

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

INTERVAL SHEET

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 Date rec'd: 9/20/71 ; processed 9/23/71  
 PROPERTY: Heritage Development Co.  
 (Windsor Forest Subdivision)  
 COMPANY: Mitchell's Well & Pump Co.  
 COUNTY: James City (Williamsburg)

C-160  
 Well Repository No: 3259  
 Sample Interval: from 0 to: 301'  
 Number of samples: 30  
 Total Depth: 301 1/2'  
 Oil or Gas: Water:  Exploratory:

| From-To   | From-To   | From-To | From-To |
|-----------|-----------|---------|---------|
| 0 - 10    | 250 - 260 | -       | -       |
| 10 - 20   | 260 - 270 | -       | -       |
| 20 - 30   | 270 - 280 | -       | -       |
| 30 - 40   | 280 - 290 | -       | -       |
| 40 - 50   | 290 - 301 | -       | -       |
| 50 - 60   | -         | -       | -       |
| 60 - 70   | -         | -       | -       |
| 70 - 80   | -         | -       | -       |
| 80 - 90   | -         | -       | -       |
| 90 - 100  | -         | -       | -       |
| 100 - 110 | -         | -       | -       |
| 110 - 120 | -         | -       | -       |
| 120 - 130 | -         | -       | -       |
| 130 - 140 | -         | -       | -       |
| 140 - 150 | -         | -       | -       |
| 150 - 160 | -         | -       | -       |
| 160 - 170 | -         | -       | -       |
| 170 - 180 | -         | -       | -       |
| 180 - 190 | -         | -       | -       |
| 190 - 200 | -         | -       | -       |
| 200 - 210 | -         | -       | -       |
| 210 - 220 | -         | -       | -       |
| 220 - 230 | -         | -       | -       |
| 230 - 240 | -         | -       | -       |
| 240 - 250 | -         | -       | -       |

all intervals have both washed and unwashed samples



OWNER: Heritage Development Co.  
(Windsor Forest Subdivision)  
DRILLER: Mitchell's Well & Pump Co.  
COUNTY: James City (Williamsburg)

VDMR # 3259  
WWCR # 160 ,  
TOTAL DEPTH : 301 1/2

GEOLOGIC LOG

Depth  
(feet)

COLUMBIA GROUP (0-40')

|       |  |
|-------|--|
| 0-10  | Clay - orange, with much silt and fine-grained sand  |
| 10-20 | Silt and sand - coarse-grained silt and fine-grained sand, with abundant reddish-orange clay; trace of fine gravel |
| 20-30 | "  |
| 30-40 | Sand - silty, rather poorly sorted; about 10 percent brownish-yellow clay  |

YORKTOWN AND ST. MARYS FORMATIONS (40-180')

|         |   |
|---------|---|
| 40-50   | Sand - medium-grained, rather poorly sorted; matrix of brown clay; about 5 percent shell fragments; very slightly glauconitic |
| 50-60   | Sand - fine-to coarse-grained, poorly sorted, with 5 percent fine-grained gravel; abundant matrix of tan clay                 |
| 60-70   | Sand - light-brown, very slightly clayey; fine-grained, well sorted; slightly glauconitic and fossiliferous                   |
| 70-80   | "   |
| 80-90   | "   |
| 90-100  | Sand - grayish-green; fine-grained, well sorted, angular; 5 percent glauconite; trace of mica; a few spines                   |
| 100-110 | "   |
| 110-120 | "   |

OWNER: Heritage Development Co. -2 -  
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120-130 Sand - grayish-green; fine-grained, well sorted, angular; 5 percent glauconite; trace of mica; a few spines  
130-140 "  
140-150 " with 5-10 percent clay matrix  
150-160 " "  
160-170 " "  
170-180 " "

CALVERT FORMATION (180-250')

180-190 Clay - pale greenish-gray, pulverulent  
190-200 Clay - light-gray, compact, trace of shell fragments  
200-210 Sand - brown clay matrix; fine- to coarse-grained, poorly sorted; clear quartz with 5-10 percent phosphorite fragments; a few foraminifers  
210-220 "  
220-230 "  
230-240 Sand - sparse matrix of brownish-gray clay; fine- to medium-grained, moderately sorted; clear quartz with 5 percent shell fragments and a trace of fragmental phosphorite  
240-250 "

NANJEMOY FORMATION (250-301')

250-260 Sand - gray, clean, some limonite staining; 20 percent fragments of shell-bearing, glauconite-bearing calcitic sandstone showing extensive replacement by pyrite; sand fraction comprises quartz, goethite after glauconite, glauconite, and bioclasts  
260-270 " sand fraction contains about 25 percent fresh autochthonous glauconite

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270-280 Sand - brown, clean, with 5 percent fragments of shell and calcitic sandstone; fine- to medium-grained, fairly well sorted; fresh to decomposed glauconite (75 percent) and stained quartz (25 percent)

280-290 " sand is fine-grained, well sorted; glauconite is fresh to slightly decomposed

290-301 " "

#### GEOLOGIC SUMMARY

| <u>Depth<br/>(feet)</u> | <u>Rock Unit</u>                  | <u>Age</u>     |
|-------------------------|-----------------------------------|----------------|
| 0-40                    | Columbia Group                    | Pleistocene    |
| 40-180                  | Yorktown and St. Marys formations | Late Miocene   |
| 180-250                 | Calvert Formation                 | Middle Miocene |
| 250-301                 | Nanjemoy Formation                | Middle Eocene  |

Virginia Division of Mineral Resources  
Robert H. Teifke - Geologist  
September 29, 1971