THIRTY-ONE SELECTED DEEP WELLS

LOGS AND MAP

GEOLOGIC REPORT SERIES NO. 2

NEW JERSEY GEOLOGICAL SURVEY

DEPARTMENT OF CONSERVATION AND ECONOMIC DEVELOPMENT

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Location Map

THIRTY-ONE SELECTED DEEP WELLS

The following thirty-one well logs were selected by the New Jersey Geological Survey for publication on the basis of location and completeness of lithologic description. The logs were selected specifically to aid oil companies in preliminary exploration.

The thirty-one logs were compiled by at least four geologists and one well driller from well samples collected between 1916 and 1958. There has been very little editing of the logs, the lithologic descriptions being reproduced as written by those logging the samples. This procedure was agreed upon when it was found that standardization of the lithologic descriptions would require rewriting most, if not all, of the logs.

Except for the elevations of the Transcontinental Gas Pipeline Corporation wells, which are accurate to the nearest foot, the surface elevations of wells were taken from the U.S.G.S. 1:24000 Quadrangle Map Series (Contour Interval 20 feet).

Many of the thirty-one wells in this report are included without lithologic descriptions in "Deep Wells of the New Jersey Coastal Plain" by Kasabach and Scudder (1961).*

* Kasabach, Haig F. and Scudder, Ronald J., 1961, Deep Wells of the New Jersey Coastal Plain; New Jersey Geological Survey, Geologic Report Series No. 3.

1

Elevation at surface: 15'

Coordinates: 26.31.892 /·/
Permit No. :
Driller : Wm. Stothoff Co.
Owner : American Cyanamid Co.
Address : Woodbridge, N. J.
Logged by :
Date : February 1947

Depth (feet)	Description	Correlation
12 - 18	Red, slightly clayey sand and gravel, maximum diameter 1" - larger pebbles chiefly rounded - shale fragments.	Wisconsin Glacial Drift
18 - 28	Red, slightly clayey sand and gravel - gravel to 1½".	
28 - 33	Red, slightly clayey sand (coarse - grained).	
33 - 37	Red clay and sand.	
37 - 44	Reddish-brown clay and sand.	
44 - 50	Red, slightly clayey sand and gravel - gravel to 3/4".	
50 - 54	Medium to coarse grained quartz sand. Mostly coarse grained - slight amount of clay - reddish-brown cast. Possibly reworked in part.	Raritan formation (Cretaceous)
54 - 62	Light-gray clay.	
62 - 65	Medium to coarse grained, slightly clayey quartz sand.	
65 - 75	Coarse-grained quartz sand mixed with fragments of greenish-gray baked shale.	
80	Greenish-gray baked shale.	Triassic at 73

Driller: Harris-Harmon Well Co., Inc.
Owner : City of N.Y., Dept. Water Supply, Gas & Elec., Boro of Queens
Date : September, 1939

Elevation at surface: 10'

Rockaway Park Pumping Station
Well #2 at Rockaway Beach,
New York

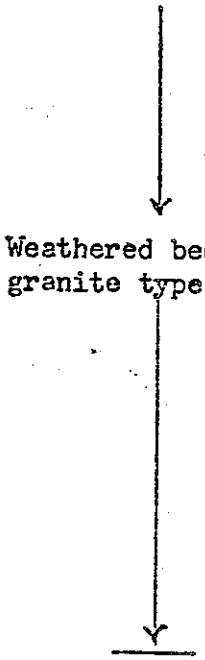
Depth (feet)	Description	Correlation
0 - 132	Fine-grained beach sand.	Recent and Pleistocene
132 - 203	Fine-grained beach sand with shells and lignite.	
203 - 251	Blue clay.	
245	Tough, blue clay (from sidewall sample taken at this point.)	
251 - 271	Fine-grained, grey sand.	
271 - 293	Coarse-grained, grey sand and gravel.	
293 - 297	Boulders.	
297 - 301	Clay and gravel.	
301 - 315	Coarse-grained, grey sand and gravel.	
315 - 343	Medium-grained, grey and white sand mixed.	Mixture of Pleistocene & Magothy ?
343 - 413	Fine-grained, grey sand.	Magothy
413 - 426	Clay.	Raritan ?
426 - 466	Medium-grained, grey sand.	
466 - 479	Sand and boulders.	
479 - 491	Clay.	
491 - 495	Clay and boulders.	
495 - 523	No sample.	
523	Six inch core of hard, white clay.	Raritan
523 - 550	No sample.	
550 - 560	Grey, medium-grained sand.	
560 - 573	Grey clay, sand and lignite mixed (from 6" core taken midway between 560 & 573.)	

573 - 583	Dark and light-grey, sandy clay (from 36" core taken midway between 573 & 583.)
583 - 593	Light, sandy grey clay (from 24" core taken within this interval.)
593 - 598	Light-grey clay with sand; dark tough clay with gravel (from 36" core taken in this interval.)
598 - 607	Dark, tough clay (from 36" core taken in this interval.)
607 - 616	Grey clay, mica and sand (from 48" core taken in this interval.)
616 - 625	Grey clay, mica and sand and wood (from 60" core taken in this interval.)
625 - 635	Light, tough grey clay (from 63" core taken in this interval.)
635 - 647	Light, tough grey clay (boulders 640-643) (from 65" core taken in this interval.)
647 - 658	Tough, grey clay (from 61" core taken in this interval.)
658 - 669	Tough, grey clay (boulder ? 666) (from 75" core taken in this interval.)
669 - 680	Tough, grey clay (from 72" core taken in this interval.)
+-680	Blue clay, wood and gravel (from sidewall sample at this point.)
680 - 692	Tough, grey clay. (from 30" core taken Red, yellow and white clay. (in this interval.
692 - 705	Upper - grey clay. Lower - white and red clay. (From 84" core taken in this interval.)
705 - 715	Upper - red and white clay. Lower - white and yellow clay. (From 137" core taken in this interval.)
715 - 725	White, grey sandy clay. Upper - white with wood. Lower - grey. (From 65" core taken in this interval.)

725 - 737	No core, probably sandy clay.	
+-733	Medium-grained grey sand and clay (from sidewall sample at this point.)	
737 - 743	Fine-grained, white sand (from 24" core in this interval.)	
745 - 748	No core, probably sand.	
748 - 758	Medium-grained, white sand with clay (from 6" core in this interval.)	
+-753	Fine-grained, gray sand (from sidewall sample at this point.)	
758 - 768	Coarse-grained, white sand, particles clay (from 18" core in this interval.)	
+-763	Fine-grained, muddy sand and clay (from sidewall sample at this point.)	
768 - 780	Coarse-grained, white sand. White clay. (From 15" solution (upper) and 6" solid (lower) cores taken in this interval.)	
+-773	Fine-grained, muddy sand; mixed clay and wood (from sidewall sample at this point.)	
780 - 791	Coarse-grained, white sand and clay (from solution taken in this interval.)	
+-783	Fine-grained, sand, much red clay and gravel (from sidewall sample taken at this point.)	Raritan or Lower Cretaceo
791	Sand and clay.	
791 - 800	Grey clay and gravel (from 12" core in this interval.)	
800 - 810	Light-grey, sandy clay with gravel and wood (from 9" core in this interval.)	
810 - 819	Coarse-grained, white sand. Sandy clay and wood. (From 24" solution taken in this interval.)	
819 - 826	Dark-grey clay, mixed (from 6" core in this interval.)	
826 - 833	Dark-grey and white clay, mixed (from 6" core in this interval.)	

833 - 840	Dark-grey and white clay (from 5¼" core in this interval.)
840 - 851	White clay, no sample.
851 - 853	Fine-grained, white beach sand and clay.
853 - 860	No sample.
860 - 862	Fine-grained, white beach sand and clay.
862 - 869	No sample.
869 - 872	Coarse grey and red clay, coarse-grained grey sand, clay and wood.
872 - 878	No sample.
878 - 879	Fine-grained, grey sand and clay.
879 - 888	No sample.
888 - 890	Fine-grained, white sand and clay with gravel.
890 - 897	No sample.
897 - 900	Fine-grained, muddy sand and much unsorted gravel to ½".
900 - 908	No sample.
908 - 910	Fine-grained, beach sand; dense clay.
910 - 918	No sample.
918 - 920	Fine-grained, beach sand, clay and gravel.
920 - 928	No sample.
928 - 930	Fine-grained, grey sand and grey clay.
930 - 939	No sample.
939 - 941	Grey clay, grey sand, brown sand.
941 - 949	No sample.
949 - 960	Tough, grey clay (about 2'); tough, red clay (about 6'); tough, red clay (about 3'.)
960 - 971	Tough, red clay (from 2½ core taken in this interval.)

971 - 980	Gritty white clay (from 48" core taken in this interval.)	
980 - 991	White clay, probably weathered bedrock (from 120" core taken in this interval.)	
991 - 1003	48" core	weathered bedrock
1003 - 1014	108" core	" "
1014 - 1022	72" core	" "
1022 - 1031	90" core	" "
1031 - 1043	96" core	" "
1043 - 1049	48" core	bedrock



NOTES: From 980' down formation grew harder.

3

Elevation at surface: 175'

Coordinates: 26.31.794 /7
Permit No. :
Driller : Parkhurst Well & Pump
Owner : Harold Kuhn
Address : Near Fords, N. J.
Logged by : Meredith E. Johnson
Date : About 9/1/50

Depth (feet)	Description	Correlation
5 - 45	Reddish clay, sand and small pebbles.	Wisconsin morainal deposit
50	Red, sandy clay.	
55	Brown, arkosic, clayey sand.	
60	Red, clayey sand and gravel.	
65 - 70	Brownish-red, clayey sand and gravel.	
75 - 95	Yellow-brown, clayey, arkosic sand.	Pensauken
100	Light-gray clay (in part mixed with sand.)	Raritan
105	Buff-colored, clayey, fine to medium-grained sand.	
110	White-sandy clay.	
115	White-slightly sandy clay.	
120	Light-gray sandy clay.	
125	Gray clay and sand.	
130	Buff-colored clay and sand.	
135	Buff-colored clayey, fine to coarse sand.	
140	Buff-colored slightly clayey, fine to coarse sand.	
145	Buff-colored, fine grained sand.	
150	Buff-colored clayey sand with a few small pieces of red clay or weathered red shale.	
155	Mixture of fine-grained sand and reddish clay, with a little buff-colored clay.	
160	Red clay with lighter-colored streaks.	Triassic shale
165	Red clay with small, well-rounded grains of coarse sand.	
170 - 235	Red shale	

Elevation at surface: 100'

4

Owner : VanHorn Oil Company
Address : (well) Millstone
Driller : Artesian Well & Eq. Co.
Logged by: H. Herpers

Depth (feet)	Description	Correlation
Surface elevation 100' ±		
10 - 30	Soft red shale.	Triassic
40	Red shale.	
50	Red sandy shale.	
60 - 70	Red shale.	
80 - 90	Soft red shale.	
100	Red shale. A little calcite mineralization.	
110	Hard, fine-grained red sandstone and shale. Calcite mineralization noted.	
120	Fine-grained, red shaly micaceous sandstone and red shale.	
130	Red shale.	
140	Soft red shale.	
150	Soft red shale with calcite mineralization.	
160	Soft red shale.	
170 - 190	Red shale. A little calcite mineralization noted.	
200	Soft red shale with hard layers.	
210	Soft red shale. Some calcite mineralization noted.	
220	Red shale with a little calcite mineralization.	
230	Soft red shale with hard layers.	
240	Red shale. Thick calcite vein (?) noted.	
250	Soft red shale.	

260	Hard micaceous red shale. Slightly sandy and red shale. Calcite mineralization noted.
270 - 280	Soft red shale.
290	Red shale.
300 - 310	Brown shale.
320 - 330	Red shale.
340 - 350	Soft red shale.
360 - 370	Red shale.
380	Red shale with calcite mineralization.
390	Soft red shale.
400	Soft red shale. Gypsum noted.
410	Red shale. Calcite mineralization.
420 - 430	Soft red shale.
440	Red shale.
450	Soft red shale.
460 - 500	Red shale.
500 - 520	Red shale and hard, fine-grained, red shaly micaceous sandstone. Calcite present.
531 - 540	Grey shale.
546 - 550	Red shale. A little calcite noted.
560	Red shale.
580 - 630	Red shale.
630 - 650	Red shale. Calcite and a little gypsum (?) noted.
670	Red shale.
690	Red shale. Gypsum noted.
710	Red shale with a few fragments of grey

710 Cont'd	shale and a few pieces of gypsum.
730	Red shale. Gypsum noted.
750	Red-brown sandy shale. Hard. Gypsum noted.
758 - 764	Grey shale. A few fragments of grey sandstone, calcite and gypsum noted.
790	Grey shale and sandstone with calcite.
810	Red shale with a little calcite and gypsum.
830	Red shale with some gypsum.
850 - 1030	Red shale with gypsum and calcite.
1050	Purple and grey shale. Calcite noted.
1068 - 1076	Grey shale with calcite. Fragments of reddish-sandy shale.
1090	Red sandy shale. Large chunks of gypsum.
1110	Red shale with fragments of grey shale and gypsum.
1130 - 1150	Red shale and fragments of gypsum.
1170 - 1190	Red sandy shale. Gypsum noted.
1210	Grey slightly calcareous shale. A few fragments of red shale, also calcite.
1230	Red shale.
1250	Red shale with a little calcite.
1275 - 1290	End of 10" hole. Red shale with a little gypsum and calcite.
1310 - 1330	Red shale.
1350	Red shale with calcite and gypsum.
1370	Similar to last. Much gypsum and a little calcite.
1390	Red shale with a little calcite and gypsum.

1410	Red shale with a little gypsum. Hard
1430 - 1450	Hard, red shale with gypsum and a little calcite.
1470	Reddish-brown shale and fine-grained red sandstone with calcite and little or no gypsum.
1490	Hard, reddish-brown shale with calcite and gypsum.
1510 - 1530	Hard, red, somewhat sandy shale with calcite and little or no gypsum.
1550	Hard red shale with a little gypsum and little or no calcite.
1570 - 1590	Hard reddish-brown shale. Very little calcite or gypsum noted.
1610	Red shale with much gypsum.
1630 - 1650	Hard reddish-brown shale with only a little gypsum.
1670	Hard red shale with a little calcite and gypsum.
1690	Red shale with a little grey shale and calcite and much gypsum (gypsum in large pieces.)
1710	Red shale with a little grey shale and calcite.
1730	Reddish-brown shale.
1750	Reddish-brown shale with a little calcite.
1770	Red shale.
1790	(9-18-47) Red shale with calcite and a little gypsum.
1825	Reddish-brown shale. A few chips of grey shale and much calcite.
1850	Reddish-brown shale. Calcite present.

1870	Reddish-brown sandy shale. A few chips of grey shale and calcite.
1890	Reddish-brown shale with some calcite.
1910	Red shale with a few chips of grey shale.
1930	Reddish-brown sandy shale with a little calcite.
1950	Mostly red-brown shale with a few chips of fine-grained micaceous red sandstone and grey shale.
1970	Red-brown shale.
1990	Red shale.
2010	Red shale. Calcite noted.
2030	Red shale. A little gypsum and calcite noted.
2050	Red shale and a little gypsum and calcite.
2070	Red shale. A little grey shale noted. Calcite filling fissure in one piece of red shale.
2090	Red sandy shale with calcite.
2110	Red shale, grey shale and a little calcite.
2118	Red-brown, shaly fine-grained sandstone with chips of grey shale and calcite.
2120	Red-brown shaly fine-grained sandstone with chips of grey shale and calcite.
2125	Rather hard-grey shale with calcite.
2140	Fine-grained, red shaly sandstone with a little calcite.
2160	Fine-grained, red shaly sandstone with a little calcite.
2180	Red-sandy shale with calcite.

2200	Red shale.
2220 - 2225	Red shale. Some calcite noted.
2240	Red, fine sandy, slightly micaceous shale. Much calcite noted.
2260	Red shale with much calcite.
2275	Dark red, fine-grained, shaly sandstone with a few chips of dark-grey rock (probably sandstone) and calcite and quartz.
2300	Red shale with a few chips of grey shale and some calcite.
2320	Red and grey shale with a little calcite.
2340	Red-sandy shale and a little calcite.
2350	Fine-grained, red-argillaceous sandstone.
2360 - 2382	Red shale with a little calcite.

Bottom of well.

5

Coordinates: 29.2.861
Permit No. : 29-1123
Driller : C. . Lawman & Co.

Elevation at surface: 215'

Record of well drilled for N.J. Highway Authority on Telegraph Hill, Holmdel Township, Monmouth County

Depth (feet)	Description	Correlation
22[illegible]	[illegible] fine sandy, slightly micaceous	
63 - 70	Olive-gray, sandy, slightly micaceous fossiliferous marl. Glauconite percent high. Fossil fragments only.	Navesink
73 - 79	Grayish, olive, micaceous, glauconitic, slightly clayey, fine-medium sand. Scattered coarse grains. Fine grains subangular, larger grains sub to rounded and polished. Glauconite, light semi-weathered type and glossy dark, greenish black type.	Mt. Laurel-Wenonah
83 - 89	Light, olive-gray, micaceous, somewhat glauconitic, fine sand. Glauconite all fresh, darkgreenish black. Sand angular to subangular.	
93 - 99	Light, olive gray (5y 4/1) micaceous, silty, probably slightly glauconitic, very fine sand.	
104 - 131	Pale olive, micaceous, glauconitic (slightly clayey, drilling mud?) fine sand. Sand subangular to subrounded.	
135 - 142	Olive gray, micaceous, silty, slightly clayey, probably slightly glauconitic, very fine sand.	Marshalltown
145 - 157	Olive gray, micaceous, slightly clayey silt.	
160 - 162	Light, olive gray, moderately micaceous, slightly glauconitic, somewhat lignitic fine sand.	Englishtown
165 - 172	Light, olive gray, tough clean clay, with interlaminated micaceous silt.	
175 - 176	Light, olive gray, clayey, micaceous silt. Some very fine sand and glauconite.	
180 - 182	Light, olive gray, slightly clayey and micaceous silt and fine sand. Some lignitic material.	
186 - 193	Light, olive gray, slightly micaceous, tough clay.	

(contd.)

201 - 203	Light, olive gray, clayey, micaceous silt.	Englishtown
206 - 213	Light, olive gray, slightly micaceous, tough clay.	
221 - 227	Light gray, micaceous, very fine sand. Scattered glauconite grains and coarse grains.	
231 - 248	Medium gray, micaceous, lignitic, fine to very fine sand. Angular to subangular sand, some silt.	
252 - 263	Medium gray, slightly micaceous and glauconitic fine sand. Grains subangular to subrounded.	
268 - 269	Olive gray (5y 4-1) very slightly micaceous, lignitic fine-medium sand. Grains subangular to rounded. Also light olive gray, tough clay.	
273 - 275	Light gray, micaceous, silty clay.	
278 - 280	Light gray, micaceous, lignitic silt and very fine sand.	
283 - 290	Medium gray, micaceous, somewhat silty clay.	
293 - 295	Light olive gray micaceous, silty clay.	Woodbury
298 - 305	Light, olive gray, micaceous, somewhat clayey silt. Some lignitic material.	
309 - 330	Light, olive gray, micaceous, silty clay.	Merchantville
334 - 336	Medium, olive gray, micaceous, glauconitic, silty clay. Small percentage of glauconite in a sea-green weathered state.	
339 - 341	Olive gray, slightly micaceous, silty, glauconitic marl. 50% of glauconite in weathered state.	
344 - 345	Medium, olive gray, micaceous, glauconitic, clayey silt. 40%-50% of glauconite weathered.	
349 -355	Medium gray, micaceous, somewhat lignitic, slightly glauconitic silty clay.	
359 - 366	Light, olive gray, micaceous, glauconitic, sparingly lignitic and clayey silt. Larger percentage of glauconite in sea-green weathered state.	

STATE OF NEW JERSEY

Department of Conservation and Economic Development
H. Mat Adams, Commissioner

Division of Resource Development
Kenneth H. Crevelling, Director

THIRTY-ONE SELECTED DEEP WELLS
LOGS AND MAP

by

Meredith E. Johnson

BUREAU OF GEOLOGY AND TOPOGRAPHY
Kemble Widmer, State Geologist
520 East State Street
Trenton 25, New Jersey

- 1961 -

(contd.)

Merchantville

Magothy

369 - 371	Medium olive gray, micaceous, glauconitic, slightly clayey and sandy silt.
374 - 375	Medium gray, moderately micaceous, fine-medium sand. Grains subangular to rounded. Mainly quartz, many well polished. Noted tourmaline heavies (schorle).
379 - 390	Medium gray, micaceous, slightly lignitic fine sand. Few black tourmalines. Mainly subangular to subrounded quartz. Slightly lignitic.
394 - 395	Medium gray, micaceous, lignitic clay and sand.
399 - 415	Same as 394 - 395.
419 - 421	Medium gray, clayey, micaceous silt.
425 - 426	Medium gray, clay, less silty than above, and light gray, fine, micaceous, lignitic sand.
430 - 431	Very fine sand, similar to that above, but slightly darker and more lignitic.
435 - 436	Highly lignitic, micaceous, dark gray, very fine sand.
441 - 450	Highly lignitic, medium gray, medium-grained, clear quartz sand. Very slightly micaceous, medium brownish-gray clay.
451 - 459	Clay as in above, and light gray, highly lignitic and micaceous fine sand.
462 - 464	Medium brownish-gray, slightly silty, micaceous clay.
467 - 468	Medium gray clay and well-sorted, light, brownish-gray, medium sand with much lignite.
473 - 474	Dark gray, highly lignitic, fine sand.
478 - 480	Light to medium brownish-gray clay, with some lignite.
483 - 491	Light gray clay with some lignite.
494 - 496	Medium gray clay, slightly silty and micaceous.
499 - 511	Light gray, lignitic very fine sand.

		(contd.)
516 - 534	Light gray, lignitic, fine-medium quartz sand.	Magothy
539 - 539	Very dark gray, highly lignitic, fine to medium sand.	
543 - 549	Medium gray, poorly sorted, silty, medium to coarse, lignitic quartz sand.	
553 - 554	Medium gray, lignitic, poorly-sorted silty, fine to coarse quartz sand.	
558 - 559	Very dark grey, highly lignitic, sandy silt.	
563 - 564	Light gray, micaceous clay and silt.	
568 - 570	Light gray, slightly silty and lignitic clay.	
574 - 581	Medium brownish-gray, well-sorted, medium quartz sand with few mica flakes.	
586 - 587	Light gray, well-sorted, medium quartz sand and medium grey clay.	
591 - 592	Medium gray, poorly-sorted fine to coarse, slightly micaceous quartz sand.	
596 - 597	Medium gray, slightly micaceous and lignitic medium sand. Subangular to subrounded.	
601 - 603	Grayish-white, sandy, slightly micaceous sharp silt. Scattered medium sand grains.	Raritan
606 - 607	Grayish-white, soft laminated, sericitic shale. Feels talcose after rubbing between fingers.	
611 - 612	Same as above with scattered pyrite clusters.	
616 - 618	Same as above, pyrite occurs in tiny spheres rather than clusters. Also pyrite sphere are almost limonite. Spheres are reddish-brown on inside.	
621 - 623	Same as 616-618. Note: Pyrite spheres in this sample are soft, reddish, nearly completely altered to limonite.	
627 - 628	Same as 621-623. Pyrite in some state of oxidation. Some medium gray, sericitic shale mixed in with sample.	
638 - 639	Light gray, micaceous, very fine sand and silt.	
643 - 651	Medium gray, micaceous, slightly lignitic, very fine sand and silt.	

(contd.)

654 - 673	Medium gray, micaceous silt.	Raritan
677 - 684	Light olive gray, micaceous, sandy silt. Very slightly glauconitic.	
689 - 696	Light olive gray, micaceous, slightly sandy silt.	
700 - 706	Medium gray, micaceous, slightly clayey silt.	
711 - 712	Medium gray, micaceous , silty clay.	
717 - 724	Medium gray, micaceous, very fine sand and silt.	
728 - 730	Medium gray, moderately micaceous silt and very fine sand.	
734 - 735	Medium gray, moderately micaceous, clean, tough, clay.	
739 - 740	Medium gray, micaceous with thin laminae of clay, silt and very fine sand.	
744 - 745	Medium gray, micaceous, slightly lignitic, very fine sand and silt.	
749 - 751	Medium gray, slightly micaceous, clay with light olive gray lignitic, micaceous silt mixed with above.	
754 - 755	Medium gray, slightly micaceous, lignitic, tough clay.	
759 - 760	Same as 749-751.	
769 - 770	Grayish black, moderately micaceous, lignitic, tough, clay.	
774 - 775	Grayish-white, micaceous or sericitic, slightly clayey soft shale. Note: Entire sample shot through with tiny opaque spherical shaped material. Average approximately 1 mm. Surface of spheres suggests concentric growth, do not react with Hcl. Suggest relationship with pyrite-limonite material at 611-628.	
784 - 785	Light to medium gray, moderately micaceous, lignitic clay. Some varied reddish clay plastered around rim of core sample.	
779 - 780	Same as 774 - 775. Some varigated reddish clay mixed in.	
790 - 791	Yellowish-gray, micaceous, slightly, lignitic silt.	

(contd.)
Raritan

795 - 801	Light gray, micaceous, slightly clayey silt.
805 - 811	Varigated red and light gray, slightly micaceous clay. Note: Many small spherical objects same as in 774-775.
815 - 816	Light, brownish gray clay, slightly micaceous silt.
820 - 821	Grayish-white, seritic clay. Many small spherical objects as in 805-806.
825 - 831	Varigated red and gray, slightly micaceous, tough clay.
836 - 837	Medium dark gray, slightly micaceous, very fine sand and silt. Scattered lignitic fragments.
842 - 843	Light gray, slightly micaceous, very fine sand and silt. Scattered medium and coarse grains.
848 - 854	Medium gray, slightly silty and micaceous, medium to coarse sand. Mainly subangular to subrounded quartz. Few grains have growth of calcite (?) on them.
858 - 859	Medium dark gray, sparingly micaceous, subanuglar to subrounded, medium coarse sand. Scattered lignite fragments.
863 - 864	Medium dark gray, sparingly micaceous, lignitic, fine sand. Mainly angular to subrounded quartz.
868 - 870	Medium gray, sparingly micaceous and lignitic fine sand.
873 - 874	Light gray, sparingly micaceous and lignitic fine sand.
878 - 880	Medium dark gray, sparingly micaceous and lignitic silt and very fine sand. Scattered medium grains.
884 - 885	Medium dark gray, micaceous and lignitic silt and fine sand.
889 - 890	Light grey, sparingly micaceous, very fine sand with about 15% medium to coarse grains. Poor sorting. Several grains to ¼".

894 - 896	Pinkish-gray, moderately micaceous, fine sand. Mainly fairly clean, subangular to rounded quartz.	(contd.) Raritan
900 - 902	Light gray, moderately micaceous, silty clay.	
905 - 917	Same as 894-896. Pinkish-gray, moderately micaceous, fine sand and silt. Approximately 15% of sample medium-coarse grains. Several grains to ¼". Note small non-magentic metallic grains.	
921 - 927	Grayish-white, moderately micaceous sharp silt.	
932 - 933	Medium gray, very slightly lignitic, and micaceous, fine-medium sand. Scattered coarse grains. Mainly subangular to rounded quartz.	
937 - 938	Pinkish-gray, micaceous (muscovite) very fine sand. Mica large flakes 1/8". Scattered medium-coarse grains.	
942 - 944	Light gray, fine-medium, subangular to rounded sand. Noted several black grains of chert or tourmaline.	
948 - 955	Light gray, sparingly micaceous, lignitic fine sand. Scattered medium-coarse grains.	
958 - 960	Grayish-yellow, highly sericitic, slightly clayey, soft shale. Angular quartz fragment with sample 3/4" X 3/8". Material feels talcose after rubbing between fingers. Top of bedrock (?).	Wissahickon (Decomposed)
965 - 971	Grayish-white, with greenish tinge, mixture of chlorite (?) mica, talcose material and quartz grains. Seems highly indicative of mixing of transported sand and weathered basement of mica schist.	
982 - 983	Same as 976-977, percentage of sand grains slightly higher, less chloritic material. Noted small spherical objects as in 774-775. Few grains of fresh glauconite. Quartz grains angular (washed).	
987 - 1011	Pale olive, highly weathered, chloritic, schistose gneiss, Wissahickon (?). Principal minerals--quartz, chlorite, feldspars.	
1015 - 1039	Moderate olive-brown, highly weathered rock. Type of rock not recognized. Brown and white noted. All other minerals badly weathered to soft state. Now appears and feels like weathered serpentine.	

6

Elevation at surface: 125'

Coordinates: 28.13.3.4.5. /·/
Permit No. : 28-2042
Driller : Artesian Well & Eq. Co.
Owner : Kimberly-Clark Corp.
Address : Middlesex County, N. J.
Logged by : Frank J. Markewicz

Depth (feet)	Description	Correlation
2 - 10	Yellowish brown, clayey silt.	Pensauken
10 - 20	Light brown, clayey, pebbly, medium-coarse sand.	
20 - 30	Same, much fine material.	
30 - 38	Light brown, slightly clayey, fine-coarse sand with scattered 1/4" pebbles.	
38 - 53	Light brown, fine, fairly-clean sand with scattered coarse grains.	
53 - 58	Light brown, gravelly, coarse sand.	
58 - 62	Light-pinkish gray, finely micaceous, tough clay.	
62 - 72	Brown, finely micaceous, fine sand with scattered coarse grains.	
72 - 83	Brown, dirty, oxidized, fine sand with scattered coarse grains.	
85 - 95	Dark gray, finely micaceous, tough-lignitic clay, dirty-lignitic clay, much carbonized vegetable matter, minor quartz, few bits pyrite. Probably a shallow marshland.	Magothy
95 - 108	Light gray, tough, finely micaceous, moderately lignitic clay. Approximately same as above, conditions of environment not quite so dirty.	
108 - 125	Light gray and orange, somewhat variegated, clayey finesand with white micaceous and angular sub-angular quartz. Grayish material appears sericitic.	Raritan (Woodbridge-resembles Sayreville)
125 - 130	Grayish orange, finely micaceous, clayey silt with scattered ferruginos pebbles.	

125 - 130 Cont'd	Clay, angular-sub angular quartz, mica, few bits lignite.	
130 - 143	Grayish orange, variegated, finely micaceous, clay with minor silt.	
143 - 163	Some silty clay with fine sand.	
163 - 171	Grayish orange, finely micaceous, silty clay.	
171 - 173	Grayish orange, poorly sorted, slightly clayey, fine-coarse sand.	Farrington
173 - 185	Grayish orange, gravelly, medium-coarse sand. Pebbles to 1½".	
185 - 186	Light gray, gravelly, sandy clay.	
186 - 195	Grayish orange, gravelly, medium-coarse sand.	
197 - 201	Light-pinkish gray, poorly sorted, fine-coarse sand with scattered pebbles.	
201 - 202	Grayish orange, poorly sorted, slightly clayey sand.	
202 - 204	Light gray, finely micaceous, tough clay.	
204 - 213	Light gray, coarse, sandy clay.	
213 - 219	Light gray, medium-coarse, fairly-clean sand.	
219 - 235	Light gray, finely micaceous, tough clay.	
235 - 245	Light gray, poorly sorted, fine-pebbly sand.	
245 - 250	Light gray, poorly sorted, gravelly, very coarse sand, pebbles to 2". Quartz and sandstone pebbles.	
250 - 255	Light-yellowish gray, poorly sorted, medium-very coarse sand.	
255 - 260	Light-yellowish gray, poorly sorted, gravelly sand. Pebbles to 2".	

260 - 263	Light yellowish gray, sandy gravel. Many sandstone pebbles.	
263 - 322	Dusky red, finely micaceous, red clay.	
322 - 330	Light-olive gray, sericitic, sandy, clayey silt.	
330 - 333	Light-reddish brown and light-olive gray, sandy, silty clay.	
333 - 339	Dusky red, finely micaceous clay and Brunswick shale fragments.	Triassic

Note: In well #2 at depth of 164-168' totally leached chert boulders (easily scratched with knife) up to 6" maximum length were noted. Many boulders of this type were found at this depth.

7

Coordinates:
Permit No.:
Driller : Artesian Well & Eq. Co.
Owner : Heyden Chemical Co.
Address : Penns Neck, Mercer Co.
Logged by :
Date : 8/27/46

Elevation at surface: 55'

Depth (feet)	Description	Correlation
22 - 24	Yellowish-brown clayey sand with some small gravel.	Pensauken formation Pleistocene Age
24 - 38	Yellow, weathered-feldspathic sandstone.	↓ Stockton formation Triassic Age
38 - 43	Gray, micaceous, fine-grained sandstone.	
43 - 54	Fine to coarse, light buff, slightly arkosic sandstone, grained-pinkish gray, light gray.	
54	Dull-red shale.	
80	Fine to coarse-grained, light-pinkish gray and slightly clayey sandstone.	
115	Very light colored, fine to coarse grained.	
125	Medium-grained, dull red, slightly clayey and arkosic sandstone.	
175	A mixture of fine to medium-grained, light colored arkosic sandstone with some red shale.	
208	Fine to coarse-grained red sandstone with some hard, interbedded gray shale showing evidence of shearing.	
225	Fine to coarse-grained pink sandstone with some interbedded sandy-red shale.	
240	Fine to coarse-grained light pink arkosic sandstone.	
283	Dull-red shale.	
290	Medium to coarse-grained, slightly clayey pink sandstone.	
325	Fine to coarse-grained, slightly clayey pink sandstone with some weathered highly arkosic beds.	

Heyden Chemical Co.
Penns Neck

345 - 350	Medium to coarse-grained slightly clayey gray sandstone, some finer grained.	
358	Mixture of light-pinkish buff and very quartzose sandstone with hard-greenish gray shale.	
360	Medium to coarse-grained pink arkosic sandstone.	
367 - 375	Medium-grained yellowish-brown sandstone.	
380	Fine to medium-grained, slightly micaceous, almost white sandstone.	
390	Medium-grained gray sandstone.	
415 - 420	Coarse-grained greenish-gray and red sandstone.	
432	Gray arkosic fine-grained sand, contains magnetite, quartz, feldspar, biotite	Wissahickon formation Precambrian Age
440	Same as above, one definite chip of crystalline rock picked out - it contains quartz, feldspar, and biotite and is granitic.	
445 - 518	Same as 440, including chips, contains a little pyrite in chips.	

Elevation at surface: 95'

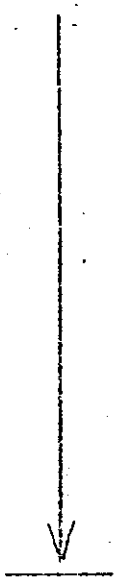
8

Coordinates: 28-13-4d7 F7
Permit No. : 28-971
Owner : Clifford Stultz
Address : Cranbury, N. J.
Logged by : Frank J. Markewicz

Depth (feet)	Description	Correlation
10	Yellowish-brown silt, fine-medium sand. Mainly quartz, very fine mica disseminated throughout sample. Few pebbles to ¼".	Pensauken
20 - 30	Similar to 10', slightly coarser, plus scattered grains of glauconite.	
40 - 50	Moderate yellowish-brown silt, fine-coarse sand. Fine mica flakes throughout sample. Mainly angular to sub-rounded dirty quartz. Scattered glauconite.	
70	Light-yellow brown, finely micaceous, slightly feldspathic sand. Little glauconite. Grains sub-angular to rounded. Few nodules of silty clay.	Raritan
80	Dark-yellow brown silty clay, scattered coarse grains and small pebbles. Sparingly micaceous.	
85 - 100	Light-olive gray, slightly clayey. Micaceous, very fine sandy silt.	
110	Medium gray, slightly silty, and micaceous clay.	
120	Dark-gray silt and fine sand. Scattered pebbles to 1/4". Mainly quartz, colorless mica, green mica, ilmenite, some glauconite.	
130 - 135	Light-gray micaceous silt. Fine-coarse sand.	
137	Medium-gray, micaceous, slightly silty clay. Few nodules of grayish-white (Kaolinitic) clay.	
140	Gray mixture of silt, fine-coarse sand. Very fine flakes of colorless mica disseminated throughout sample.	

140 (washed and sieved)	Fine-coarse sand. Mainly angular to sub-angular quartz. Few feldspars noted. Some colorless mica, one small pebble with quartz and decomposed feldspar.	
158	Light-grayish white, silty clay, and medium-coarse grains. Mainly quartz, angular to poorly sub-rounded. Scattered pebbles to 1/4". Silty clay appears kaolinitic.	
165	Same as 158', plus granitoid pebble, and chert.	
166	Light gray, fine to coarse clean sand. Angular to poorly sub-rounded. Mainly quartz. Few feldspars. Black semi-vitreous mineral, has cherty appearance. Little colorless mica. Few dark magnetic minerals.	
175	Gray mixture of silt, fine-coarse dirty sand. Some fine mica scabs.	
177	Light grayish white silty clay, and fine-coarse sand. Scattered pebbles to 3/8". Mainly quartz. Clay resembles kaolin.	
180	Similar to 177', somewhat coarser and less clayey.	
190	Gray silt, fine-coarse sand, scattered pebbles to 3/8". Fine flakes of mica scattered throughout. Grains mainly quartz.	
200	Grayish olive, badly decomposed and possibly crushed granitoid material. Also medium-coarse grains of sand. Some silty clay. One granitoid pebble found.	Weathered Wissahickon
210	Medium-olive gray, silty clay (part kaolin?), and fine-coarse sand. Few small badly decomposed granitoid pebbles. Few bits of charcoal.	

215 - 219	Light-olive gray, fine-coarse arkosic sand. Sub-angular to sub-rounded. Quartz, orthoclase, oligoclase (?), black slightly magnetic ilmenite (?) sphene or zircon.
226 - 240	Similar to 215', slightly coarser. Few highly weathered granitic pebbles.
250	Medium-olive gray, fine-coarse, arkosic sand. Grains granitoid, weathered and angular.
260 - 263	Light-olive gray, fine-coarse, arkosic sand. Quartz, feldspars, hornblende, grains angular, show granitic composition.



9

Coordinates: 28.12.603 [ ]
Permit No. : 28-1396
Driller : W. Stothoff Co., Inc.
Owner : Clifford Stults
Address : Cranbury, N.J.
Logged by : W.J. Kantowicz
Date :

Elevation at surface: 90'

Depth (feet)	Description	Correlation
10	Moderate-brown, mixture of earthy silt and scattered medium-coarse grains. Washed and sieved - light brown medium-coarse sand with scattered ¼" pebbles, mainly quartz; few dark non-magnetics.	Pensauken
20	Same as 10'. Washed and sieved - light brown, fine-medium sand with scattered coarse gains and few small pebbles, quartz mainly; little mica, ilmenite, black non-magnetic mineral.	
30	Moderate brown, slightly micaceous, fine sand with scattered coarse grains; Washed and sieved - light brown, fine subangular to rounded sand; mainly quartz, some mica, some ilmenite, black non-magnetic mineral.	
40	Moderate brown, silty, fine-coarse dirty sand.	
50	Moderate brown, slightly micaceous, fine, somewhat dirty sand; scattered coarse grains.	
55 - 80	Moderate brown, silty, sandy, micaceous, earthy oxidized clay.	
90	Grayish-brown, sandy, micaceous plastic clay.	
93	Light brown mixture of fine, micaceous sand and angular rock fragments; fragments to ½"; of Triassic sandstone and argillite--some cherts.	
95 - 100	Medium gray, very angular, heterogenous pebbles, maximum 3/4"; mainly Triassic, argillite fragments, red sandstone fragments, some granitic fragments, some diabase fragments (?), few cherts, some pryite nodules.	
103	Grayish-white, micaceous, silty clay, numerous angular fragments and pebbles scattered throughout clay.	Raritan

110	Medium gray, slightly clayey silt, appears to contain some carbonaceous material, scattered coarse grains and small rounded pebbles.
120	Yellowish-gray, fine, slightly micaceous sand, numerous bits of charred wood.
123 - 130	Light gray, silty, somewhat micaceous clay with numerous medium-coarse grains.
135 - 140	Greyish-yellow, fairly clean, fine sand with numerous coarse gains, scattered blebs of whitish material--appear to be decomposed feldspars.
150	Yellowish-gray, clean, fine sand, scattered coarse grains.
155	Yellowish-gray, fine to coarse sand, scattered small $\frac{1}{4}$" pebbles, grains angular to subrounded.
160	Yellowish-gray, fine-coarse sand, scattered pebbles to $\frac{1}{2}$", this sand more uniform in size than 155.
165	Light gray, fairly clean, coarse to pebbly sand, some fines mixed in, pebbles average 3/8".
166 - 170	Grayish-white, mixture of silty clay and medium coarse sand, percent about 50/50.
180	Variegated light grey and gray, totally decomposed Wissahickon, sample soft, somewhat clayey mass though structure of original rock can be detected, whitish masses probably decomposed feldspars.

Transition zone
Raritan
Wissahickon
Basal Raritan

10

Elevation at surface: 100'

Coordinates: 28.22.411
Permit No. : 28-1363
Driller : Louis M. Bainbridge
Owner : Hamilton Square Water Co.
Address :
Logged by : F.J. Markewicz
Date :

Depth (feet	Description	Correlation
10	Pale yellowish orange, silty, slightly clayey, matrix with much fine-coarse sand. Washed and sieved. Subangular to rounded fine-coarse sand, few pebbles to 3/8", mainly quartz. Minerals noted: some chert, little magnetite and/or ilmenite, few grains glauconite and feldspar.	Pensauken
20	Pale yellowish-orange mixture of pebbles to ½", fine-coarse sand and silt.	
30	Dark yellowish-orange, fine-medium sand with scattered coarse grains; grains subangular to rounded. Washed and sieved. Few grains of rutile, few grains of graphite, noted small dark spheres, somewhat magnetic. Driller did not do any welding on job. also noted straw brown resistant mineral in sand. Zircon or spinel.	
40	Yellowish-brown, dirty, fine-medium sand with scattered coarse grains. Several angular ironstone concretion fragments, 1 quartz pebble 1½" x 1".	
50	Yellowish-brown, ironstone, concretion with many quartz pebbles.	
60	Mixture of small ¼" pebbles and grayish-pink clay.	Raritan
70	Slightly clayey and silty, medium-coarse sand with many ¼" pebbles. Mainly sub-rounded quartz. Noted some cherts. Poorly sorted.	
80 - 90	Grayish-yellow, fine corn meal sand with scattered bits of silty clay and cemented sand nodules. Also scattered coarse grains.	
100 - 110	Very pale orange, fine, clean, angular-subangular, corn meal sand.	

120	Pale orange, fine to medium, clean, angular to subrounded sand, scattered coarse grains, few white clay-like nodules appear to be decomposed feldspars.	
130	Very pale orange, fine, clean well sorted sand with scattered black, non-magnetic minerals.	
140	Medium gray, silty, fine, somewhat dirty sand.	
150	Yellowish-gray, quite clean, fine sand, scattered coarse grains.	
160	Light gray, silty, fine-coarse sand, scattered pebbles to 3/8", grains angular to subangular.	
165	Yellowish-gray, fine-medium sand, scattered coarse grains, pyritized wood fragments and ironstone nodules.	
168 - 172	Yellowish-gray, clean, medium-coarse, angular-subrounded sand.	
170	Yellowish-gray, clean, fine-coarse sand, grains angular to subangular.	
174 - 194	Grayish-white, silty medium-coarse sand, silt sharp between fingers when dry, scattered pebbles to 3/8".	
180 - 195	Grayish-white, silty clay, feels sharp and gritty before and after wetting.	
194 - 195	Variegated (light color) gravelly, very coarse sand, subangular to subrounded, mainly quartz, some chert, pebbles to $\frac{1}{2}$".	
215	Very light, gray, micaceous, fine-medium angular sand, scattered blebs of yellow highly micaceous material; this material probably weathered zone of Wissahickon.=	Transition zone Raritan and Wissahickon
219 - 235	Light, olive-gray, very micaceous material with scattered coarse grains, material very slippery between fingers, highly weathered schist, some highly weathered feldspars also noted. High percentage of angular quartz sand grains, decomposed Wissahickon with some mixing.	

Elevation at surface: +20'

Coordinates: 29.23.6/4 /.7
Permit No. :
Driller : A.C. Schultes & Sons
Owner : Monmouth Consolidated Water Company
Address : Hamilton Mills
Date :
Logged by : Henry Herpers

Depth (feet)	Description (Rotary Method)	Correlation
0 - 50	No samples	Cape May & Kirkwood
50 - 60	Drab, fine-grained, glauconitic sand. A few lumps of light green calcareous clay noted. Whole mass clacareous. Nodosaria sp. noted.	Manasquan
60 - 70	Similar to last. Slightly more clay and slightly coarser grained. No fossils noted.	
70 - 90	Olive drab, fine to medium-grained glauconitic sand. Lump of light-green calcareous clay noted. Nodosaria sp. noted. A few coarse grains noted.	Vincentown
90 - 110	Similar to last. Light green in color. More light-green calcareous clay.. No fossils noted.	
110 - 120	Similar to last. Slightly less clay.	
120 - 130	No sample.	
130 - 140	Drab, fine-grained glauconitic sand. Lump of sea-green calcareous clay present.	
140 - 150	No sample.	
150 - 160	Drab, very fine-grained (silty) glauconitic micaceous sand. Not calcareous. Nodosaria sp. noted.	
160 - 200	No samples.	
200 - 210	Drab, fine-grained to silty glauconitic, highly calcareous sand. Many fossils noted, viz.: Onychocella	

200 - 210	digitata (Morton), Ostrea (Gryphostrea) vomer (Morton), Echinoid spines (Cidaris sp. cf. splendens (Morton) and other species and teeth. (Sharks.)	
210 - 240	No samples.	
240 - 260	Light-green calcareous clay.	
260 - 270	Medium-grained, sandy, slightly clayey greensand. Many molluscan fragments noted, also: Ostrea (Gryphostrea) vomer (Morton), Onychocella digitata (Morton), Shark tooth, Nodosaria cf. filiformis d'Orbigny, N. cf. polygona (Reuss), N. cf. obliqua (Linn.), Echinoid spines.	Hornerstown
270 - 280	Lithologically same as at 260-270'. Nodosaria sp., Echinoid spines, and heavy molluscan fragments (including Ostrea sp.) noted.	
280 - 290	Same as last, paleontologically and lithologically.	Hornerstown ?
290 - 300	Same as last	Red Bank ?
300 - 310	Same as last	Red Bank
310 - 320	Fine to medium-grained, calcareous sandy greensand. Slightly fossiliferous. No clay noted. Only molluscan fragments noted, no bryozoa, forams or echinoid spines.	
331 - 350	Fine to medium-grained, slightly calcareous, light-yellowish glauconitic sand. (Pepper and salt sand.) Noted heavy molluscan spp. fragments, Nodosaria obliqua (Linn.) N. cf. consobrina emaciata (Reuss), Echinoid spines, spp. (incl. Cidaris cf. splendens (Morton) Ostrea sp. Onychonella digitata (Morton.)	
350 - 390	Fine to medium-grained, greenish-gray, slightly clayey, sl. calcareous, glauconitic sand. Molluscan fragments only noted. A little mica noted.	

390 - 410	Similar to last. Little or no clay. Slightly finer grained. Echinoid spines noted.	Navesink
410 - 420	Same as last. No Echinoid spines noted, but Nodosaria cf. obliqua (Linn.) noted.	
420 - 430	Same as last. Only heavy molluscan fragments noted.	
430 - 440	Similar to last. Slightly coarser grained. Many molluscan fragments noted.	
440 - 450	Light-greenish gray, fine to medium-grained glauconitic, calcareous, highly fossiliferous sand. A few coarse grains mica noted. Also noted Nodosaria cf. oblicua (Linn), Ostrea sp, mollusca spp., Echinoid spines (spp.) (Cidaris cf. splendens (Morton), Shark's tooth, Onychocella digitata (Morton), Pinna ? Polorthus fibialis (Morton).	
450 - 460	Greenish-gray, fine to medium-grained, glauconitic, highly fossiliferous sand. Fragments of Belemnitella americana noted. Also Echinoid spines, etc. as above.	Mt. Laurel-Wenonah
460 - 500	Gray, fine-grained, silty, slightly micaceous and slightly glauconitic sand. A few molluscan fragments noted.	
500 - 520	Fine to medium-grained, gray, glauconitic sand. A few coarse grains noted. Molluscan fragments. Belemnitella americana noted.	
520 - 550	Gray, fine to medium-grained, glauconitic sand. A few molluscan fragments noted.	
550 - 570	Fine to medium-grained, glauconitic sand. "Pepper and salt sand." A few coarse grains noted.	

Monmouth Consolidated Water Company

(contd.)

570 - 590	Similar to last, but generally finer grained.	Mt. Laurel-Wenonah
590 - 600	Gray, very-fine grained, slightly micaceous, slightly glauconitic, silty sand.	↓
600 - 620	Medium-grained, slightly sandy greensand.	Marshalltown
620 - 640	Gray, fine-grained, glauconitic, slightly micaceous silty sand.	↓ Englishtown
640 - 650	Medium-grained, glauconitic with some medium to coarse-grained sand. Molluscan fragments noted.	↓
650 - 660	Greenish-gray, fine to medium-grained, highly glauconitic sand. Fossils noted. Molluscan fragments, shark's teeth, Inoceramus ? sp., Calcellaria ?, Pinna sp, Cadulus obnotus (Conrad) = Upper Cretaceous (Woodbury), Nodosaria sp.	Woodbury
660 - 670	Same as last, lithologically. Noted molluscan fragments, Nodosaria sp., Cadulus obnotus (Conrad) Shark's teeth. Echinoid spines. Pinna sp. Lunatia halli Gabb, Anomia argentaria Morton Breviarca haddonfieldensis Stephenson = B. saffordi (Gabb) = Woodbury.	
670 - 680	Same as last. Molluscan fragments noted.	
680 - 690	Same as last. Molluscan and gastropod fragments noted, also forams. (Nodosaria sp., Truncatulina sp.) Myliobatis sp. (caudal spine).	
690 - 700	Gray, fine-grained, glauconitic, slightly micaceous silty sand. Contained molluscan fragments.	
700 - 710	Lithologically same as last. Noted Molluscan and gastropod fragments, similar to Mataxa sp., Cadulus obnotus (Conrad), Pinna sp.	

710 - 720	Lithologically same as last. Noted molluscan fragments, Nodosaria sp. Echinoid spines, also Vetericardia crenalirata (Conrad) = Characteristic of Woodbury and Merchantville horizons. Cadulus obnotus (Conrad.)	
720 - 730	Gray, fine to medium-grained, glauconitic sand. A little mica noted. Large thick molluscan fragments. Echinoid spines. Cadulus obnotus, Nodosaria sp. Breviarca haddonfieldensis, Corbula crosaplica, Gabb, Actaeon cf. cretacea Gabb. Heteropora parvicella (Gabb & Horn) probably fell in from Vincentown.)	
730 - 740	Lithologically same as last. Large thick molluscan fragments noted. Echinoid spines, Nodosaria spp., Pinna sp., Actaeon sp., Corbula cf. percrassa Wade, Cardium ? sp., Lima reticulata Forbes.	
740 - 750	Olive drab, fine-grained, glauconitic, silty sand. Slightly micaceous. A few fossil fragments noted. Vetericardia crenalirata (Conrad) noted.	Merchantville
750 - 760	Same as last. Cadulus obnotus (Conrad). Molluscan fragments.	
760 - 790	Same as last. Molluscan fragments noted. (Pelecypods and gastropods.)	
790 - 800	Gray, fine-grained, silty clayey, glauconitic sand. Molluscan fragments noted.	
800 - 840	Same as last. Few molluscan fragments noted.	
840 - 860	Similar to last, but more clay.	
860 - 870	No sample.	
870 - 880	Gray, sandy, glauconitic clay. No fossils noted.	

880 - 890	Gray, fine to medium-grained, glauconitic, clayey sand. Molluscan fragments noted.	
890 - 900	No sample.	
900 - 910	Same as at 880 - 890.	
910 - 920	Same as last. Noted lignite (1/4 x 1/8"), Breviarca ? sp., Corbula sp., Crassatellites cf. lineatus (Conrad), C. cf. vadosus (Morton).	Magothy
920 - 930	Similar to last, but more clayey, Molluscan fragments noted.	
930 - 940	Gray, fine-grained, silty, slightly glauconitic clayey sand. Molluscan fragments noted. Lignite noted. Baculites sp.	
940 - 950	No sample.	
950 - 960	Gray, fine-grained, slightly clayey, slightly glauconitic sand, silty. Molluscan fragments noted. Lignite noted. Gastropod fossils noted.	
960 - 970	Same as last. Some mica noted, also molluscan fragments.	
975 - 995	Light gray - almost white - fine-grained, slightly micaceous, glauconitic sand. (Probably a washed sample.)	Raritan
995 - 1005	Light gray, fine to medium-grained, slightly glauconitic sand. Gray clay fragments noted. Molluscan and gastropod fragments noted. Verteri-cardia crenalirata (Conrad), Dentalium sp., Uddenia conradi (Whitfield).	
1005 - 1010	Similar to last. Coarser grained. Lignite and molluscan fragments noted.	
1010 - 1030	Similar to last, finer grained, lignite, pelecypod and gastropod fragments noted.	
1030 - 1065	Similar to last, but much coarser grained. Ironstone noted. Pelecypod fragments noted.	

Elevation at surface: 110' 12 Coordinates: 28.33.636

Record of Well at Prospertown

Well Driller's Log

Depth (feet)	Description		Remarks
0-4	Fine yellow sand.	0-18	Vincentown
4-18	Water sand.	18-40	Hornerstown
18-26	Green sand with 2' gravel.	40-90	Red Bank
26-34	Green marl.	90-118	Navesink
34-40	Hard green sand.	118-207	Mt. Laurel-Wenonah
40-90	Green sand.	207-213	Marshalltown
90-118	Dark green sand with about 25% marl. Showing of oil.	213-295	Marshalltown & Englishtown
		295-360	Englishtown
118-207	Dark sand and shells. Water flows at 100'.	360-443	Wood. & Merch.
207-213	Blue shale - set 15½ casing 201-3.	443-446	Merchantville
		446-448	Merchantville
		448-516	Merchantville
		516-525	Merchantville (?)
			Drillers said there was 60' of water-bearing sand (Prob. between 160' & 200')
213-295	Dark coarse sand.		
295-360	Coarse gray sand.		
360-443	Blue sand, shale ? or clay HBK.		
443-446	Shale.		
446-448	Green sand.		
448-516	Blue sandy shale.		
516-525	Blue soft (rock).	525-649	Magothy (?)
525-649	Dark blue shale.	649-650	" (?)
649-650	Rock.	650-656	" (?)

650-656	Sand.	656-690	Raritan (?)
656-690	Shale (i.e. clay).	690-1100	"
690-700	Rock (?).		
700-725	Sand.		
725-760	Shale.		
760-770	Hard shale.		
770-773	Rock.		
773-850	Dark blue shale.		
850-950	Coarse sand, gravel & boulders.		Combined thickness of Mag. Rar. - 575-
950-960	White clay.		
960-970	Red clay.		
970-980	" "		
980-1000	Sand, gravel & boulders.		
1000-1022	Red and white clay.		
1022-1026	Sand (gray).		
1026-1041	Shale.		
1041-1047	Gravel and boulders.		Hard rock at somewhat more than 1100'.

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Elevation at surface: 5'

Coordinates: 29.33.947 /·7
Driller : C. W. Lauman & Co.
Permit No. :
Owner : Point Pleasant
Address : Ocean County

Depth (feet)	Description	Correlation
0 - 10	Buff-colored sand, grain size variable, quartz pebbles up to 1.0 cm. diam. FeO staining.	Quaternary Cape May
10 - 20	Medium gray sand, variable grain size, slight amount FeO stain, quartz and chert pebbles up to 1.0 cm. Few mafic grains, ilmenite, possibly some magnetite.	
20 - 30	White quartz sand, fine-grained with pebbles up to 1.0 cm.	
30 - 40	Dark-greenish gray compact clay.	Miocene Kirkwood
40 - 50	Dark-gray clay admixed with coarse quartz sand.	
50 - 60	Buff, medium-grained quartz sand, few quartz pebbles up to 1.0 cm. diameter.	
60 - 70	Buff, medium-grained quartz sand, micaceous.	
70 - 89	Gray, medium to coarse sand, micaceous.	
80 - 90	Same as last.	
90 - 100	Gray, coarse-grained sand (±2.0 mm) with slight clay admixture.	
120	Gray, coarse-grained sand (±4.0 mm) with clay admixture, micaceous.	
122	Dark gray, slightly sandy, finely micaceous clay.	
130	Dark gray, somewhat sandy, micaceous clay.	
135	Dark gray, fine-grained, slightly clayey, micaceous sand.	
140	Gray, medium to coarse quartz sand, micaceous.	
147	Dark gray, medium-grained, clayey, micaceous sand.	

150	Dark gray, finely micaceous, sandy clay.	
160	Dark gray, finely micaceous, slightly sandy clay.	
170	Dark gray, medium-grained, slightly clayey sand, micaceous, and contains fine needle-like crystals of salts - probably precipitated from ground water.	
180	Greenish-gray, slightly glauconitic clay (sample emits odor of marsh gas.) CH_4?	
190	Gray, slightly sandy and glauconitic clay. Some fine needle-like salt crystals.	Eocene Manasquan
200	Grayish-green, slightly glauconitic and micaceous clay.	
210	Gray, slightly micaceous and glauconitic clay, shell fragments.	
220	Gray, slightly micaceous and glauconitic clay, shell fragments.	
230 - 250	Gray, finely micaceous clay, shell fragments.	
260	Brownish-gray, finely micaceous clay, shell fragments.	
270	Brownish-gray, finely micaceous clay, few shell fragments.	
280 - 300	Light greenish-gray, finely micaceous clay.	Vincentown
310	Brownish-gray, finely micaceous, glauconitic clay, shell fragments.	
320	Greenish gray, finely micaceous, glauconitic clay, shell fragments.	
330 - 370	Greenish gray, finely micaceous clay.	
380 - 400	Brownish and greenish-gray, finely micaceous clay, shell fragments.	

Point Pleasant Well
Ocean County

410 – 420	Greenish-gray, finely micaceous clay.	
430	Greenish and brownish-gray, finely micaceous clay, shell fragments.	
440	Brownish-gray, finely micaceous slightly sandy clay, few shell fragments.	Hornerstown
450	Brownish-gray, finely micaceous, slightly sandy clay, many large shell fragments.	
460 – 490	Dark gray, finely micaceous, fissile clay.	Cretaceous Red Bank
500 – 524	Greenish-gray, finely micaceous, glauconitic marly clay.	Navesink
530 – 560	Greenish-gray, finely micaceous, glauconitic marly clay, shell fragments.	
570	Greenish-gray, finely micaceous slightly sandy, glauconitic clay.	Mt. Laurel
580 – 590	Dark gray, finely micaceous, slightly sandy, glauconitic clay.	Wenonah
600	Medium-gray, slightly sandy, glauconitic clay.	
610	Medium gray, calcareous, glauconitic clay.	
620 – 630	Medium gray, calcareous, slightly sandy, glauconitic clay.	
640 – 660	Dark gray, finely micaceous, slightly sandy, glauconitic clay.	
670	Medium gray, micaceous, silty sand and clay, shell fragments.	
680	Dark gray, finely micaceous, slightly sandy clay.	Marshalltown
690 – 720	Dark gray, finely micaceous, slightly sandy clay, glauconitic clay.	
730	Medium gray, finely micaceous clay.	Englishtown

740	Medium gray indurated clayey sand fragments 3-4 cm. diameter.
750	Medium gray, finely micaceous, clayey sand.
760	Dark gray, finely micaceous, clayey sand.
770 - 790	Medium gray, finely micaceous, glauconitic clayey sand.
800	Medium gray, finely micaceous, glauconitic, partly indurated clayey sand.

Wm. P. Williams

Elevation at surface: 5' 14 Coordinates: 29.43.387

Borough of Mantoloking (one block southwest of railroad station.)
Completed September 5, 1931.

Depth (feet)	Description	Correlation
Elevation: 5		
0 - 10	Medium-grained sand and peaty clay	Recent and Pleistocene
10 - 20	Clean, light gray sand	
20 - 30	Clean, coarse sand and small gravel	
30 - 40	Gray, clayey sand and gravel	
40 - 50	Gray, clayey coarse-grained sand	Kirkwood
50 - 60	Greenish-gray, clayey, coarse-grained sand	
60 - 70	Same as last	
70 - 100	Light-gray, medium-grained sand; coarse-grained sand	
100 - 110	Gray clay and a little coarse-grained sand	
110 - 120	Gray clayey and very coarse-grained sand	
120 - 130	Brownish-gray, slightly sandy clay	
130 - 150	Fine to coarse-grained sand	
150 - 160	Medium to coarse-grained sand	
160 - 170	Slightly sandy gray clay	
170 - 180	Sand and gray clay	
180 - 190	Sand and dark-gray clay	
190 - 210	Sand and dark-gray clay	
210 - 220	Fine-grained gray sand	
220 - 240	Fine-grained light-gray sand	
240 - 250	Greenish-gray, glauconitic sand and clay	Shark River and Manasquan 70'

250 - 280	Same, with fossils	(contd.) Shark River and Manasquan 70'
280 - 290	Micaceous, glauconitic, fine-grained fossiliferous sand	
290 - 300	Same as last	
300 - 310	Glauconitic and sandy clay	
310 - 320	Greenish-gray clay with some coarse-grained sand	
330 - 340	Coarse-grained sand (320-330 Micaceous sand and clay)	
340 - 350	Coarse-grained sand and light greenish gray clay	
350 - 360	Glauconitic and slightly sandy clay	
360 - 370	Fine-grained, light greenish-yellow fossiliferous sand	Vincentown Hornerstown, Red Bank & Navesink 420'
370 - 380	Sandy clay with a few pebbles	
380 - 390	Fine-grained highly glauconitic sand	
390 - 400	Medium-grained highly glauconitic sand	
400 - 410	Fine to coarse glauconitic sand	
410 - 420	Very fine-grained, light cream-colored sand with fossils and a few pebbles	
420 - 430	Compact, sandy clay	
430 - 440	Dark-gray, slightly sandy clay and coarse-grained sand	
440 - 450	Gray clay with a few large sand grains	
450 - 460	Dark-gray, sandy and micaceous clay and small pebbles	
460 - 470	Dark-gray sandy clay	
470 - 480	Dark-gray clay and coarse-grained sand	
480 - 490	Greenish-gray clay with a little sand	
490 - 500	Fine-grained, clayey sand	

500 - 510	Fine-grained, clayey micaceous sand	(contd.) Vincentown, Hornerstown, Red Bank & Navesink 420'
510 - 520	Very fine-grained, clayey sand with a few pebbles	
520 - 530	Dark-gray, sandy and micaceous clay	
530 - 540	Very fine-grained, gray, clayey, fossiliferous sand with a few pebbles	
540 - 550	Light creamy-gray clay and small pebbles	
550 - 560	Gray sandy clay and small pebbles	
560 - 570	Light greenish-gray clay and small pebbles	
570 - 580	Mixture of light greenish-gray clay, dark gray clay and small pebbles	
580 - 590	Light greenish-gray clay and small pebbles	
590 - 600	Glauconitic and fossiliferous gray clay	
600 - 610	Greenish-gray glauconitic clay	
610 - 640	Highly glauconitic clay	
640 - 650	Clayey glauconite	
650 - 660	Glauconitic clay	
660 - 690	Glauconite and clay	
690 - 700	Slightly sandy and glauconitic clay	
700 - 710	Glauconite with a little interbedded clay	
710 - 720	Glauconite with a little interbedded clay and a few grains of sand and fossils	
720 - 730	Same, but no sand	
730 - 740	Clay with a little sand	Mt. Laurel-Wenonah 100'
740 - 750	Clay with some interbedded fine-grained sand	
750 - 760	Clay with a little glauconite	

		(contd.)
760 - 770	Highly glauconitic fine to medium-grained sand	Mt. Laurel-Wenonah 100'
770 - 800	Same as last	
800 - 810	Fine to medium-grained sand and glauconite	
810 - 830	Fine to medium-grained sand and glauconite	
830 - 860	Grayish-brown clay	Marshalltown ±30'
860 - 870	Glauconite and sandy clay	Englishtown ±150'
870 - 910	Glauconite and slightly sandy clay	
910 - 920	Glauconite and sandy, fossiliferous clay	
920 - 970	Glauconite and slightly sandy clay (w/shells at 950)	
970 - 980	Same as last, with shells	
980 - 1010	Glauconite and slightly sandy clay	
1010 - 1030	Fossiliferous glauconite and clay	?
1030 - 1050	Slightly glauconitic & fossiliferous clay	Woodbury ±70'
1050 - 1080	Slightly sandy fossiliferous clay	
1080 - 1100	Glauconitic clay	
1100 - 1120	Glauconitic & fossiliferous clay	Merchantville 70'
1120 - 1135	Glauconitic & sandy clay	
1135 - 1150	Glauconitic, clayey, fine-grained sand	
1150 - 1180	Greenish-gray, very fine-grained sand and clay	Magothy 57'
1180 - 1195	Greenish gray, clay with a little sand	
1195 - 1207	Greenish-gray clay	

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Coordinates: 29,43.387
Permit No. : 29-1325
Driller : A.C. Schultes & Sons
Owner : Ocean County Water Co.
Location : Manchoking
Logged by : F.J. Markewicz
How drilled: Cored samples

Depth (feet)	Description	Correlation
Method: Rotary to 879'; core samples 879' to bottom. Depths from table. (Ditch samples). Elevation at surface: 5'.		
3 - 33	Sand, medium to 2mm, mostly medium, well sorted and clean. Color is near a pinkish-gray 5 YR 8/1 on rock color chart. Grains are mostly subangular but subrounded ones were noted. Sample is composed of 90% quartz, glauconite, lignite, and feldspar.	Recent, Pleistocene Cohansey Kirkwood
33 - 48	Sand, medium to 2 mm, mostly a mixture of medium and coarse, medium well-sorted and clean. Like 3-33 otherwise.	
48 - 71	Sand, micaceous, fine to coarse, mostly medium to coarse, medium well-sorted and clean. Color is near a very light gray N 8 on the rock color chart. Grains are predominantly subangular. Quartz - 90%, muscovite, glauconite, and a black, vitreous, non-magnetic mineral were noted.	
71 - 99	Sand, micaceous, fine to coarse, mostly medium to coarse. Like 48-71.	
99 - 117	Sand, micaceous, fine well-sorted and clean. Color is near a very light gray N 8 on the rock chart. Grains are mostly subangular . Quartz 90% ±, muscovite, lignite, and a black, vitreous, non-magnetic mineral were seen.	
117 - 136	Sand, micaceous, fine to coarse, mostly medium to coarse. Like 71-99 otherwise, except for scattered quartz pebbles up to 10 mm.	
136 - 164	Sand, micaceous, medium to 2 mm, mostly coarse, clean and medium, well-sorted. Color is near a very light gray N 8 on the rock color chart. Grains are predominantly subangular. Sample is composed of 90% ± quartz, feldspar (?) muscovite, a black, vitreous, non-magnetic minerals.	
164 - 185	Sand, micaceous, fine to coarse, mostly medium, clean and medium well-sorted. Like 136-164 sample otherwise.	

185 - 207	Sand, glauconitic, fine to 3 mm, mixture of fine to medium glauconite and fine to coarse quartz grains, clean and fairly well-sorted. Quartz is subangular whereas glauconite is rounded. Quartz 60% ±, glauconite 35%, and muscovite were seen. Color is a mottled, very light gray. N 8 and dusky green 5 G 3/2.
207 - 228	Sand, glauconitic, fine to 2 mm, mostly medium, clean and medium well-sorted. Color is a yellowish-gray 5 Y 8/1 on rock color chart. Quartz grains are subangular whereas glauconite grains are rounded. Quartz - 80%, glauconite, muscovite, and lignite were noted.
228 - 248	Sand, glauconitic, fine to very coarse, mostly medium, clean, and medium well-sorted. Color is mottled, very light gray N 8 and dusky green 5 G 3/2. Grains of quartz are subangular whereas glauconite is rounded. Quartz 65%, glauconite 30%, and muscovite were seen.
248 - 269	Sand, glauconitic, mixture of fine and very coarse, fairly clean and medium well sorted. Like 228-248 otherwise except for more subrounded quartz grains.
269 - 290	Sand, glauconitic, mixture of fine and very coarse. Like 248-269.
290 - 311	Sand, glauconitic, mixture of fine and very coarse. Like 248-269.
311 - 330	Sand, glauconitic, mixture of fine and very coarse. Like 248-269.
330 - 354	Sand, micaceous and glauconitic, very fine to coarse, mostly fine to medium. Like 311-330 otherwise.
354 - 375	Sand, glauconitic, fine to very coarse, mixture of fine and very coarse. Like 311-330 otherwise. Foraminiferous.
(a) 417	Sand, fine to very coarse, dirty glauconitic with some clay. Sand grains are mixture of fine and very coarse grains. Sand color is near a greenish-gray 5 GY 6/1 on rock color chart. Quartz grains (80%) are predominantly subangular whereas glauconite (15%) is subrounded. Muscovite and lignite were noted. Clay is near the color grayish yellow green 5 GY 7/2 on rock color chart. Abundant forams were seen in the clay.
(a) 438	Sand, fine to very coarse, with some clay. Like 417.

Shark River-Manasquan at 3 (E log)

↓

Vincentown

(a)	460	Sand, glauconitic, fine to very coarse, mostly coarse, and clay mixed. Clay is near the color greyish yellow-green 5 GY 7/2 on rock color chart whereas sand is near a pinkish-gray 5 YR 8/1 on chart. Quartz grains are predominantly subangular. Quartz - 50-80%, glauconite 15-40%, lignite and muscovite were seen, abundant forams in clayey and more glauconitic phases of sample.	
(a)	483	Sand, glauconitic, fine to very coarse, mostly coarse and clay mixed. Like 460 - forams.	
(a)	505	Clay, silty, glauconitic, with some subangular quartz grains up to 10 mm. Color is mixture of dark greenish gray 5 GY 4/1 and light greenish gray 5 G 8/1 on rock color chart. Muscovite limy nodules, and forams present.	
(a)	531	Clay, silty, glauconitic with some subangular quartz grains up to 10 mm. Like 505.	
(a)	557	Clay glauconitic, with scattered subangular quarz up to 8 mm and limy nodules. Color is mottled, greenish-black 5 GY 2/1, light olive-gray 5 Y 6/1, and light greenish-gray 5 G 8/11. Muscovite and forams were also seen.	
(a)	578	Clay, glauconitic, with scarce subangular quartz grains up to 8 mm and limy nodules. Like 557 - forams.	
(a)	606	Clay, glauconitic, with scarce subangular quartz grains up to 5 mm and limy nodules. Like 557 - forams. Globigerina.	Hornerstown Red Bank Navesink
(a)	626	Clay, glauconitic, with scarce subangular quartz grains up to 10 mm and limy nodules. Like 606.	
(a)	646	Clay, glauconitic, with rare clear subangular quartz grains up to 3 mm. Color is near a dark greenish-gray 5 GY 4/1 on rock color chart. Muscovite and forams were seen.	
(a)	671	Clay, glauconitic, micaceous, with limy nodules (light greenish-gray 5 G 8/1.) Clay is near medium gray N 5 on rock color chart. Some clear subangular quartz grains up to 2 mm were seen. Forams were noted.	
(a)	693	Sand, highly glauconitic, very fine to fine, with some quartz (subangular and subrounded) grains. Color is near a greensih gray 5 G 6/1 on rock color chart. Glauconite - 90%, quartz - clean, and muscovite, were noted; some forams. Some light-gray coating on all grains, drilling mud?	

(a) 714 Sand, highly glauconitic, very fine to fine, with some subangular quartz grains up to 2 mm and gray clay (drilling mud?) Like 693 - forams - Robolus sp.

(a) 737 Sand, highly glauconitic, very fine to fine, with some clay and quartz grains up to 2 mm. Like 714.

(a) 760 Sand, highly glauconitic, like 737.

(a) 785 Sand, very fine to 3 mm, mostly medium to very coarse, glauconitic with some clay. Color is near a greenish gray, 5 G 6/1 on rock color chart. Glauconite - 70%, quartz (subangular) 25%, and muscovite - forams.

(a) 807 Silt, micaceous, glauconitic, with some clear subangular quartz (30% ±) grains up to 2 mm. Color is near dark, greenish-gray 5 GY 4/1 on the rock color chart. Some forams were seen.

(a) 882 Clay, near greenish-gray 5 GY 6/1 with scattered subangular quartz grains up to 5 mm mixed with sand, very fine to medium, mostly medium with clay coated subangular quartz (100%) grains, rounded glauconite, and muscovite. Color of sand is near a moderate greenish-yellow 10 Y 7/4 on the rock color chart. Heavy shell fragments and nodules noted.

Mt. Laure. Wenonah at 852 (E log)

(a) 887 Sand with some clay. Like 882 otherwise except lignite noted.

(a) 892 Sand with some clay. Like 887 sample.

Core samples

(a) 942 (?) Silt, micaceous, lignitic, with some shell fragments. Color is predominantly near medium light gray N 6 although a yellowish-gray 5 Y 8/1, is present

Above logged by U.S.G.S.

Core samples 879' to 1052' logged by Frank J. Markewicz.

879 Moderate olive-brown, silty, slightly micaceous and lignitic fine sand. Very probably a contaminated sample

902 Medium-gray, micaceous, lignitic, slightly fossiliferous silt and very fine sand.

Englisht

PAGE 53

Constituents: Micaceous silt, fine quartz, sand, large percentage lignite; few grains glauconite; some lignite pyritized. Most of the microfauna are small, appear immature. Noted immature pelecy. and gastropod forms. Much of the mica is irregular and crinkly. Noted amber and a number of immature and broken ostracode valves.

907 Same as 902'.
Constituents: Micaceous silt, lignite, broken fossil fragments; approximately 50-50 lignite and quartz; much of quartz if iron-stained. Angular-subangular grains, few grains glauconite, few cluster of pyrite, microfauna sparse, very few forams, just several ostracodes. (contd.) Englishtown

912 Same as 907' Not quite as lignitic.
Constituents: Micaceous silt, large percentage lignite, small percentage quartz, very few grains glauconite. Approximately 4 genera forams, approximately 4 genera ostracodes. Noted pieces of amber. Broken fossil fragments. Noted immature gastropods.

917 Medium-gray, micaceous, lignitic, quite fossiliferous silt and very fine sand.
Constituents: Micaceous silt, large percent, moderately lignitic, small percent quartz. Few broken shell fragments, few Hamulus? worm tubes, few echinoid spines, very few forams, several species of ostracodes.

922 Same as 917', locally highly fossiliferous, mainly pelecypods, some worm tubes or echinoid spines.
Constituents: Micaceous silt, quartz sparse, highly fossiliferous. Broken shell fragments, few grains glauconite, few forams (species) few broken ostracode valves. Few immature gastropods, few echinoid spines, numberous worm tubes (Hamulus?).

927 Medium-gray, micaceous, moderately fossiliferous and lignitic silt. Slightly clayey.
Constituents: Micaceous silt, lignite, very little quartz, broken fossil fragments, pelecy. and Hamulus (?) tubes. Few bits of amber, few pyrite clusters, few immature gastropods, few echinoid spines, Approximately 3 genera of forams, approximately 4 genera of ostracodes.

932 Same as 927.

937 Same as 932.
Constituents: Micaceous silt, moderate percentage of lignite, few quartz grains, scattered bits of broken fossiliferous fragments, few ostracode valves noted. Several good immature pelecypods noted with prominent prodissoconch, no forams noted.

947 Medium-gray, micaceous, moderately fossiliferous, slightly clayey and lignitic silt.
Constituents: Micaceous silt, lignite, broken fossil fragments, few grains quartz, few Hamulus (?) tubes, no forams noted except several badly decomposed ones. Three or four genera of ostracodes noted.

952 — Same as 947, slightly more micaceous.
Constituents: Large percent mica, micaceous silt, approximately 20% glauconite, 7-10% lignite, small percentage of quartz, few broken fossil fragments, few echinoid spines, some glauconite shows vermiculitic structure, noted many light brown heavy minerals. Note: forams are different from those noticed above 952, approximately 4 genera of forams, forams somewhat decomposed (reworked?) few ostracode valves.

957 — Medium-gray, micaceous, moderately fossil., clayey silt, scattered bits of lignite.
Constituents: Micaceous silt, small percent of quartz and glauconite, forams more prolific than upper 15 ft., although forms are small. Few ostracod valves, few echinoid spines.

962 — Medium-gray, micaceous, fossil., moderately glauconitic, slightly clayey silt and very fine sand.
Constituents: Glauconite, high percentage, micaceous silt, angular quartz, few small forams noted. Few broken fossil fragments.

967 — Same as 962, not as fossiliferous or glauconitic.
Constituents: Micaceous silt, glauconite, scattered angular quartz, broken fossil fragments, few echinoid spines, few forams, few ostracode valves. Noted several immature gastropods.

972 — Medium-gray, micaceous, lightly fossiliferous silt with some clay.
Constituents: Micaceous silt, much colorless and green mica. Moderate percent lignite, few broken fossil fragments, few grains glauconite, noted bryozoan (?) fragments. Very few decomposed forams, few echinoid spines, few ostracode valves.

977 — Medium-gray, micaceous, lightly glauconitic, fossiliferous, and lignitic silt, slightly sandy.
Constituents: Even percentage of quartz, glauconite and mica, quartz angular. Small percentage of lignite, much of the glauconite has vermiculitic structure. Scattered broken fossil fragments, noted several broken forams and ostracode valves.

982 — Same as 977', locally more fossiliferous.
Constituents: Micaceous silt, glauconite, angular quartz, broken fossil fragments, few ostracode valves. Few immature gastropods, several broken fragments of formas noted.

(contd.)

987	Medium-gray, micaceous, slightly fossiliferous and glauconitic sandy silt. Slightly lignitic. Constituents: 60% subangular quartz, lignite, mica glauconite, immature pelecy., broken shell fragments. Small forams, several different genera from those above, few ostracode valves, few echinoid spines, few immature gastropods.	Englishtown
992	Same as 987', but slightly more fossiliferous. Constituents: 50-50 mica and quartz, quartz angular, lignite, broken fossil fragments, amber, numerous forams, forams include at least 3 genera different from above. Ostracodes.	
997	Same as 992', less glauconite. Constituents: Quartz, mica, lignite, scattered glauconite, broken fossil fragments, immature pelecy., and gastropods. Forams, numerous ostracodes.	
1002	Medium-gray, micaceous, fossil., moderately lignitic sandy silt. Constituents: Large percent mica, 20% angular quartz, glauconite, lignite, fossil fragments, few echinoid spines, forams and ostracodes, few bits of amber, immature gastropods.	
1007	Same as 1002', not so fossiliferous or micaceous. Constitutents: Angular quartz, mica, lignite, scattered glauconite, scattered fossil fragments, Forams (all small forms) few broken ostracode valves, few echinoid spines.	
1012	Medium-gray, micaceous, slightly fossiliferous and lignitic sandy silt. Constituents: Micaceous silt, small percent, angular Quartz, few grains glauconite, broken fossil fragments, few immature gastropods, forams, (not many), ostracodes (not many).	
1017	Medium-gray, micaceous, moderately fossiliferous, lightly lignitic sandy silt.	
1022	Medium-gray, micaceous, moderately fossiliferous, and lignitic sandy silt. Constitutents: Mica, quartz, lignite, forams, ostracodes shell fragments, small gastropods, several feeth (shark?).	
1027	Same as 1022'. Constituents: Quartz, subangular, mica, glauconite (small percent), lignite, fossil fragments, amber, Immature gastropods.	

(contd.)
Englishtown

1032 Same as 1027'.
Constituents: Micaceous silt, mica, large percent, quartz, lignite, little glauconite, broken fossil fragments, few forams and ostracodes, few immature gastropods, few bits of amber.

1037 Medium-gray, micaceous, slightly fossiliferous and lignitic sandy silt.
Constituents: Micaceous silt, quartz, lignite, broken fossil fragments, few bits of amber, few immature gastropods, many small forams, many ostracodes.

1042 Medium-gray, micaceous, lightly fossil, and lignitic slightly clayey, silt. Scattered coarse grains and few pebbles ¼".
Constituents: Micaceous silt, small percentage quartz, small percent lignite, broken fossil fragments, few grains glauconite, few ostracodes. Small forams, scattered coarse quartz grains, immature gastropods.

1052 Same as 1052', little more clay.
Constituents: Micaceous silt, mica, little quartz, lignite, little glauconite, numerous broken shell fragments, Few grains amber, echinoid spines, numerous forams, small ostracodes.

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Coordinates: 33.3.311
Driller : A.C. Schultes & Sons
Permit No. : 33-360
Owner : Ocean Co. Water Co.
Address : Bay Head, New Jersey

Elevation at surface: 10'

Depth (feet)	Description	Correlation
0 - 1225	No samples submitted	
1225	Dark gray, dirty, very coarse sand. Broken fragments of pelcy. or bracks. Some glauconite noted in what little fine material there is. Scattered throughout are nodules of micaceous, slightly limy shale.	Magothy-Raritan
1232 - 1250	Same as above, but in general medium, coarse, grains. Grains subangular to rounded.	
1282 - 1290	Dark, olive gray, somewhat micaceous glauconitic, fossiliferous, fine sand.	
1295 - 1315	Dark, olive gray, glauconitic, somewhat fossiliferous, fine sand, and fine-grained scabs of micaceous, gray shale.	
1328 - 1350	Washed and sieved sample. Medium olive gray, glauconitic sand. Scattered bits of fossil fragments and olive-colored, silty clay. Quartz grains, polished glauconite, little pyrite, scattered fossil fragments, little colorless mica.	
1350 (washed) ?	Medium, light, olive gray, moderately glauconitic, clean, fine sand. Sparingly micaceous. Scattered coarse grains. Grains subangular to rounded. Few fossil fragments.	
1370 - 1400	Olive gray, sparingly micaceous, glauconitic fine sand, somewhat dirty.	
1416 - 1467 (washed) ?	Medium, light, olive gray glauconitic, sparingly fossiliferous, sparingly micaceous, clean sand.	
1416 - 1467	Gray, somewhat dirty, fine to coarse glauconitic sand. Few fossil and carbonized wood fragments scattered throughout.	
1442 - 1464	Light, gray, slightly glauconitic, clean fine sand. Scattered medium-coarse grains. Grains subangular to rounded. Few fossil fragments.	
1458	Same as above, but medium olive gray.	

17

Well Number 2

Elevation at surface: 160'

Coordinates :
Permit No. :
Driller : A.C. Schultes & Sons
Owner : Maguire Air Base
Address : Fort Dix
Logged by : Meredith E. Johnson
Date : June, 1953

Depth (feet)	Description	Correlation
0 - 4	Sand, clayey, yellow, fine-grained.	Kirkwood
4 - 10	Sand, slightly clayey, yellow, fine to medium-grained, well rounded.	
10 - 20	Sand, similar, but gray buff.	
20 - 35	Clay, gray, silty, micaceous.	
35 - 69	Sand, light gray, mostly fine-grained, but some larger grains, a little glauconite	Kirkwood (?)
69 - 151	Glauconite, a little quartz sand and sparingly fossiliferous (i.e. bryozoa and thin-shelled mollusks, a Dentalium).	Vincentown and Hornerstown
151 - 165	Glauconite and fine to medium sand	
165 - 190	Sand, fine to medium-grained, glauconitic and fossiliferous, a little mica, noted several bryozoan fragments.	Mt. Laurel and Wenonah
190 - 224	Similar, but average grain size smaller.	
224 - 246	Sand, very fine-grained, mixed with much coarser sand and glauconite.	Marshalltown and Englishtown
246 - 266	Sand, fine to medium-grained, gray, glauconitic and micaceous, a few molluscan shell fragments.	
266 - 306	Sand, fine to medium-grained, light buff-gray, slightly glauconitic, a few molluscan shell fragments.	
306 - 326	Sand, fine to medium-grained, glauconitic and fossiliferous (incl. many bryozoa from above,) noted also some lignite.	
326 - 346	Similar to last, considerable number of small bryozoan and unrecognizable molluscan shell fragments, believe unwashed material may have consisted largely of gray clay.	

346 - 363	No sample.	
363 - 383	"Gray clay" (driller), sample consists largely of fine to coarse-grained, gray fossiliferous sand.	Woodbury
383 - 400	"Gray clay" (driller).	
400 - 420	"Gray clay" (driller) same remarks as for 363-383.	Woodbury and Merchantville
420 - 440	"Gray clay" (driller), gray clay mixed with fine to medium-grained fossiliferous sand.	
440 - 460	"Gray clay" (driller) sample consists of clayey, fine to coarse-grained glauconitic sand with a few small fossil fragments.	
460 - 480	"Gray clay" (driller), similar to last. Several bryozoan fragments noted.	
480 - 500	"Marl clay" (driller), greenish-gray, clayey, and glauconitic sand.	
500 - 520	"Marl clay" (driller), greenish-gray, clayey, and glauconitic.	
520 - 560	Sand, fine to medium-grained, slightly glauconitic (driller reports a little clay in it.)	Magothy and Raritan
560 - 563	No sample.	
563 - 583	Sand, fine to medium-grained, light gray, slightly clayey, a little glauconite.	
583 - 635	Similar but cleaner, lignite and a little muscovite.	
635 - 676	Sand, average grain size greater than .030", brownish-gray, fossil fragments include bryozoa. Note, however, that driller reported "shells".	
676 - 706	"Fine sand, shells mixed with clay" (driller); as described with considerable drilling mud (bentonite) "black clay" (driller, fine to coarse, gray, clayey sand.)	
706 - 726	"Black clay" (driller) fine to coarse, gray clayey sand.	

726 - 746	? actual sample is like 635-655.	
746 - 766	"Tough black clay" (driller) gray clay mixed with fine to medium-grained sand.	
766 - 786	"Vari-colored clay" (driller) clay (chiefly gray, but some red) sand and shell fragments.	
786 - 805	"Gray, red, white clay" (driller) as described, but chiefly gray, and mixed with sand.	
805 - 825	"Medium white sand, wood" (driller), actual sample consists of gray clay mixed with glauconitic sand and a little lignite.	
825 - 984	No sample.	
984 - 1060	(N.B. marked well A.) sand, medium to coarse buff-colored, noted one fragment of Balanus (?) and a small pelecypod.	
1025	Sand, chiefly medium to coarse, light brown, a few fossil fragments including Balanus.	
1100 - 1139	Biotite, angular quartz, and a little white feldspar (albite ?)	Wissahickon - Precambrian

Elevation at surface: 125'

18

Coordinates: 28.42.529

Well No. 2
Fort Dix, N. J.
Driller: Artesian Well & Equip Co.
Completed: July, 1941

Depth (feet)	Description	Correlation
Elevation 130		
6 - 22	Yellow, fine-grained clayey sand with a few coarse grains and small pebbles.	Kirkwood 42'
22 - 40	Gray clay and fine-grained silty sand.	
at 42'	Green clayey glauconitic sand	Manasquan 23'
42 - 65	Same - Glauconite not more than 25% of sample. Hard streaks at 54 - 56.	
65 - 106	Yellowish-green, clayey, glauconitic sand.	Vincentown 41'
at 95	Dark green clay marl with mollusk fragments and a bryozoan.	
106 - 120	Arsenic green clayey and slightly sandy glauconite with a few shell fragments including a bryozoan.	Hornerstown 35'
120 - 141	Dark gray glauconitic clay with a few shell fragments.	
141 - 162	Medium-grained, yellowish-green, glauconitic sand with a few small shell fragments (mollusks).	Red Bank 21'
at 162	Mixture of gray clay, glauconite and sand with a Belemnitella americana and fragments of massive mollusk shells.	162 - ± 200 Navesink ± 37'
180	Very fine-grained, gray, clayey, micaceous sand.	
274	Gray clay and very fine-grained micaceous sand.	(Mt. Laurel-Wenonah 75')
275	Dark greenish-gray glauconitic clay with some very fine-grained, micaceous sand.	Marshalltown 30'
299	Brown clay with a little lignite.	Englishtown
328	Gray clay.	

(contd.)

352	Gray clay	Englishtown
370 - 447	Gray glauconitic and fossiliferous clay.	Woodbury (?)
at 447	Greenish-gray glauconitic ans slightly sandy clay.	Merchantville
451	Greenish-brown glauconitic clay.	
485	Dark gray micaceous, sandy and glauconitic clay.	
501	Dark greenish-gray highly glauconitic clay.	
520	Dark brownish-gray and somewhat clayey glauconitic fine to medium-grained sand.	
530	Fine to medium-grained, speckled, glauconitic sand. Brown staining probably derived by rusting of iron from bit. At least one streak of clay.	Magothy
540	Dark brownish-gray and somewhat clayey, glauconitic, fine to medium-grained sand.	Magothy-Raritan
563	Very fine-grained (99% .010", white, slightly clayey) sand.	
577	Fine-grained, light-gray, highly lignitic sand. (Some coarse grains), with some interbedded white clay.	
578	Light gray, fine to coarse sand and small gravel (up to 1/4").	
580(1)	Very fine-grained sand interbedded with clay and lignite.	
580(2)	Stiff, light-gray clay.	
597	Chiefly very fine-grained (a few coarser grains) white sand. Some coarse sand cemented by pyrite noted at this same depth.	
617 - 622	Fine-grained white sand (mostly .010"). Buff-colored, fine to coarse sand and small gravel (up to 1/2").	

(contd.)

627	Some; gravel up to 3/4".	Magothy-Raritan
628	Slightly clayey, light-brownish-gray, fine to coarse (mostly fine) sand.	
630	Fine to coarse gray sand with pyrite and a little clay in thin seams.	
656	Gray clay.	
663	Very fine-grained, light-gray silty sand.	
668	Fine to coarse, light gray sand and small gravel (1/4") with some white clay seams.	
715	Fine-grained (would all pass 14 slot) slightly micaceous brown sand.	
720	Mixture of fine-grained sand and gray clay.	
720 - 870	Mixture of very fine to fine-grained sand and clay. Very fine-grained sand is micaceous and almost white.	
at 870	Red clay.	
880	Red clay.	
890	Mottled red & white clay.	
935	Red clayey fine-grained sand.	
965	Red clay.	
992	Red and grey clay with lignite and a few coarse sand grains.	
(Driller's verbal statement —		
870 - 1030	Red, white and gray clay.	
1030 - 1050	Coarse, water-bearing sand).	
986	Pink and light gray clay	Magothy-Raritan
1030	Fine to coarse light flesh-colored sand.	
1040	Fine to very coarse light-gray sand. (Coarse water-bearing sand between 1035-1053').	
1050	Chiefly fine-grained, light-gray sand, but some gray clay (in thin beds?).	

Elevation at surface: 12'

19

Coordinates: 30.42.37h /7
Permit No. :
Driller :
Owner : Town of Salem *
Address : (near standpipe)
Logged by :
Date : July 1935

Depth (feet)	Description	Correlation
6 - 21	Medium to coarse-grained, yellow sand.	Cape May
21 - 71	Glauconite, with just a little quartz.	Hornerstown and Navesink
71 - 82	Glauconite and medium to coarse quartz sand with some shell fragments.	
82 - 103	Similar, but finer-grained and more shells, glauconite and quartz in 40-60 ratio.	Mt. Laurel-Wenonah 84'
103 - 125	Similar, glauconite-quartz ratio is 25-75.	
125 - 155	Fine to coarse-grained quartz sand with a little fine-grained glauconite.	
155 - 186	Fine-grained, clayey, glauconitic sand.	Marshalltown 31'
186 - 266	Gray clay.	Englishtown and Woodbury 80'
266 - 271	Fine-grained, slightly clayey, glauconitic sand with some coarse sand and shell fragments.	
271 - 292	Dark gray, glauconitic, micaceous, sandy clay.	Merchantville 69'
292 - 335	Gray clay and fine-grained, glauconitic sand.	
335 - 361	Fine to coarse gravel and slightly glauconitic, light-gray sand.	
361 - 378	Dark gray micaceous clay.	Magothy (?)
378 - 427	Slightly glauconitic, light gray, fine to coarse sand and gravel.	
427 - 483	Pink and gray clay with some medium-grained sand.	Raritan

483 - 568	Fine to medium-grained, slightly glauconitic, light-gray sand with a few small pebbles.	
568 - 590	Pink and gray clay.	
590 - 637	Fine to coarse-grained, light-gray sand.	
637 - 659	Pink and gray clay mixed with sand.	
659 - 663	Fine to coarse white sand.	
663 - 667	Pink and gray sandy clay.	
667 - 737	Light gray, fine to coarse sand and small pebbles.	
737 - 1004	Red and gray clay.	
1004 - 1025	Fine to medium-grained pink sand.	
1025 - 1058	Red and gray clay with some sand - Patapsco?.	Upper Cretaceous
1058 - 1073	Medium to coarse grained, light-gray sand - Arundel?.	Lower Cretaceous
1073 - 1192	White, red, and gray clay - Patuxent?.	
1192 - 1233	Fine to medium-grained clayey sand.	
1233 - 1255	Fine-grained quartz sand with a little pyrite.	
1255 - 1298	Fine to medium-grained clayey sand.	
1298 - 1325	Fine to medium-grained pink sand.	
1325 - 1363	Similar, but lighter color.	
1363 - 1376	Slightly clayey, medium-grained sand.	
1376 - 1410	Angular quartz grains with large talcose red and light-gray fragments.+	Weathered granite?
1410 - 1440	Same as last, but harder, according to driller.	

* This well was drilled by a rotary hydraulic method.

\+ Microscopic examination showed: quartz, limonite, apatite, black tourmaline, muscovite, hematite, hornblende, pyroxene, titanite, chlorite and magnetite.

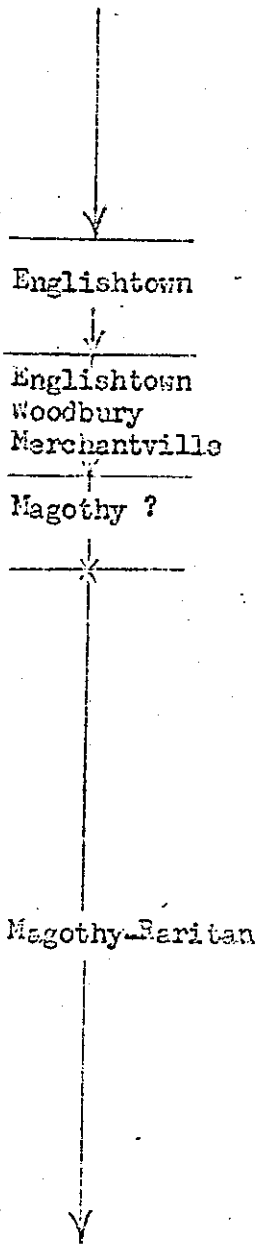
20

Elevation at surface: 85'

Coordinates: 34.5.7.0
Owner : City of Bridgeton
Address : Cumberland Avenue (near northern boundary line)
Date : December 26, 1939

Depth (feet)	Description	Correlation
0 - 67	Coarse-yellow sand.	Cohansey 101'
67 - 101	Medium-grained brown sand.	
101 - 130	Gray clay.	
140	Gray clay with a little interbedded fine-grained sand.	
165	Well rounded, fine to medium-grained gray sand.	Kirkwood 194'
195	Light-gray clay with a few shell fragments and scattered grains of sand.	
230	Same as last.	
240 - 260	Similar clay mixed with darker, highly fossiliferous clay.	
270	Similar, but clay has greenish cast.	
277 - 294	Fine to medium-grained, highly glauconitic and fossiliferous, brownish-gray sand.	
294 - 314	Dark, greenish-gray sandy clay.	
314 - 354	Gray clay.	
354 - 373	Greenish-gray, glauconitic, sandy clay.	
373 - 399	Light-greenish gray, glauconitic and fossiliferous clay with a little sand.	Manasquan Vincetown Hornerstown Navesink
399 - 480	Similar to last, but sand grains coarser.	
480 - 706	Light gray-green clay.	
706 - 835	Same, with much glauconite, a few shell fragments, and scattered grains of coarse sand.	Mt. Laurel-Wenonah Marshalltown
835 - 903	Light-greenish-grey clay and glauconite with a few shell fragments and scattered sand grains.	

903 - 939	Similar to last, but greater percentage of clay.	
939 - 1025	Same as 835 - 903.	
1025 - 1043	About 50% glauconite and 50% light greenish-gray clay.	
1043 - 1094	Highly glauconitic, fine to medium grained sand (35% glauconite.)	Englishtown
1094 - 1335	No sample. Nothing but clay according to driller.	Englishtown Woodbury Merchantville
1335 - 1391	Fine to coarse sand mixed with reddish clay.	Magothy ?
1391 - 1425	A washed residue of medium to coarse vari-colored sand consisting of grains of quartz, quartzite, clay-marl, lignite, chert, etc.	
1425 - 1470	Reddish, clayey sand.	
1470 - 1540	Red and white clay, mixed.	
1540 - 1580	Fine to very coarse, vari-colored sand.	Magothy-Raritan
1580 - 1607	Very fine-grained pinkish-clayey sand.	
1607 - 1651	No sample. *	
1651	Vari-colored, fine to coarse sand with a few small pebbles.	



This well was drilled by a rotary, hydraulic method.

* Following information obtained from local water works officials: "For the greater part of the depth below 1093 feet, dark-colored clay was found. Within the last 200 feet this changed to a reddish clay with streaks of sand."

21

Coordinates: 35.13.161
Permit No. :
Driller :
Owner : Cumberland Oil & Gas Company
Address : Millville, Cum., Co.
Logged by :
Date Logged: Drilled in 1916

Elevation at surface: 60'

Depth (feet)	Description	Correlation
0 - 5	Sandy loam. Streak of sticky white clay.	Cohansey
5 - 22	Coarse reddish-yellow sand.	
22 - 25	Black clay.	
25 - 28	Reddish-yelow clay.	
28 - 68	Yellow sand.	
68 - 85	Gray-yellow sand.	
85 - 90	Sand and gravel with shells	
90 - 100	Yellow and gray sand.	
100 - 109	Clay loam.	
109 - 112	Greensand marl.	
112 - 123	Clay.	
123 - 235	Lignite.	
125 - 127	Greensand marl.	
127 - 135	Reddish-gray sand and shale.	
135 - 136	Gravel.	
136 - 138	Shale, olive-black.	
138 - 140	Lignite.	
140 - 175	Sand, yellowish-red & gray	
175 - 185	Sand and gravel.	
185 - 230	Gray sand with lignite	Kirk? Cohansey?
230 - 234	Reddish-gray sand.	Cohansey
234 - 243	Greenish-gray sand.	Probably Kirkwood Cohansey
243 - 250	Shale.	Cohansey ?

250 - 269	Sand, clay.	(contd.) Cohansey
269 - 270	Rock.	
270 - 290	Black sand.	
290 - 295	Magnetic (?) mud & pebbles.	
295 - 346	Fossiliferous brown shale.	Kirkwood
346 - 350	Gray-green sand.	
350 - 384	Gray sand and clay.	
384 - 400	Light gray and brown clay.	
400 - 427	Gray-green sand.	
427 - 437	Dark-green marl.	
437 - 460	Brownish-gray sand.	
460 - 513	Ash-colored and greenish-brown gumbo.	Manasquan
at 513	Dark-brown sandstone.	Vincetown
513 - 530	Dark sand (and sandstone).	
530 - 532	Lignite.	
532 - 560	Dark gray sand.	
560 - 580	Brown glauc. sand.	
580 - 630	Cemented sand with lime rock.	
630 - 670	Gray sand and clay with shells.	
670 - 705	Greenish-gray clay (?)	Hornerstown (?)

22

Coordinates : 39°14.7½' [illegible]
Permit No. : 36-220
Logged by : P.J. Markewicz
Drilled for : President Hotel
Atlantic City

Elevation at surface: 10'

S & M - sieved and microscope study

Depth (feet)		Description	Correlation
0 - 26	SG	Light olive gray, angular - subangular, fine-medium sand. Mostly quartz, but large percentage of heavy minerals.	Recent Beach Deposit.
26 - 38		Pale red (coloring due to drilling mud,) slightly micaceous and fossil. Angular - subangular sand. Percentage of heavies smaller than above.	
38 - 70	SP	Light gray fossil. Slightly micaceous, uniform, fine sand. Heavies approximately same percentage as 26-38 feet. Noted scattered forams. Fossils mainly broken pelecypods. S & M - broken pelecy-shells, forams, fragments of bryozoan, several ostracode valves, small percent quartz, rounded and polished.	
70 - 100	SP	Light grayish red (drilling mud), slightly fossiliferous and micaceous, uniform fine sand. S & M - angular quartz, small percent quartz, subangular; small percent quartz, rounded and polished. Few forams, some species as above.	
100 - 130	SG	Light gray, fairly clean, fine-coarse, angular - subangular sand. Large percent in heavy mineral concentration of siderite. Light yellow crystals with whitish alteration product, slightly magnetic. Crystal system scalenohedral as shown in Palache textbook on mineralogy. Apparently an isomorphous system from magnesite $MgCO_3$ to siderite $FeCO_3$. Chemical tests - turn black upon heating to become highly magnetic. In dil. warm HCl effervesce strongly. Occur as large percent at top of Cohansey authigenic.	Cohansey
130 - 171	SG	Light yellowish, gray; fine and very coarse sand. Coarse grains, angular - subrounded. Fine grains, angular - subrounded. No fossils.	
171 - 206		Light yellowish gray, fine-medium fairly clean sand. Sand angular-subangular, percent of siderite (?) high in minerals. No fossils.	

208 - 218 — SC — Medium grayish-red, clayey fine sand with approximately 15% pea gravel. Angular quartz, little mica, magnetic heavies, siderite, black non-magnetic hornblende (?). (contd.) Cohansey

218 - 251 — SP — Yellowish-gray, fine sand with 50% by volume lignite.

218 - 251 — S & M - angular - subrounded quartz, a few dark magnetics, siderite prominent, several fragments which resemble vesicular volcanic glass. Scattered shell fragments.

251 - 273 — G — Light gray to yellowish gray, sand pea gravel. Grains subangular. Noted 1 foram, probably from above.

273 - 298 — SG — Light grayish, pebbly, fine-medium sand. Pebbles pea size. Subangular - subrouned quartz. Small percent angular, quartz, large percent siderite (?) in heavy minerals.

298 - 311 — SG — Same as above, plus micaceous silt, light gray in color, angular - subangular quartz, percent of siderite smaller than above, large percent of slightly magnetic black opaque minerals.

311 - 403 — SG — Light grey, slightly clayey and micaceous, fine-coarse sand with small percent pea gravel. Grains angular - subrounded. Many quartz grains highly polished. Transition zone Cohansey Kirkwood

403 - 437 — C — Light olive gray, slightly micaceous clay.
S & M - clay and fine-coarse sand. Coarse percent small. Angular - subangular quartz, magnetic and non-magnetic black opaques, siderite (?) mica, quite diatomaceous few broken fragments. No forams noted. Kirkwood

642 - 804 — C — CLAY — Light olive gray, sandy, slightly micaceous fossil clay.
S & M - micaceous silt, angular - subangular quartz, fines most angular, broken shell fragments, quite diatomaceous, few forams, few grains of glauconite.

804 - 845 — Medium dark gray, fossil. Medium, very coarse, angular - subrounded sand. Mainly quartz, small percent of grains well polished. Noted few forams, few bats of lignite.

367'

845 - 865	Medium gray, moderately micaceous, fossil. Silty clay with pea size gravel mixed in. S & G - angular - subangular quartz, fine-coarse, few rounded quartz grains, large percent broken fossil fragments, diatomaceous, forams, some mica, some lignite, light gray micaceous silt.	(contd.) Kirkwood
SC-SM		

NOTE: Black micaceous and lignitic fragments in samples from 804' to 865' in fluorescent light, blue under mineral light. Same fragments after heating test tube give strong to weak hydrocarbon odor. Most probably hydrocarbons derived from sapropelic material.

23

Coordinates: 37.11.372
Owner : Cape May City
Elevation : 15'

Depth (feet)	Description	Correlation
0 - 52	Sands and gravels of various shades of yellow, gray, buff and orange.	
52 - 62	Black clay with recent marine diatoms and sponge spicules, containing also marine mollusks, viz. Gemma marhattenensis Prime and Pholas costata, Linn.	
62 - 85	Greenish very sandy clay, containing (probably at the base) the following mollusks, viz., Rangia cuneata, gray, and Pholas costata, Linn sponge spicules at 72 and 82.	Pleistocene
85 - 90	Heavy whitish gravels with large pebbles and cobbles, one of the latter showing well-marked Scolithus linearis, a Cambrian fossil.	
90 - 140	Mixture of coarse gray sand and fine gravel, water-bearing, supplying the 6 more shallow wells.	
140 - 160	White very fine clayey sand.	
160 - 180	Dark gray sand, very clayey at the base, no micro-organisms in the clay.	
180 - 190	White sand and gravel mixed.	
190 - 212	Darker gray, very clayey sand containing no micro-organisms.	
212	Few fragments of much comminuted mollusks, apparently bivalves.	Cohansey
212 - 240	Lighter colored sand, still quite clayey and without micro-organisms.	
240 - 270	Darker slightly brownish-gray sands ranging from fine to coarse and sometimes quite clayey, no micro-organisms.	
270	Lignite plentiful.	
270 - 285	Lighter colored gray sand.	
285 - 300	Coarser gray sand water-bearing, but not utilized for water supply.	

		(contd.) Cohansey
300 - 310	Brownish yellow sand.	
310 - 340	Dark clays and sandy clays, without diatoms or other micro-organisms.	
340 - 360	Dark, very clayey sands; comminuted shells at 340'.	
360 - 367	Coarse sand and fine gravel.	Kirkwood
367 - 440	Dark mixture of sand, gravel and clay containing throughout sponge spicules and Miocene marine diatoms; miocene mollusks at 367' to 385' at 400' & at 420' to 440'.	
440 - 450	Sand.	
450 - 522	Dark colored, fine very clayey sand with sponge spicules and diatoms throughout; cemented shells at 510-20.	
522 - 533	Rock seam 11' thick, probably indurated sand.	
533 - 560	Fine and coarse gray gravels with black barnacles and white molluscan shells; some shells at 550'.	
560	Lignite.	
560 - 600	Grayish coarse sands and fine gravels, water-bearing between 585' and 600', supplies the deep well as finally finished; this bed includes a rock seam 1' thick between 584' and 585'; lignite occurred at 590'.	
600 - 660	Brown sandy micaceous clay with sponge spicules and abundance of diatoms among the latter notably Actinocyclus ehrenbergii, Ralfs.	
660 - 667	Gray sand.	
667 - 694	Rock stratum 17' thick, probably indurated sand.	
694 - 712	Gray sand.	
700	Some comminuted shells.	

(contd.)
Kirkwood

712 - 717	Rock seam 6' thick.
717 - 775	Very fine dark gray sand somewhat clayey.
775 - 790	Still darker (somewhat greenish) and slightly coarser gray sand with mollusks at 780' to 790'.
790 - 812	Mixture of coarse gray sand and fine and coarse gravel with plenty of molluscan fossils.
812 - 818	Rock seam 6' thick.
818 - 825	Coarse gray sand and gravel.
825 - 849	Brownish mixture of clay, sand and gravel with comminuted shells, but no micro-organisms.
849 - 850	Rock seam 1' thick.
850 - 880	Very fine clayey sand.
880 - 980	Fine sandy brownish clay, containing throughout an abundance of sponge spicules and a considerable number of diatoms notably among the latter, great numbers of Actinoptychus heliopelta Grunow.
980 - 990	Mixture of diatom clay, sand, gravel and molluscan shells; the beds above this depth (990') contain no glauconite or greensand, but below this depth all the beds penetrated contain more or less greensand.
990 - 1020	Dark gray sand somewhat micaceous, contains considerable greensand.
1020 - 1040	Dark greenish sand, with a large proportion of greensand, with some comminuted small shells at the base.
1040 - 1070	Dark gray sand similar to that at 990' to 1020'. but with more clay in the matrix, also somewhat micaceous.
1070 - 1080	Dark greensand similar to that at 1040' but with less comminuted shell.

1080 - 1090	Greenish-gray coarse sand and fine gravel mixed, consisting mostly of white quartz grains with a small admixture of greensand.	(contd.) Kirkwood
1090	Fragments of an echinus.	Sub-Kirkwood
1090 - 1110	Similar greenish-gray sand but without gravel.	
1110 - 1130	Somewhat clayey sand brownish-gray in color the grains mostly quartzose containing however, a few greensand grains; a very little water just trickled over the top of the well at 1120'.	
1130 - 1140	Clayey sand, consisting largely of greensand.	
1140 - 1160	Black or dark green greensand somewhat clayey, very little gray sand in this.	
1160 - 1280	Olive-green, nearly pure greensand, somewhat clayey .	
1280	Some mollusks.	
1280 - 1313	Olive-green greensand, still more clayey; some foraminifera at 1,300'.	

Eocene contact not far distant.

M. E. J.

Elevation at surface: 5'

24

Coordinates 37.11.12
Driller Layne New York Co., Inc.
Permit No 37-136
Owner City of Cape May
Address Cape May, New Jersey
Date Logged July 29, 1958
Logged by W.B. Nelson

Depth (feet)	Description	Correlation
6	Fill	
22	Dark brown, lignitic clay, containing rounded, fine gravel of quartz and feldspar and much organic material ie. roots etc.	
40	Medium yellow, rounded to sub-round, mixture of fine to medium quartz sand and fine gravel.	Cape May
40-77	Dirty grey, fine to coarse grained, rounded, poorly sorted, mixture of silt, fine to coarse sand and fine to coarse gravel.	
100	Light yellow to light grey, fine to coarse grained, round to sub-round, poorly sorted, frosted quartz sand, with scattered chert grains.	
235	Dirty grey, fine to coarse grained, sub-round to angular, felspathic quartz sand. Sample contains- cepheloped, and brachiopod and other shell fragments.	Cohansey
245	Light grey, fine to medium grained, sub-rounded to sub-angular, moderately well sorted, relatively pure quartz sand.	
260	Yellow to grey mixture of grey, micaceous clay and coarse gravel of frosted quartz pebbles, well rounded.	
305	Grey to yellow mixture of sub-rounded, medium to coarse grained quartz sand and rounded medium, frosted, quartz gravel. Sample contains, detritol magnetite, chert fragments, and fragments of myliobates jaw.	
316-326	Same as 306', except contains lignitic material.	
336-366	Same as 316', except for appearance of a few shell fragments.	Kirkwood
376	Same as 336', contains pelecypod and myliobates fragments.	
386	Same as 336', with numerous shell fragments and a sharks tooth.	
396	Same as 336', with numerous shell fragments, & sharks tooth, and fragments of myliobates jaw.	
400-446	Dirty grey, medium grained, sub-rounded, moderately well sorted, quartz sand with a few gravel sized fragments. Contains numerous shell fragments.	

Depth (feet)	Description	Correlation
456	Same as 400', almost no gravel.	(contd.)
466	Same as 456', contains a fairly intact gastropod.	
476-506	Dirty grey, fine grained, sub-rounded, silty sand containing shell fragments.	
516-536	Light grey, fine grained, sandy clay, containing shell fragments.	Kirkwood
546-586	Dirty grey, fine to medium grained, sub-round, silty sand, with some coarse gravel of frosted quartz. Contains numerous shell fragments.	
596	Dirty grey, fine to coarse grained, sub-rounded, quartz sand, some gravel, containing numerous shell fragments.	
606-626	Dirty grey, medium to coarse grained, sub-rounded, quartz sand with numerous shell fragments.	
636	Same as 606', contains myliobates jaw and shark tooth.	
646-696	Same as 606'.	
706-736	Same as 606', contains scaphopoda and numerous other shell fragments.	
746	Same as 706', contains myliobates jaw fragments and shell fragments.	
756-766	Same as 706'	
776-1006	Dirty grey, medium to sub-rounded coarse grained quartz sand, containing fragments of fine, well consolidated, quartzite, and numerous shell fragments.	

Elevation at surface: 108'

Well No. 1
Owner : Transcontinental Gas Pipeline Corporation
Address: North of Chatsworth, N.J.
Driller: Survey Drilling Company
Date : March 1951

Depth (feet)	Description	Correlation
0 - 42	No samples.	Cohansey
42 - 47	Buff to reddish coarse-grained sand and gravel. Gravel to 1/2" overall.	
47 - 52	Fine-grained, buff sand. A few coarse grains noted.	
52 - 57	Buff to reddish coarse-grained sand and gravel. Also some fine-grained buff sand.	
57 - 62	Fine-grained buff sand. A few coarse grains noted.	
62 - 67	Fine to coarse-grained buff sand.	
67 - 97	Fine to medium-grained buff sand. Some coarse grains noted.	
97 - 144	Buff, fine to medium-grained sand. A few coarse grains noted.	
144 - 164	Fine to medium-grained gray sand.	Kirkwood
164 - 200	Similar to last, but about 10% coarse grains at 169'.	
200 - 210	Gray, fine to medium-grained sand. (Not calcareous.)	
210 - 226	Similar to last, but generally coarser.	
226 - 231	Brownish-buff, fine-grained sand. A few coarse grains noted, one up to 3/4" overall.	
231 - 236	Similar to last, but contains streaks of white sandy clay.	
236 - 241	Same as last. Contains partially leached molluscan fragments.	
241 - 261	Gray, fine-grained sand and silt. Slightly micaceous. Partially leached molluscan fragments.	
261 - 266	Gray, fine-grained, silty sand. Partially leached molluscan fragments.	

266 - 298	Gray, fine-grained silt. Partially leached molluscan fragments.	
298 - 308	Gray, fine to medium-grained slightly micaceous, silty sand. Slightly calcareous.	
308 - 323	Same as last. Molluscan fragments noted.	
323 - 328	Same as last. Molluscan fragments noted, slightly glauconitic.	
328 - 334	Similar to last, molluscan fragments noted.	
334 - 339	Light greenish-gray fine-grained, slightly glauconitic, calcareous silty sand. Molluscan fragments noted.	Manasquan
339 - 364	Light greenish-gray, fine-grained, slightly glauconitic, calcareous silty sand.	
364 - 369	Light greenish-gray, fine-grained glauconitic, silty calcareous sand. Molluscan fragments noted.	
369 - 380	Light gray, fine-grained, slightly glauconitic, silty, slightly micaceous, calcareous sand. Molluscan fragments.	
380 - 385	Similar to last. Slightly more glauconite.	
385 - 390	Similar to last. Slightly less glauconite.	
390 - 395	Similar to last. Slightly coarser grained.	
396 - 416	Greenish-gray, fine to medium-grained, glauconitic, calcareous clayey sand. Molluscan fragments present.	
416 - 421	Similar to last, but less clay.	
421 - 426	Similar to last, but more clay.	

426 - 431	Sea green, glauconitic, sandy, calcareous clay.
431 - 436	Greenish-gray, fine to medium-grained, slightly clayey, glauconitic calcareous sand. Molluscan fragments noted.
436 - 441	Similar to last, but slightly more clay.
441 - 446	Greenish-gray, fine to medium-grained, slightly clayey, glauconitic calcareous sand.
446 - 452	Greenish-gray, fine to medium-grained glauconitic calcareous sand. Molluscan fragments. Similar to that at 441-446, but slightly coarser.
452 - 457	Sea green, fine-grained, slightly clayey, glauconitic, calcareous sand.
457 - 482	Sea green, glauconitic, slightly sandy clay with molluscan fragments noted at 472-477.
482 - 493	Similar to last, sandier, few coarse grains noted.
493 - 498	Same as 477-482.
498 - 503	Sea green, fine-grained, glauconitic, calcareous "muddy" sand, "mud" is sea green and calcareous
503 - 518	Similar to last, but with many coarse pink and yellow quartzite grains to 1/4" overall.
518 - 523	Sea green, sandy, glauconitic, calcareous "clay." A few coarse grains of yellow quartzite noted.
523 - 534	Similar to last. No coarse grains noted.
534 - 539	Light gray, almost white, fine-grained, slightly glauconitic, slightly calcareous sand.
539 - 544	No sample.

Vincentown

544 - 554	Same as at 534-539.	
554 - 595	Sea green, slightly sandy, glauconitic, calcareous "clay."	
595 - 621	Light green, sandy, calcareous, glauconitic clay. Molluscan fragments and forams noted.	
621 - 636	Similar to last. Lumps of sea green calcareous clay abundant.	
636 - 641	Light green, fine-grained, calcareous, glauconitic, clayey sand. Molluscan fragments and foraminifera noted. Also sea green clay.	
641 - 646	Similar to last. Slightly more clay.	
646 - 656	Light green, fine-grained, calcareous, glauconitic sand. Forams noted. A little sea green clay noted.	
656 - 661	Green, fine-grained, highly glauconitic, calcareous sand. With molluscan fragments and pieces of sea green clay.	
661 - 676	Fine-grained, sandy, calcareous, glauconite (greensand.) Molluscan fragments noted. Sea green clay fragments noted.	Hornerstown
676 - 686	Green, fine to medium-grained, highly glauconitic, calcareous sand. Molluscan fragments and a few coarse grains noted.	
686 - 691	Similar to last, but sand is medium to coarse-grained.	
691 - 696	Similar to last, but sand is fine to medium grained.	
702 - 712	Light grayish-green, fine-grained, glauconitic, highly calcareous sand. Calcareous "mud" present. (May be aquagel.) Molluscan fragments abundant.	

712 - 717	Similar to last, but slightly more of the limey "mud." Not so many fossil fragments as in last.	
717 - 722	Similar to last, but no fossils noted. A few coarse grains noted.	
722 - 727	Similar to last. Molluscan fragments noted.	
727 - 732	No samples.	
732 - 737	Light gray, fine-grained, glauconitic, calcareous sand. Contains abundant pelecypod and gastropod fragments and hard, slightly calcareous concretions of sand and glauconite. Calcareous nature largely due to admixed "lime-mud." (Aquagel?)	Navesink
737 - 742	Similar to last. No evidence of "lime-mud."	
742 - 757	Same as last. Not so many fossil fragments.	
757 - 759	No sample.	
759 - 762	Same as at 752-757.	
800 - 805	Gray-green, fine-grained, slightly micaceous, glauconitic, calcareous sand. Molluscan fragments noted.	Mt. Laurel-Wenonah
805 - 825	Similar to last. No fossils noted. Few coarse sand grains.	
825 - 835	Greenish-gray, fine-grained, highly glauconitic, slightly calcareous sand. Molluscan fragments noted.	
835 - 840	Similar to last, but fine to coarse grained. About 10% coarse-grained.	
840 - 845	Greenish-gray, fine-grained, glauconitic, slightly micaceous, calcareous sand. Belemnitella americana (?) noted.	Marshalltown (?) and Englishtown
845 - 855	Similar to last, but lighter in color, less glauconite.	

855 - 880	No samples.
880 - 885	Light greenish-gray, medium-coarse grained, glauconitic, calcareous sand. Coarse grains to 1 /4" overall. Molluscan fragments.
885 - 890	Gray, fine-grained, glauconitic, calcareous sand. Sea green clay fragments noted, as well as a few coarse grains up to 1/8" overall.
890 - 895	Similar to last. Molluscan fragments noted. Slightly clayey.
895 - 900	Dark, greenish-gray, fine to medium-grained, calcareous, glauconitic sand. A fair proportion of coarse grains (10%) noted.
900 - 906	Gray, sandy, micaceous, glauconitic, calcareous clay. A few fragments of sea-green calcareous clay.
906 - 911	Same as last. No sea green clay noted.
911 - 916	Same as last. Molluscan fragments noted.
916 - 921	Same as last. Fragments of sea green clay noted.
921 - 926	Similar to last. No molluscan fragments noted. Some large grains of quartz up to 1/4" overall noted.
926 - 931	No sample.
931 - 936	Same as 921-926.
936 - 941	Dark gray, micaceous clay and fine-medium grained, gray glauconitic sand. Fragments of sea green clay noted. Calcareous.
1046 - 1051	Slightly calcareous, fossiliferous (fragments of mollusks,) greenish-gray, fine-medium grained, glauconitic sand. A few fragments of calcareous greenish clay noted.

Woodbury and Merchantville

1051 - 1056	Similar to last, but with greater proportion of calcareous greenish-clay fragments, plus fragments of dark gray, micaceous clay and a few coarse grains, up to 1/8".
1056 - 1061	Similar to last, but more calcareous and with greater proportion of glauconite and calcareous greenish clay lumps.
1061 - 1066	Light, sea-green calcareous, slightly glauconitic clay. Contains forams.
1066 - 1071	Dark greenish-gray, fine-medium grained, slightly calcareous, fossiliferous (fragments of mollusks) highly glauconitic (50-50) sand. A few coarse grains noted.
1071 - 1081	Same as last, but more calcareous.
1081 - 1086	Similar to last, but contains fragments of sea green calcareous clay.
1086 - 1097	Dark greenish-gray, fine-grained, highly glauconitic, fossiliferous sand and calcareous sea green clay.
1097 - 1103	Similar to last, but greater quantity of sea green clay.
1103 - 1106	Similar to last, but less sea green clay.
1107 - 1112	Dark greenish gray, fine-grained, highly glauconitic, calcareous sand.
1112 - 1117	No sample.
1117 - 1127	Same as last. (1107-1112.)
1127 - 1140	Gray green, fine to medium-grained, calcareous, glauconitic sand. A few lumps of sea green calcareous clay noted. Some sand grains are orange-colored or pinkish.

Magothy

7 T

Well No. : 7
Driller for: Transcontinental Gas Pipeline Corporation
Driller : Survey Drilling Co.
Completed : April, 1951

Elevation at surface: 117'

Depth (feet)	Description	Correlation
0 - 5	Fine to coarse, light gray and yellow sand with an occasional grain of glauconite.	Cohansey
5 - 10	Fine to coarse yellow sand.	
10 - 15	Fine to coarse yellow sand with a little glauconite.	
15 - 20	Fine to coarse yellow sand with a little glauconite. Note: grains of quartz in Cohansey are well rounded.	
20 - 25	Fine to coarse, slightly clayey and glauconitic yellow sand.	
25 - 30	Fine to coarse, slightly glauconitic yellow sand.	
30 - 35	Fine to coarse, slightly glauconitic yellow sand, little lignite.	
35 - 41	Same as 10-35.	
41 - 46	Fine to coarse gray and yellow sand. Grains up to 3/16".	
46 - 51	Mostly coarse, but some fine-grained deep yellow sand. Grains up to 1/4".	
51 - 56	Same as last.	
56 - 61	Mostly coarse (up to 3/8") but some fine and medium-grained, yellow, slightly clayey sand. Some white weathered chert.	
61 - 66	Fine to coarse yellow sand and pebbles up to 3/8".	
66 - 71	Fine to coarse yellow sand and pebbles up to 3/8", little yellow clay.	
71 - 82	Fine to coarse yellow sand and well rounded pebbles up to 3/8".	
82 - 87	Fine to coarse yellow sand and pebbles up to 1/4".	
87 - 102	Fine to coarse yellow sand and pebbles up to 3/8".	

102 - 107	Yellow-brown, pea gravel, with less than 25% sand.	(contd.) Cohansey
107 - 112	Yellow-brown, pea gravel, with less than 50% sand.	
112 - 117	Yellow-brown, pea gravel, with 30% sand.	
117 - 128	Yellow-brown, pea gravel with more than 50% sand.	
128 - 143	Yellow-brown, pea gravel with less than 50% sand.	
143 - 192	Gray clayey silt.	Kirkwood
192 - 202	Gray clayey silt with some fine to coarse sand and small pebbles. (Note: pebbles from 141 down are all believed to have fallen in from above.)	
202 - 213	Gray silty clay with a little glauconite.	
213 - 254	Greenish-gray, glauconitic clay and sand. Few small shell fragments at 254.	Manasquan
254 - 264	Same as last, with Balanus.	
264 - 274	Light, sea-green, glauconitic clay with forams.	
274 - 284	Same.	
284 - 305	Sea-green, glauconitic and fossiliferous sand and clay. Little lignite.	
305 - 346	Light, sea green, glauconitic and fossiliferous sandy clay.	
346 - 377	Similar clay, but more glauconitic.	
377 - 387	Same as 305-315.	
387 - 408	Same as 305-315 though no fossils seen.	
408 - 413	Same, mixed with fine to coarse-grained glauconitic sand.	Vincentown
413 - 418	Light sea-green, glauconitic sand and clay.	
418 - 423	Same as 408-413.	

		(contd.)
423 - 428	Same as 413-418.	Vincentown
428 - 449	Sea-gray, sandy, glauconitic clay.	
449 - 469	Same, with fine to coarse-grained, glauconitic sand.	
469 - 474	Greenish-gray, glauconitic and fossiliferous sand and clay. More glauconite than previous samples.	
474 - 479	Similar to last, but sandier. Quite glauconitic and many molluscan fragments.	
479 - 484	Greenish-gray, sandy, glauconitic and fossiliferous clay.	Hornerstown ?
484 - 490	Greenish-gray, sandy, glauconitic and fossiliferous clay.	
490 - 495	Dark gray, glauconitic clay (mixed with light sea-green clay from above.)	
495 - 510	Dark gray, glauconitic clay.	
510 - 525	Greenish-gray, glauconitic clay.	Navesink ?
525 - 541	Glauconitic gray clay.	
541 - 546	Light greenish-gray, glauconitic clay.	
546 - 551	Glauconitic, gray clay and molluscan fragments. Noted B.americana fragments.	Wenonah-Mt. ? Laurel
551 - 556	Glauconitic sand, clay and molluscan fragments.	
556 - 561	Glauconitic sand, little clay and molluscan fragments.	
561 - 571	Glauconitic, fine to coarse sand with Belemnitella americana.	
571 - 576	Glauconitic, fine to coarse sand.	
576 - 581	Glauconitic, fine to medium sand.	
581 - 586	Glauconitic, fine to medium sand with Ostrea falcata (?).	
586 - 591	Glauconitic, fine to medium-grained sand with shell fragments.	

		(contd.)
591 - 596	Gray, micaceous clay with shell fragments. *Ostrea*.	Wenonah-Mt. ? Laurel
596 - 601	Gray, slightly clayey, glauconitic and fossiliferous sand.	
601 - 606	Fine to medium-grained, glauconitic and micaceous sand.	
606 - 612	Fine to medium-grained, glauconitic and fossiliferous sand.	
612 - 622	Gray micaceous clay.	Marshalltown ?
622 - 653	Gray, silty and micaceous clay.	
653 - 663	Same, with some glauconite.	
663 - 673	Same, with shell fragments.	
673 - 684	Same as 653-663.	
684 - 694	Same as 653-663, but sandier.	
694 - 700	Gray, glauconitic sand and clay with *Belemnitella americana* and four species of a gastropod. Fossils found:	Englishtown ?
	Hamulus falcatus (Conrad) *Gryphaea* sp. (left valve) *Turritella* cf. *encrinoides* Morton *T.* cf. *marshalltownensis* Weller. *T* cf. *trilira* Conrad *T.* sp. *Meretrix* sp. *Lucina Parva* Stephenson Fish vertebrae (small) Shark's tooth (small) *Belemnitella americana* (fell in from above.)	
700 - 704	Gray, micaceous clay.	
702 - 715	Gray, micaceous clay with molluscan fragments.	
715 - 720	Same, with some quartz sand and glauconite.	
720 - 735	Gray micaceous clay with shell fragments.	
735 - 740	Same, with fine to coarse-grained glauconite sand.	

		(contd.)
740 - 745	Similar to last. More than 50% sand. Shell fragments.	Englishtown ?
745 - 750	Similar to last. Less than 50% sand.	Horiz. "D"
750 - 756	Similar to last. More than 50% sand. Shell fragments.	
756 - 761	Dark gray, micaceous clay with some glauconite.	
761 - 797	Dark gray, micaceous clay with some glauconite, and sand and shell fragments.	
797 - 802	Similar to last, with 50% fine to medium-grained glauconitic sand.	Woodbury and Merchantville ?
802 - 807	Chiefly fine to medium-grained glauconitic sand with a few shell fragments and one Belemnitella americana.	
807 - 817	Chiefly dark gray clay with a few shell fragments.	
817 - 822	Similar, but more sand.	
822 - 827	Similar, but about 50% sand.	
827 - 832	Gray micaceous sandy clay.	
832 - 838	Gray micaceous sandy clay with shell fragments.	
838 - 843	Gray clay and glauconitic, fine to medium-grained sand and shell fragments, including two small gastropods.	
843 - 848	Same with small unrecognizable shell fragments.	
848 - 853	About 50% gray sandy clay and 50% fine to medium-grained glauconitic sand. One Turritella (?) noted.	
853 - 858	Same, but no recognizable fossils.	
858 - 863	Same, with shell fragments.	
863 - 868	Same with shell fragments, and one small vertebra (?)	

(contd.)

868 - 879	Same with shell fragments and one Belem. americana.	Woodbury and ? Merchantville
879 - 884	Speckled, gray, highly glauconitic, fine to medium-grained sand.	↓ Magothy ?
884 - 900	Same, with a few small shell fragments.	

13 T

Transcontinental Pipeline Corp.
Drilled by Survey Drilling Co.
Well #13
Drilled at Penn State Forest
Log Compiled by H. Herper from
Samples Submitted by Driller
Elevation at Surface: 90 Feet

Depth (Feet)	Description	Correlati
0- 942	No samples.	Marshalltown 92 950 E-log.
942- 962	Gray, fine-grained, glauconitic, silty, slightly micaceous sand.	Englishtown (
962- 973	Similar to last. Finer-grained overall.	
973- 983	Gray, fine-grained, glauconitic, silty, slightly micaceous sand.	
983-1014	Similar to last. Finer-grained overall.	
1014-1024	" " " Coarser-grained.	
1024-1044	Gray, fine-grained, glauconitic sand.	
1044-1054	Similar to last. A few coarse grains noted.	
1054-1064	" " " Sand a bit finer-grained. Molluscan fragments noted; Ostrea?	
1064-1085	Drab-fine-grained, glauconitic sand. Color may be due in part to admixed drilling mud.	
1085-1095	Gray, fine-grained, glauconitic silty sand; micaceous sand.	
1095-1115	Same as last. Molluscan fragments noted.	
1115-1126	" " " " " " Echinoid spines, crustacean remains noted.	
1126-1136	Gray, fine-grained, glauconitic, silty, slightly micaceous sand. Cadulus obuotus and molluscan fragments noted.	Woodbu Merchan ville
1136-1156	Gray, fine-grained, glauconitic, silty, slightly micaceous sand. Molluscan fragments noted.	
1156-1177	Greenish-gray, fine-grained, glauconitic sand. "Pepper-and-salt" sand. Molluscan fragments noted.	
1177-1187	Greenish-gray, fine-grained, glauconitic, silty sand. Cadulus obuotus and molluscan fragments noted.	
1187-1197	Greenish-gray, fine-grained, glauconitic sand. "Pepper-and-salt" sand. Molluscan fragments noted.	

(contd.)

1197-1208	Greenish-gray, fine-grained, glauconitic sand. Corbula cf. subradiata Gardner; and other moluscan fragments noted.	Woodbury and Merchantvill
1208-1218	Greenish-gray, fine to medium-grained glauconitic sand; molluscan fragments noted.	
1218-1238	Greenish-gray, fine-grained, glauconitic, silty sand; molluscan fragments noted.	
1238-1249	Greenish-gray, fine-grained, glauconitic sand. Molluscan fragments noted.	
1249-1269	Greenish-gray, fine to medium-grained, glauconitic sand. Molluscan fragments noted.	
1269-1280	Grayish-green, fine to medium-grained, highly glauconitic sand. Molluscan fragments noted.	
1280-1290	Greenish-gray, fine-grained, glauconitic, silty sand. Fossil fragments noted.	
1290-1310	Gray, fine to coarse-grained, glauconitic sand.	Magothy-Raritan
1310-1321	Same as last. Molluscan fragments present.	
1321-1331	Similar to last, but greater proportion of fine material.	
1331-1341	Gray, fine-grained, glauconitic sand.	
1341-1351	Gray-green, fine-grained, glauconitic sand and silt.	
1351-1361	Gray, fine to medium-grained, slightly glauconitic sand. Molluscan fragments noted.	
1361-1371	Gray, fine-grained, slightly glauconitic sand. Molluscan fragments noted.	
1371-1392	Gray, fine-grained, slightly glauconitic silty sand. Turritella sp. and other molluscan fragments noted.	
1392-1402	Similar to last, but greater proportion of fine material.	
1402-1422	Gray, glauconitic silt.	
1422-1433	Gray, fine-grained, glauconitic, silty sand. Turritella cf. bonaspes Gardner; and other molluscan fragments noted.	
1433-1484	Same as last. Molluscan fragments noted.	
1482-1515	Same as last.	

15T

Transcontinental Gas Pipeline Co
Drilled by Survey Drilling Co.
Well #15
Drilled Near Harrisville, Burlington County
Description by Meredith E. Johns
Elevation at Surface: 19 Feet

Depth (Feet)	Description	Correlat
0- 20	Light yellow sand and gravel, quartz pebbles well rounded	Pleistoce
20-30	Same, with a little clay.	
30- 41	Fine to coarse yellow sand with a few small pebbles.	
41- 51	Yellow sand and gravel with a little clay.	
51- 81	Yellow sand and gravel.	
81- 91	" " " " with a little clay.	
91-101	" " " " " " " " (N.B.: All of above samples could have been taken from a shallow surface pit.)	
101-113	Gray clay with some fine to coarse-grained sand and scattered small pebbles.	Kirkwood
113-122	Gray clay.	
122-133	Gray clay and fine-grained micaceous sand.	
133-143	Clayey, gray, fine to coarse-grained gray sand with scattered small pebbles ranging up to 3/8" diameter.	
143-153	Slightly clayey, fine to coarse, gray sand with occasional small pebbles.	
153-163	Same, with some (interbedded?) gray clay.	
163-174	Fine to coarse, gray sand.	
174-194	Same, with gray clay.	
194-204	Medium to coarse, gray sand with occasional small pebbles.	
204-225	Fine to coarse, gray sand.	
225-286	" " " " " with occasional small pebbles and some interbedded, gray clay.	
286-296	Fine to coarse sand with some interbedded gray clay.	
296-306	Fine to coarse, brownish-gray sand.	
306-316	Same, with some interbedded, gray clay.	
316-337	Same, with some interbedded, gray clay.	
337-347	Gray sandy clay.	

347-378	Gray clay and sand.	Kirkwood
378-388	Fossiliferous gray clay and silt including one bryozoan.	
388-398	" " silty clay. Turritella sp. noted.	
398-408	Gray, clayey and micaceous silt.	
408-418	Gray clay with some interbedded silt.	
418-439	Olive-green, glauconitic clay and sand.	Shark River-Manasquan
439-449	Same, but more glauconite. Many grains have brown limonitic coating.	
449-459	Same, but more clayey.	
459-470	Same, with a few small shell fragments.	
470-480	Olive-green glauconitic clay and sand.	
480-490	Same, but a little sandier.	Vincentown?
490-500	Same as 470-480.	
500-511	Olive-green, glauconitic clay and sand with a few small shell fragments.	
511-521	Same, but no fossils.	
521-531	Same with a few small shell fragments.	
531-572	Same as 511-521.	
572-582	" " " " with a few small shell fragments.	
582-592	Ash-colored glauconitic sandy clay with a few small shell fragments.	
592-655	Same, but a little darker. Shell fragments (and forams?).	
655-665	Light greenish-gray, clayey, glauconitic sand with forams and a few small shell fragments.	
665-675	Same, but more clayey and fewer fossils.	
675-686	Light greenish-gray, glauconitic sand. Clayey part of sample believed to be almost entirely the bentonite used by drillers in mudding off the walls of the hole.	
686-727	Same, but more clayey.	
727-737	Light greenish-gray, glauconitic and fossiliferous sand.	

(contd.)

737- 758	Same, but clayey.	Vincentown
758- 768	Same, but a little sandier.	
768- 778	Light greenish-gray, glauconitic clay and sand.	
778- 789	" " " sandy clay (sand from above?).	
789- 840	" " " " "	
840- 850	" " " " " (and glauconitic sand?).	
850- 881	" " " " "	
881- 891	Greenish-gray, fine to coarse glauconitic sand. (N.B.: Change in samples occurred with change of shift. A coincidence?).	
891- 921	Chiefly a light sea-green clay.	
921-931	" " " " " and gray clay.	Hornerstown & Navesink
931- 942	" " gray clay.	
942- 952	" gray clay and fine to medium-grained glauconitic sand.	
952- 993	Same. A few small fossiliferous fragments.	
993-1003	Same, but lighter gray color.	
1003-1013	Medium-grained, glauconitic, "salt-and-pepper" sand.	Mt.Laurel-Wenonah
1013-1075	Same with a few small fossil fragments.	
1075-1085	Fine to medium-grained glauconitic sand with fossil fragments.	
1085-1095	Gray clay with a few fossil fragments. Noted Ostrea cf. falcata.	
1095-1106	Gray clay with a few fossil fragments.	
1106-1127	Fine to medium-grained glauconitic sand with some gray clay.	
1127-1137	Gray sandy clay.	
1137-1147	Gray clay and sand.	
1147-1157	Gray clay with a few fossil fragments.	
1157-1168	" " and sand with a few fossil fragments.	
1168-1178	Gray silty clay.	
1178-1188	Gray silty clay with a few fossil fragments.	

(contd.)

1188-1209	Gray sandy and glauconitic clay.	Mt. Laur Wenonah
1209-1220	No sample.	
1220-1230	Greenish-gray glauconitic sand and clay with a few fossil fragments.	Merchant-ville?
1230-1250	Gray clayey silt with a few fossil fragments.	
1250-1261	Gray silty clay.	
1261-1271	" " " with a few fossil fragments.	
1271-1281	" " "	
1281-1312	Gray sandy clay with a few fossil fragments.	
1312-1322	Gray fine to medium-grained glauconitic sand with a few fossil fragments.	Magothy
1322-1332	Same, but less clay.	
1332-1343	Gray, fine to medium-grained sand and clay.	
1343-1353	Same, but more clayey.	
1353-1373	Chiefly gray clay.	
1373-1394	Gray sandy clay with a few fossil fragments.	
1394-1404	Same.	
1404-1414	Fine to coarse glauconitic sand and greenish-gray clay.	
1414-1424	Clayey, fine to coarse glauconitic sand with a few fossil fragments.	
1424-1435	Coarse-grained sand. Most grains angular to subangular.	Raritan
1435-1445	Gray, clayey, medium to coarse sand.	
1445-1455	Gray clay and fine to coarse sand.	
1455-1476	Gray clay and fine to coarse sand (mostly fine).	
1476-1486	Greenish-gray, silty clay with small fossil fragments.	
1486-1496	Same, mixed with fine to coarse sand.	
1496-1506	Like 1476-1486.	
1506-1516	Same material, with some fine to coarse glauconitic sand.	
1516-1537	Chiefly a gray clayey silt.	
1537-1701	Greenish-gray clay with small fossil fragments.	

Elevation at surface: 156'

17 T

Well #17
Transcontinental Gas Pipeline Corporation
Driller: Survey Drilling Co.
Completed June 23, 1951

Depth (Feet)	Description	Correlation
0 - 31	Light buff, fine to coarse sand and grains including greatly weathered chert ranging up to 1"+ in maximum diameter and lumps of white clay.	Beacon Hill and
31 - 41	Same, a little yellow clay.	↓ Cohansey
41 - 112	Fine to coarse yellow sand and gravel.	
112 - 122	Same, with addition of some yellow clayey silt.	
122 - 133	Fine to coarse, buff and light gray sand.	↓ Kirkwood.
133 - 143	Fine to coarse light gray sand with a 1" pebble of quartzite.	
143 - 155	Fine to coarse, slightly clayey yellow sand with scattered small pebbles.	
155 - 163	Same.	
163 - 174	Same.	
174 - 225	Gray-buff fine to coarse sand with small pebbles.	
225 - 256	Yellow fine to coarse sand with small pebbles.	
256 - 286	Gray buff sand with small pebbles.	
286 - 306	Chiefly gray fine to coarse sand and small pebbles.	
306 - 316	Same, with buff-colored sand and gravel (sloughed from above).	
316 - 327	Same, mixed with gray clay.	
327 - 337	Gray micaceous clayey silt.	
337 - 347	Gray micaceous clayey silt and sand.	
347 - 368	Gray and buff fine to coarse sand with small pebbles.	
368 - 378	Chiefly gray, cherty gravel (up to 5/8" maximum diameter), but some buff-colored sand.	
378 - 409	Gray and buff fine to coarse grained sand with a few small gray pebbles.	

(contd.)

409 - 429	Gray clay.	Kirkwood
429 - 439	Gray sandy clay with a few small fossil fragments.	
439 - 450	Brownish-gray silty clay.	
450 - 460	Same, with small fossil fragments (crab claw?).	
460 - 470	Brownish-gray clayey silt and sand.	
470 - 480	Same with fossil fragments.	
480 - 491	Gray clay and sand with fossil fragments.	
491 - 501	Same, with gray glauconitic sand.	Shark River Manasquan
501 - 542	Fine to coarse, greenish-yellow glauconitic sand.	
542 - 552	Same with fossil fragments.	
552 - 573	Same with fossil fragments.	
573 - 583	Same, but few fossil fragments.	
583 - 593	Same with Balanus (?).	
593 - 604	Same with many fossil fragments.	
604 - 614	Same material mixed with olive drab clay.	
614 - 624	About the same with a little ash-colored clay.	
624 - 634	Chiefly a greenish-gray glauconitic sand.	Vincentown
634 - 655	Greenish-gray glauconitic clay and sand with a few fossil fragments.	
655 - 665	Same. Forams (?).	
665 - 675	Greenish-gray glauconitic clay and sand.	
675 - 696	Same. A few fossil fragments noted.	
696 - 716	Same, but a little darker and more glauconitic.	
716 - 737	Same with fossil fragments.	
737 - 747	Same with small fossil fragments and forams (?).	
747 - 757	Chiefly a greenish-gray glauconitic clay with forams (?).	
757 - 768	Chiefly a light greenish-gray glauconitic clay with forams (?).	

		(contd.)
768 - 829	Light sea-green glauconitic clay with forams.	Vincentown
829 - 850	Same mixed with darker green glauconitic sand.	
850 - 891	Chiefly a light sea-green clay.	
891 - 901	Same, mixed with dark gray fossiliferous clay.	
901 - 921	Same, but mostly a light sea-green clay.	
921 - 931	Same material, mixed with fine to coarse glauconitic sand.	Tertiary
931 - 962	Chiefly a light sea-green clay.	
962 - 983	Same, some forams noted.	
983 - 993	Same, some fine to coarse sand.	
993 - 1024	Same as 931-942 although some of material is coated black with oily (?) smudge.[1]	
1024 - 1055	Same mixed with gray-green clay.	
1055 - 1065	Dark gray-green clay.	
1065 - 1085	Quite glauconitic, dark green-gray clay.	Upper Cret.
1085 - 1096	Same with lumps of light sea-green clay.	
1096 - 1106	Chiefly light sea-green clay with formas.	
1106 - 1126	Gray clay and glauconite mixed with light sea-green clay. A few fossils, including 1 worm-tube, noted.	
1126 - 1137	Same with some quartz sand and shell fragments including Ostrea.	
1137 - 1147	Same as last, although no fossils identified.	
1147 - 1228	Dark grey silty and micaceous clay with a few fossil fragments.	
1228 - 1238	Fine to coarse, speckled (salt and pepper) gray, glauconitic sand.	Mt. Laurel
1238 - 1249	Same. A few fossil fragments.	
1249 - 1279	Same with an equal or greater amount of gray glauconitic clay.	
1279 - 1290	Chiefly a fine to medium grained greenish-gray glauconitic sand.	

1 Probably from stove used in drying samples.

		(contd.)
1290 - 1300	Same, mixed with gray clay.	Mt. Laurel
1300 - 1310	Chiefly gray clay.	↓
1310 - 1331	Gray clay and glauconitic sand.	
1331 - 1341	Green, fine grained, glauconitic sand and clay.	Marshallto
1341 - 1352	Same, but more clay and less glauconite.	↓
1352 - 1362	Gray clay and sand. Not much glauconite, but a few fossils, including a small fish vertebra.	
1362 - 1372	Greenish-gray clayey and glauconitic sand.	↓ Englishtow
1372 - 1393	Same. Some sand, fairly coarse.	Woodbury, Merchantvil
1393 - 1413	Gray micaceous clay and 1/3 fine to medium grained sand.	& Magothy
1413 - 1444	2/3 gray micaceous clay and 1/3 fine to medium-grained sand.	
1444 - 1516	Half gray micaceous clay and half fine to coarse glauconitic sand.	
1516 - 1557	Chiefly gray to dark gray clay.	
1557 - 1567	Half gray clay and half fine to medium-grained glauconitic sand.	
1567 - 1577	Half gray clay and half fine to coarse glauconitic sand.	
1577 - 1588	2/3 gray glauconitic clay and 1/3 fine to medium-grained glauconitic sand.	
1588 - 1598	No sample.	↓
1598 - 1628	Pink and gray, fine to coarse, well rounded, glauconitic sand. Some grains have reddish ferric oxide coating and some appear to be agglomerates of smaller grains. Some gray and red clay.	Raritan [1]
1628 - 1639	Pink and light gray fine to coarse sand. Glauconite in fine grained fraction.	
1639 - 1659	Same. Glauconite constitutes +15% of sand.	
1659 - 1669	Same. Some grains quite coarse (3/16").	
1669 - 1679	Same with some gray clay.	
1679 - 1689	Same with 50% gray clay.	

(contd.)

1689 - 1710	Chiefly a light gray micaceous and silty clay.	Raritan [1]
1710 - 1717	Cored.	
1717 - 1741	Same as 1689 - 1710. A few fossil fragments.	

1 Totally unlike Magothy in type locality and in Raritan Bay district.

19T

Well #19
Owner : Transcontinental Gas Pipeline Corporation
Driller: Survey Drilling Company

Elevation at surface: 39'

Depth (feet)	Description	Correlation
0 - 20	Buff, fine to medium grained sand.	
20 - 50	Similar to 0-20', but sand coarser grained.	
50 - 71	Grayish-buff, fine to coarse grained sand.	Cohansey
71 - 81	Orange to buff, fine grained sand.	
81 - 112	Orange to buff, fine to coarser grained sand.	
112 - 142	Orange to buff, and gray, fine to coarse grained sand.	
142 - 163	Gray, fine to coarse grained sand.	Kirkwood
163 - 183	Similar to 142-163', but has greater proportion of fine grained material.	
183 - 194	Gray, fine grained sand.	
194 - 204	Greenish-gray, fine grained glauconitic, slightly micaceous sand.	
204 - 215	Olive-drab, fine grained glauconitic sand and dark-gray silt.	
215 - 235	Olive-drab, fine grained glauconitic sand.	
235 - 245	Gray-green, fine to medium grained glauconitic sand.	
245 - 256	Similar to last, but slightly coarser.	
256 - 266	Olive-drab, fine to medium grained glauconitic sand.	
297 - 317	Gray-fine to medium grained, slightly micaceous, glauconitic sand.	
317 - 327	Olive-drab, fine to medium grained, slightly micaceous, glauconitic sand.	
327 - 348	Gray, fine to medium grained, slightly glauconitic sand. A few coarse grains noted.	

Well #19
Transco.

398 - 409	Similar to last, but more glauconitic.	385 (E log) Kirkwood-Manasquan contact
409 - 420	Gray, fine grained, slightly glauconitic sand. A few coarse grains noted.	Shark River & Manasquan
420 - 440	Similar to last, but slightly coarser.	
450 - 491	Gray, fine grained glauconitic sand and silt.	
491 - 512	Light gray, clacareous, fine-grain glauconitic sand and silt (Some of this sample may be drilling mud.)	
512 - 655	Light gray to cream-colored, fine to medium grained calcareous silty sand. A little glauconite and mica noted. Cream-colored stuffing may be drilling mud.	
655 - 696	Gray, fine grained slightly glauconitic, calcsreous sand.	
696 - 717	Similar to 655-696, but slightly coarser.	
717 - 737	Similar to 655-696.	Vincentown & Hornerstown
737 - 747	Similar to 717-737 except has coarse pebbles, may have fallen in from top.	
747 - 757	Gray, fine to coarse grained slightly calcareous and glauconitic, silty sand.	
757 - 767	Gray, fine grained, slightly glauconitic, silty sand. Molluscan fragments noted.	
767 - 788	Gray, medium grained glauconitic sand with no molluscan fragments.	
788 - 798	Dark-gray, medium grained, highly glauconitic sand. Molluscan fragments noted.	Navesink, Merchantville & Marshalltown
808 - 819	Gray, fine grained, silty, glauconitic sand.	

819 - 860	Light gray, fine grained, silty, glauconitic sand. A few molluscan fragments noted.
860 - 870	Gray, fine to medium grained, slightly micaceous and glauconitic, silty sand. Heavy molluscan fragments noted.

(Logged by Henry Herpers - 5/15/52)

870 - 901	Dark, greenish-gray glauconitic, calcareous, micaceous, gravelly, fine-grained sand and silt containing shell fragment. Some of the coarser quartz pebbles are sub-angular.
901 - 911	Similar to 870-901 except gravel pebbles occur up to $\frac{3}{8}$" in diameter. The gravel is composed of quartz and claystone.
911 - 921	Similar to 901-911 except is coarser, being a coarse to fine-grained sand.
921 - 942	Similar to 911-921 except is darker in color.
942 - 973	Similar to 921-942 except is finer grained.
973 - 1003	Similar to 942-973 except has more shell fragments

Magothy and Marshalltown

983 (E log)

1003 - 1024	Similar to 973-1003 except is more clayey.
1024 - 1085	Similar to 1003-1024 except is more clayey with lumps of a lighter colored clay.

Englishtown

1085 - 1106	Lighter in color than 1024-1058 with lumps of a creamy-white, calcareous clay. Sub-angular quartz pebbles present. It is slightly glauconitic.
1126 - 1137	Near medium, dark-gray, micaceous, lightly glauconitic, fossiliferous, sandy silt. Has a few lighter lumps of clay. A fossil snail was tentatively identified as Turricula leda.

Well #19
Transco.

1137 - 1157	Similar to 1126-1137 except has more shell fragments.	
1157 - 1167	Similar to 1137-1157 except has fewer shell fragments.	Woodbury & Merchantville & Magothy
1167 - 1178	Similar to 1157-1167 except has more light lumps of clay. A gravel pebble 3/8" in diameter was present.	
1178 - 1188	Similar to 1167-1178 except gravel pebbles occur up to $\frac{1}{2}$" in diameter.	
1188 - 1208	Similar to 1178-1188 except grayer in color.	
1208 - 1218	Near medium, dark gray, angular to well-rounded, poorly-sorted, fossiliferous quartz sand. Small gravel pebbles are present.	
1218 - 1239	Similar to 1208-1218 except is finer grained, being a fine, grained sand and silt with coarse sand grains.	
1239 - 1352	Dark, greenish-gray, quite glauconitic, fossiliferous, calcareous, fine-grained sand and silt with quartz gravel particles up to 5/8" in diameter.	1287 (E
1352 - 1362	Same color as 1239-1352, but is a glauconitic quartz sand with fossil fragments.	
1362 - 1393	Similar to 1352-1362 except finer.	Raritan
1393 - 1424	Near medium, dark-gray, sub-angular glauconitic, fossiliferous quartz, medium grained sand with fine-grained gravel pebbles.	
1424 - 1485	Similar to 1393-1424 except finer grained.	
1485 - 1598	Similar to 1424-1485 except finer grained.	
1598 - 1650	Similar to 1485-1598 except coarser grained.	
1650 - 1660	Similar to 1598-1650 except coarser grained.	

1660 - 1670	Similar to 1650-1660 except darker in color and finer grained.
1670 - 1681	Similar to 1660-1670 except coarser grained.
1681 - 1701	Similar to 1670-1681 except coarser grained.
1701 - 1711	Browner in color than 1681-1701 and is now a medium to fine-grained sand.
1721 - 1742	Brownish-gray, fossiliferous, glauconitic, quartz sand and silt. Fragments of clay are present.
1742 - 1805	Medium-gray, glauconitic quartz sand and silt with fragments of clay. Shell fragments are present.

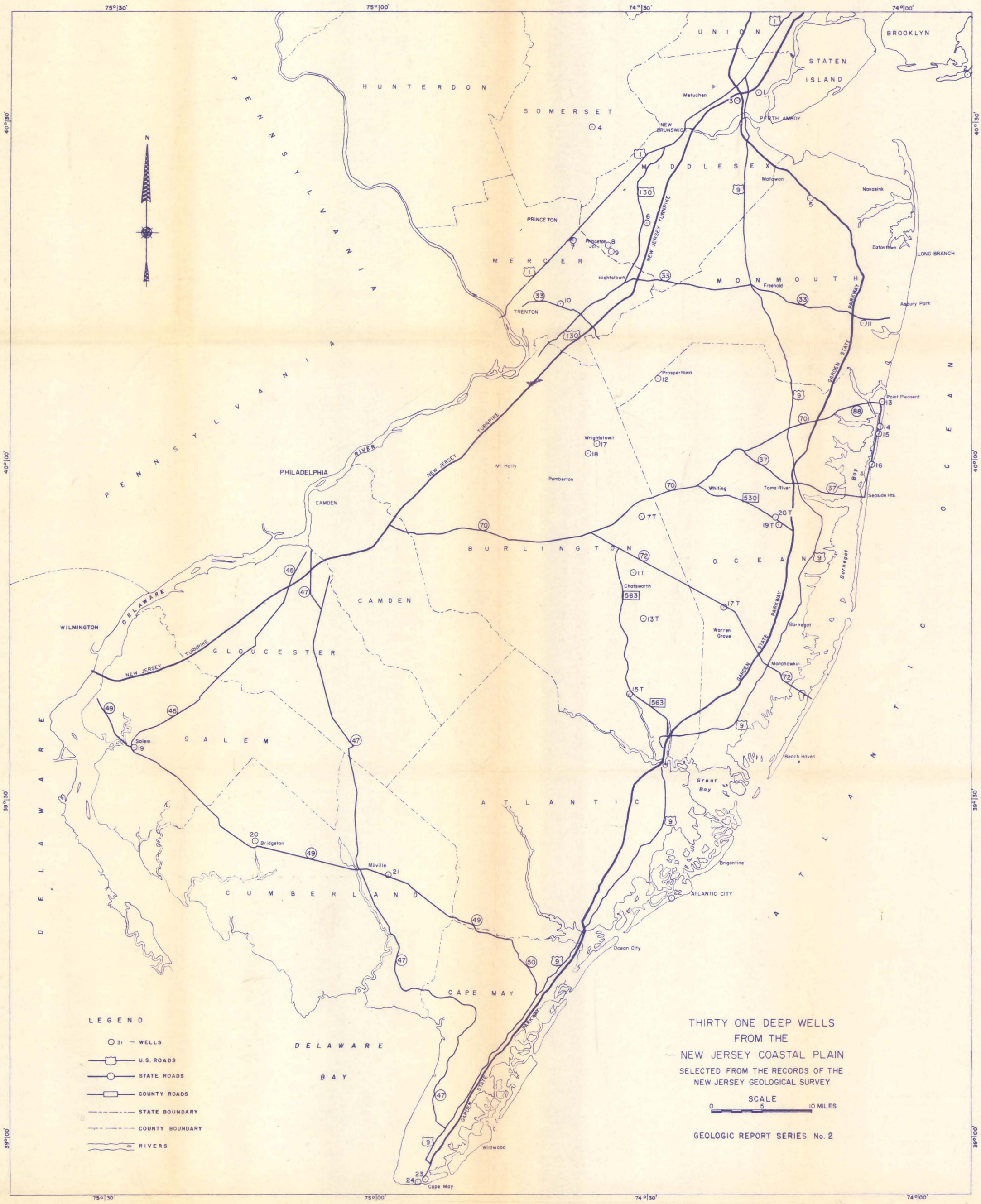
(Log prepared by William T. Black, Jr. on 11/20/53)

20 T Elevation at surface: 41'

Well #20
Transcontinental Gas
Pipeline Corporation
Driller: Survey Drilling Co
Completed

Depth (feet)	Description	Correlation
0 - 50	Fine to coarse buff colored sand.	Cohansey
50 - 61	Same, but coarser.	
61 - 71	Same, with a little yellow clay.	
71 - 81	Like 0 - 50 ft.	
81 - 112	Same, but average grain size quite coarse.	
112 - 142	Like 0 - 50 ft.	
	Note: All of the above samples could have been taken from the surface and I believe they were.	
142 - 153	Fine to very coarse gray sand.	
153 - 163	Same. Grains are conspicuously well rounded.	Kirkwood
163 - 173	Same, but clayey.	
173 - 183	Same. Clay is micaceous and lignitic.	
183 - 194	Chiefly fine to medium grained, gray clayey sand.	
194 - 204	Greenish-gray, glauconitic clay and sand with small fossil fragments.	Sh.R.-Man.
204 - 235	Yellow-green, clayey and glauconitic sand.	
235 - 256	Greenish-gray, clayey and glauconitic sand.	Vincentown
256 - 368	Olive drab clayey and glauconitic sand.	
368 - 430	Slightly clayey and glauconitic; fine to coarse light greenish-gray sand.	
430 - 440	Same, but more clayey and fossiliferous.	
450 - 461	Greenish-gray glauconitic, fossiliferous and slightly sandy clay.	
461 - 491	Very similar, but a little sandier.	
491 - 512	Light sea-green clay with a little glauconite and forams.	
512 - 543	Same type of clay, but no fossils noted.	?
543 - 584	Same. Fossil fragments.	

543 - 584	Same. Fossil fragments.	
584 - 655	Same. Forams.	
655 - 666	Similar, but a little darker and shell fragments	
666 - 696	Same as last, but fewer shell fragments	
696 - 727	Same, mixed with fine grained, glauconitic sand	
727 - 737	Greenish-gray, fine grained, clayey, glauconitic and fossiliferous sand	?
737 - 747	Similar, but some coarser sand	
747 - 757	Similar, sand is fine to coarse grained	
757 - 767	Similar, but more clayey	
767 - 778	Same as 727-737	
778 - 788	Chiefly greenish-gray, fine to coarse grained, glauconitic sand	
788 - 808	Dark greenish-gray, fine to coarse grained, glauconitic sand	Navesink ?
808 - 839	Gray, sandy and glauconitic clay with a few fossil fragments	
839 - 860	Gray, glauconitic and sandy clay	
860 - 870	Gray, clayey, fine to coarse grained, glauconitic and fossiliferous sand	Mt.Laurel-Wenonah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CUMBERLAND
CAPE MAY
ATLANTIC OCEAN
DELAWARE BAY
UNION
STATEN ISLAND
BROOKLYN
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Metuchen
Matawan
Navesink
Eatontown
LONG BRANCH
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Freehold
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PRINCETON
Princeton Jct.
TRENTON
Prospertown
Wrightstown
Mt Holly
Pemberton
Whiting
Toms River
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Bay
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Chatsworth
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