

INTERVAL SHEET

WWCR - 130

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VDMR Well No: 1841

Date rec'd: March 29, 1967

Sample Interval: from 0 to 799

PROP: Northumberland Plantation Club

Number of samples: 75

COMP: Douglas & Dickinson

Total Depth: 799

COUNTY: Northumberland (Ophelia)

Oil or Gas: Water: X Exploratory:

From-To	From-To	From-To	From-To
0 - 10	327 - 337*	642 - 652	-
10 - 21	337 - 348*	652 - 663	-
21 - 31	348 - 359	663 - 673	-
31 - 42	359 - 367	673 - 683	-
42 - 52	367 - 378	683 - 693*	-
52 - 63	378 - 388	693 - 703*	-
63 - 73	388 - 399	703 - 712	-
73 - 84	399 - 408	712 - 723	-
84 - 94	408 - 419	723 - 734	-
94 - 105*	419 - 429	734 - 745	-
105 - 115*	429 - 439*	745 - 756	-
115 - 136	439 - 450	756 - 767	-
136 - 147	450 - 460*	767 - 777	-
147 - 158	460 - 472*	777 - 787	-
158 - 168	472 - 482*	787 - 799	-
168 - 179*	482 - 493	-	-
179 - 189	493 - 504	-	-
189 - 200	504 - 515*	-	-
200 - 210	515 - 526*	-	-
210 - 221	526 - 536	-	-
221 - 231	536 - 546	-	-
231 - 242	546 - 557*	-	-
242 - 252	557 - 569*	-	-
252 - 264	569 - 579	-	-
264 - 274	579 - 588	-	-
274 - 285*	588 - 599	-	-
285 - 295	599 - 610	-	-
295 - 306	610 - 621	-	-
306 - 316*	621 - 631	-	-
316 - 327*	631 - 642	-	-

*Unwashed samples only

OWNER: Northumberland Plantation Club
DRILLER: Douglas & Dickinson, Inc.
COUNTY: Northumberland (Ophelia)

VDMR: 1841
WWCR: 130
TOTAL DEPTH: 799'

GEOLOGIC LOG

Depth in feet

COLUMBIA GROUP (0-42')

- 0-10 Sand - brown, clayey, a few small pebbles and fragments of ferricrete; medium- to coarse-grained, fairly well-sorted, subangular to subrounded; partially-decomposed feldspar common; a few grains of glauconite and magnetite.
- 10-21 " "
- 21-31 Sand - light brownish-gray, slightly clayey; medium-grained, well-sorted, subangular to subrounded; slightly feldspathic; traces of glauconite and muscovite.
- 31-42 Sand - grayish-brown, moderately-clayey to clayey, a few small pebbles; medium- to coarse-grained, fairly well-sorted, subangular to rounded; slightly feldspathic; traces of glauconite, ferricrete.

YORKTOWN FORMATION (42-136')

- 42-52 Sand and Gravel - gray, slightly clayey; sand (80%) is medium- to very coarse-grained, moderately sorted, subrounded to rounded; 20% rounded granule gravel; weathered white, perthite common among coarser grains; traces of chert and glauconite; abundant plant fragments.
- 52-63 Sand - gray, slightly clayey; about 10% granules and very small pebbles; medium- to very coarse-grained, moderately sorted, subangular to rounded; slightly feldspathic; traces of magnetite, glauconite, chert, phosphorite, garnet, brown epidote; some plant fragments.
- 63-73 " "
- 73-84 Gravel and Sand - gray, moderately clayey; gravel (65%) is fine-grained, well-sorted (2-8 mm), rounded; sand (35%) is medium- to very coarse-grained, moderately sorted, subrounded to rounded; slightly feldspathic and lithic; traces of magnetite, glauconite, muscovite; plant fragments abundant; a very few pelecypod shell fragments.

- 84-94 Gravel and Sand - gray, moderately clayey; gravel (65%) is fine-grained, well-sorted (2-8 mm), rounded; sand (35%) is medium- to very coarse-grained, moderately sorted, sub-rounded to rounded; slightly feldspathic and lithic; traces of magnetite, glauconite, muscovite; plant fragments abundant; a very few pelecypod shell fragments.
- 94-105 " "
- 105-115 " "
- 115-136 " "

CALVERT FORMATION (136-348')

- 136-147 Gravel, Sand, and Clay - greenish-gray; clay (30%); gravel (45%) is fine-grained, well-sorted (2-8 mm), rounded, and consists of quartz, feldspar, and a few phosphate nodules; sand (25%) is fine- to coarse-grained, poorly sorted, variably rounded; slightly feldspathic and glauconitic; small amounts of carbonaceous material, plant debris, and shell debris.
- 147-158 " clay (50%), sand (30%), gravel (20%).
- 158-168 Clay - gray, sandy, slightly pebbly; sand is medium- to coarse-grained, rounded; slightly glauconitic; small amounts of feldspar, carbonaceous material, pyrite; a few plant fragments, shell fragments, and ostracods.
- 168-179 " very sandy; shell fragments common.
- 179-189 " " trace of diatoms.
- 189-200 " " and a few fragments of phosphorite (bone and shell).
- 200-210 Sand - brownish-gray, clayey; fine- to very fine-grained, very well-sorted, angular; small amount glauconite; traces of carbonaceous material, muscovite and magnetite; a few shell fragments, plant fragments and foraminifers; slightly diatomaceous.
- 210-221 " "
- 221-231 " "
- 231-242 " "
- 242-252 " "

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- 252-264 Clay - gray, with greenish cast, sandy; sand is fine- to coarse-grained, rather poorly-sorted; trace of glauconite; a few shell fragments and plant fragments, and foraminifers; moderately diatomaceous.
- 264-274 " diatomaceous.
- 274-285 Clay - light-gray, slightly sandy; trace of glauconite; a few plant fragments and foraminifers.
- 285-295 " " moderately diatomaceous to diatomaceous.
- 295-306 " "
- 306-316 " very slightly sandy.
- 316-327 " "
- 327-337 " "
- 337-348 " " medium-gray, foraminifers moderately abundant (including Siphogenerina); slightly diatomaceous.

CHICKAHOMINY FORMATION (348-408^f)

- 348-359 Clay - gray, moderately sandy; sand is poorly sorted, poorly rounded; traces of phosphorite and glauconite; shell fragments and plant fragments common; foraminifers (mostly Siphogenerina) common but not abundant; a few fish teeth.
- 359-367 Sand - brownish-gray, clayey; medium- to coarse-grained, moderately sorted, subrounded; clear quartz, with traces of phosphorite and glauconite; a few shell fragments; foraminifers moderately abundant.
- 367-378 " "
- 378-388 " part of interval is gray, calcitic, fossiliferous quartz sandstone; a few ostracods.
- 388-399 Sand - gray, slightly to moderately clayey; coarse- to very coarse-grained, well sorted, subrounded; clear quartz, with small amounts of phosphorite, and shell, plant, and rock fragments; bryozoans common.

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399-408 Shell - gray, clayey, slightly- to moderately- sandy; trace of glauconite; pelecypods, gastropods, anthozoans, bryozoans, echinoid spines and plates, foraminifers and ostracods; microfossils very abundant.

NANJEMOY FORMATION (408-515¹)

408-419 Sand - dark-gray, moderately clayey; medium- to coarse-grained, fairly well-sorted; 70% dark-green glauconite, 20-25% quartz, 5-10% shell fragments; trace of pyrite, foraminifers and ostracods moderately abundant.

419-429 " brownish-gray; abundant goethite after glauconite.

429-439 Sand - light brownish-gray, slightly clayey; medium- to very coarse-grained, fairly well-sorted; 90% subrounded to rounded quartz, 10% glauconite and goethite after glauconite. a few shell and plant fragments; some limestone.

439-450 Stained Quartz - oxidized glauconite, arenaceous & fossiliferous limestone; miliolids, Dentalina, textularids.

450-460 Sand - gray, slightly clayey, 2-5% granule gravel; medium- to very coarse-grained, moderately sorted; 60% coarse- to very coarse-grained, subrounded to rounded quartz, and 40% medium- to coarse-grained glauconite; abundant plant fragments; limestone fragments common.

460-472 " cemented, in part, by brownish-yellow clay; replacement of carbonate (limestone) by iron spores.

472-482 Sand - dark-gray (speckled), very slightly clayey; medium- to coarse-grained, fairly well-sorted; 60-65% glauconite, 35-40% subrounded to rounded quartz; abundant plant fragments; foraminifers common.

482-493 " 50% fresh to oxidized glauconite, 50% clear to stained quartz; some shell fragments.

493-504 Sand - gray, clayey; fine- to coarse-grained, rather poorly sorted; 50% glauconite, 50% quartz; some plant fragments; foraminifers and ostracods very abundant; arenaceous and fossiliferous limestone common as fragments.

504-515 " "

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MATTAPONI FORMATION (515-673')

- 515-526 Sand - dark-gray, slightly clayey; medium-grained, well sorted; 90-95% fresh glauconite, 5-10% quartz; abundant plant fragments, and a few foraminifers.
- 526-536 " medium- to coarse-grained; a few pelecypod shell fragments.
- 536-546 " moderately clayey; foraminifers common.
- 546-557 " "
- 557-569 " "
- 569-579 Clay - light-gray, sandy; sand is coarse-grained, essentially glauconite; a very few foraminifers.
- 579-588 Sand - gray, slightly clayey, abundant coarse shell (about 40%), coarse-grained, fairly well-sorted, predominantly glauconite; pyrite, foraminifers, and fish teeth.
- 588-599 Sand - dark gray, with greenish cast; coarse-grained, well sorted; predominantly dark-green glauconite; about 5% pelecypod shell fragments; trace of phosphorite; grass-green aspect.
- 599-610 " about 10% pelecypod shell fragments, a few bryozoans, a few Nodosaria.
- 610-621 Sand and Clay - 70% coarse-grained, well-sorted sand, predominantly glauconite; 30% brightly mottled, slightly sandy clay; 15-20% very coarse pelecypod shell fragments.
- 621-631 " 10% shell fragments; a few fragments of phosphorite.
- 631-642 Clay - brightly mottled, sandy; sand is highly glauconitic (50-60%); a few pelecypod shell fragments, and a very few foraminifers including Robulus Nodosaria; white-weathered feldspar common; a few fragments of phosphorite-cemented glauconite.
- 642-652 " "
- 652-663 " 75-80% glauconite.
- 663-673 " "

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PATUXENT FORMATION (673-799¹)

673-693	Clay - brightly mottled, very sandy; sand is coarse-grained, highly glauconitic; a few plant fragments; feldspar present; <u>Robulus</u> noted;
693-703	" "
703-712	Sand - brown, with reddish cast, very slightly clayey; medium- to coarse-grained, well sorted; 95% subrounded quartz and feldspar, and 5% dark-green glauconite; feldspathic; traces of shell, muscovite and garnet.
712-723	" slightly clayey (mottled clay).
723-734	" "
734-745	" "
745-756	" "
756-767	" "
767-777	" "
777-787	" "
787-799	" "

GEOLOGIC SUMMARY

	<u>Rock Unit</u>	<u>Age</u>
0-42	Columbia Group	Pleistocene
42-136	Yorktown Formation	Upper Miocene
136-348	Calvert Formation	Middle Miocene
348-408	Chickahominy Formation	Late Eocene
408-515	Nanjemoy Formation	Middle Eocene
515-673	Mattaponi Formation	Paleocene
673-799	Patuxent Formation	Early Cretaceous

Virginia Division of Mineral Resources
 Robert H. Teifke, Geologist
 September 21, 1967