

COMMONWEALTH OF VIRGINIA  
DEPARTMENT OF CONSERVATION AND ECONOMIC DEVELOPMENT

MAILING ADDRESS:

DIVISION OF MINERAL RESOURCES

OFFICE ADDRESS:

P. 3667  
Charlottesville, VA 22903

JAMES L. CALVER, COMMISSIONER

McCormick Road  
Charlottesville, Virginia

WATER WELL COMPLETION REPORT

James City Courthouse  
Williamsburg, Virginia 23185

OWNER: James City Co. Service Authority Mailing Address: Williamsburg, Virginia 23185

TENANT: Long Hill Rd. Water Works #1 Mailing Address: Williamsburg, Virginia 23185

DRILLER: Sydnor Hydrodynamics, Inc. Mailing Address: P. O. Box 27186 Richmond, Virginia 23261

WELL LOCATION: County James City Approx. 1.7 miles East (direction) of St. Rt. 614 and 1500 feet North (direction) of St. Rt. 612

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

DATE STARTED: 4-25-73 DATE COMPLETED: 6-14-73

TYPE OF DRILL RIG USED: Rotary TOTAL DEPTH 398 feet

WATER LEVEL: Stands 91'8" feet below surface OR has NATURAL flow of \_\_\_\_\_ gallons per minute.

YIELD TEST: Method Submersible

Drawdown 91 feet

Rate 300 gal. per min.

Duration 24 hrs., \_\_\_\_\_ min.

WATER ZONES: from 200 to 215 feet  
222 232  
from 236 to 246 feet  
from 260 to 270 feet

WATER: Color Clear Taste \_\_\_\_\_  
Odor \_\_\_\_\_ Temp. \_\_\_\_\_ °F

WELL TO SUPPLY: (check one) Home \_\_\_\_\_  
Farm \_\_\_\_\_ Town \_\_\_\_\_ School \_\_\_\_\_  
Industry \_\_\_\_\_ Other County \_\_\_\_\_

WATER ANALYSIS AVAILABLE: Yes  No \_\_\_\_\_  
40

DRILL CUTTINGS SAVED: Yes  No \_\_\_\_\_

(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 Sydnor Well #1

HOLE SIZE: 22 inches from 0 to 50 feet

17 1/2 inches from 50 to 280 feet

9-7/8 inches from 280 to 398 feet

SCREEN SIZE: 6 inches from 200 to 215 feet

6 222 232

6 inches from 236 to 246 feet

6 inches from 260 to 270 feet

CASE SIZE: 8 inches from +2'4" to 200 feet

6 215 222

6 inches from 232 to 236 feet

6 246 260

6 inches from 270 to 276 feet

GROUTING: Method Pressure

Material Cement & Water Depth 50 feet

PUMP: Type \_\_\_\_\_

Capacity \_\_\_\_\_ gal. per min

Depth of intake \_\_\_\_\_ feet

LOG

FURNISHED BY: SYDNOR HYDRODYNAMICS, INC. DATE: \_\_\_\_\_

DEPTH (feet)		TYPE OF ROCK OR SOIL PENETRATED (gravel, clay, etc., hardness, color, etc.)	REMARKS (water, caving, shot, screen, sample, etc.)
FROM	TO		
0	33	Tough yellow and orange clay	
33	45	Sand and yellow clay	
45	80	Clay, shells and some sand	
80	180	Blue clay some tough green clay	
180	206	Softer clay and sand	
206	207	Shell rock	
207	232	Soften sand, clay, shells	
232	243	Sand clay some sand streaks	
243	246	Shell rock	
246	276	Gray sand clay some shells	
276	295	Sand clay, gray and blue	
295	318	Tough clay some sand	
318	319	Shell rock	
319	348	Black sand shells	
348	360	Black soft sand some clay	
360	398	Tough blue-gray clay	

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

INTERVAL SHEET

Page 1 of 1 Well Repository No.: C- 164 W- 3877  
 Date rec'd: 6/19/73 Date Processed: 5/16/74 Sample Interval: from 0 to: 398'  
 PROPERTY: James City Co. Service Authority Number of samples: 40  
 (Long Hill Rd. Water Works #1  
 COMPANY: Sydnor Hydrodynamics Total Depth: 398'  
 COUNTY: James City (Centreville) Oil or Gas: Water: ~~X~~Exploratory:

From-To	From-To	From-To	From-To	From-To
0 - 10	350 - 360	-	-	-
10 - 20	360 - 370	-	-	-
20 - 30	370 - 380	-	-	-
30 - 40	380 - 390	-	-	-
40 - 50	390 - 398	-	-	-
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	-	-	-	-
300 - 310	-	-	-	-
310 - 320	-	-	-	-
320 - 330	-	-	-	-
330 - 340	-	-	-	-
340 - 350	-	-	-	-

All intervals have both washed and unwashed samples.

OWNER: James City Co. Service Authority  
(Long Hill Rd. Water Works, #1)  
DRILLER: Sydnor Hydrodynamics, Inc.  
COUNTY: James City

VDMR #3877  
WWCR # 164  
TOTAL DEPTH: 398'

GEOLOGIC LOG

Depth  
(feet)

BACONS CASTLE FORMATION (0-40')

- 0-10 Sand - pink and tan; clayey, minor silty; fine to medium; moderate sorting; subrounded; rare gypsum and muscovite; gray clay clasts.
- 10-20 Sand - pink to tan; clayey, minor silt; fine; moderate sorting; subrounded; glauconite trace; muscovite rare.
- 20-30 Sand - tan; clayey, minor silt; fine to coarse; poor sorting; subrounded; glauconite trace; quartz granules and pebbles; ferricrete; slightly feldspathic; muscovite rare.
- 30-40 Sand - tan; clayey; fine to coarse; poor sorting; subrounded slightly glauconitic; quartz granules and pebbles; ferricrete; slightly feldspathic.

YORKTOWN FORMATION (40-170')

- 40-50 Sand - tan; clayey; fine; moderate sorting; subrounded; slightly glauconitic; shell fragments rare; quartz granules; ferricrete.
- 50-60 Sand - tan; clayey; fine; moderate sorting; subrounded; glauconite trace; shell fragments 5%; quartz granules.
- 60-70 Sand - tan; clayey; fine; moderate sorting; subrounded; slightly glauconitic; shell fragments 5-7%; quartz granules; muscovite rare; echinoids spines; minor calcareous cement.
- 70-80 Sand - greenish tan; clayey; fine; moderate sorting; subrounded; slightly glauconitic; shell fragments 10%; coral echinoid spines, Isognomen?
- 80-90 Sand - greenish gray; clayey; fine; moderate sorting; subrounded; glauconite common; shell fragments 10%, echinoid spines; Isognomen ?, muscovite rare.

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Depth  
(feet)

- 90-100 Sand - greenish gray; clayey; fine; moderate sorting; sub-rounded; glauconite common; shell fragments 5-10%, echinoid spines; Isognomen ? thin interbeds of gray, sandy, glauconitic limestone.
- 100-110 Sand - greenish gray; clayey; fine; moderate sorting; sub-rounded; glauconite common; shell fragments 10%, echinoid spines Isogomen ?
- 110-120 As above.
- 120-130 Sand - greenish gray; clayey; fine; moderate sorting; sub-rounded; glauconite common; shell fragments 5%, echinoid spines, shark's teeth, forams (Nonionella cf. auris); muscovite rare.
- 130-140 Sand - greenish gray; clayey; fine; moderate sorting; subrounded; glauconite common; shell fragments 5%, ostracodes.
- 140-150 Sand - greenish gray; clayey; fine; moderate sorting; subrounded; slightly glauconitic; shell fragments 5%, echinoids spines.
- 150-160 Sand - greenish gray; very clayey; fine; moderate to poor sorting; subrounded; slightly glauconitic; shell fragments 1-2%.
- 160-170 Sand - greenish gray; very clayey fine; moderate sorting; subrounded; glauconite trace; shell fragments 1-2%; interbeds of gray clay and sandy limestone.
- CALVERT FORMATION (170-250')
- 170-180 Clay - greenish gray; glauconite trace; shell fragments 1-2%; sandy.
- 180-190 As above with in interbeds of fine to medium sand.

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Depth  
(feet)

- 190-200 Sand - greenish gray; very clayey; fine; poor sorting; subangular to subrounded; shell fragments, forams (Marginulina, Dentalina); brown phosphate.
- 200-210 Sand - greenish gray; very clayey; medium to coarse; poor to moderate sorting; subangular to rounded; shell fragments, forams (Robulus); minor brown phosphate.
- 210-220 Sand - greenish gray; very clayey; fine to medium; poor to moderate sorting; subangular to rounded; shell fragments; minor brown phosphate.
- 220-230 As above with echinoid spines and forams (Dentalina).
- 230-240 Sand - grayish tan; clayey; medium; poor sorting; subangular; glauconite common; shell fragments, forams (Nonion); sandy glauconitic limestone.
- 240-250 Sand - grayish tan; minor clay; medium to coarse; poor sorting; subangular; glauconite common to abundant; shell fragments; sandy glauconitic limestone with pyrite.

NANJEMOY FORMATION (250-360')

- 250-260 Limestone - grayish tan; sandy; minor clay; glauconite common to abundant; shell fragments; minor pyrite.
- 260-270 Limestone - grayish tan; sandy; glauconite common to abundant; shell fragments; minor pyrite; interbeds of medium to coarse sand.
- 270-280 Sand - gray to black; glauconitic (50%); minor clay; fine to medium; poor sorting; angular to rounded; shell fragments; interbedded sandy, glauconitic limestone; abraded forams.
- 280-290 Sand - gray to black; glauconitic (60-70%); minor clay; fine to medium; poor sorting; angular to rounded; shell fragments; minor sandy, glauconitic limestone; abraded forams.

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Depth  
(feet)

- 290-300 Sand - gray to black; glauconitic (60-70%); clayey; fine to medium; poor sorting; angular to rounded; shell fragments.
- 300-310 As above with pink to gray, glauconitic clay.
- 310-320 Clay - pink to gray; glauconitic; thin glauconitic (50-60%) sand.
- 320-330 Sand - dark green to black; glauconitic (80-85%); clayey; fine; moderate sorting; subangular; minor shell fragments.
- 330-340 As above with 85% glauconite and thin pink to gray glauconitic clay beds.
- 340-350 As 330-340 above.
- 350-360 As 330-340 above.
- 350-360 As 330-340 above with rounded quartz granules and pebbles.
- MATTAPONI FORMATION (360-398')
- 360-370 Sand - dark green to black; glauconitic (85%); clayey; fine; moderate sorting; subangular; minor shell fragments.
- 370-380 As above with 80% glauconite.
- 380-390 As 370-380 above.
- 390-398 As 360-370 with 70% glauconite and pink to gray glauconitic clay.

GEOLOGIC SUMMARY

<u>Thickness</u> <u>(feet)</u>	<u>Rock Unit</u>	<u>Time Rock Unit</u>
40	Bacons Castle Formation	Pleistocene
130	Yorktown Formation	Pliocene-Miocene
80	Calvert Formation	Miocene-Eocene
110	Nanjemory Formation	Eocene
38	Mattaponi Formation	Eocene-Cretaceous

Virginia Division of Mineral Resources  
Eugene K. Rader  
May 2, 1978