

W- 3375  
C- 350

COMMONWEALTH OF VIRGINIA  
DEPARTMENT OF CONSERVATION AND ECONOMIC DEVELOPMENT

MAILING ADDRESS:  
P 3667  
Charlottesville, VA 22903

DIVISION OF MINERAL RESOURCES

JAMES L. CALVER, COMMISSIONER

OFFICE ADDRESS:  
McCormick Road  
Charlottesville, Virginia

WATER WELL COMPLETION REPORT

OWNER: Tangier Is. Crab Co. Mailing Address: Tangier, VA

TENANT: (Ray Crockett) Mailing Address: \_\_\_\_\_

DRILLER: Douglas & Dickinson Mailing Address: Warsaw, VA

WELL LOCATION: County Accomack Approx. feet miles NW (direction) of  
Tangier and at feet miles north end (direction) of landing strip

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

DATE STARTED: \_\_\_\_\_ DATE COMPLETED: 8/30/71

TYPE OF DRILL RIG USED: Hy. rotary TOTAL DEPTH 991 feet

WATER LEVEL: Stands 7 1/2 feet above ~~below~~ surface OR  
has NATURAL flow of \_\_\_\_\_ gallons per minute.

YIELD TEST: Method pump  
Drawdown \_\_\_\_\_ feet  
Rate 40 gal. per min.  
Duration \_\_\_\_\_ hrs., \_\_\_\_\_ min.

HOLE SIZE: 6 inches from 0 to 150 feet  
3 inches from 150 to 991 feet  
\_\_\_\_\_ inches from \_\_\_\_\_ to \_\_\_\_\_ feet

WATER ZONES: from 961 to 986 feet  
from \_\_\_\_\_ to \_\_\_\_\_ feet  
from \_\_\_\_\_ to \_\_\_\_\_ feet

SCREEN SIZE: 2 inches from 971 to 986 feet  
\_\_\_\_\_ inches from \_\_\_\_\_ to \_\_\_\_\_ feet  
\_\_\_\_\_ inches from \_\_\_\_\_ to \_\_\_\_\_ feet

WATER: Color \_\_\_\_\_ Taste \_\_\_\_\_  
Odor \_\_\_\_\_ Temp. 75 °F

CASE SIZE: 4 inches from 0 to 150 feet  
2 inches from 141 to 971 feet  
2 inches from 986 to 991 feet

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

GROUTING: Method \_\_\_\_\_  
Material \_\_\_\_\_ Depth \_\_\_\_\_ feet

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

PUMP: Type \_\_\_\_\_  
Capacity \_\_\_\_\_ gal. per min  
Depth of intake \_\_\_\_\_ feet

DRILL CUTTINGS SAVED: Yes 101 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: USGS 63L1 (E log in file) elevation 2' +sl

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

INTERVAL SHEET

C - 350

Page 1 of 1

Well Repository No: 3375

Date rec'd: 11/16/71 ; processed 2/9/72

Sample Interval: from 0 to: 990'

PROPERTY: Ray Crockett  
 (Tangier Is. Crab Co.)

Number of samples: 100

COMPANY: Douglas & Dickinson

Total Depth: 991'

COUNTY: Accomack (Tangier)

Oil or Gas: Water:  Exploratory:

From-To	From-To	From-To	From-To
0 - 5	230- 40	480- 90	730- 40
5 - 10	240- 50	490- 500	740- 50
10 - 20	250- 60	500- 10	750- 60
20 - 30	260- 70	510- 20	760- 70
30 - 40	270- 80	520- 30	770- 80
40 - 50	280- 90	530- 40	780- 90
50 - 60	290- 300	540- 50	790- 800
60 - 70	300- 10	550- 60	800- 10
70 - 80	310- 20	560- 70	810- 20
80 - 90	320- 30	570- 80	820- 30
90 - 100	330- 40	580- 90	830- 40
100 - 10	340- 50	590- 600	840- 50
110 - 15	350- 60	600- 10	850- 60
115 - 20	360- 70	610- 20	860- 70
120 - 30	370- 80	620- 30	870- 80
130 - 40	380- 90	630- 40	880- 90
140 - 50	390- 400	640- 50	890- 900
150 - 60	400- 10	650- 60	900- 10
160 - 70	410- 20	660- 70	910- 20
170 - 80	420- 30	670- 80	920- 30
180 - 90	430- 40	680- 90	930- 40
190 - 200	440- 50	690- 700	940- 50
200 - 10	450- 60	700- 10	950- 60
210 - 20	460- 70	710- 20	960- 70
220 - 30	470- 80	720- 30	970- 80
			980 90

Unwashed samples only

OWNER: Tangier Island Crab Co.  
DRILLER: Douglas and Dickinson  
COUNTY: Accomack (Tangier)

W-3375  
C-350  
TOTAL DEPTH: 990'  
Quad.: Tangier Island  
Elev.: < 5'

GEOLOGIC LOG

COLUMBIA GROUP (0-140')

0-10	Sand -- dirty (clayey), fine-pebbly, gray; very poorly sorted.
10-20	"
20-30	Sand -- clean, tan, iron-stained; rather poorly sorted.
30-37	"
37-40	Clay -- compact, very slightly sandy, gray.
40-50	"
50-60	"
60-70	"
70-80	"
80-90	"
90-100	Clay -- compact, very slightly sandy, gray; with lenses of fine-silty tan clay.
100-110	"
110-115	", with some pebbles, and a few fragments of gl. - bearing limestone (caving?)
115-120	Sand -- fairly clean, tan; poorly sorted, iron-stained in part.
120-130	"
130-140	"

## CALVERT FORMATION (140-605')

140-150	Clay - brownish-gray, uniformly fine-silty, scattered shell fragments; diatomaceous.
150-160	"
160-170	"
170-180	Clay - gray, sandy, silty, w/lenses of clayey greenish-gray silt; 15-25 percent shells (clams and snails), spines; diatomaceous.
180-190	"
190-200	"
200-210	Clay - gray, compact, w/some shells (incl. <u>Turritella</u> ); uniformly fine-silty; diatomaceous.
210-220	"
220-230	Clay and sand - gray, numerous shells, a few pebbles; diatomaceous.
230-240	Clay - brownish-gray, compact, trace of shells; trace of diatoms.
240-250	"
250-260	"
260-270	Clay - brownish-gray, fairly compact, uniformly fine-silty, numerous shells (clams - snails); trace of diatoms.
270-280	Clay - brownish-gray, compact, trace of shell fragments, trace of diatoms.
280-290	"
290-300	Clay - gray, silty, numerous shells (clams and snails); trace of diatoms.

- 300-310 Clay - compact, grayish-brown, w/numerous shells; layers of clayey sand to clayey silt; slightly diatomaceous.
- 310-320 "
- 320-330 "
- 330-340 "
- 340-350 Clay - pale gray, pulverulent, slightly sandy, trace of shell fragments; Nonions observed.
- 400 clays in this interval, from 340 to 585' are more-or-less compact, more-or-less diatomaceous, virtually sand-free to slightly sandy, contain traces of shell and a few foraminifers, range in color from pale-gray to buff.
- 500 a few plant remains and turritellid snails
- 585-605 Sand - matrix of greenish-brown clay; fine- to coarse-grained, poorly sorted; Quartz w/  $P_2O_5$  incl. bone, teeth, etc; comminuted shell material common.

## NANJEMOY FORMATION (605-800')

- 605-620 Sand - with layers and matrix of greenish-gray clay, and a few shaly shell fragments; locally, a gray glauconite-bearing limestone; fine- to coarse-grained, poorly sorted, angular to well-rounded; quartz (mostly clear, some iron-stained) and dark- to light-green glauconite; minor fragmental phosphorite, authigenic pyrite; some spines and foraminifers including Marginulina (?).
- 620-625 ", except w/foraminifers more abundant.

- 625-640 Sand - matrix of brown silty clay, a few shell fragments and rounded quartz granules; very fine- to coarse-grained, poorly sorted; dark- and light-green glauconite (about 60 percent) and clear to pale-green, angular to well-rounded quartz (about 40 percent); trace of phosphorite; foraminifers fairly abundant.
- 640-650 "
- 650-660 Sand - trace of clay, trace of shell, gray; very fine- to medium-grained, fairly well-sorted; 50 percent clear and greenish quartz, 50 percent green glauconite; trace phosphorite, pyrite; small foraminifers common.
- 660-670 Sand - trace of clay, trace of shells, 5 percent fine-grained gravel; very fine- to very coarse-grained, poorly sorted; clear and greenish quartz (about 50 percent) and green glauconite; small percentages of phosphorite and pyrite; foraminifers fairly common.
- 670-680 "
- 680-690 ", except: with about 10 percent fragments of yellowish shell and glauconitic shell limestone.
- 690-700 " "
- 700-710 " "
- 710-720 " "
- 720-730 " "
- 730-740 Sand - very slightly clayey; a few fragments of shell and glauconitic limestone; very fine- to medium-grained, fairly well-sorted; two-thirds quartz, one-third glauconite; foraminifers common; some bryozoans.
- 740-750 ", except: with lenses of sandy clay.

750-760 Sand - slightly to moderately clayey, about 5 percent shell fragments and a few very small pebbles; very fine-to medium-grained, moderately sorted; clear to greenish quartz and green glauconite in comparable amounts; foraminifers fairly common; including Marginulina.

760-770 "

770-780 "

780-790 "

790-800 "

MATTAPONI FORMATION (800-860')

800-810 Clay - gray with greenish cast, slightly to moderately sandy; sand-size material is mainly authigenic glauconite, much of it in large masses; quartz sand is fine-grained, angular; fragments of shell, glauconite-bearing limestone, and concretionary pyrite common; a few foraminifers including miliolids, globigerinid, Nonion; Nodasaria common.

810-820 "

820-830 "

830-840 Clay - sandy, variegated, trace of shells; sand fraction is two-thirds glauconite; about one-third quartz; large masses of glauconite are common; trace of fragmental phosphorite and concretionary pyrite; foraminifers fairly common.

840-850 "

850-860 "

## TRANSITIONAL BEDS (860-940')

- 860-870 Clay - sandy, subtly variegated, a few fragments of shell and limestone; non-clay fraction consists of about 60 percent well-sorted, angular, quartzo-feldspathic silt-fine-grained sand and about 40 percent fine- to coarse-grained mainly autochthonous glauconite; muscovite common; foraminifers uncommon.
- 870-880 "
- 880-890 "
- 890-900 ", except: very sandy.
- 900-910 ", except: less sandy, and sand is less glauconitic and more micaceous.
- 910-920 " "
- 920-930 Sand - moderately abundant matrix and lenses of drab but subtly variegated clay, a few shell fragments, limestone fragments, and small pebbles of quartz; very fine- to medium-grained quartz and feldspar (50 percent), and very fine- to coarse-grained glauconite (about 50 percent); some muscovite, hematite, phosphorite; a few spines and foraminifers.
- 930-940 ", except: less glauconite (about 30 percent); minor authigenic pyrite (concretionary, cementing).

## PATUXENT FORMATION (940-990')

- 940-950 Sand - matrix and lenses of subtly variegated clay, a few shell fragments and concretions of pyrite; very fine- to very coarse-grained, poorly sorted; quartzo-feldspathic with 20 percent fine- to coarse-grained glauconite muscovite common; pink garnet present; a very few foraminifers.
- 950-960 ", except: finer and better sorted; somewhat less feldspathic.
- 960-970 " "



OWNER: Tangier Island Crab Co. -7-

W-3375

- 970-980 Sand - slightly clayey, with a few lenses of variegated clay, a very few shell fragments; about 5 percent feldspathic granule gravel; fine- to very coarse-grained, rather poorly sorted; arkosic; slightly glauconitic (about 5 percent); small amounts of muscovite and garnet.
- 980-990 ", except: less glauconitic, more feldspathic.

GEOLOGIC SUMMARY

<u>Depth (feet)</u>	<u>Rock Unit</u>	<u>Age</u>
0-140	Columbia Group	post-Miocene
140-605	Calvert Formation	<del>Miocene</del>
605-800	Nanjemoy Formation	Eocene
800-860	Mattaponi Formation	Paleocene-Late Cretaceous
860-940	Transitional beds	Late Cretaceous
940-990	Patuxent Formation	Early Cretaceous

Virginia Division of Mineral Resources  
Robert H. Teifke - Geologist  
March 28, 1972

ELEV:

QUAD:

microfossil slides for intervals 610-660  
700-760  
770-800  
820-870  
930-940

OWNER: Tangier Island Crab Co.  
DRILLER: Douglas and Dickinson  
COUNTY: Accomack (Tangier)

W-3375  
C-350  
TOTAL DEPTH: 991'

GEOLOGIC LOG

COLUMBIA GROUP (0-140')

0-10	Sand — dirty (clayey), fine-pebbly, gray; very poorly sorted.
10-20	"
20-30	Sand — clean, tan, iron-stained; rather poorly sorted.
30-37	"
37-40	Clay — compact, very slightly sandy, gray.
40-50	"
50-60	"
60-70	"
70-80	"
80-90	"
90-100	Clay — compact, very slightly sandy, gray; with lenses of fine-silty tan clay.
100-110	"
110-115	", with some pebbles, and a few fragments of gl. - bearing limestone (caving?)
115-120	Sand — fairly clean, tan; poorly sorted, iron-stained in part.
120-130	"
130-140	"

## CALVERT FORMATION (140-605')

140-150	Clay - brownish-gray, uniformly fine-silty, scattered shell fragments; diatomaceous.
150-160	"
160-170	"
170-180	Clay - gray, sandy, silty, w/lenses of clayey greenish-gray silt; 15-25 percent shells (clams and snails), spines; diatomaceous.
180-190	"
190-200	"
200-210	Clay - gray, compact, w/some shells (incl. <u>Turritella</u> ); uniformly fine-silty; diatomaceous.
210-220	"
220-230	Clay and sand - gray, numerous shells, a few pebbles; diatomaceous.
230-240	Clay - brownish-gray, compact, trace of shells; trace of diatoms.
240-250	"
250-260	"
260-270	Clay - brownish-gray, fairly compact, uniformly fine-silty, numerous shells (clams - snails); trace of diatoms.
270-280	Clay - brownish-gray, compact, trace of shell fragments, trace of diatoms.
280-290	"
290-300	Clay - gray, silty, numerous shells (clams and snails); trace of diatoms.

- 300-310 Clay - compact, grayish-brown, w/numerous shells; layers of clayey sand to clayey silt; slightly diatomaceous.
- 310-320 "
- 320-330 "
- 330-340 "
- 340-350 Clay - pale gray, pulverulent, slightly sandy, trace of shell fragments; Nonions observed.

400 clays in this interval, from 340 to 585' are more-or-less compact, more-or-less diatomaceous, virtually sand-free to slightly sandy, contain traces of shell and a few foraminifers, range in color from pale-gray to buff.

500 a few plant remains and turritellid snails

- 585-605 Sand - matrix of greenish-brown clay; fine- to coarse-grained, poorly sorted; Quartz w/  $P_2O_5$  incl. bone, teeth, etc; comminuted shell material common.

NANJEMOY FORMATION (605-800')

605-620 Sand - with layers and matrix of greenish-gray clay, and a few [shally] shell fragments; locally, a gray glauconite-bearing limestone; fine- to coarse-grained, poorly sorted, angular to well-rounded; quartz (mostly clear, some iron-stained) and dark- to light-green glauconite; minor fragmental phosphorite, authigenic pyrite; some spines and foraminifers including Marginulina (?).

620-625 ", except w/foraminifers more abundant.

- 625-640 Sand - matrix of brown silty clay, a few shell fragments and rounded quartz granules; very fine- to coarse-grained, poorly sorted; dark- and light-green glauconite (about 60 percent) and clear to pale-green, angular to well-rounded quartz (about 40 percent); trace of phosphorite; foraminifers fairly abundant.
- 640-650 "
- 650-660 Sand - trace of clay, trace of shell, gray; very fine- to medium-grained, fairly well-sorted; 50 percent clear and greenish quartz, 50 percent green glauconite; trace phosphorite, pyrite; small foraminifers common.
- 660-670 Sand - trace of clay, trace of shells, 5 percent fine-grained gravel; very fine- to very coarse-grained, poorly sorted; clear and greenish quartz (about 50 percent) and green glauconite; small percentages of phosphorite and pyrite; foraminifers fairly common.
- 670-680 "
- 680-690 ", except: with about 10 percent fragments of yellowish shell and glauconitic shell limestone.
- 690-700 " "
- 700-710 " "
- 710-720 " "
- 720-730 " "
- 730-740 Sand - very slightly clayey; a few fragments of shell and glauconitic limestone; very fine- to medium-grained, fairly well-sorted; two-thirds quartz, one-third glauconite; foraminifers common; some bryozoans.
- 740-750 ", except: with lenses of sandy clay.

- 750-760 Sand — slightly to moderately clayey, about 5 percent shell fragments and a few very small pebbles; very fine-to medium-grained, moderately sorted; clear to greenish quartz and green glauconite in comparable amounts; foraminifers fairly common; including Marginulina.
- 760-770 "
- 770-780 "
- 780-790 "
- 790-800 "

## MATTAPONI FORMATION (800-860')

- 800-810 Clay — gray with greenish cast, slightly to moderately sandy; sand-size material is mainly authigenic glauconite, much of it in large masses; quartz sand is fine-grained, angular; fragments of shell, glauconite-bearing limestone, and concretionary pyrite common; a few foraminifers including miliolids, globigerinid, Nonion; Nodasaria common.
- 810-820 "
- 820-830 "
- 830-840 Clay — sandy, variegated, trace of shells; sand fraction is two-thirds glauconite; about one-third quartz; large masses of glauconite are common; trace of fragmental phosphorite and concretionary pyrite; foraminifers fairly common.
- 840-850 "
- 850-860 "

## TRANSITIONAL BEDS (860-940')

- 860-870 Clay — sandy, subtly variegated, a few fragments of shell and limestone; non-clay fraction consists of about 60 percent well-sorted, angular, quartzo-feldspathic silt-fine-grained sand and about 40 percent fine- to coarse-grained mainly autochthonous glauconite; muscovite common; foraminifers uncommon.
- 870-880 "
- 880-890 "
- 890-900 ", except: very sandy.
- 900-910 ", except: less sandy, and sand is less glauconitic and more micaceous.
- 910-920 " "
- 920-930 Sand — moderately abundant matrix and lenses of drab but subtly variegated clay, a few shell fragments, limestone fragments, and small pebbles of quartz; very fine- to medium-grained quartz and feldspar (50 percent), and very fine- to coarse-grained glauconite (about 50 percent); some muscovite, hematite, phosphorite; a few spines and foraminifers.
- 930-940 ", except: less glauconite (about 30 percent); minor authigenic pyrite (concretionary, cementing).

## PATUXENT FORMATION (940-990')

- 940-950 Sand — matrix and lenses of subtly variegated clay, a few shell fragments and concretions of pyrite; very fine- to very coarse-grained, poorly sorted; quartzo-feldspathic with 20 percent fine- to coarse-grained glauconite muscovite common; pink garnet present; a very few foraminifers.
- 950-960 ", except: finer and better sorted; somewhat less feldspathic.
- 960-970 " "

- 970-980 Sand – slightly clayey, with a few lenses of variegated clay, a very few shell fragments; about 5 percent feldspathic granule gravel; fine- to very coarse-grained, rather poorly sorted; arkosic; slightly glauconitic (about 5 percent); small amounts of muscovite and garnet.
- 980-990 ", except: less glauconitic, more feldspathic.
- 990-991 No sample

GEOLOGIC SUMMARY

<u>Depth (feet)</u>	<u>Rock Unit</u>	<u>Age</u>
0-140	Columbia Group	post-Miocene
140-605	Calvert Formation	Miocene
605-800	Nanjemoy Formation	Eocene
800-860	Mattaponi Formation	Paleocene-Late Cretaceous
860-940	Transitional beds	Late Cretaceous
940-990	Patuxent Formation	Early Cretaceous
990-991	No sample	—

Virginia Division of Mineral Resources  
Robert H. Teifke – Geologist  
March 28, 1972



OWNER: Tangier Island Crab Co.  
DRILLER: Douglas and Dickinson  
COUNTY: Accomack (Tangier)

W#: 3375\*  
C#: 350  
TOTAL DEPTH: 991'  
QUAD: Tangier Island

GEOLOGIC LOG

Depth  
(feet)

- 0 - 5 Sandy silt - gray 10 YR 5/1; some clay; sands are fine to medium grained; subangular to angular; moderately well sorted; some heavies; abundant organics.
- 5 - 10 Silty sand - light brownish gray 10 YR 6/2; little clay; sands are fine to coarse grained; subrounded to rounded; poorly sorted; moderate heavies; little siderite.
- 10 - 20 Sandy silt - light brownish gray 10 YR 6/2; sands are fine to coarse grained; subrounded to subangular; poorly sorted; abundant heavies; little siderite; little to some feldspar; few organics.
- 20 - 30 Sand - very pale brown 10 YR 7/3; moderate silt; sands are fine to very coarse grained (granules, pebbles); subrounded to subangular; very poorly sorted; 1% heavies; some feldspar; little mica; little glauconite.
- 30 - 40 Sand - pale brown 10 YR 6/3; little to some silt; fine to very coarse grained; rounded to subangular; poorly sorted; 1% heavies; some feldspar; little mica; little to some glauconite.
- 40 - 50 Clay - gray 10 YR 6/1; some silt; some sand; fine to medium grained; subrounded; moderately well sorted; some heavies.
- 50 - 60 Same as above with little mica.
- 60 - 70 Clay - gray 10 YR 6/1; little silt; little medium grained sand; few heavies; little mica.
- 70 - 80 Same as 40' - 50' above with brown color mottles.
- 80 - 90 Same as above with some mica.
- 90 - 100 Same as above with few organics.
- 100 - 110 Same as above.
- 110 - 115 Same as above without mottling; pebbles.

\*VA-AC-P-6: Number refers to U. S. Geological Survey Professional Paper 796.

Depth  
(feet)

- 115 - 120 Sand - light brownish gray 10 YR 6/2; moderate silt; medium to coarse grained, granules, pebbles; subrounded to rounded; poorly sorted; moderate heavies; little mica.
- 120 - 130 Sand - light gray 10 YR 7/2; some to moderate silt; fine to coarse grained; poorly sorted; subangular to subrounded; abundant heavies; little mica; little to some feldspar.
- 130 - 140 Clayey silty sand - very pale brown 10 YR 8/3; sand is fine to coarse grained; poorly sorted; subrounded; abundant heavies; little mica; spines; organics.
- 140 - 150 Silty sandy clay - light gray 10 YR 7/1; sand is fine to coarse grained; poorly sorted; subrounded to subangular; moderate heavies; moderate mica; spines; shell fragments.
- 150 - 160 Same as above.
- 160 - 170 Same as above.
- 170 - 180 Same as above, but with more silt, slightly less clay and few organics.
- 180 - 190 Same as above.
- 190 - 200 Same as above without organics, but with few large pebbles, Turritella.
- 200 - 210 Same as 140' - 150' with some mica, no spines and few organics, Turritella.
- 210 - 220 Silty clay - gray 10 YR 6/1; some fine to medium subangular sand; few heavies; little mica; few shell fragments.
- 220 - 230 Silty sandy clay - light gray 10 YR 7/1; sand is fine to coarse grained; poorly sorted; subrounded; some heavies; little mica; spines; shell fragments.
- 230 - 240 Same as above with little less silt and sand.
- 240 - 250 Same as above with few organics.
- 250 - 260 Same as above with more shell fragments.
- 260 - 270 Same as 210' - 220' with only moderate silt, organics, and more shell.

Depth  
(feet)

- 270 - 280 Same as 220' - 230' with subrounded to subangular sands.
- 280 - 290 Same as 220' - 230'.
- 290 - 300 Same as above with moderate heavies, no mica.
- 300 - 310 Same as 220' - 230'.
- 310 - 320 Silty clay - gray 10 YR 6/1; some sand; coarse grained; moderately sorted; subrounded; little mica; few heavies; few organics; spines; some shell fragments.
- 320 - 330 Same as 210' - 220' with sand subangular to subrounded with few organics.
- 330 - 340 Sandy silty clay - gray 10 YR 6/1; sand is fine to coarse grained; poorly sorted; subangular to subrounded; few heavies; little mica; few organics; moderate shell fragments.
- 340 - 350 Silty clay - light gray 10 YR 7/1; some fine to medium grained subrounded to subangular sand; some heavies; few shell fragments.
- 350 - 360 Same as above with only little sand and few organics.
- 360 - 370 Silty sandy clay - gray 10 YR 6/1; sand is fine to coarse grained; poorly sorted; subrounded to subangular; moderate heavies; little mica; few organics; moderate to abundant shell fragments.
- 370 - 380 Clayey silt - light gray 10YR 7/1; little fine to medium grained subangular sand; few heavies; little mica; few to some shell fragments.
- 380 - 390 Clayey silt - light gray 10 YR 7/1; some to moderate sand; fine to very coarse grained, small pebbles; very poorly sorted; subrounded to subangular; some heavies; little mica; some shell fragments; few organics.
- 390 - 400 Same as above, but with only some fine to coarse grained sand and slightly more clay.
- 400 - 410 Same as above with some organics.
- 410 - 420 Same as 380' - 390' but with more fine grained material and no pebbles.
- 420 - 430 Clayey silty fine sand - same as above with some mica.

Depth  
(feet)

- 430 - 440 Same as 410' - 420'.
- 440 - 450 Sandy clayey silt - light gray 10 YR 7/1; sands are fine to coarse grained; poorly sorted; subrounded to subangular; moderate heavies; little mica; some shell fragments; some organics.
- 450 - 460 Same as above, but with less sand and no organics.
- 460 - 470 Clayey silt - light gray 10 YR 7/1; some fine to coarse grained sand; poorly sorted; subrounded to subangular; some heavies; few shell fragments.
- 470 - 480 Same as 440' - 450' with slightly less sand and no mica.
- 480 - 490 Same as 460' - 470' with some organics.
- 490 - 500 Same as above with little mica; foram (Robulus).
- 500 - 510 Same as 460' - 470'; few coarse grains; Turritella.
- 510 - 520 Same as 460' - 470'.
- 520 - 530 Same as above.
- 530 - 540 Clayey silt - light gray 10 YR 7/1; some fine to medium fine grained sand; moderately well sorted; subangular; few heavies; very few shell fragments.
- 540 - 550 Same as above.
- 550 - 560 Same as above; foram (Robulus).
- 560 - 570 Same as 530' - 540' but with some medium grained sands and slightly more shell fragments.
- 570 - 580 Silt - light gray 10 YR 7/2; some to moderate clay; few medium grained subrounded sands; few heavies; spines; few shell fragments (one large piece 3/4" x 1/2"); few organics.
- 580 - 590 Sandy silt - gray 10 YR 6/1; some clay; sands are fine to coarse grained; poorly sorted; subangular to subrounded; 1% heavies; some shell fragments; few organics.
- 590 - 600 Same as above, slightly less sand; some glauconite.
- 600 - 610 Same as 580' - 590'; 3% glauconite; no organics.

Depth  
(feet)

- 610 - 620 Silty sand - gray 10 YR 6/1; some clay; sand is fine to coarse grained; poorly sorted; subrounded to subangular; some heavies; 15% glauconite; few organics; some shell fragments.
- 620 - 630 Same as above; 18% glauconite.
- 630 - 640 Sandy silt - same as above.
- 640 - 650 Silty sand - gray 10 YR 6/1; little clay; sand is medium to coarse grained; moderately sorted; subrounded to subangular; some heavies; 23% glauconite; some organics; some shell fragments.
- 650 - 660 Silty sand - gray 10 YR 6/1; little clay fine to medium grained with few coarse grains; moderately sorted; rounded to subrounded; some heavies; 22% glauconite; few organics; some shell fragments; few forams (Robulus).
- 660 - 670 Silty sand - light gray 10 YR 7/1; little clay; fine to medium grained, with some coarse grains; moderately sorted; subrounded to subangular; some heavies; little mica; 20% glauconite; moderate shell fragments.
- 670 - 680 Silty sand - light gray 10 YR 7/1; little clay; fine to medium grained with few coarse grains; moderately sorted; rounded to subangular; 18% glauconite; moderate shell fragments.
- 680 - 690 Same as 660' - 670' with few organics, some shell no mica.
- 690 - 700 Same as above.
- 700 - 710 Silty sand - light gray 10 YR 7/1; little clay; fine to medium grained with moderate coarse grains; poorly sorted; subrounded; some heavies; 18% glauconite; little mica; some shell fragments; few forams (Robulus and Marginulina).
- 710 - 720 Silty sand - light gray 10 YR 7/1; little clay; fine to medium grained with few coarse grains; moderately sorted; subangular to subrounded; 22% glauconite; some shell fragments.
- 720 - 730 Sandy silt - gray 10 YR 6/1; some clay; medium fine to medium sand with few coarse grains; moderately sorted; subrounded to angular; some heavies; 17% glauconite; some shell fragments.
- 730 - 740 Silty sand - gray 10 YR 6/1; little clay; medium fine to medium grained; moderately well sorted; subangular to subrounded; some heavies; 20% glauconite; some shell fragments.
- 740 - 750 Same as 720' - 730' with few organics, few forams (Robulus).

Depth  
(feet)

- 750 - 760 Sandy silt - gray 10 YR 6/1; little clay; fine to coarse grained; poorly sorted; subangular to rounded; some heavies; 14% glauconite; some shell fragments.
- 760 - 770 Same as 730' - 740' with 17% glauconite.
- 770 - 780 Same as 730' - 740'.
- 780 - 790 Same as 730' - 740'.
- 790 - 800 Sandy silt - gray 10 YR 6/1; little clay; sands are medium grained with some coarse grains; moderately sorted; subrounded to subangular; moderate heavies; 12% glauconite; some mica; few organics; some shell fragments.
- 800 - 810 Silty clay - light gray 10 YR 7/1; moderate to abundant sand; fine to medium grained with some coarse grains; poorly sorted; subangular; moderate heavies; 5% glauconite; some mica; moderate shell fragments (Turritella).
- 810 - 820 Sandy silt - light gray 10 YR 7/1; little clay; sand is medium grained with some coarse grains; moderately sorted; subrounded to subangular; some heavies; 17% glauconite; some mica; moderate shell fragments.
- 820 - 830 Clayey sandy silt - gray 10 YR 6/1; fine to medium grained sand; moderately well sorted; subrounded; some heavies; some mica; 7% glauconite; some shell fragments (Turritella plebia and Turritella cumberlandia ?).
- 830 - 840 Silty sand - gray 10 YR 6/1; moderate clay; fine to medium grained; moderately well sorted; subangular to subrounded; some heavies; 10% glauconite; some siderite; few organics; few shell fragments.
- 840 - 850 Same as above with few forams (Robulus).
- 850 - 860 Same as above with no forams.
- 860 - 870 Sandy silt - light gray 10 YR 7/1; some clay; medium grained with some coarse grains; moderately sorted; subangular to subrounded; moderate heavies; some mica; some siderite; 5% glauconite; few shell fragments.
- 870 - 880 Same as above with little mica and some shell fragments.

Depth  
(feet)

- 880 - 890 Silty sand - gray 10 YR 6/1; little clay; medium fine to medium grained sand with few coarse grains; moderately sorted; subangular to subrounded; some mica; some siderite; moderate heavies; 11% glauconite.
- 890 - 900 Same as 870' - 880' with 7% glauconite.
- 900 - 910 Sandy silt - light gray 10 YR 7/1; little clay; fine to medium grained sand; moderately well sorted; subangular to subrounded; moderate mica; 2% heavies; 5% glauconite; little siderite; few organics; few shell fragments.
- 910 - 920 Same as above, with slightly coarser grained more poorly sorted sands and 3% glauconite.
- 920 - 930 Same as 880' - 890' with 13% glauconite and few organics.
- 930 - 940 Sandy silt - gray 10 YR 6/1; little clay; fine to medium grained; moderately well sorted; subrounded to subangular; abundant heavies; moderate mica; some siderite; 7% glauconite; few shell fragments.
- 940 - 950 Silty sand - gray 10 YR 6/1; little clay; fine to coarse grained; poorly sorted; subangular to subrounded; abundant heavies; little mica; moderate siderite; 7% glauconite; some shell fragments.
- 950 - 960 Same as above with some siderite.
- 960 - 970 Same as above.
- 970 - 980 Sand - light gray 10 YR 7/2; little clay; little silt; fine to very coarse grained, small pebbles; very poorly sorted; subangular; moderate heavies; some mica; some siderite; 6% glauconite; some shell fragments.
- 980 - 990 Same as above with subangular to subrounded grains and little mica.

Logged by: Michelle Dewey  
November, 1979

GEOLOGIC SUMMARY\*

<u>Thickness (feet)</u>	<u>Rock Unit</u>	<u>Age</u>
44	Post - Miocene	Pliestocene (?)
117	St. Marys Formation	Miocene
449	Calvert Formation	Miocene
78	Nanjemoy Formation	Eocene
687	Aquia Formation	Paleocene
212	Patuxent Formation	Cretaceous

\*Picks based on logy by U.S.G.S. supplement to Professional Paper 796.