

OWNER: Shu-Lu Corporation
DRILLER: Sydnor Hydrodynamics, Inc.
COUNTY: Henrico (Richmond)

VDMR: 1769
WWCR: 189
TOTAL DEPTH: 314'

GEOLOGIC LOG

Depth in Feet

COLUMBIA GROUP (0 - 50')

- 0 - 10 Clay -- brown, very sandy, a few rounded pebbles; sand is medium grained, fairly well-sorted, subangular to subrounded; moderately feldspathic.
- 10 - 20 "
- 20 - 30 Clay -- tan, very sandy; fine- to medium-grained, well-sorted, subangular to subrounded; moderately feldspathic; traces of magnetite and muscovite.
- 30 - 40 Sand and Gravel -- yellowish-brown, slightly clayey; 20% subrounded to rounded granules, and 80% medium- to very coarse-grained, moderately-sorted sand; both fractions moderately feldspathic; considerable blue quartz.
- 40 - 50 Sand -- orange-brown, moderately clayey; fine-grained, well-sorted, angular; slightly feldspathic; traces of muscovite, magnetite, hornblende, weathered chert.

CALVERT FORMATION (50-90')

- 50 - 60 Sand -- brownish-gray, very clayey; fine-grained, well-sorted, angular; clear quartz; accessory magnetite and muscovite.
- 60 - 70 Sand -- gray, very clayey; fine- to very fine-grained, well-sorted, angular; accessory magnetite and muscovite; traces of glauconite and diatoms.
- 70 - 80 "
- 80 - 90 "

NANJEMOY FORMATION (90-170')

- 90 - 100 Sand -- gray, very clayey; fine-grained, well-sorted; sand fraction is 85% angular quartz, 15% glauconite; traces of muscovite, phosphorite.

- 100 - 110 Sand with Limestone Lenses — brownish-gray, very clayey, about 5% fine-grained gravel (2-5mm) consisting, in part, of phosphate nodules; very fine- to medium grained, fairly well-sorted; 50% quartz, 50% glauconite; small amounts of muscovite and fine-grained phosphorite; small amount of sandy, glauconitic limestone; a few shell fragments, bone fragments, and teeth.
- 110 - 120 Clay — brownish-gray, very sandy, about 5% fine-grained gravel (2-7mm) containing a few phosphate plates and nodules; sand is very fine- to medium-grained; 50% glauconite; micaceous; a few shell fragments, bone fragments, and teeth.
- 120 - 130 " with limestone lens
- 130 - 140 Clay — gray, very silty, slightly sandy; a very few quartz pebbles and phosphate nodules; micaceous; slightly glauconitic.
- 140 - 150 Silt — gray, very clayey, slightly sandy; very coarse-grained, moderately sorted, angular; about 10% glauconite; moderately micaceous.
- 150 - 160 Silt and Clay — laminae of light-gray clay (25%), and brownish-gray, clayey, very coarse-grained silt (75%); silt is angular, micaceous, moderately glauconitic.

160 - 170

"

AQUIA FORMATION (170-190')

- 170 - 180 Sand — gray, moderately clayey to clayey, 5-10% fine-grained gravel (2-10mm) consisting of granules, very small pebbles, shards, and a few phosphate nodules; very fine- to very coarse-grained, poorly-sorted; 50% quartz, 35% glauconite, 15% shell fragments; a very few Aquia foraminifers (Robulus, Nodosaria).

180 - 190

"

with about 20% shell fragments.

PATUXENT FORMATION (190-314')

- 190 - 200 Sand and Gravel — gray, slightly to moderately clayey; 20% fine-grained gravel, 80% sand; sand is fine- to very coarse-grained, rather poorly-sorted, variably rounded; arkosic, slightly glauconitic; scattered shell fragments.
- 200 - 210 " "
- 210 - 220 " "
- 220 - 230 " "
- 230 - 240 " "

240 - 250	Sand and Gravel — brown, slightly to moderately clayey; 40% fine-grained gravel, 60% coarse- to very coarse-grained, fairly well-sorted, subrounded sand; slightly to moderately arkosic.
250 - 260	Sand — brownish-gray, slightly to moderately clayey; coarse- to very coarse-grained, well-sorted, subrounded to rounded; moderately arkosic.
260 - 270	"
270 - 280	" with about 5% fine-grained gravel.
280 - 290	" "
290 - 300	" with about 35% fine-grained, well-sorted gravel.
300 - 314	" with about 10% fine-grained gravel.

GEOLOGIC SUMMARY

	<u>Rock Unit</u>	<u>Age</u>
0 - 50	Columbia Group	Pleistocene
50 - 90	Calvert Formation	Miocene
90 - 170	Nanjemoy Formation	Eocene
170 - 190	Aquia Formation	Eocene
190 - 314	Patuxent Formation	Early Cretaceous

Virginia Division of Mineral Resources
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