INTERVAL SHEET WWCR: ~~163~~ 94

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VDMR Well No: 2158

Date rec'd: 3/29/68

Sample Interval: from 0 to: 320'

PROP: Kiwanis Club of Richmond, Va.

Number of samples: 33

COMP: Sydnor Hydrodynamics, Inc.

Total Depth: 320'

COUNTY: ~~King William (Mangohick)~~ Caroline (Bowerville)

Oil or Gas: Water: X Exploratory:

From-To	From-To	From-To	From-To
0 - 2	290 - 300	-	-
2 - 10	300 - 310	-	-
10 - 20	310 - 320	-	-
20 - 30	-	-	-
30 - 40	-	-	-
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	-	-	-

All intervals have both washed and unwashed samples.

OWNER: Kiwanis Club of Richmond, Va.
DRILLER: Sydnor Hydrodynamics, Inc.
COUNTY: Caroline (Bowersville)

VDMR: 2158
WWCR: 94
TOTAL DEPTH: 320'

GEOLOGIC LOG

Depth in feet	
COLUMBIA GROUP (0-50')	
0-2	Sand - abundant matrix of tan clay; very fine- to coarse-grained, poorly sorted, angular; very slightly feldspathic; trace of magnetite
2-10	Sand - abundant matrix of red clay; fine- to coarse-grained, poorly sorted, angular to subangular; very slightly feldspathic
10-20	Sand - abundant matrix of multi-colored clay, 10 percent very fine-grained quartz gravel; very fine- to very coarse-grained, poorly sorted, angular to subangular; very slightly feldspathic; a few schistose rock fragments
20-30	Sand - orange-brown (iron-stained), trace of clay; medium- to coarse-grained, fairly well-sorted, subangular to subrounded; slightly feldspathic and lithic in coarse fraction
30-40	Sand - orange-brown, very slightly claycy, 5 percent poorly-rounded, quartzo-feldspathic granule gravel; fine- to coarse-grained, rather poorly sorted, angular to subrounded; slightly feldspathic; a few schistose rock fragments
40-50	Sand - orange-brown, very slightly clayey; bimodal; 50 percent fine- to medium-grained, well-sorted, angular; 50 percent very coarse-grained, well-sorted, subrounded; coarser fraction is moderately feldspathic, slightly lithic; a few pebbles up to 15 mm
CALVERT FORMATION (50-130')	
50-60	Sand - brownish-gray, slightly clayey; fine-grained, well-sorted, angular to subangular; minor magnetite; traces of shell and plant material
60-70	Sand - gray, slightly clayey; fine-grained, very well-sorted, angular to subangular; magnetite is an abundant accessory; a few small shell fragments
70-80	"
80-90	"
90-100	"

100-110 Sand - greenish-gray, moderately clayey, 10 to 15 percent small pelecypod shell fragments; fine- to very fine-grained, well-sorted, angular; trace of magnetite; foraminifers rare

110-120 Clay - greenish-gray, locally sandy, 10 percent small pelecypod shell fragments; sand is fine, well-sorted, angular; quartz, with minor amount of bone phosphorite

120-130 Sand and Clay - greenish-gray, about 50 percent clay; trace of shell fragments; sand is fine-grained, well-sorted, angular; fragments of bone phosphorite common; traces of glauconite, muscovite, and kyanite

NANJEMOY FORMATION (130-170')

130-140 Clay - greenish-gray, locally orange-brown, very sandy, 5 percent shell fragments; sand is fine- to medium-grained, moderately sorted; 60 percent angular, clear to greenish quartz, 40 percent blackish-green autochthonous glauconite (generally coarser than quartz); small amount of bone phosphorite; moderately micaceous; trace of pyrite; a few small foraminifers

140-150 "

150-160 " Sand fraction is well-sorted, 75 percent quartz, 25 percent glauconite

160-170 Clay - gray, silty, moderately sandy, a few shell and plant fragments; sand is fine- to very fine-grained, very well-sorted; 70 percent angular, clear to greenish-quartz, 30 percent blackish-green glauconite; micaceous and pyritic; a few fragments of bone phosphorite; a very few small foraminifers

MATTAPONI FORMATION (170-240')

170-180 Clay - dark-gray, very silty, slightly sandy, trace of granule gravel; sand is very fine- to coarse-grained, poorly sorted; 60 percent quartz, 40 percent dark-green glauconite; micaceous; minor pyrite and bone phosphorite; a few small shell fragments; plant fragments, ostracods and foraminifers (Robulus, Nodosaria)

180-190 "

190-200 "

200-210 Sand - dark-gray, clayey, a few small shell fragments; 50 percent fine- to medium-grained, angular quartz, and 50 percent medium- to coarse-grained, dark-green glauconite; minor muscovite, pyrite, and bone phosphorite; a few ostracods and foraminifers (Robulus, Nodosaria)

210-220 " 5-10 percent shell fragments

OWNER: Kiwanis Club of Richmond, Va.

220-230 Sand and Shell - very little clay; 30 percent abraded pelecypod shell fragments; 70 percent medium- to very coarse-grained, fairly well-sorted (skewed coarse), subrounded sand (grades into granule gravel); sand is 15 percent medium- to coarse-grained glauconite, 5 percent nodular phosphorite; feldspathic; quartz and feldspar commonly stained yellow to green

230-240 " 5 percent abraded pelecypod shell fragments

PATUXENT FORMATION (240-320')

240-250 Sand - gray, clean, 5-10 percent granule gravel; coarse- to very coarse-grained, fairly well-sorted, subrounded to rounded; 5 percent medium- to coarse-grained glauconite; very feldspathic; minor nodular phosphorite

250-260 " 15-20 percent granule gravel

260-270 " 10 percent granule gravel

270-280 " 5 percent granule gravel

280-290 " 10 percent fine- to medium-grained glauconite; trace of granule gravel

290-300 Sand - gray, clean, traces of granule gravel and shell fragments; coarse- to very coarse-grained, fairly well-sorted, subangular to subrounded; feldspathic; slightly glauconitic

300-310 "

310-320 " 15 percent granule gravel

GEOLOGIC SUMMARY

	Rock Unit	Age
0-50'	Columbia Group	post- Miocene
50-130'	Calvert Formation	Miocene
130-170'	Nanjemoy Formation	Eocene
170-240'	Mattaponi Formation	Paleocene - Late Cretaceous
240-320'	Patuxent Formation	Early Cretaceous

Virginia Division of Mineral Resources
Robert H. Teifke, Geologist
April 10, 1968

Robert H. Teifke
March 6, 1972

VDMR - 2158
WWCR - ~~165~~ 94

RP

COMMONWEALTH OF VIRGINIA
DEPARTMENT OF CONSERVATION AND ECONOMIC DEVELOPMENT

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Charlottesville, Virginia

DIVISION OF MINERAL RESOURCES

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WATER WELL COMPLETION REPORT

OWNER: Kiwanis Club of Richmond, Va. Mailing Address: Hotel John Marshall Richmond, Virginia 23213

TENANT: Greenway Kiwanis Club Mailing Address: King William County, Va.

DRILLER: Sydnor Hydrodynamics, Inc. Mailing Address: P.O.Box 1476, Richmond, Va.23212

WELL LOCATION: County ~~King William~~ Caroline Approx. 3½ ~~feet~~ miles east (direction) of U.S. Highway Route 301 and 2 ~~feet~~ miles south (direction) of State Route 30

(GIVE DIRECTION AND DISTANCE IN FEET OR MILES FROM TWO REFERENCE POINTS - ROADS, TOWNS, RIVERS, ETC. - ON COUNTY HIGHWAY OR OTHER MAP.)

DATE STARTED: 12-15-67 DATE COMPLETED: 1-8-68

TYPE OF DRILL RIG USED: Rotary TOTAL DEPTH 320 feet

WATER LEVEL: Stands 148'9" ~~feet~~ below surface OR

has NATURAL flow of - gallons per minute.

YIELD TEST: Method submersible

Drawdown 138 feet

Rate 20 gal. per min.

Duration 5 hrs., 15 min.

Electric Log
WATER ZONES: from 208 to 213 feet

from 285 to 300 feet

from 310 to 315 feet

WATER: Color Clear Taste OK

Odor None Temp. ____ °F

WELL TO SUPPLY: (check one) Home ____

Farm ____ Town ____ School ____

Industry ____ Other Camp

WATER ANALYSIS AVAILABLE: Yes ____ No X

DRILL CUTTINGS SAVED: Yes X No ____

HOLE SIZE: 8 inches from 0 to 320 feet

____ inches from ____ to ____ feet

____ inches from ____ to ____ feet

SCREEN SIZE: 4 inches from 208 to 213 feet

4 inches from 285 to 300 feet

4 inches from 310 to 315 feet

CASE SIZE: 4 inches from 0 to 208 feet

4 inches from 213 to 285 feet

4 inches from 300 to 310 feet
4 315 317

GROUTING: Method Pressure

Material Cement & Water Depth ____ feet

PUMP: Type ____

Capacity ____ gal. per min.

Depth of intake ____ feet

(DRILL CUTTINGS SHOULD BE COLLECTED AT 10 FOOT INTERVALS. THESE SAMPLES MAY BE SHIPPED TO THIS OFFICE EXPRESS COLLECT. SAMPLE BAGS ARE FURNISHED FREE OF CHARGE UPON REQUEST.)

REMARKS: Electric Log Ran by driller

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(LOG OF WELL) OVER

LOG

FURNISHED BY: Sydnor Hydrodynamics, Inc. DATE: 1-11-68

DEPTH (feet) FROM	TO	TYPE OF ROCK OR SOIL PENETRATED (gravel, clay, etc., hardness, color, etc.)	REMARKS (water, caving, shot, screen, sample, etc.)
0	2	Top soil	
2	10	Red Clay	
10	25	Yellow sand	
25	55	Yellow clay	
55	95	Blue Marl - some shell	
95	200	Blue clay	
200	225	Blue clay & shells	
225	235	Blue clay, sand, shells	
235	240	Shells, sand, clay	
240	255	Blue clay	
255	265	Shells, sand, clay	
265	286	Sand	
286	290	Blue clay	
290	295	Sand, clay, shells	
295	303	Sand	
303	310	Sand, soft clay	
310	315	Sand	
315	319	Blue clay	
319	320	Rock	

(Use additional forms if necessary)