

UNIVERSITY OF DELAWARE  
DELAWARE GEOLOGICAL SURVEY  
REPORT OF INVESTIGATIONS No. 23

CRETACEOUS AND TERTIARY SECTION,  
DEEP TEST WELL,  
GREENWOOD, DELAWARE

BY  
JOHN H. TALLEY

STATE OF DELAWARE  
NEWARK, DELAWARE

JUNE, 1975

**CRETACEOUS AND TERTIARY SECTION,  
DEEP TEST WELL,  
GREENWOOD, DELAWARE**

**By**

**JOHN H. TALLEY**

**Hydrogeologist**

**JUNE, 1975**

APPENDIX B

Geologists' descriptive log of well Nc13-3

APPENDIX B

This log was compiled from descriptions of the ditch and core samples by I. H. Kantrowitz and R. H. Johnston of the USGS and J. H. Talley of the DGS while drilling was in progress.

Depth Interval (feet)	Sample Number (core)	Description
0-10		Sand, fine, clayey, silty, tan to tannish-gray
10-20		Sand, fine to very fine, silty, clayey, gray; some gravel, coarse sand
20-30		Sand, very fine to coarse, gravel; some silt and clay
30-69		Sand, fine to very coarse, with gravel. Generally smaller than above
69-71		Silt, clay, dark gray, with sand, very fine
71-76		Sand, fine to very fine, silty, dark gray
76-86		No recovery
86-91	22864	Sand, very fine, silty, gray
91-101		No recovery
101-106	22865	Silt, dark gray, with clay and sand, very fine to fine
106-111		Silt, dark gray, with clay and sand, very fine to fine
111-121		Silt, dark gray, with sand, very fine to fine

(continued)

Depth Interval (feet)	Sample Number (core)	Description
121-131		Silt, dark gray, sand, very fine to fine, with shell fragments
131-141		Silt, dark gray, with shell fragments, white
141-151		Silt, dark gray, with sand, fine to medium, shell fragments (gastropods and pelecypods)
151-161		Silt, dark gray, with abundant shell fragments
161-166	22866	Silt, dark gray, with shell fragments
166-171		Sand, fine to coarse, silty, gray, with many shell fragments
171-184		Clay, dark gray, with streaks of silt; some shell fragments
184-194		Clay, silty, sand, fine, gray, with shell fragments
194-204		Clay, silty, gray, little or no sand; some shell fragments
204-224		Clay, gray, very little silt and sand; some shell fragments
224-264		Clay, silt, gray, shell fragments, with some sand, very fine to fine
264-266	22867	Silt, gray
266-274		Silt, clay, gray
274-284		Clay, shells, some silt, sand, very fine. Shells at 281.5'

(continued)

Depth Interval (feet)	Sample Number (core)	Description
284-304		Clay, silt, shells, with some sand, very fine. Several zones of hard drilling
304-314		Clay, shell fragments, with some sand, very fine
314-324		Clay, some silt and shell fragments
324-364		Clay, silty, dark gray, with shell fragments
364-366	22868	Silt, slightly micaceous, gray to dark brownish-gray
366-374		Silt, dark brownish-gray, with sand, very fine, clay
374-384		Silt, dark brown, with sand, very fine, shell fragments, clay binder
384-394		Silt, dark brown. Cemented shell beds 386-389'
394-404		Silt, sand, fine, dark brown, with shell beds
404-406	22869	Sand, very fine, silty, light gray, with shell fragments
406-424		Sand, very fine, silt, grayish-brown, with shell fragments
424-434		Sand, very fine, silt, brownish-gray
434-444		Silt, sand, very fine, grayish-brown, with many shell fragments. Drilling indicates many hard thin shell beds

(continued)

Depth Interval (feet)	Sample Number (core)	Description
444-454		Sand, very fine, silt, grayish-brown, with shell fragments
454-464		Sand, very fine, silt, brownish-gray, with abundant shell fragments. Drills like there are many hard shell beds
464-466	22870	Sand, very fine, silt, brownish-gray, shell fragments
466-474		Sand, very fine, silt, brownish-gray, shell fragments
474-484		Sand, very fine, silty, grayish-brown, shell fragments
484-504		Sand, very fine, silt, grayish-brown, few shell fragments. Easy drilling
504-524		Silt, slightly clayey, brownish-gray, with sand, very fine, shells
524-526	22871	Silt, grayish-brown, with sand, very fine
526-544		Clay, silty, dark gray, with some sand, very fine
544-554		Clay, dark gray, with some sand, very fine
554-574		Clay, dark gray, with some silt, sand, very fine
574-584		Clay, silt, sand, very fine; some cemented layers. Hard drilling 578'
584-586	22872	Sand, very fine, silt, gray; some cemented zones

(continued)

Depth Interval (feet)	Sample Number (core)	Description
586-594		Clay, silt, sand, very fine; some cemented zones
594-614		Sand, fine, shell fragments; almost all cemented. Formation probably sand, very fine to fine, and/or silt, with some layers of sand, fine, cemented
614-624		Sand, fine, shell fragments, cemented. Probably sand, very fine, and/or silt, with some layers of sand, fine
624-626	22873	Sand, very fine to fine, silty, clayey, olive; some cemented sand, shell fragments. May contain some glauconite
626-644		Sand, very fine to fine, with shell fragments
644-654		Sand, very fine to fine, with shell fragments and layers of clay, dark gray. Contains some quartz grains, subrounded; black grains (glauconite?)
654-656		Sand, fine to medium, partially cemented, greenish-gray, some glauconite
656-664		Sand, fine to medium, silty
664-666	22874	Sand, fine to medium, silty, glauconitic, greenish-gray
666-674		Sand, fine to medium, silty, glauconitic, greenish-gray

(continued)



Depth Interval (feet)	Sample Number (core)	Description
674-694		Silt, sand, fine to medium, glauconitic, greenish-gray, with some sand, very coarse, and many shell fragments
694-704		Silt, sand, fine to medium, glauconitic, greenish-gray, with some black grains, very fine to fine
704-706	22875	Sand, fine to medium, silty, glauconitic, greenish-gray
706-714		Sand, fine to medium, silty, glauconitic, greenish-gray
714-724		Sand, fine to coarse, silty, glauconitic, greenish-gray; some shells
724-734		Sand, fine to coarse, silty, clayey, glauconitic, greenish-gray
734-744		Sand, very fine to medium, silty, clayey, glauconitic, greenish-gray
744-746	22876	Sand, very fine to medium, silty, glauconitic, greenish-gray
746-764		Sand, very fine to medium, silty, greenish-gray
764-766	22877	Sand, very fine to fine, silty, glauconitic, greenish-gray
766-784		Sand, very fine to fine, silty, clayey, greenish-gray
784-786	22878	Silt, clay, sand, very fine to fine, greenish-gray; somewhat glauconitic

(continued)

Depth Interval (feet)	Sample Number (core)	Description
786-794		Sand, very fine to medium, silty, clayey
794-804		Sand, very fine to medium; less silt and clay than above
804-806	22879	Silt, sandy, clay, bluish-gray; moderately glauconitic
806-824		Clay, sand, very fine, silt
824-826	22880	Clay, silty, very slightly glauconitic, gray
826-834		Clay, very silty, gray
834-844		Clay, silty, gray, with sand, very fine to medium
844-846	22881	Sand, very fine, silty, clayey, greenish-gray; some glauconite
846-854		Sand, very fine, silt, clayey, greenish-gray
854-864		Sand, very fine, silt, greenish-gray
864-866	22882	Silt, sandy, very fine, greenish-gray, with glauconite
866-874		Sand, very fine, silt, firm, greenish-gray
874-884		Silt, glauconitic, with sand, very fine and clay, greenish-gray
884-886	22883	Silt, with sand, very fine and clay, somewhat glauconitic

(continued)

Depth Interval (feet)	Sample Number (core)	Description
886-904		Silt, glauconitic, firm, with sand, very fine and clay, greenish-gray
904-906	22884	Silt, clayey, firm, with sand, very fine, grayish-green; microfossils
906-914		Silt, clayey, firm, with sand, very fine, grayish-green
914-924		Silt, clayey, with traces of sand, very fine, grayish green
924-944		Silt, clayey, greenish-gray, with small amount of sand, very fine, black
944-946	22885	Silt, clayey, firm, grayish-green, with traces of glauconite; many microfossils
946-964		Silt, clay, firm, grayish-green, some sand, very fine, black
964-966	22886	Clay, silty, grayish-green, with traces of glauconite; very fossiliferous
966-994		Clay, silty, grayish-green, with sand, very fine, black
994-996	22887	Silt, very clayey, grayish-green, with layers of sand, very fine, black; very fossiliferous
996-1004		Clay, silty, grayish-green, with sand, very fine, black
1004-1014		Clay, silty, grayish-green, with layers of sand, very fine, black, cemented

(continued)

Depth Interval (feet)	Sample Number (core)	Description
1014-1034		Silt, clayey, with sand, very fine, black
1034-1036	22888	Clay, silty, olive green, with sand, very fine, cemented, and traces of glauconite
1036-1044		Clay, silty, grayish-green. No cemented layers for last 15' (1029-1044), but sand, very fine, black still present; possible as contamination from drilling mud
1044-1064		Clay, silty, greenish-gray, with traces of sand, very fine, black. Drills like clay
1064-1074		Clay, silty, grayish-green, with a trace of sand, very fine, black
1074-1076	22889	Clay, silty, grayish-green, with traces of glauconite; fossiliferous
1076-1114		Clay, silty, grayish-green, with sand, very fine
1114-1116	22890	Clay, silty, firm, greenish-gray, with sand, very fine, black; fossiliferous
1116-1124		Clay, silty, firm, grayish-green, with sand, very fine, black
1124-1144		Clay, silty, grayish-green, with sand, very fine, black. Recovery is poor due to slow drilling
1144-1146	22891	Clay, with traces of silt, quartz sand, glauconite, dark gray
1146-1164		Clay, gray

(continued)

Depth Interval (feet)	Sample Number (core)	Description
1164-1184		Clay, gray, some silt
1184-1186	22892	Silt, clayey, greenish-gray, grading to clay, dark gray, waxy, with very little silt
1186-1204		Clay, dark gray, very little silt
1204-1206	22893	Clay, slightly silty, waxy, dark gray, with traces of glauconite, mica, quartz, pyrite
1206-1214		Clay, slightly silty, dark gray
1214-1224		Clay, dark gray to greenish-gray, with silt, traces of sand, very fine
1224-1226	22894	Clay, silty, greenish-gray, traces of glauconite, sand, very fine; fossiliferous
1226-1244		Clay, silty, greenish-gray, traces of sand, very fine
1244-1246	22895	Silt, clayey, white to light gray; clay, gray, waxy; very fossiliferous
1246-1254		Sand, very fine, silty, greenish-gray
1254-1264		Clay, sand, very fine, black
1264-1266	22896	Clay, glauconitic, dark gray, with sand, very fine to fine
1266-1285		Clay, dark gray, sand, very fine to fine, black. Sand content decreases with depth
1285-1287	22897	Clay, silty, glauconitic, dark gray

(continued)

Depth Interval (feet)	Sample Number (core)	Description
1287-1325		Clay, silty, greenish-gray, with sand, very fine, black
1325-1327	22898	Clay, silty, greenish-gray to tan-gray, with sand, very fine, black, glauconitic; fossiliferous
1327-1355		Clay, silty, greenish-gray, with sand, very fine, black
1355-1365		Clay, silty, with traces of sand, very fine
1365-1367	22899	Clay, slightly silty, gray, with traces of glauconite; very fossiliferous
1367-1395		Clay, light gray, some silt and sand, very fine to fine, black
1395-1405		Clay, silt, with sand, very fine to fine
1405-1407	22900	Clay, silty, glauconitic, dark gray, with some shell fragments
1407-1415		Clay, silty, glauconitic, dark gray. Drills streaky
1415-1425		Clay, silt, dark gray, with sand very fine to fine, black
1425-1435		Silt, light gray; clay, silty, dark gray, with some sand, very fine to fine, black
1435-1437	22901	Clay, glauconitic, dark gray, with silt and mica; greasy
1437-1445		Clay, dark gray, with silt and mica; somewhat glauconitic

(continued)

Depth Interval (feet)	Sample Number (core)	Description
1445-1466		Clay, silty, gray, with silt, greenish-gray and sand, very fine, black
1466-1468	22902	Silt, clayey, glauconitic, grayish-green, with traces of sand, very fine, black
1468-1476		Silt, clay, grayish-green, with glauconite and sand, very fine, black
1476-1486		Silt, clayey, greenish-gray, with sand, very fine, black
1486-1498		Silt, clayey, greenish-gray, with sand, very fine, black, brown
1498-1500 T.D.	22903	Silt, clayey, greenish-gray, with glauconite and sand, very fine