

COMMONWEALTH OF VIRGINIA
DEPARTMENT OF CONSERVATION AND ECONOMIC DEVELOPMENT

MAILING ADDRESS:

DIVISION OF MINERAL RESOURCES

OFFICE ADDRESS:

Box 3667
Charlottesville, VA 22903

JAMES L. CALVER, COMMISSIONER

McCormick Road
Charlottesville, Virginia

WATER WELL COMPLETION REPORT

OWNER: William H. Kriete Mailing Address: Tappahannock, Virginia 22560

TENANT: South Hill Banks Well #2 Mailing Address: Center Cross, VA

DRILLER: Douglas & Dickinson, Inc. Mailing Address: Box 498, Warsaw, Virginia

WELL LOCATION: County Essex Approx. 2 3/4 ~~feet~~ miles southeast (direction) of
Center Cross and _____ feet at end _____ (direction) of St. Rd. 656
miles

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

DATE STARTED: April 1970 DATE COMPLETED: April 23, 1970

TYPE OF DRILL RIG USED: Rotary TOTAL DEPTH 519 feet

WATER LEVEL: Stands 58 feet below surface OR
has NATURAL flow of _____ gallons per minute.

YIELD TEST: Method _____
Drawdown 72 feet
Rate 166 gal. per min.
Duration _____ hrs., _____ min.

HOLE SIZE: 8 inches from 0 to 207 feet
5 7/8 inches from 207 to 519 feet
_____ inches from _____ to _____ feet
SCREEN SIZE: 3 inches from 482 to 507 feet
_____ inches from _____ to _____ feet
_____ inches from _____ to _____ feet

WATER ZONES: from 482 to 507 feet
from _____ to _____ feet
from _____ to _____ feet

CASE SIZE: 6 inches from 0 to 207 feet
3 inches from 207 to 482 feet
3 inches from 507 to 519 feet

WATER: Color _____ Taste _____
Odor _____ Temp. _____ °F

GROUTING: Method _____
Material _____ Depth _____ feet

WELL TO SUPPLY: (check one) Home _____
Farm _____ Town _____ School _____
Industry _____ Other Subdivision

PUMP: Type _____
Capacity 166 gal. per min
Depth of intake _____ feet

WATER ANALYSIS AVAILABLE: Yes _____ No X

DRILL CUTTINGS SAVED: Yes 47 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: _____

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

INTERVAL SHEET

C-149

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Well Repository No: 3063

Date rec'd: 5/11/70 ; processed 1/25/71

Sample Interval; from 0 to: 514'

PROPERTY: William H. Kriete
(South Hill Banks #2)

Number of samples: 47

COMPANY: Douglas & Dickinson, Inc.

Total Depth: 519'

COUNTY: Essex (Center Cross)

Oil or Gas: Water:^x Exploratory:

From-To	From-To	From-To	From-To
0 - 10	262 - 273 *	-	-
10 - 21	273 - 283	-	-
21 - 31	-	-	-
31 - 42	294 - 304	-	-
42 - 52	304 - 315	-	-
52 - 63	315 - 325	-	-
63 - 73	-	-	-
73 - 84	336 - 346	-	-
84 - 94	346 - 357 *	-	-
94 - 105	357 - 367 *	-	-
105 - 115	367 - 378 *	-	-
115 - 126	378 - 388 *	-	-
126 - 136	388 - 399 *	-	-
136 - 147	399 - 409 *	-	-
147 - 157	409 - 420 *	-	-
157 - 168	420 - 430 *	-	-
168 - 178	430 - 441 *	-	-
178 - 189	441 - 451 *	-	-
189 - 199	451 - 462 *	-	-
199 - 210 *	462 - 472 *	-	-
210 - 220 *	472 - 483 *	-	-
220 - 231 *	483 - 493 *	-	-
231 - 241 *	493 - 504 *	-	-
241 - 252 *	504 - 514 *	-	-
252 - 262	-	-	-

* Washed only



(South Hill Bank)
OWNER : W. H. Kriete
DRILLER: Douglas and Dickinson
COUNTY : Essex

W# : 3063
C# : 149
TOTAL DEPTH: 519'
QUAD : Morattico

GEOLOGIC LOG

Depth
(feet)

- 0-10 Sand- dark yellowish-orange; some silt; fine to medium grained, some coarse grains, few granules; subangular to subrounded; moderately sorted; quartz; feldspar; few heavy minerals; a bone fragment; a shell fragment (sample unwashed).
- 10-21 Sand- dark yellowish-orange, moderate yellowish-brown; some silt; medium to coarse grained, some fine and very coarse grains, some granules; subangular to subrounded; poorly sorted; quartz; feldspar; few grains of glauconite (sample unwashed).
- 21-31 Sand- grayish-orange, dark yellowish-orange; some silt; medium to coarse grained; subangular to subrounded; moderately sorted; quartz; feldspar; few grains of glauconite (sample unwashed).
- 31-42 Sand- yellowish-gray; coarse grained, some medium grains; subangular to subrounded; moderately well sorted; quartz; feldspar; some glauconite (sample unwashed).
- 42-52 Sand- olive light gray; silty; fine to medium grained, some coarse grains; subangular to subrounded; well sorted; quartz; 35% shell fragments (5 to 10 mm); 7% fine grained glauconite; spines; few grains muscovite; foram (sample unwashed).
- 52-63 Sand- olive light gray; silty; fine to medium grained, some coarse grains; subangular to subrounded; moderately sorted; quartz; 7% shell fragments; glauconite; muscovite (sample unwashed).
- 63-73 Clay- olive light gray; abundant silt; muscovite; some fine glauconite; few shell fragments; few quartz grains (sample unwashed).
- 73-84 As above.
- 84-94 As above.
- 94-105 Sand- olive light gray; moderate clay; silty; fine grained, some medium grains; subangular to subrounded; well sorted; quartz; fine grained glauconite; muscovite; few shell fragments (sample unwashed).

(South Hill Bank)

OWNER: W. H. Kriete

W#: 3063

Depth
(feet)

- 105-115 Sand and clay- light olive gray; silty; fine to medium grained, some coarse grains; subangular to subrounded; moderately sorted; quartz; diatoms; forams moderate (inc. Nonion, Bulimina, and Globigerina); very fine glauconite; muscovite; bone fragments; spines; few shell fragments (sample unwashed).
- 115-126 Clay and silt- yellowish-gray; minor assorted sand; diatoms abundant; quartz; forams abundant (inc. Nonion and Bulimina); muscovite; few phosphate fragments (sample unwashed).
- 126-136 As above except forams are not as plentiful, and only Bolivina identified.
- 136-147 As above except no Bolivina, but Siphogenerina; few shell fragments.
- 147-157 Sand and clay- light olive gray; abundant silt; fine to coarse grained; subangular to subrounded; poorly sorted; quartz; abundant diatoms; some shell fragments; forams (inc. Nonion) (sample unwashed).
- 157-168 As above except a few shell fragments; forams (inc. Nonion and Uvigerina).
- 168-178 Clay- yellow gray; silty; minor assorted sands; diatoms; quartz; forams (inc. Bulimina, Nonion, and Siphogenerina); muscovite; few shell fragments (sample unwashed).
- 178-189 Clay and silt- light olive gray and olive light gray; minor assorted sand; diatoms; muscovite; forams (inc. Siphogenerina, Nonion, and Uvigerina); a few grains of glauconite (sample unwashed).
- 189-199 Sand- olive light gray; silty; fine to coarse grained, few granules; subangular to subrounded; poorly sorted; quartz; 7% shell fragments; phosphatic material; muscovite; some glauconite; diatoms; forams (inc. Siphogenerina, Nonion, and Marginulina); spines (sample unwashed).
- 199-210 Sand- olive light gray; silty; fine to medium grained, some coarse grains; subangular to subrounded; poorly sorted; quartz; 25% shell fragments; 7% glauconite; phosphatic material; bone fragments; spines; diatoms; forams (inc. Siphogenerina, Nonion, Buccella, Bulimina, and Marginulina).

(South Hill Bank)

OWNER: W. H. Kriete

W#: 3063

Depth
(feet)

- 210-220 Sand- olive gray; slightly clayey; silty; fine to medium grained, some coarse grains; subangular to subrounded; moderately sorted; quartz; phosphatic material; glauconite; forams (inc. Nonion, Guttulina, Bolivina, Bulimina, and Uvigerina); diatoms common; spines; few shell fragments (sample unwashed).
- 220-231 Sand and limestone- light olive gray; medium to coarse grained sand; subangular to subrounded; moderately well sorted; sandy limestone fragments contain quartz, glauconite, and some shell fragments; quartz; 2% glauconite (some brown); altered forams and bryozoans; pyrite; ostracode (sample unwashed).
- 231-241 Sand and limestone- light olive gray; fine to very coarse grained; subangular to rounded; poorly sorted; sandy limestone containing quartz, glauconite, and shell fragments; quartz; 5% glauconite (dark green and brown); altered forams; shell fragments (sample unwashed).
- 241-252 As above.
- 252-262 Sand- light olive gray; fine to coarse grained; subangular to rounded; moderately sorted; quartz; 25% limestone and shell fragments; 15% glauconite (dark green and brown); altered forams; shark's tooth.
- 262-273 Sand- light olive gray, light brown; fine to very coarse grained; subangular to rounded; poorly sorted; quartz; 15% glauconite (dark green and brown); 10% limestone and shell fragments; altered forams.
- 273-283 Sand- light olive gray, olive light gray; slightly clayey; abundant silt; fine to medium grained, some coarse grains; subangular to rounded; moderately sorted; quartz; 35% glauconite (dark green and brown); muscovite; some limestone and shell fragments; forams; ostracodes; spines; (sample unwashed).
- 283-294 No sample.
- 294-304 Sand and clay- olive light gray, olive gray; fine to very coarse grained; rounded; poorly sorted; glauconite; muscovite; quartz (some green); forams; few shell fragments (sample unwashed).
- 304-315 Sand- olive gray; slightly clayey; fine to coarse grained, some very coarse grains; rounded; moderately sorted; glauconite; 25% quartz (some green); spines; forams; few shell fragments (sample unwashed).

(South Hill Bank)

OWNER: W. H. Kriete

W#: 3063

Depth
(feet)

- 315-325 Sand and clay- olive light gray, olive gray; medium to coarse grained, some very coarse grains; rounded; moderately sorted; glauconite; quartz (some green); forams; few shell fragments (sample unwashed).
- 325-336 No sample.
- 336-346 Sand- olive light gray, olive gray, dark yellowish-orange; slightly clayey; fine to medium grained; rounded; moderately well sorted; quartz; 48% glauconite; muscovite; few shell fragments (sample unwashed).
- 346-357 Sand and clay- light olive gray; olive gray; silty; medium to coarse grained, some very coarse grains; rounded; moderately sorted; quartz; glauconite 40% of the sand; muscovite; forams (inc. Discorbis).
- 357-367 Sand- olive light gray; two clay clasts; grayish-orange-pink, light brown; coarse grained, some medium and very coarse grains; rounded; moderately well sorted; quartz (some green); 35% glauconite (dark green, green, and brown).
- 367-378 As above except slightly clayey; 40% glauconite; ostracode.
- 378-388 Sand- grayish-olive; slightly clayey; medium to coarse grained, some very coarse grains; rounded; moderately well sorted; 60% glauconite; quartz (some green); forams (inc. Nodosaria and Marginulina); spines.
- 388-399 As above except no Marginulina; no spines; few shell fragments.
- 399-409 Sand- grayish-olive; slightly clayey; medium to coarse grained; rounded; moderately well sorted; 70% glauconite; quartz (some green); forams (inc. Marginulina, Nodosaria, and Robulus); spines.
- 409-420 As above except 60% glauconite; additional forams (inc. Globigerina, Discorbis, Buccella, and Lagena); no spines.
- 420-430 Sand- grayish-olive; slightly clayey; medium to coarse grained; rounded; moderately well sorted; 50% glauconite; quartz; forams (inc. Nodosaria, Marginulina, Discorbis, and Dentalina); spines.
- 430-441 Sand- salt and pepper; medium to coarse grained; subangular to rounded; moderately well sorted; quartz; 30% glauconite; forams (inc. Nodosaria and Robulus); some muscovite; spines; few shell fragments.

(South Hill Bank)

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W#: 3063

Depth
(feet)

- 441-451 Sand- salt and pepper; medium to coarse grained; subangular to rounded; well sorted; quartz; 30% glauconite; feldspar; forams (inc. Robulus); few flakes of muscovite; few grains of garnet.
- 451-462 Sand- salt and pepper; few clay clasts of moderate yellowish-brown; medium to coarse grained; subangular to rounded; moderately well sorted; quartz; 22% glauconite; feldspar; forams (inc. Nodosaria and Dentalina); few grains of muscovite; few grains of garnet.
- 462-472 Sand- salt and pepper; medium to coarse grained, some very coarse grains; subangular to rounded; moderately sorted; quartz; feldspar; 7% glauconite; some garnet; few grains of muscovite.
- 472-483 Sand- salt and pepper; medium to coarse grained; subangular to rounded; moderately well sorted; quartz; feldspar; 10% glauconite; some garnet; some muscovite.
- 483-493 Sand- light olive gray; medium to coarse grained; subangular to subrounded; moderately well sorted; quartz; feldspar; 2% glauconite; few grains of garnet.
- 493-504 As above.
- 504-514 Sand- light olive gray; medium to coarse grained; subangular to rounded; moderately well sorted; quartz; feldspar; 20% glauconite; some garnet.
- 514-519 No sample.

Logged by: David A. Hubbard
August 17, 1979

OWNER: W. H. Kriete (South Hill Banks #2)
 DRILLER: Douglas & Dickinson, Inc.
 COUNTY: Essex (Center Cross)

VDMR # 3063
 WWCR # 149
 TOTAL DEPTH: 519'
 ELEV: ~ 30'

GEOLOGIC SUMMARY

<u>Depth (feet)</u>	<u>Rock Unit</u>	<u>Age</u>
0-42	Columbia Group	Pleistocene
42-63	Yorktown & St. Marys formations	Late Miocene
63-220	Calvert Formation	Middle Miocene
220-355	Nanjemoy Formation	Middle Eocene
345-355	Marlboro Clay Member	
355-475	Mattaponi Formation	Paleocene-Late Cretaceous
475-514	Patuxent Formation	Early Cretaceous
514-519	No sample	—

Virginia Division of Mineral Resources
 Robert H. Teifke - Geologist
 February 9, 1971

- 42-63' bluish-gray silt & shell
acc. to State Map, Upper Miocene at this place is St. Marys Fm.
- 63-94' silty clay
- 94-105' dk-gray silt
- 105-115' pale silty clay
- 115-178' buff diatomaceous earth
- 178-189' silty diatomaceous clay
- 189-220' Q sands → silts, w/ shells
- 220-273' calcitic sandstone
- 273-283' yellowish brecciated deposits
- 345-355 light-gray and pinkish-gray clays (basal lithotype 2.)



total Calvert & basal Calvert considerably thicker than anticipated

top of Lower K anticipated at -315', reached at -445.
 ELEV: ~ 30'