

INTERVAL SHEET

C-322

Page 1

VDMR WELL NO.: 511

Date 8/10/61

Sample Interval: from 0 to 350

PROP: Henrico Co. Schools

Total Depth

COMP: Mitchell

Oil Gas Water X Exploratory

COUNTY: Henrico (Highland Springs)

Cuttings X Core Other

| From-To | From-To | From-To | From-To                            | From-To |
|---------|---------|---------|------------------------------------|---------|
| -       | 0-10    | 279-289 | -                                  | -       |
| -       | 10-19   | 289-299 | Complete set of sampled intervals. |         |
| -       | 19-29   | 299-309 | -                                  | -       |
| -       | 29-37   | 309-319 | -                                  | -       |
| -       | 37-41   | 319-329 | -                                  | -       |
| -       | 41-47   | 329-339 | -                                  | -       |
| -       | 47-49   | 339-349 | -                                  | -       |
| -       | 49-59   | 349-350 | -                                  | -       |
| -       | 59-69   | -       | -                                  | -       |
| -       | 69-79   | -       | -                                  | -       |
| -       | 79-89   | -       | -                                  | -       |
| -       | 89-99   | -       | -                                  | -       |
| -       | 99-109  | -       | -                                  | -       |
| -       | 109-119 | -       | -                                  | -       |
| -       | 119-129 | -       | -                                  | -       |
| -       | 129-139 | -       | -                                  | -       |
| -       | 139-149 | -       | -                                  | -       |
| -       | 149-159 | -       | -                                  | -       |
| -       | 159-169 | -       | -                                  | -       |
| -       | 169-179 | -       | -                                  | -       |
| -       | 179-189 | -       | -                                  | -       |
| -       | 189-199 | -       | -                                  | -       |
| -       | 199-209 | -       | -                                  | -       |
| -       | 209-219 | -       | -                                  | -       |
| -       | 219-229 | -       | -                                  | -       |
| -       | 229-239 | -       | -                                  | -       |
| -       | 239-249 | -       | -                                  | -       |
| -       | 249-259 | -       | -                                  | -       |
| -       | 259-269 | -       | -                                  | -       |
| -       | 269-279 | -       | -                                  | -       |

OWNER: Henrico Co. Schools  
DRILLER: Mitchell  
COUNTY: Henrico (Highland Springs)

W#: 511  
C#: 322  
TOTAL DEPTH: 350'  
QUAD.: Seven Pines

GEOLOGIC LOG

Depth  
(feet)

- 0-10 Sand — very light brownish gray; moderate clay; fine to medium grained; subangular to subrounded; moderately well sorted; quartz; feldspar; 2% opaques.
- 10-19 Sand — white; slightly clayey; fine to medium grained, few granules; subangular to subrounded; well sorted; quartz; feldspar; 2% opaques; few flakes of muscovite.
- 19-29 As above plus some coarse grains; moderately well sorted.
- 29-37 As above.
- 37-41 Sand — dark yellowish orange; moderately stained; slightly clayey; medium to coarse grained, 10% granules, 5% pebbles; subangular to subrounded; moderately sorted; quartz; feldspar; some opaques; few grains of glauconite; muscovite.
- 41-47 Sand — light olive gray; moderate clay; fine to medium grained, some very fine grains, some granules; subangular to subrounded; moderately well sorted; quartz; feldspar; some opaques.
- 47-49 Sand — light olive gray; moderate clay; medium grained; subangular to subrounded; well sorted; quartz; feldspar; some glauconite; few grains of garnet.
- 49-59 Clay — light olive gray; moderate sand; very fine to fine grained; subangular to subrounded; well sorted; quartz; few grains of feldspar; muscovite; glauconite.
- 59-69 Sand — olive light gray; abundant clay; very fine grained; subangular to subrounded; well sorted; quartz; 2% glauconite; few flakes of muscovite.
- 69-79 As above plus some fine grains; some glauconite.
- 79-89 As above plus some black phosphatic material.
- 89-99 Sand — olive gray; moderate clay; very fine to fine grained; subangular to rounded; moderately well sorted; quartz; 35% glauconite (black, green); some muscovite; few black phosphatic fragments.

Depth  
(feet)

- 99-109 As 89-99 except olive light gray; 15% glauconite.
- 109-119 Sand — olive gray; moderate clay; very fine to medium grained; subangular to rounded; moderately sorted; quartz; 15% glauconite; 2% muscovite; some shell fragments; few gypsum crystals; few spines.
- 119-129 As above except 20% glauconite; no gypsum; no spines.
- 129-139 Clay — light gray; slightly sandy; fine to medium grained; subangular to rounded; moderately well sorted; quartz; glauconite 10% of sand sized fraction; some muscovite; few shell fragments.
- 139-149 Sand — olive gray; moderate clay; slightly silty; very fine grained, some medium grains; subangular to subrounded; moderately well sorted; quartz; 10% glauconite; 2% muscovite; few shell fragments; forams (inc. Robulus and Cibicides ?).
- 149-159 As above plus 7% limestone fragments (3-10 mm); no Cibicides ?).
- 159-169 Clay — moderate orange pink; few grains of quartz; few grains of glauconite; few black phosphatic fragments; muscovite.
- 169-179 Sand — olive gray; moderate clay; very fine to fine grained, some medium grains; subangular to subrounded; moderately well sorted; quartz; 10% glauconite; 2% muscovite; 2% shell fragments; forams (inc. Robulus); ostracodes.
- 179-189 As above plus 30% limestone fragments (2-30 mm).
- 189-199 Sand — olive light gray; moderate clay; fine to medium grained; subangular to rounded; moderately well sorted; quartz; 15% glauconite; 10% shell fragments; some muscovite; forams scarce (inc. Robulus and Buccella).
- 199-209 Sand — off white; slightly clayey; coarse to very coarse grained, 10% granules, 7% pebbles; subrounded; moderately sorted; quartz; feldspar; 2% glauconite; few grains of garnet.
- 209-219 Sand — white; slightly clayey; coarse grained to granular, some pebbles; subrounded; moderately sorted; quartz; feldspar; some glauconite; few grains of garnet.
- 219-229 As above except medium to coarse grained, 7% granules.
- 229-239 As above except 2% granules.
- 239-249 As above except 7% granules.
- 249-259 As above plus some muscovite.

Depth  
(feet)

- 259-269 Sand — yellowish gray; moderate clay; medium to very coarse grained, 10% granules, few pebbles; subangular to subrounded; poorly sorted; quartz; feldspar; few grains of garnet.
- 269-279 As above except medium grained to granular, few pebbles; few grains of glauconite.
- 279-289 Sand and gravel — off white; slightly clayey; coarse grained to granular, 30% pebbles; subangular to subrounded; poorly sorted; quartz; feldspar; some glauconite; muscovite.
- 289-299 Clay — light olive gray; abundant sand; coarse grained to gravel; subrounded; poorly sorted; quartz; feldspar; some glauconite.
- 199-309 Sand — dusky yellow; moderate clay; coarse grained to granular, some medium grains, some pebbles; subangular to subrounded; moderately sorted; quartz; feldspar; few grains of glauconite.
- 309-319 Sand — yellowish gray; moderate clay; coarse grained to granular, some medium grains, few pebbles; subrounded; moderately sorted; quartz; feldspar; few grains of glauconite; muscovite.
- 319-329 As above.
- 329-339 As above except no pebbles.
- 339-349 As above except slightly clayey.
- 349-350 Sand — White; medium to coarse grained, some granules; subangular to subrounded; moderately well sorted; quartz; feldspar; few grains of glauconite.

Logged by: Michael T. Currie

OWNER: Henrico County Schools (Highland Springs)

W: 511

GEOLOGIC SUMMARY

| <u>Depth (feet)</u> | <u>Thickness (feet)</u> | <u>Rock Unit</u>    | <u>Time Rock Unit</u> |
|---------------------|-------------------------|---------------------|-----------------------|
| 0-41                | 41                      | Columbia Group      | Pleistocene           |
| 41-49               | 8                       | “ “                 | “ “                   |
| 49-89               | 40                      | Calvert Formation   | Miocene-Eocene        |
| 89-159              | 70                      | Nanjemoy Formation  | Eocene                |
| 159-169             | 10                      | Marlboro Clay       | Eocene                |
| 169-199             | 30                      | Mattaponi Formation | Eocene-Cretaceous     |
| 199-350             | 151                     | Patuxent Formation  | Cretaceous            |

VDMR  
David A. Hubbard, Jr., Geologist  
December 12, 1978

Reproduced by Jessee Standbridge – March 7, 2011

OWNER: Henrico Co. Schools  
(Highland Springs)

W# 511

- 4 -

## GEOLOGIC SUMMARY

| <u>Depth</u><br>(feet) | <u>Thickness</u><br>(feet) | <u>Rock Unit</u>    | <u>Time Rock Unit</u> |
|------------------------|----------------------------|---------------------|-----------------------|
| 0-41                   | 41                         | Columbia Group      | Pleistocene           |
| 41-49                  | 8                          | " "                 | " "                   |
| 49-89                  | 40                         | Calvert Formation   | Miocene-Eocene        |
| 89-159                 | 70                         | Nanjemoy Formation  | Eocene                |
| 159-169                | 10                         | Marlboro Clay       | Eocene                |
| 169-199                | 30                         | Mattaponi Formation | Eocene-Cretaceous     |
| 199-350                | 151                        | Patuxent Formation  | Cretaceous            |

VIRGINIA DIVISION OF MINERAL RESOURCES  
David A. Hubbard, Jr., Geologist  
December 12, 1978