INTERVAL SHEET

WWCR 138

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VDMR Well No.: Well No 971

Date 3/26/64

Sample Interval: from 0 to 437

PROP: First Colony Subdivision

Total depth 475

COMP: Sydnor

Oil ___ Gas ___ Water X Exploratory ___

COUNTY: James City (Williamsburg)

Cuttings X Core ___ Other ___

VDMR Well No: W-971

Washed Samples

From-To	From-To	From-To	From-To	From-To
0 - 17	299 - 306	-	362 - 377	-
17 - 27	306 - 316	-	377 - 402	-
27 - 37	316 - 326	-	402 - 427	-
37 - 47	326 - 327	-	427 - 437	-
47 - 57	327 - 332	-	437 - 475 *	-
57 - 67	332 - 342	-	-	-
67 - 77	342 - 350	-	-	-
77 - 86	350 - 360	-	-	-
86 - 94	360 - 362 *	-	-	-
94 - 98	362 - 377	-	-	-
98 - 106	377 - 392	-	-	-
106 - 116	392 - 402	-	-	-
116 - 126	402 - 412	-	-	-
126 - 130	412 - 422	-	-	-
130 - 136 *	422 - 437	-	-	-
136 - 146	437 - 475 *	-	-	-
146 - 151	-	-	-	-
151 - 167	-	-	-	-
167 - 177	-	-	-	-
177 - 192	-	-	-	-
192 - 202	-	-	-	-
202 - 212	-	-	-	-
212 - 226	-	-	-	-
226 - 236	-	-	-	-
236 - 246	-	-	-	-
246 - 256	-	-	-	-
256 - 266	-	-	-	-
266 - 276	-	-	-	-
276 - 286	-	-	-	-
286 - 299	-	-	-	-

* No Sample

OWNER: Sydnor Pump & Well Co., Inc. VDMR #971
First Colony Subdivision WWCR#138
DRILLER: Sydnor Pump & Well Co., Inc. TOTAL DEPTH:475'
COUNTY: James City

GEOLOGIC LOG

Yorktown Formation (0-151')

0-17	Clay — light-gray to buff; traces of white mica, angular, iron-stained quartz sand; ferruginous.
17-27	Clay — gray to buff, sandy, slightly silty; traces of white mica, minor rounded quartz granules; ferruginous.
27-37	Clay — gray, abundant quartz mostly as coarse sand but ranging from silt to pebbles; trace of white mica; ferruginous.
37-47	Clay — greenish-gray, moderately sandy, minor granules and small pebbles; trace of white mica; slightly ferruginous.
47-57	Clay — gray; slightly sandy; traces of mica, iron-oxides.
57-67	As above.
67-77	As above.
77-86	As above.
86-94	As above.
94-98	Sand — gray to buff, very coarse with many granules and a few pebbles; subangular to subrounded; mostly quartz, some rock fragments and ferromagnesian minerals; blue to hyacinth quartz common; slightly clayey.
98-106	Clay — gray, slightly sandy, slightly ferruginous.
106-116	Clay — gray, slightly sandy; shell fragments, traces white mica.
116-126	Sand — gray, very fine to fine, subangular to subrounded, argillaceous, granules and small pebbles of quartz, abundant shell material, both vertebrate and invertebrate, including bryozoans, clams, shark teeth.
126-130	As above.
130-136	No sample.

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136-146	Sand — gray fine-grained, subangular to subrounded, argillaceous, minor granules of quartz, shell material abundant.
146-151	Sand — buff, fine-grained but poorly sorted, granules and small pebbles common, argillaceous, less fossiliferous and more ferruginous than higher sands.

St. Marys Formation (151-299')

151-167	Sand — gray to greenish-gray, medium to coarse grained, subangular to subrounded; argillaceous, and in part, firmly cemented by clay with minor cementation by calcite; areas of firm cementation richest in glauconite; abundant oxidized glauconite pellets (some may be casts of foroms, ostracods); trace of white mica and shell material.
167-177	Clay — gray, sandy, glauconitic, less abundant than in overlying sand and non-oxidized; trace of white mica, minor amount shell material (clams).
177-192	Sand — dark-gray to black, medium-grained, argillaceous, unaltered rounded glauconite with lesser amounts of coarse- to very-coarse, subrounded to rounded quartz; traces of white mica and shell material; some cementation by calcite, particularly of the glauconite.
192-202	As above.
202-212	Sand — medium- to dark-gray, argillaceous, slightly ferruginous, medium-grained, glauconite and quartz in subequal amounts with lesser amounts of coarse-grained, subangular to subrounded quartz; traces of white mica and shell material.
212-226	Sand — gray, poorly sorted, argillaceous (much clay), abundant glauconite, minor granules of quartz and a small amount of silt; minor amounts of white mica and shell material.
226-236	Sand — gray; medium- to coarse-grained; slightly silty and argillaceous; richer in glauconite and shell material, and poorer in clay than preceding sample, minor amount of white mica.
236-246	Sand — black, medium-grained, fairly well-sorted, slightly argillaceous; predominately unaltered glauconite; minor amount of quartz.

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246-256 Sand — black, medium-grained, fairly well-sorted, slightly argillaceous (yellow clay), predominately unaltered glauconite; minor amount of quartz; small amount shell fragments.

256-266 As above.

266-276 As above.

276-286 Sand — dark-gray, medium-grained, fairly well-sorted; medium- to very coarse-grained sand and granules, subangular to subrounded; argillaceous, unaltered glauconite dominant, quartz abundant, white mica (lighter, more quartzose and more argillaceous than overlying 40' of sand), small amounts of shell fragments.

286-299 Sand — light-gray to gray, coarse-to medium-grained, slightly silty, subangular to subrounded; quartz dominant, unaltered glauconite abundant; traces of clay and white mica.

Calvert Formation (299-437')

299-306 Sand — gray; two distinct fractions, very-coarse sand to granules, (1.5 - 2.5 mm) subangular to subrounded, predominately quartz; medium-grained sand, very slightly silty; glauconite and subangular quartz in subequal amounts, minor white mica; trace of pyrite (less glauconite than preceding sample), small amounts of shell fragments.

306-316 Sand — gray, medium-grained, slightly silty; subangular; glauconite and subangular quartz in subequal amounts; trace of white mica.

316-326 Sand — light-gray to tan, coarse- to very-coarse-grained, very slightly silty, subangular to subrounded; predominately quartz, glauconitic.

326-327 Sand — gray, poorly sorted, subangular to subrounded; silt, clay, and granules abundant (very dirty); moderately glauconitic in smaller fractions (medium-grained sand); minor amount of white mica; slightly ferruginous.

327-332 Sand — gray, medium-grained, subangular, slightly argillaceous, silty, small amount of granules; quartz and glauconite in subequal amounts; trace amounts white mica, shell fragments.

332-342 As above.

342-350 Clay — buff, sandy with glauconite dominant over quartz in sand fraction, slightly silty, minor amounts of small gravel, including metamorphic rock fragments; ferruginous, scattered fossil material, both vertebrate and invertebrate.

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350-360	Sand — dark-gray, slightly silty, coarse-grained, subangular, quartz dominant, glauconite abundant; small amounts of white mica, highly comminuted shell material.
360-362	No sample.
362-377	Sand — gray, moderately argillaceous, slightly silty; coarse-grained, subangular to subrounded, quartz predominant; glauconitic; minor amount of white mica.
377-392	Sand — gray, slightly silty and argillaceous; coarse-grained, subangular; slightly glauconitic with glauconite concentrated in smaller sand fractions; traces of white mica and garnet.
392-402	Sand — gray, slightly silty and argillaceous, coarse- to very-coarse-grained with small amount of granules, subangular to subrounded; slightly glauconitic (less so than overlying 15'); traces of white mica and garnet.
402-412	Sand — gray, slightly silty and argillaceous, medium-grained with large amount of granules; subangular, glauconitic in sand fraction; small amount of garnet, trace of white mica; trace of shell material.
412-422	Sand — gray, slightly silty and argillaceous; coarse-grained, small amount of granules, subangular to subrounded; slightly glauconitic, traces of white mica and garnet.
422-437	Sand — gray, argillaceous, slightly ferruginous, medium- to coarse-grained with moderate amount of granules; slightly glauconitic, small amounts of garnet and white mica.
437-475	No sample.

GEOLOGIC SUMMARY

	ROCK UNIT	TIME ROCK UNIT
0-151	Yorktown Formation	Miocene
151-299	St. Marys Formation	Miocene
299-437	Calvert Formation	Miocene
437-475	No sample	

Virginia Division of Mineral Resources
Robert H. Teifke, Geologist
October 22, 1964