1978-10,000

C-425
W-6840

COMMONWEALTH OF VIRGINIA
WATER WELL COMPLETION REPORT

• BWCM No. 187-180

(Certification of Completion/County Permit)

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

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

County/City Southampton
County/City Stamp

• Virginia Plane Coordinates
_____ N
_____ E
Latitude & Longitude
36°39'16" N
077°20'10" W
• Topo. Map No. 7A
• Elevation 120 ft.
• Formation KLP
• Lithology Sd
• River Basin 5
• Province 1
• Type Logs EGD
• Cuttings Yes
• Water Analysis Yes
• Aquifer Test No

• Owner Observation Well #178A
• Well Designation or Number Little Texas
Address _____
Phone _____

• Drilling Contractor _____
Address _____
Phone _____

Little Texas (Observation Well #178A)
WELL LOCATION: _____ (feet/miles _____ direction) of _____
and _____ feet/miles _____ (direction) of _____
(If possible please include map showing location marked)

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

Date started 6/85 • Date completed 6/22/85 Type rig Rotary

1. WELL DATA: New X Reworked _____ Deepened _____
• Total depth 380' ft.
• Depth to bedrock 360' ft.
• Hole size (Also include reamed zones)
• 7 inches from 0 to 380 ft.
• _____ inches from _____ to _____ ft.
• _____ inches from _____ to _____ ft.
• Casing size (I.D.) and material
• 4 inches from 0 to 285 ft.
Material Steel
Wt. per foot _____ or wall thickness _____ in.
• 4 inches from 295 to 316 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 285 to 295 ft.
• Mesh size .020 Type Wire wound
• _____ inches from _____ to _____ ft.
• Mesh size _____ Type _____
• _____ inches from _____ to _____ ft.
• Mesh size _____ Type _____
• _____ inches from _____ to _____ ft.
• Mesh size _____ Type _____
• Gravel pack
• From _____ to _____ ft.
• From _____ to _____ ft.
Grout
• From 0 to 30 ft., Type Neat Cement
• From _____ to _____ ft., Type _____

2. WATER DATA • Water temperature 66 °F
• Static water level (unpumped level measured) 70.35 ft.
• Stabilized measured pumping water level 200 ft.
• Stabilized yield 1.1 gpm after 5 hours
Natural Flow: Yes ____ No ____, flow rate _____ g pm
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 _____

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OVER

Owner Observation Well #178A

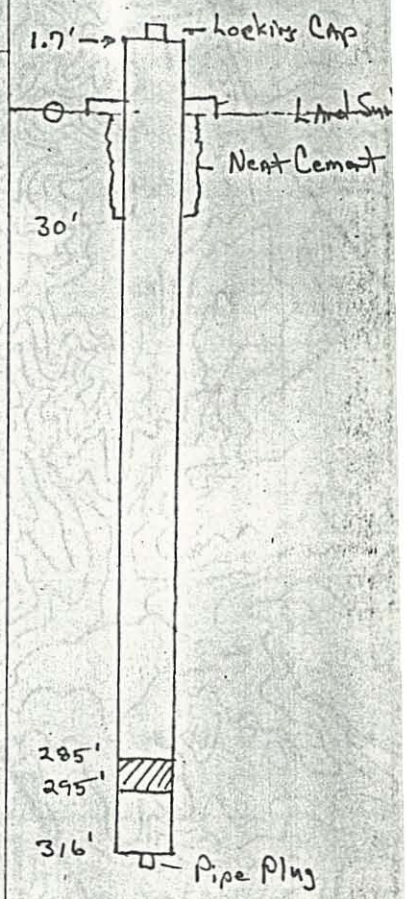
BWCM No: 187-180

9. State law requires submitting to the Virginia State Water Control Board information about groundwater and wells for every well made in the State intended for water, or any other non-exempt well. This information must be submitted whether the well is completed, on standby, or abandoned. Information required includes an accurately and completely prepared water well completion report, full data from any aquifer pumping tests, drill cuttings taken at ten foot intervals (unless exemption is secured), the results of any chemical analyses, and copies of any geophysical logs. Quarterly pumpage and use reports are required from owners of public supply and industrial wells. County or State permits to drill may be required in some parts of the state. Some counties require submission of a water well completion report. The Virginia State Health Department requires a water well completion report for public supply wells.

10. DRILLERS LOG (use additional Sheets if necessary)

DEPTH (feet) From	DEPTH (feet) To	TYPE OF ROCK OR SOIL (color, material, fossils, hardness, etc.)	REMARKS (water, caving, cavities, broken, core, shot, (etc.)	11. Drilling Time (Min.)

12. DIAGRAM OF WELL CONSTRUCTION (with dimensions)



13. Well lot dedicated? _____ ; Size _____ ft. X _____ ft., Well house? _____
Distance to nearest pollutant source _____ ft., Type _____
Distance to nearest property line _____ ft., Building _____ ft.

14. WATER SERVICE PIPE: Checked under _____ p.s.i. for _____ minutes. Pipe size _____ inches, Material _____
Installer _____
Date _____

15. I certify that the information contained herein is true and correct and that this well and/or system has been installed and constructed in accordance with the requirements for well construction as specified in compliance with appropriate county or independent city ordinances and the laws and rules of the Commonwealth of Virginia.

Signature _____ (Seal), Date _____
(Well driller or authorized person)
License No. _____

State Water Control Board Regional Offices

Valley Reg. Off.
116 North Main Street
P. O. Box 268
Bridgewater, Va. 22812
703-828-2595

Piedmont Reg. Off.
4010 West Broad Street
P. O. Box 6616
Richmond, Va. 23230
804-257-1006

Southwest Reg. Off.
408 East Main Street
P. O. Box 476
Abingdon, Va. 24210
703-628-5183

Tidewater Reg. Off.
287 Pembroke Office Park
Suite 310 Pembroke No. 2
Va. Beach, Va. 23462
804-499-8742

West Central Reg. Off.
Executive Park
5312 Peters Creek Road
Roanoke, Va. 24019
703-982-7432

Northern Virginia Reg. Off.
5515 Cherokee Avenue
Suite 404
Alexandria, Va. 22312
703-750-9111

Dreweryville Quad 17A

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

INTERVAL SHEET

Page 1 of 1

Well Repository No.: W- 6840

Date rec'd: Date Processed: 9/4/86

Sample Interval: from 0 to: 340

PROPERTY: SWCB Observation well # 178A

Number of samples: 34

COMPANY: SWCB

Total Depth: 380'

COUNTY: Southampton

Oil or Gas: Water: Exploratory:

From-To	From-To	From-To	From-To	From-To
0 - 10	300 - 310	-	-	-
10 - 20	310 - 320	-	-	-
20 - 30	320 - 330	-	-	-
30 - 40	330 - 340	-	-	-
40 - 50	-	-	-	-
50 - 60	-	-	-	-
60 - 70	-	-	-	-
70 - 80	-	-	-	-
80 - 90	-	-	-	-
90 - 100	-	-	-	-
100 110	-	-	-	-
110 - 120	-	-	-	-
120 - 130	-	-	-	-
130 - 140	-	-	-	-
140 - 150	-	-	-	-
150 - 160	-	-	-	-
160 - 170	-	-	-	-
170 - 180	-	-	-	-
180 - 190	-	-	-	-
190 - 200	-	-	-	-
200 - 210	-	-	-	-
210 - 220	-	-	-	-
220 - 230	-	-	-	-
230 - 240	-	-	-	-
240 - 250	-	-	-	-
250 - 260	-	-	-	-
260 - 270	-	-	-	-
270 - 280	-	-	-	-
280 - 290	-	-	-	-
290 - 300	-	-	-	-

Washed & Unwashed Samples.

OWNER:	SWBC #178A	VDMR:	W-6840
DRILLER:	SWBC	WWCR:	C-425
COUNTY:	Southhampton	TOTAL DEPTH:	380'
QUAD:	Drewerysville	ELEV:	120'

GEOLOGIC LOG

Description of Cuttings

DEPTH IN FEET	
0- 10	Sand, clayey, light brown (5 YR 6/4), very fine-to fine-grained, subangular, moderately sorted; quartz, feldspar, muscovite, rare opaque minerals (glauconite?), iron oxide aggregates (ferricrete?).
10- 20	Sand, as 0-10 above with increased clay and less iron oxide.
20- 30	Sand, grayish orange pink (5 YR 7/2), very fine-to fine-grained; angular to subrounded, well sorted; quartz, sparse feldspar and opaque minerals; dark yellowish orange (10 YR 6/6) clay clasts common; iron oxide (ferricrete) clasts present; quartz grains about 50% milky and 50% rock crystal, milky grains tend to be more angular indicating a mixed Piedmont first cycle sediment and reworked marine sediments.
30- 40	Sand, as 20-30 above with sparse granule size quartz and feldspar clasts; olive gray, sandy clay clasts present - contact with underlying Chesapeake Group may be in this interval.
40- 50	Sand, biofragmental, clayey, light olive gray (5 Y 6/1), very fine-to fine-grained, subrounded to rounded, moderately-to well-sorted sand with about 60% shell fragments, several high spire gastropod species, echinoid spines, bivalve shell fragments.
50- 60	Sand, as 40-50 above; 60 to 70% biofragmental, one coral piece noted.
60- 70	Sand, as 40-50 above; 80 to 90% biofragmental, fossil fragments smaller.
70- 80	Sand, as 40-50 above; 50 to 60 biofragmental.
80- 90	Sand, biofragmental, clayey, light olive gray (5 Y 6/1), very fine-to medium-grained, subrounded to rounded, moderately-to well-sorted sand with 30 to 40% shell fragments; quartz, clay, sparse glauconite, phosphate present; gastropods, bivalves, ostracodes, echinoid spines, diatoms.
90-100	Sand, clayey, light olive gray (5 Y 6/1), very fine-to coarse-grained, subangular to rounded, moderately-to poorly-sorted, with 5 to 10% shell fragments; quartz, clay, phosphate common to sparse, glauconite rare; bivalve fragments, echinoid spines.

DEPTH IN FEET	
100-110	Sand, as 90-100 above, somewhat lighter color, less clay, higher proportion of coarse grains, trace garnet and milky quartz.
110-120	Sand, very light gray (N 8), fine-to coarse-grained, angular to subrounded, moderately sorted; milky quartz, feldspar, trace garnet and tourmaline; quartz grains with white clay coatin.
120-130	Sand, as 110-120 above with trace pyrite.
130-140	Sand, as 110-120 above with increase in clay and coarse grains.
140-150	Sand, as 110-120 above; some down hole contamination.
150-160	Sand, as 110-120 above with scattered 1/8 to 1/4 inch quartz clasts.
160-170	Sand, as 110-120 above; some down hole contamination.
170-180	Sand, as 110-120 above.
180-190	Sand, as 110-120 above.
190-200	Sand, gravelly, very light gray (N 8), fine-to very coarse-grained, angular to rounded, poorly sorted; mostly milky quartz with white clay coating, feldspar, trace garnet, 10 to 15% quartz clasts - 1/8 to 1/4 inch.
200-210	Sand, very light gray (N 8), medium-to very coarse-grained, angular to subrounded, poorly-to moderately-sorted; milky quartz with white clay coating, feldspar, muscovite.
210-220	Sand, as 200-210 above with garnet common.
220-230	Sand, as 200-210 above.
230-240	Sand, gravelly, very light gray (N 8), medium-to very coarse-grained, angular to rounded, poorly sorted; milky quartz with white clay coating, feldspar, trace garnet, abundant 1/8 inch quartz clasts - 10 to 20%.
240-250	Sand, as 200-210 above with abundant contamination; unwashed sample has abundant clay.
250-260	Sandstone, semiconsolidated, light to dark gray with reddish brown iron oxide stains, fine-to coarse-grained, angular to subrounded; quartz, feldspar, chlorite, garnet, muscovite, lithic grains (phyllite, schist, granite?); overall red cast to sample.
260-270	Sandstone, as 250-260 above.

DEPTH IN FEET	
270-280	Sandstone, as 250-260 above.
280-290	Sandstone, as 250-260 above.
290-300	Sandstone, as 250-260 above, sample finer due to bit grinding.
300-310	Sandstone, as 250-260 above, sample finer due to bit grinding.
310-320	Sandstone, as 250-260 above, sample finer due to bit grinding.
320-330	Sandstone, as 250-260 above.
330-340	Sandstone, as 250-260 above.

Description of Core

CORED INTERVAL	CORE RECOVERY	
13- 19.5	3.7	Clay, sandy and silty, grayish red (10 R 4/2) to yellowish gray (5 Y 8/1); thin sand layers - dark yellowish orange (10 YR 6/6), very fine-to fine-grained, angular to subangular, moderately-sorted; quartz, 1 to 3% opaque minerals;iron oxide staining; becomes sand with minor clay near bottom of core.
30- 35	1.5	Clay and sand; upper 9 inches of recovered core light gray, silty clay with thin interbeds of very fine- to fine-grained, quartz sand, weathers reddish orange to yellowish orange; lower 9 inches of recovered core light gray, clayey, very fine-to fine-grained, quartz sand, weathers reddish orange, subangular, with opaque minerals common; bedding near horizontal.
36- 52	3.7	Sand, clay, grayish red (10 R 4/2) to yellowish gray (5 Y 8/1), very fine-to fine-grained, angular to subangular, moderately-sorted; quartz, 1 to 3% opaque minerals; unweathered sand very light gray (N 8); distinct change to dominent yellow color in lower 1.2 feet of core; lower 1.5 inches of core clayey, olive gray sand with glauconite and shells.
80- 90	3.4	Clay, sandy, light olive gray (5 Y 5/2); clay, quartz, rounded garnet, glauconite, selenite needles; diatoms, weathered (brown) and unweathered (white) shell layer; shell layers tend to be clayey sand.
134-138.5	1.3	Sand, clayey, yellowish gray (5 Y 7/2), fine-to coarse-grained, angular to subrounded, moderately sorted; quartz, trace garnet, 1-2% opaques, clay, feldspar; thin layers of ilmenite and garnet.

CORED INTERVAL	CORE RECOVERY	
138.5-145.5	1.5	Sand, clayey, yellowish gray (5 Y 7/2), fine-to coarse-grained, angular to subrounded, moderately sorted; quartz, feldspar, ilmenite, muscovite, trace garnet; weak induration; 6 inch olive gray, burrowed (?) clay at base of core recovered.
255-266	6.0	Sandstone and mudstone, weakly indurated, stored in 12 plastic bag labeled "core bit piece", 1, 3, 4, 6, 7, 8, 9, 10, 11, and 12; highest number at top of core; sample in bag is described. Bag #12: Clay, silty and sandy, light brown (5 YR 6/4), moderate brown (5 YR 4/4), and light olive gray (5 Y 5/2); quartz sand-sparse, very fine-grained; red hematite stains; large (2"), broken quartzite clast; sample appears to be weathered. Bag #11: Sand, light olive gray (5 Y 5/2), very fine-to fine-grained, silty or clayey, red hematite(?) stains, scatted granule size quartzite grains with red hematite(?) coating; clay, sandy, dark reddish brown (10 R 3/4), approximately 1/2" thick. Bag #10: Sand and clay, sand as Bag #11 with three 1/2" clay layers and four 1" sand layers. Bag #9: Sand and clay, same as Bag #11, clay layers not distinct. Bag #8: Sand and clay, same as Bag #11 with four clay layers and five sand layers. Bag #7: Sand and clay, same as Bag #11, clay layer not distinct. Bag #6: Sand and clay, same as Bag #11 with two clay layers and three sand layers. Bag #4: Sand and clay, same as Bag #11, clay layers thin and discontinuous; sand may be somewhat coarser in small lenses. Bag #3: Sand and clay, same as Bag #11, sand coarser grained. Bag #1: Sand as Bag #11, womewhat coarser grained, with large angular lithic clasts. "Core Bit Piece": same as Bag #1.
366-370.4	1.2	Phyllonite, white (N 9) to grayish green (10 G 4/2), quartz, sericite, epidote, carbonate, plagioclase, minor pyrite; carbonate as replacement grains and veins; lensoidal domains of quartz in finer-grained matrix; compositional banding ill defined but present, consists of quartz-rich and mica-rich bands with ill defined boundaries (thin section description by James F. Conley).

GEOLOGIC SUMMARY

Formational picks based on descriptions of cuttings and core and interpretation of geophysical logs.

INTERVAL	ROCK UNIT	AGE
0- 42	Windsor Formation	Pliocene
42- 86	Yorktown Formation	Pliocene
86-112	Eastover Formation	Pliocene/ Miocene
112-255	Potomac Group	Cretaceous
255-350	Newark Supergroup	Triassic
350-380	basement, phyllonite	unknown

Virginia Division of Mineral Resources
Eugene K. Rader, Geologist
June 9, 1987