

COMMONWEALTH OF VIRGINIA
WATER WELL COMPLETION REPORT

C-237
W-6839

• HWCM No. _____

(Certification of Completion/County Permit)

State Water Control Board
Box 11141
1 North Hamilton St
Richmond Va 23210

County/City _____

County/City Stamp

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

• Virginia Plane Coordinates
_____ N
_____ E

Latitude & Longitude
36° 11' 30" N
77° 15' 40" W

• Topo. Map No. 388
• Elevation 90 ft.
• Formation _____
• Lithology _____
• River Basin 5
• Province 1
• Type Logs DEG
• Cuttings Yes
• Water Analysis No
• Aquifer Test No

• Owner _____
• Well Designation or Number _____
Address _____
Phone _____

• Drilling Contractor VASUNE
Address _____
Phone _____
_____ (Observation well at 102' Pilot Hole)

WELL LOCATION: _____ (feet/miles _____ direction) of _____
and _____ (feet/miles _____ direction) of _____
(If possible please include map showing location marked)

Date started _____ • Date completed 10/16/95 Type rig Rotary

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

1. WELL DATA: New Reworked _____ Deepened _____

• Total depth 521 ft.
• Depth to bedrock 516 ft.

Hole size (Also include reamed zones)

- 1.5 inches from 0 to 518 ft.
- 3 inches from 518 to 521 ft.
- _____ inches from _____ to _____ ft.

• Casing size (I.D.) and material

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

- _____ 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 _____

• Gravel pack

- From _____ to _____ ft.
- From _____ to _____ ft.

Grout

- From _____ to _____ ft., Type _____
- From _____ to _____ ft., Type _____

2. WATER DATA • Water temperature _____ of _____

- Static water level (unpumped level measured) _____ ft.
- Stabilized measured pumping water level _____ ft.
- Stabilized yield _____ gpm after _____ hours

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 _____

• Type of facility: Domestic _____, Public water supply _____
Public institution _____, Farm _____, Industry _____
Commercial _____, Other _____

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

6. WELL HEAD: 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 0 to 521 material Bentonite

50
OVER

Littleren Quarry 30B



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

INTERVAL SHEET

Page 1 of 1

Well Repository No.: W- 6839

Date rec'd:

Date Processed: 9/4/86

Sample Interval: from 0 to 500

PROPERTY: SWCB Observation well # 178
 (Little Texas)

Number of samples: 50

COMPANY: SWCB

Total Depth: 521'

COUNTY: Sussex

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	340 - 350	-	-	-
50 - 60	350 - 360	-	-	-
60 - 70	360 - 370	-	-	-
70 - 80	370 - 380	-	-	-
80 - 90	380 - 390	-	-	-
90 - 100	390 - 400	-	-	-
100 - 110	400 - 410	-	-	-
110 - 120	410 - 420	-	-	-
120 - 130	420 - 430	-	-	-
130 - 140	430 - 440	-	-	-
140 - 150	440 - 450	-	-	-
150 - 160	450 - 460	-	-	-
160 - 170	460 - 470	-	-	-
170 - 180	470 - 480	-	-	-
180 - 190	480 - 490	-	-	-
190 - 200	490 - 500	-	-	-
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 #178
DRILLER: SWBC
COUNTY: Sussex
QUAD: Littleton

VDMR: W-6839
WNCR: C-237
TOTAL DEPTH: 521'
ELEV.: 90'

GEOLOGIC LOG

Description of Cuttings

DEPTH IN FEET

- 0- 10 Sand, light brown (5 YR 6/4), fine-grained, angular to sub-angular, moderate sorting; rock crystal and iron stained quartz, feldspar, trace muscovite and opaque minerals.
- 10- 20 Sand, as 0-10 above with silt and minor clay.
- 20- 30 Silt, sandy and clayey, grayish orange (10 YR 7/4); sand as above with scattered rounded, coarse, milky quartz grains.
- 30- 40 Silt, sandy and clayey, as 20-30 above with trace of green glauconite.
- 40- 50 Sand, light olive gray (5 Y 6/1), fine-grained, subangular to rounded; well sorted; rock crystal quartz, 2 to 5% dark green to black glauconite, trace phosphate, minor silt and clay; fossils - shell fragments, echinoid spines.
- 50- 60 Sand, biofragmental, light olive gray (5 Y 6/1); quartz sand, fine-grained, subangular to rounded, well sorted, with trace green to black glauconite and phosphate; shell fragments up to 1/8 inch, echinoid spines.
- 60- 70 Sand, biofragmental, as 50-60 above with large shell fragments (up to 3/8 inch), marked decrease in echinoid spines.
- 70- 80 Sand, biofragmental, as 60-70 above with 60 to 70% shell fragments (up to 1/2 inch), no echinoid spines.
- 80- 90 Sand, biofragmental and clayey, as 70 to 80 except marked increase in clay, clay almost equal to quartz sand.
- 90-100 Sand, biofragmental and clayey, light olive gray (5 Y 6/1); quartz sand, fine-grained, subrounded to rounded, well sorted, with 1 to 2% green to black glauconite, phosphate; clay in clotted masses; shell fragments 1/8 inch and less, 10%; rare echinoid spines.
- 100-110 Sand, clayey, yellowish gray (5 Y 7/2), fine-to medium-grained, angular to subrounded, poor to moderate sorting; milky quartz, minor rock crystal quartz, trace pink garnet, feldspar, quartz with white clay coating and some grains with green inclusions; fossil fragments and glauconite probably contamination.

DEPTH IN FEET

111-120	Sand, as 100-110 above.
120-130	Sand, as 100-110 above.
130-140	Sand, as 100-110 above.
140-150	Sand, as 100-110 above.
150-160	Sand, as 100-110 above.
160-170	Sand, as 100-110 above except fine-to coarse-grained.
170-180	Sand, as 100-110 above except fine-to coarse-grained.
180-190	Sand, as 100-110 above except coarse-grained.
190-200	Sand, as 100-110 above except coarse- to very coarse-grained.
200-210	Sand, Clayey, yellowish gray (5 Y 8/1), fine-to coarse-grained, angular to subrounded, moderate sorting; milky quartz with white clay coating, feldspar, trace garnet and muscovite.
210-220	Sand, as 200-210 above.
220-230	Sand, as 200-210 above.
230-240	Sand, as 200-210 above.
240-250	Sand, as 200-210 above.
250-260	Sand, as 200-210 above except for increase in coarse-grained fraction.
260-270	Sand, as 250-260 above.
270-280	Sand, as 250-260 above.
280-290	Sand, as 250-260 above.
290-300	Gravel, white (N 9) to light gray (N 7), very minor sand-size particles, subangular to rounded; milky quartz, feldspar, lithic clasts; white clay coatings common.
300-310	Sand, as 250-260 above.
310-320	Sand, as 250-260 above.
320-330	Sand, as 250-260 above.
330-340	Gravel, as 290-300 above.
340-350	Sand, clay with gravel-sized clasts common, light gray (N 7) to white (N 9), medium-to coarse-grained, subangular to rounded, poorly sorted; milky quartz, feldspar, clay, lithic clasts.

DEPTH IN FEET

350-360	Gravel, sandy, minor clay; gravel-quartz, lithic clasts, rare feldspar, subrounded to rounded; sand-quartz, feldspar, subangular to subrounded; poorly sorted.
360-370	Gravel, as 350-360 above except decrease in sand.
370-380	Gravel, as 360-370 above except very coarse, up to 3/8 inch.
380-290	Gravel, as 370-380 above except increase in sand.
390-400	Gravel, as 370-380 above.
400-410	Gravel, as 380-390 above.
410-420	Gravel, as 360-370 above.
420-430	Gravel, as 380-390 above.
430-440	Gravel, as 380-390 above.
440-450	Gravel, as 380-390 above with an increase in clay.
450-460	Gravel, as 440-450 above.
460-470	Gravel, as 440-450 above.
470-480	Gravel, as 440-450 above.
480-490	Sand, clayey, light gray (N 7), fine-to coarse-grained, angular to subrounded, poorly sorted; quartz, feldspar, trace garnet, rare gravel clast.
490-500	Sand, as 480-490 above, with biotite or chlorite, quartz grains with tourmaline needles.

DESCRIPTION OF CORE

<u>CORED INTERVAL</u>	<u>CORE RECOVERY</u>	
85- 92	2.2	Sand, clayey, olive gray (5 Y 4/1), very fine-to medium-grained with sparse granules, subangular to rounded, poorly sorted; clay and silt matrix; weathered shell fragments; abundant needles of selenite gypsum; black glauconite (2 to 4%).
116-125	4.0	Sand, grain supported with minor white clay matrix, very light gray (N 8), fine-to coarse-grained, angular to subrounded, poorly sorted; quartz, feldspar, muscovite, chlorite, biotite, garnet; 0.1 "sandy clay bed interbedded with 0.5" sand beds.

<u>CORED INTERVAL</u>	<u>CORE RECOVERY</u>	
149-156	1.15	Sand, clayey, light olive gray (5 Y 5/2), fine-to coarse-grained, angular to subrounded, poorly sorted; quartz, feldspar, clay, muscovite, garnet, iron oxide stains; quartz clasts 1/8" to 1", thin clay beds interbedded with thicker sand beds.
185-190	1.6	Sand, clayey, light gray (N 8), fine-to coarse-grained, angular to subrounded, moderately sorted; quartz, feldspar, clay, chlorite, muscovite; quartz clasts.
435-446	1.3	Sand, silty, light olive gray (5 Y 5/2), fine-to coarse-grained, angular to subrounded, moderately sorted; quartz, feldspar, clay, hornblende, muscovite; one 2" quartzite clast with gravels common.
446-456	1.0	Sand, silty with gravel, light olive gray (5 Y 5/2), fine-to very coarse-grained, angular to subrounded, moderately sorted; quartz, clay, feldspar, garnet.
456-461	3.3	Clay, silty, olive gray (5 Y 4/1); scattered quartz grains, gypsum needles and plates.
518-519	1.5	Protomylonitic granulite (518.9'-519.2'), microcline, quartz, plagioclase, biotite (partially altered to chlorite), orthopyroxene, carbonate and sericite from feldspar host; retrograde green schist overprint shows mortar texture (thin section description by James F. Conley).

GEOLOGIC SUMMARY

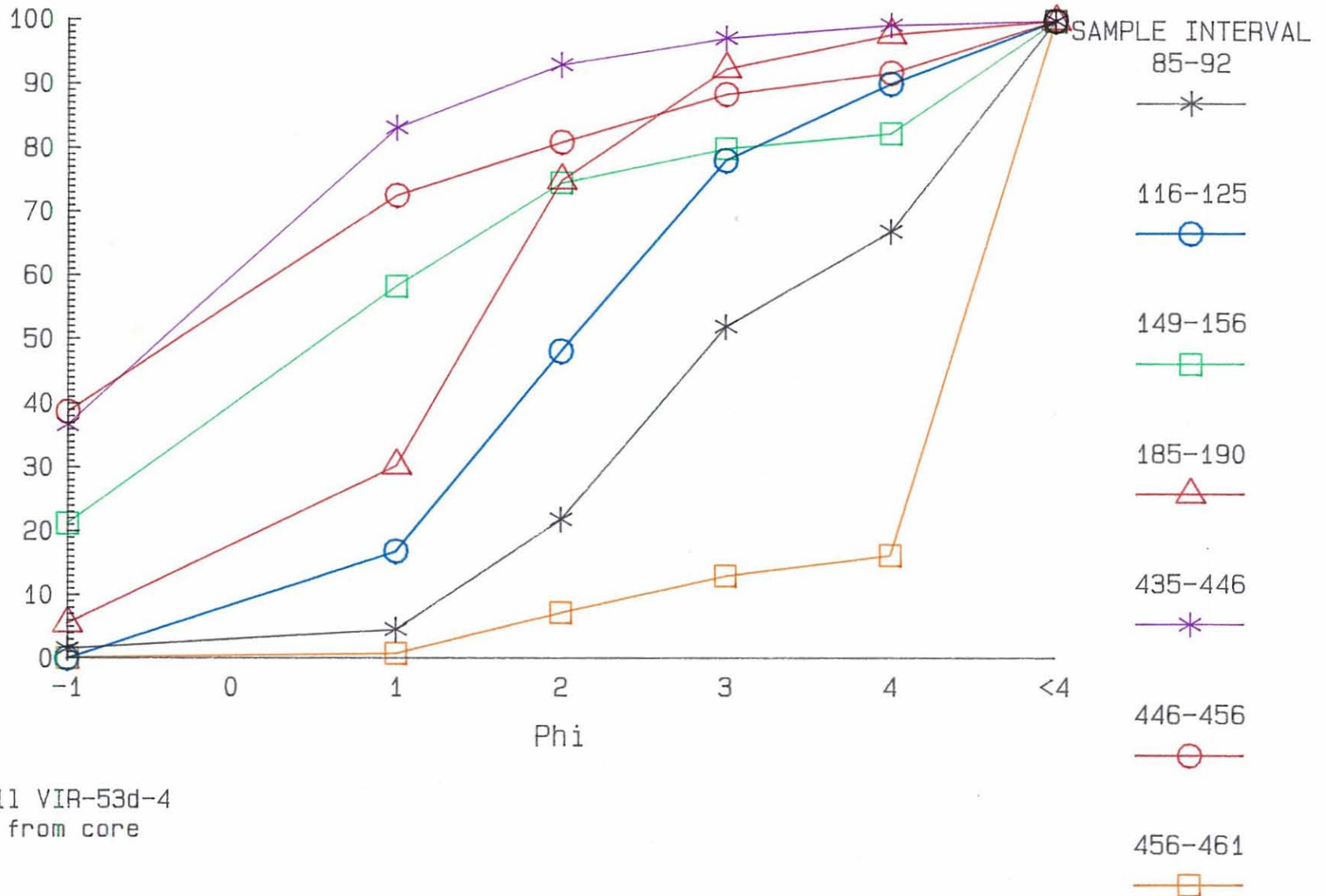
Formational picks based on descriptions of cuttings and core and interpretation of geophysical logs.

<u>INTERVAL</u>	<u>ROCK UNIT</u>	<u>AGE</u>
0- 37	Bacon Castle Formation	Pliocene
37- 70	Yorktown Formation	Pliocene
70-102	Eastover Formation	Pliocene/ Miocene
102-518	Potomac Group	Cretaceous
518-521	basement, granulite	unknown

VIRGINIA DIVISION OF MINERAL RESOURCES
Eugene K. Rader
June 9, 1987

GRAIN SIZE CUMULATIVE CURVES
 VDMR W-6839
 E. K. RADER

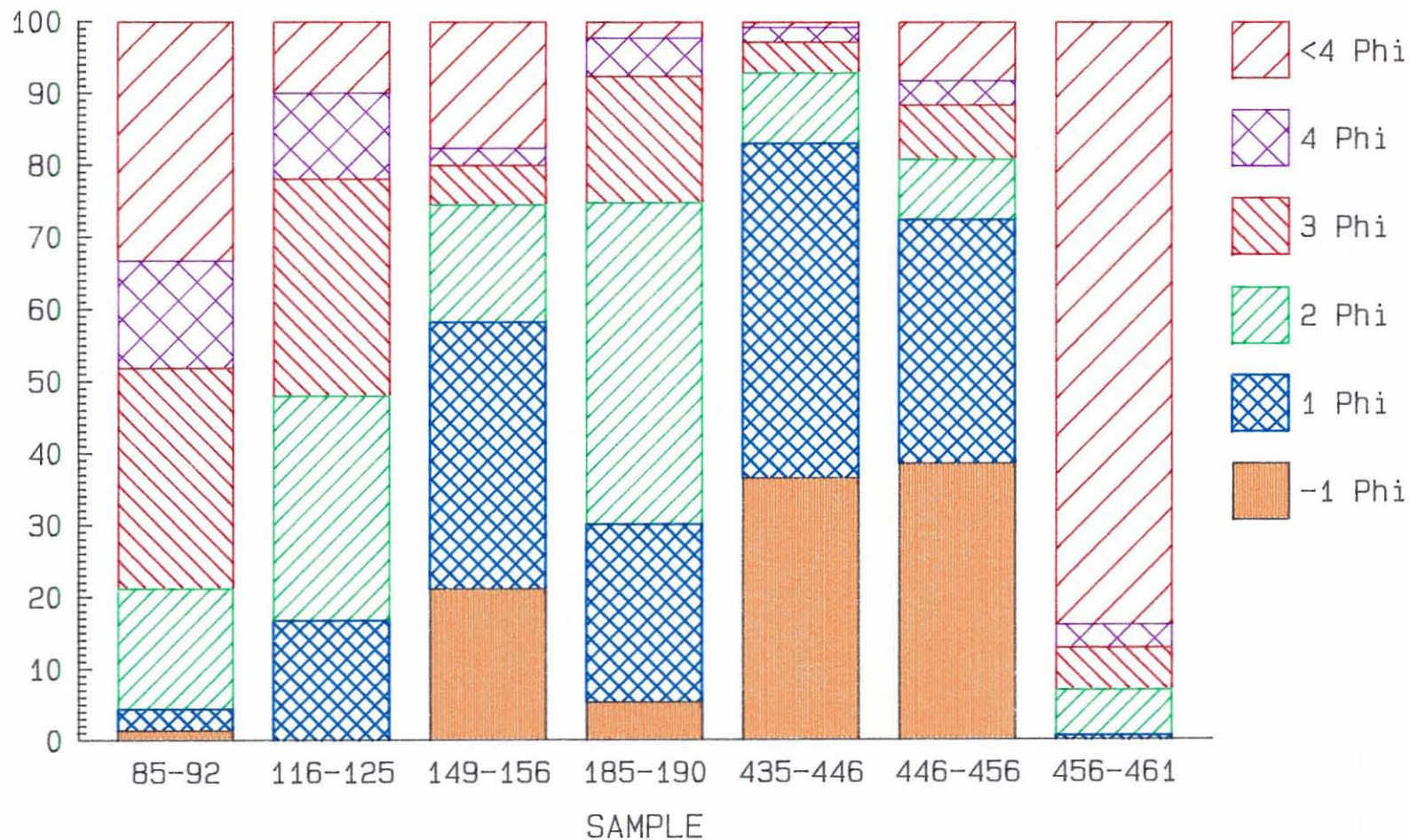
PERCENT (WEIGHT)



SWBC Well VIR-53d-4
 Samples from core

PER CENT GRAIN SIZE
VDMR W-6839
E. K. RADER

WEIGHT PERCENT



SWBC Well VIR-53d-4
Samples from core