
- 810 - 820 Sand and gravel, same as above.
- 820 - 830 Sand and gravel, same as above.
- 830 - 840 Sand and gravel, same as above.
- 840 - 850 Sand, fine-grained to granule, white to light gray, poorly sorted, subangular to subrounded, milky quartz, feldspar, garnet, rock fragments.
- 850 - 860 Sand, same as above.
- 860 - 870 Sand, mostly fine-grained with coarse grains and granules, white to light gray, poorly sorted, subangular to rounded, milky quartz, feldspar, garnet, rock fragments.
- 870 - 880 Sand, same as above.
- 880 - 890 Sand, same as above with clay.
- 890 - 900 Sand, same as above.
- 900 - 910 Sand, same as above with clay.

910 - 920 Sand, same as above with clay and iron oxide.
920 - 930 Sand, same as above.
930 - 940 Sand, same as above.
940 - 950 Sand, same as above with hematite (?).
950 - 960 Sand, same as above.
960 - 970 Sand, same as above.
970 - 980 Sand, same as above with clay.
980 - 990 Sand, same as above.
990 - 1000 Sand, same as above.
1000 - 1010 Sand, same as above.
1010 - 1020 Sand, same as above.
1020 - 1030 Sand, same as above.
1030 - 1040 Sand, same as above with clay.
1040 - 1050 Sand, same as above with minor clay and iron oxide.
1050 - 1060 Sand, same as above.
1060 - 1070 Sand, same as above.
1070 - 1080 Sand, same as above.
1080 - 1090 Sand, same as above.
1090 - 1100 Sand, same as above.
1100 - 1105 No sample.

Logged by: Eugene K. Rader
June 12, 1985

GEOLOGIC SUMMARY

<u>Interval*</u> <u>feet</u>	<u>Rock Unit</u>	<u>Age</u>
0- 72	Chesapeake Group - Upper Cycle	Pliocene-
(0- 28)	Barhamsville Formation	Miocene
(28- 56)	Yorktown Formation	
(56- 72)	Eastover Formation	
72- 202	Chesapeake Group-Lower Cycle	Miocene
	Calvery Formation(?)	
202- 384	Pamunkey Group	Eocene - Paleocene
(202- 232)	Chickahominy Formation (?)	
(232- 254)	Nanjemoy Formation	
(254- 384)	Aquia Formation	
384-1100	Potomac Group	Cretaceous

* Interval picks from gamma log.