DEPARTMENT OF ENVIRONMENTAL PROTECTION
DIVISION OF SCIENCE, RESEARCH AND TECHNOLOGY
NEW JERSEY GEOLOGICAL SURVEY

Prepared in cooperation with the
U. S. GEOLOGICAL SURVEY
NATIONAL GEOLOGIC MAPPING PROGRAM

INTRODUCTION

Surficial materials in the Perth Amboy and Arthur Kill quadrangles consist of glacial, stream, wetland, and weathered bedrock sediment. The glacial sediment includes sand, gravel, silt, and clay laid down by meltwater in glacial lakes and river plains, and till laid down by glacial ice as a sheet on the bedrock surface and in the terminal moraine. The sand, gravel, silt, and clay, known collectively as stratified drift, are as much as 70 feet thick. Till is as much as 130 feet thick. The stream sediment includes sand, gravel, and silt deposited in floodplains, stream terraces, and former river plains. It is as much as 40 feet thick. The wetland sediment includes peat and organic silt and clay deposited in freshwater swamps and saltwater marshes and estuaries. It is as much as 100 feet thick. The weathered bedrock consists of silty clay and shale fragments formed by chemical and mechanical decomposition of shale bedrock of Triassic and Jurassic age. It is generally less than 10 feet thick.

The accompanying map and sections show the surface extent and subsurface relations of these deposits. Figure 1 shows the extent of glacial lakes and river plains, the terminal moraine, and recessional ice margins. Table 1 lists water-well and test-boring logs used to plot bedrock-surface topography and to infer the subsurface distribution of deposits. Table 2 lists the composition of pebbles in the glacial deposits. The correlation chart shows the temporal relationships and age of the deposits.

DESCRIPTION OF MAP UNITS

Postglacial Deposits--These include artificial fill, stream, wetland, and beach sediment deposited since retreat of the late Wisconsinan glacier. Alluvial and swamp deposits began to accumulate shortly after deglaciation. Estuarine and salt-marsh deposits began to accumulate as rising sea level entered the Raritan Valley. This occurred as early as 11,500 radiocarbon years before present (yrs B. P.) as indicated by a radiocarbon date of 11,420±560 yrs B. P. (GX-21687) on organic clay at the base of the estuarine deposit at a depth of 98-100 feet in a boring adjacent to boring 139 (table 1) (Lippincott, Jacobs, and Gouda, Inc., 1995, boring B2).

af **ARTIFICIAL FILL**--Excavated sand, silt, clay, gravel, rock, and till, and man-made materials (bricks, cinders, ash, slag, glass, construction materials and minor amounts of trash). Color is variable, but generally gray to black. In railroad and road embankments, and made land. As much as 50 feet thick but generally less than 20 feet thick. Mapped only where it forms distinct landforms, or where it covers salt-marsh deposits and large floodplains. The extent of fill is based on aerial photographs taken in 1979 and 1986. The extent of fill over salt-marsh deposits and floodplains is based, in part, on the position of shorelines, salt marshes, and alluvial deposits shown on maps in Darton and others (1908) and Ries and Kummel (1904). Fill also occurs in all urban areas, and in most former clay and sand pits, as a thin layer (generally less than 10 feet thick) of fill, or mixed fill and natural material, overlying the mapped surficial material.

aft **TRASH FILL**--Trash and construction materials mixed and covered with excavated clay, silt, sand, gravel, rock, and till. As much as 50 feet thick.

Qb **BEACH DEPOSITS**--Sand and pebble gravel. As much as 15 feet thick (estimated).

Qal **ALLUVIUM**--Sand, silt, clay, pebble gravel; minor cobble gravel. Contains variable amounts of organic matter. Fine sediment is reddish-brown to dark brown. Gravel and sand composition similar to that of surficial deposits and outcropping bedrock in the drainage basin. Fine sediment is deposited as overbank material on the floodplain and may be as much as 15 feet thick. It generally overlies sand and gravel deposited in the stream channel. The gravel is generally less than 5 feet thick.

Qs **SWAMP AND MARSH DEPOSITS**--Gray to brown organic silt and clay, overlain by dark-brown to black peat. As much as 15 feet thick (estimated).

Qm **ESTUARINE AND SALT-MARSH DEPOSITS**--Peat and organic clay and silt, brown to dark gray; minor sand and shells. Locally, at base, may include alluvial sand and gravel deposited before marine inundation. As much as 100 feet thick.

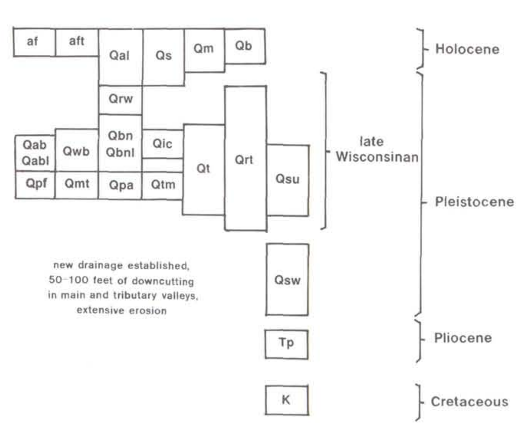
Glacial Deposits--These include till and stratified drift deposited by ice and meltwater during the late Wisconsinan glaciation. The till is a reddish-brown, nonstratified, poorly-sorted sediment consisting of pebbles, cobbles, and a few boulders scattered in a compact matrix of mixed silt, sand, and clay. It is deposited by glacial ice. Stratified drift includes reddish-brown to gray, moderately- to well-sorted, cross- to plane-bedded sand and gravel deposited in deltas and fans in glacial lakes and in glacial river plains; and reddish-brown to gray, well-sorted, laminated to varved silt, clay, and fine sand deposited on the bottoms of glacial lakes. The sand fraction in both till and stratified drift is predominantly quartz and red and gray shale fragments. The composition of pebbles in these deposits is provided in table 2.

Late Wisconsinan ice advanced southerly to southwesterly across the map area to the southern edge of the terminal moraine. As the glacier advanced, it overrode sand and gravel laid down in lakes and river plains in valleys in front of the ice margin. Records of wells and borings indicate that these deposits are preserved beneath till in a few places, chiefly where valleys drained toward the advancing glacier. These include the preglacial valley in the northwestern part of the map area (units Qpf and Qsu in wells 4-7, 80, 82, 83, 85), the preglacial valley extending from Metuchen to the Rahway area (units Qpf and Qsu, section C-C'; wells 42, 47, 93, 203, 208-210, 221, 331), and in the lowland between the Arthur Kill and Woodbridge Creek (wells 179-182, 237-239, 241, 242, 244-246, 249, 256, 305, 309, 311). Ice also overrode fluvial sand and gravel at Perth Amboy (unit Qpa, section B-B'; wells 134-137, 151, 158, 159, 343).

Ice also overrode, eroded, and deformed unconsolidated Cretaceous deposits and Pensauken Formation sediment at and south of Carteret, Woodbridge, and Metuchen (K and Tp on sections A-A', B-B'). Folded Cretaceous sand and clay, and, in places, Pensauken sand and gravel, were formerly well exposed in the clay pits at Woodbridge, Perth Amboy, and Fords (Ries and others, 1904) and were also observed in several excavations between 1987 and 1995. The two hills mapped as ice-contact deposits (Qic) in Woodbridge and Carteret may contain, or consist largely of, deformed Cretaceous sediment.

North of the Cretaceous outcrop belt the ice advanced across red shale bedrock. Glacial erosion of bedrock in the preglacial valleys was minimal because the valleys were sediment-filled. On low uplands between the valleys, though, ice eroded rock and deposited till to form low, smoothed ridges with a rough northeast-southwest trend parallel to both ice flow and rock strike.

The terminal moraine (Qtm) was deposited while the ice margin stood at and melted back from its maximum position. The moraine is a broad belt of knolls, ridges, and basins, composed mostly of till, extending in an arc from Perth Amboy to Scotch Plains. A prominent frontal ridge as much as 100 feet high marks the south edge of the moraine



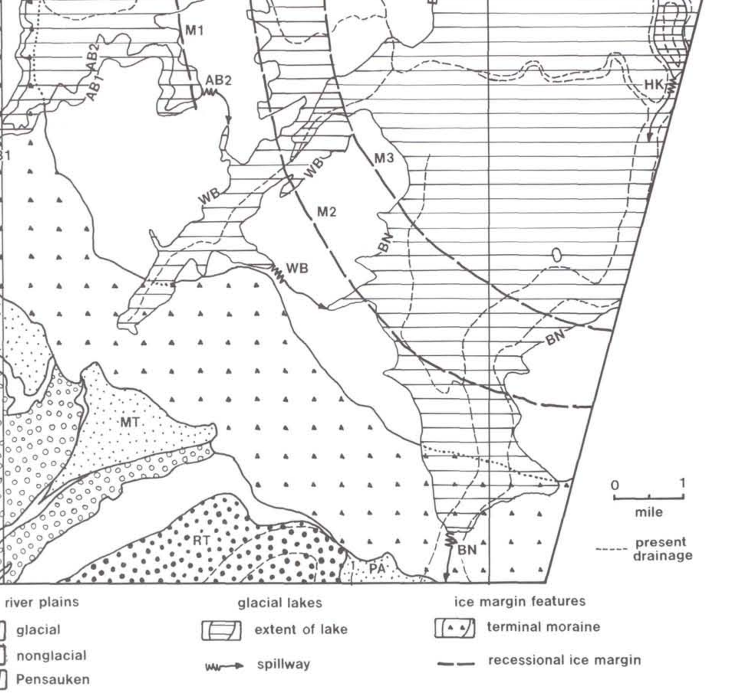
CORRELATION OF MAP UNITS

Base map from U. S. Geological Survey, 1956 (Perth Amboy) and 1966 (Arthur Kill)
Photorevised 1981

SCALE 1:24000

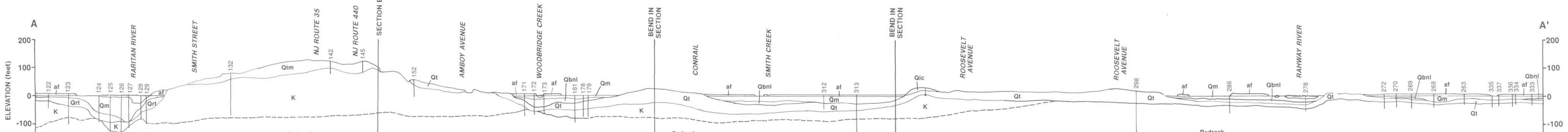
CONTOUR INTERVAL 20 FEET

Geology mapped 1987, 1995
The interpretations presented here are provisional pending peer review.
There may be revisions prior to publication.

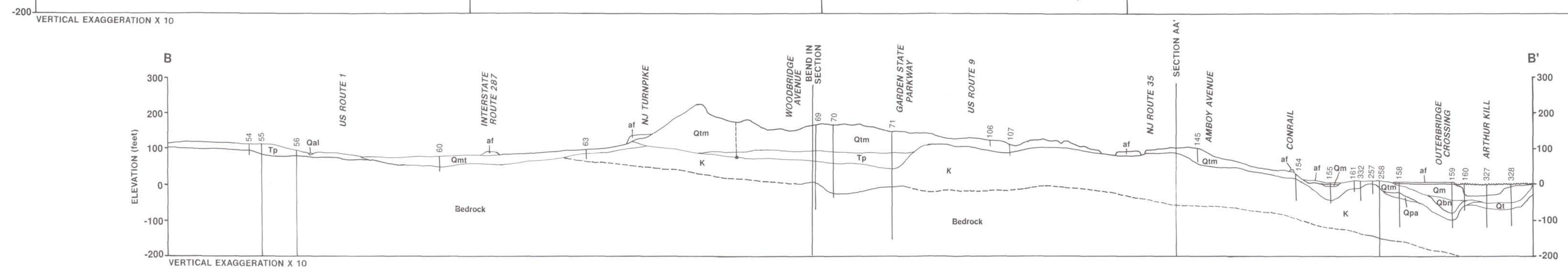


SURFICIAL GEOLOGY OF THE PERTH AMBOY AND ARTHUR KILL QUADRANGLES, MIDDLESEX AND UNION COUNTIES, NEW JERSEY

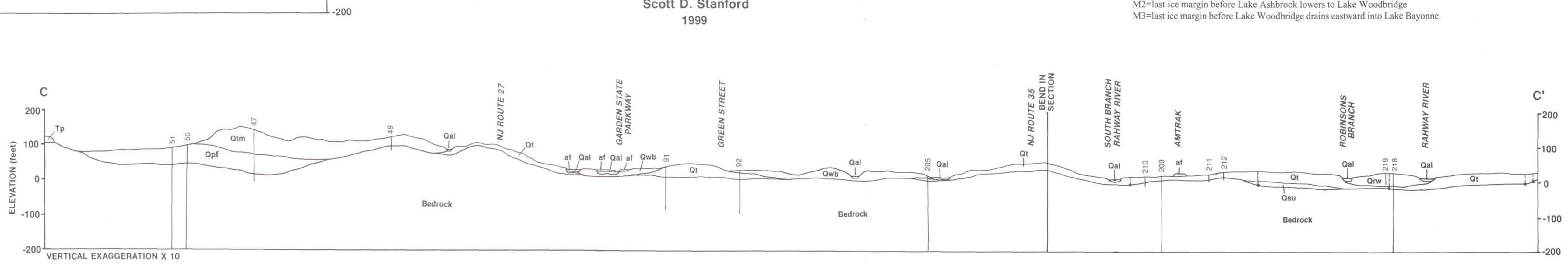
by
Scott D. Stanford
1999



VERTICAL EXAGGERATION X 10



VERTICAL EXAGGERATION X 10



VERTICAL EXAGGERATION X 10

Table 1.--Selected Well Logs

Well no.	Identifier[1]	Depth[3]	Description (Driller's Log[2])
1	25-21337	0-68	clay and gravel overburden (Qtm)
		68-125	red slate
2	25-1203	0-14	red sand clay (Qtm)
		14-30	boulders and heavy gravel (Qtm)
		30-45	hard red clay (Qtm)
		45-60	red hardpan (Qtm)
		60-65	red muddy sand (Qtm)
		65-67	red hard clay (Qtm or Qsw)
		67-132	hard red sand rock
3	25-627	0-5	red sandy clay (Qt)
		5-15	hard pan with streak of red sand (Qt)
		15-33	hard red clay, heavy gravel (Qt)
		33-150	red hard sand rock and streaks of red shale
4	25-1298	0-25	red sand and gravel mixed with red clay (Qtm)
		25-75	red hard pan with streaks of yellow dry sand (Qtm)
		75-100	red muddy sand (Qpf?)
		100-110	hard red clay (Qsw)
		110-170	red sand rock
5	25-28739	0-12	brown coarse-to-fine sand; trace silt, clay, cobbles,and boulders (Qtm)
		12-40	red-brown coarse-to-fine sand, trace silt (Qpf?)
		40-60	red-brown fine sand, trace silt (Qpf?)
		60-76	red-brown coarse-to-fine sand, little coarse-to-fine gravel, trace silt (Qpf?)
		76-170	red shale
6	25-8379	0-70	sand (Qtm over Qpf)
		70-127	shale
7	25-408	0-50	dirt, red sand, some clay (Qtm over Qpf)
		50-402	red shale
8	25-5432	0-41	brown clay and stone (Qtm)
		41-608	red shale, some brownstone and clay seams
9	25-5637	0-26	fine red sand, few streaks of gravel (Qtm)
		26-629	red shale, some brownstone
10	25-27174	0-30	sand and gravel, stones (Qt)
		30-110	red shale
11	25-24853	0-41	overburden (Qt)
		41-300	red rock
12	25-1073	0-25	sand and clay (Qt)
		25-130	shale
13	25-1256	0-23	sand and clay (Qt)
		23-90	shale
14	25-13392	0-30	sand and gravel (Qt)
		30-120	red shale
15	25-12799	0-28	sand and gravel (Qt)
		28-130	red shale
16	25-15987	0-20	sand and gravel (Qt)
		20-145	shale
17	25-13060	0-30	sand and gravel (Qt)
		30-150	red shale
18	25-28407	0-30	overburden (Qt)
		30-300	shale
19	26-577	0-42	sand and gravel (Qt)
		42-90	rock
20	26-356	0-32	sand and clay (Qt)
		32-85	shale
21	26-329	0-23	sand, clay, gravel (Qt)
		23-80	rock
22	25-12610	0-25	sand and gravel (Qt)
		25-110	red shale
23	26-330	0-10	sand (Qt)
		10-16	clay (Qt)
		16-82	shale
24	26-673	0-42	sand and clay (Qt)
		42-90	rock
25	26-423	0-26	sand and clay (Qt)
		26-80	rock
26	26-477	0-28	sand and clay (Qt)
		28-89	rock
27	26-474	0-25	clay and sand (Qt)
		25-78	rock
28	26-478	0-17	sand and clay (Qt)
		17-85	rock
29	26-554	0-24	sand and clay (Qt)
		24-82	rock
30	26-291	0-18	clay and sand (Qt)
		18-86	shale
31	26-469	0-10	red hard pan (Qt)
		10-20	red muddy sand (Qt)
		20-27	red hard clay (Qt or Qsw)
		27-100	red sand rock
32	26-275	0-5	red hard pan (Qt)
		5-145	red shale and red sand rock
33	26-341	0-10	sand clay, hard, mixed with some fine gravel (Qt)
		10-30	tough hard red clay (Qt)
		30-43	red hard pan (Qt)
		43-150	red hard shale
34	26-460	0-22	sand and clay (Qt)
		22-99	rock
35	26-8535	0-18	red-brown clayey silt till (Qt)
		18-19	soft shale (Qsw)
		19-28	red shale
36	26-21970	0-10	topsoil and clay (Qt)
		10-200	shale
37	25-1104	0-26	sand and clay (Qt)
		26-80	shale
38	26-1155	0-30	clay (Qt)
		30-320	red shale
39	26-10489	0-58	sand (Qt, 53 feet of casing)
		58-508	shale
40	25-6566-8	0-5	red-brown silty clay, trace medium-to-fine gravel (Qt)
		5-12	red-brown silty clay (Qt or Qsw)
		12-13	soft red shale
41	25-62	0-49	red dirt (Qtm)
		49-102	red shale
42	25-21996	0-20	sand and gravel (thin Qtm over Qpf)
		20-200	shale
43	25-14787A	0-50	sand and gravel (Qtm over Qpf?)
		50-180	red shale
44	25-21969	0-70	sand and gravel (Qtm)
		70-250	red shale
45	25-13343	0-40	sand and gravel (Qtm)
		40-60	red clay (Qsw or Qtm)
		60-500	red shale
46	25-13204	0-42	sand and gravel (Qtm)
		42-52	red clay (Qtm or Qsw)
		52-110	red shale
47	25-233	0-105	clay and sand (Qtm over Qpf)
		105-126	sand and gravel (Qpf)
		126-143	shale
48	25-27254	0-20	red silt and clay with sandstone, shale, and siltstone fragments (Qtm)
		20-29	red shale
49	25-13009	0-55	sand and clay (Qtm)
		55-150	red shale
50	25-6989	0-50	clay (Qpf)
		50-403	red shale
51	25-10771	0-85	soft red shale and sandstone (Qpf over Qsw)
		85-296	red shale
52	25-5278	0-25	earth, sand, clay (Qpf)
		25-35	soft red shale rock (Qsw)
		35-231	red shale rock
53	25-6877	0-28	red clay (Tp over Qsw)
		28-170	red shale
54	N 25-44-363	0-15	brown, gray, yellow clayey sand and gravel (Tp)
		15-27	red clay (Qsw)
55	25-42	0-36	clay, stones, and hardpan (Tp)
		36-95	red shale
		95-105	gray shale
		105-417	red rock
56	25-58	0-5	stones and sandy clay (Tp)
		5-10	hardpan, stones (Tp)
		10-12	yellow clay (Tp or Qsw)
		12-18	pink clay (Qsw)
		18-26	red shale
		26-32	purple clay (Qsw)
		32-82	brown and red rock
		82-92	red and gray rock
		92-402	red rock
57	26-1026	0-10	earth (Qt)
		10-394	red shale rock
58	26-6661	0-6	red-brown clayey silt, trace gravel (Qt)
		6-14	red-brown coarse-to-fine sand, some fine gravel, little clayey silt (Qt)
59	22-2018	0-7	fill
		7-20	red silty clay, little gravel, fragmented shale and gravel (Qt)
60	25-9026	0-28	coarse brown sand and gravel (Qm)
		28-60	red and white clay, streaks of red shale (Qsw)
61	26-20207		abbreviated log
		0-31	red sandy clay, trace pebbles (Qt)
		31-91	red clayey sand and gravel (Qt)
62	26-16079		abbreviated log
		0-34	reddish-brown sandy silt, little gravel and clay (Qt)
63	25-22689	0-8	red to light-brown clay, trace sand (Qmt or af)
		8-11	brown sand and gravel, some clay, gravel is rounded (Qmt)
		11-21	white, orange, brown fine sand; a little light green clay (K)
64	26-20274	0-16	fill
		16-25	brown till and clay (Qtm over Qmt)
		25-30	red-brown clay (Qmt)
65	26-12460		abbreviated log
		0-6	brown and gray medium-to-fine sand, a little medium-to-fine gravel (Qmt)
		6-25	dark-gray silt and clay with lignite and pyrite (K)
		25-27	light-gray to buff medium-to-fine quartz sand (K)
66	26-12462		abbreviated log
		0-4	fill
		4-7	light-gray to light-brown medium-to-fine sand (Qmt)
		7-33	dark-gray clay and silt, lignitic, with sand seams (K)
		33-42	orange-brown to light-gray medium-to-fine quartz sand (K)
67	26-12	0-50	dirt and sand (Qtm over K)
		50-90	clay (K)
		at 90	red brick
68	26-6550		abbreviated log
		0-12	red-brown clayey silt, trace sand and gravel (Qtm)
69	N 26-31-794	0-75	glacial drift (Qtm)
		75-100	yellow-brown pebbly sand (Tp)
		100-160	clay, lignite (K)
		160-235	red shale (K)
70	26-484	0-105	red clay and red hard pan (Qtm)
		105-160	dirty, muddy, fine sand (K)
		160-165	yellow hard clay (K)
		165-195	hard black and brown clay (K)
		195-200	gray clay and boulders (shale bedrock?)
71	26-1040		log by F. J. Markewicz, NJGS, abbreviated here
		0-60	reddish-brown, pale-red, pale-brown silty clayey fine-to-coarse sand with scattered pebbles (Qtm)
		60-110	yellowish-brown slightly clayey fine-to-medium arkosic sand with some pebbles (Tp)
		110-153	dark-gray, light-gray, grayish-pink micaceous, lignitic clayey silt with some fine sand (K)
		153-157	yellowish-gray fine-to-very-coarse angular sand (K)
		157-170	red clay (weathered shale)
		170-302	dusky-red finely micaceous shale
72	N 26-31-793	0-11	red clayey sand till (Qtm)
		11-20	yellow sand and gravel (Tp)
		20-90	gray and white clay and sand (K)
73	26-5929		abbreviated log
		0-45	orange-brown and gray fine-to-coarse sand and tan to gray clay lenses (K)
74	26-22460		abbreviated log
		0-47	gray, brown, yellow medium-to-fine sand; some brown clay and silt (K)
		47-58	gray marl (K or weathered shale)
		58-60	dark gray shale rock
75	26-18605		abbreviated log
		0-12	olive-yellow, light-gray, yellowish-brown fine sand, silt, and some rounded medium-to-coarse quartz river gravel (Qtm)
		12-38	gray, brown very-fine-to-medium-grained sand with some interbeds of gray clay (K)
		38-42	reddish-brown gray clay with mottling specks (weathered shale)
76	26-22502		abbreviated log
		0-42	brown fine-to-coarse sand, trace silt, some fine-to-coarse gravel (Qtm)
		42-70	gray very-fine-to-fine lignitic sand (K)
		70-72	gray to green laminated clay (weathered shale)
77	26-22474		abbreviated log
		0-25	brown and gray fine-to-coarse sand, little fine-to-coarse gravel, trace silt (Qt)
		25-49	dark-gray very-fine-to-coarse sand, pyrite and lignite, little silt (K)
		49-62	olive, red, gray dense laminated clay (weathered shale)
		62-64	bedrock, dark-green weathered shale
78	26-3325	0-4	fill (af)
		4-10	gray silt, gray clay (Qm)
		10-19	reddish-brown sand, gravel, streaks of clay (Qt)
		19-40	red-brown silt (Qt)
		40-62	fine-to-coarse light gray sand and fine gravel (K)
		62-73	gray clay and shale
79	26-25873	0-6	fill (af)
		6-15	interbedded lenses of soft black clay and meadow mat (Qm)
		15-17	yellow clay (Qrt?)
		17-25	fine silty light-brown sand (Qrt or Qal)
		25-42	sandy light-gray clay (Qrt?)
		42-70	weathered fine-to-coarse gray and white quartz sand with trace of clay (K)
		70-80	decomposed gray shale with gray clay lenses
80	26-452	0-25	red hard pan (Qt)
		25-35	brown muddy sand (Qu or Qt)
		35-50	red hard packed fine dry sand (Qu or Qt)
		50-60	red quick sand (Qu or Qt)
		60-68	red hard clay (Qsw)
		68-100	red hard sand rock
81	26-4002	0-45	hardpan (Qt)
		45-115	red shale
82	26-4751	0-6	fill
		6-14	red dirt and clay (Qt)
		14-30	clay, gravel, and boulders (Qt)
		30-35	boulders and fine sand (Qt or Qsu)
		35-59	gravel and cobbles some fine sand (Qsu)
		at 59	red shale rock
			screened 48-59, yield 360 gpm
83	26-2981	0-78	sand (Qt over Qsu?)
		78-145	shale
84	26-482	0-8	red sandy clay and gravel (Qt)
		8-12	red hard pan (Qt)
		12-32	boulders and heavy gravel, dry (Qt)
		32-42	red hard clay (Qsw)
		42-150	hard red sand rock
85	26-4106	0-5	clay (Qt)
		5-45	sand, gravel (Qt or Qsu?)
		45-140	shale
86	26-314	0-2	topsoil (Qt?)
		2-85	red shale
87	25-7075	0-13	sand (Qt)
		13-150	red shale
88	26-349	0-9	clay (Qt)
		9-25	sand, gravel (Qt or Qsu)
		25-70	red shale
89	26-320	0-12	red sandy clay and gravel (Qt)
		12-22	red hard pan (Qt)
		22-42	hard red clay with streaks of white clay (Qt over Qsw)
		42-102	red sand rock
90	26-1806	0-32	earth, clay, stones (Qt)
		32-315	red shale
91	25-13262	0-30	sand, clay, gravel (Qt)
		30-120	red shale
92	26-1	0-5	sand (Qwb)
		5-20	hardpan (Qt)
		20-102	red clay (Qt)
		at 102	gray shale
		102-120	red shale
93	26-24439	0-18	red-brown clayey sand and gravel (Qt)
		18-35	orange-brown silty fine sand (Qpa?)
		35-40	red-brown clayey sand and gravel (Qt)
94	26-25069	0-5	red clayey silt and gravel, some pieces of bedrock (Qt)
		5-15	red clay (Qt)
		15-16	decomposed shale (Qsw)
95	26-22292		abbreviated log
		0-4	fill
		4-24	red silty clay, little sand, trace gravel (Qt)
		24-34	brown fine-to-coarse sand little silty clay, occasional gravel (Qpa or Qt)
96	N 26-31-818		section formerly exposed in pit
		0-10	red clayey silt, boulders of baked shale, quartzite, and granite-gneiss (Qtm)
		10-40	yellow medium sand with occasional small pebbles (Tp)
		40-60	pink clay (K)
		at 60	red shale
97	N 26-31-841		section formerly exposed in pit
		0-10	red clayey silt, boulders of gneiss and quartzite (Qtm)
		10-20	yellow sand (Tp)
		20-35	clay and sand (K)
98	26-563	0-10	sand and gravel mixed with red clay (Qt)
		10-14	blue, yellow, white, red clay (K clast in Qt?)
		14-35	hard pan (Qt)
		35-50	very muddy fine sand (Qsu or Qt)
		50-55	red hard clay (Qsw)
		55-100	hard red sand rock
99	26-5534	0-60	sand, gravel (Qt over Qsu or Tp)
		60-200	red shale
100	26-5193	0-3	red clay and gravel (Qt)
		3-15	gray dense clay (K clast in Qt?)
		15-21	gravel and brown clay (Qt)
		21-65	red glacial till--silty sand and boulders, occasional layers of reddish brown clay (Qt)
		65-212	Brunswick formation (shale)
101	26-10473	0-17	black to gray clay, trace silt (K)
102	26-21695	0-12	fill
		12-30	red-brown silty clay with some sand (K)
		30-35	white-gray varved clay (K)
103	26-21631	0-10	red-brown silty clay (K)
		10-25	brown silty clay (K)
		25-30	yellow-brown silt and sand
		30-40	gray silty sand (K)
		40-45	gray clay (K)
104	26-866	0-15	reddish-brown sandy clay (Qtm)
		15-30	brown sand and boulders (Qtm)
		30-40	yellow sandy clay (K)
		40-50	gray clay (K)
		50-65	brown clay (K)
		65-78	white sandy clay (K)
		78-82	fine white sand--muddy (K)
		82-95	black clay (K)
		95-100	gray muddy sand (K)
		100-108	coarse gray sand (K)
105	26-3586		abbreviated log
		0-15	red clay and sand (Qtm)
		15-21	sand and stones and rocks (Qtm)
		21-98	gray clay (K)
		98-118	white, red, yellow clay (K)
		118-144	coarse brown sand, some mixed clay and ironstone (K)
		144-147	gray and red clay (K or weathered shale)
106	26-5550		abbreviated log
		0-15	red-brown silty clay with imbedded angular gravel (Qtm)
107	26-23805		abbreviated log
		0-19	red-brown silty sandy clay with some pebbles (Qt)
		19-21	yellow-brown clayey sand, some silt (K)
108	NJGS files		Parkway bridge boring 103
		0-4	fill, brick
		4-13	silt, clay (K)
		13-43	gray and brown sand (K)
		43-61	gray clay (K)
		61-66	sand, peat (probably lignite)
109	NJGS files		Parkway bridge boring 92
		0-11	fill, ashes, brick (af)
		11-18	organic silt (Qm)
		18-25	gravel, sand, silt (Qm)
		25-55	white, gray interbedded clay and sand (K)
		55-72	white to brown medium-to-coarse sand (K)
		72-81	decomposed rock (weathered shale)
		81-85	rock (diabase)
110	NJGS files		Parkway bridge boring 86
		0-27	water
		27-40	gray, brown coarse sand and gravel (Qrt)
		40-52	coarse gray sand (K)
		52-59	decomposed rock (weathered diabase)
		59-66	sandstone (probably diabase)
		66-82	trap rock (diabase)
111	NJGS files		Parkway bridge boring 72
		0-6	water
		6-49	organic silt (Qm)
		49-59	coarse brown sand and gravel (Qrt)
		59-67	decomposed rock (weathered diabase)
		67-77	rock (diabase)
112	NJGS files		Parkway bridge boring 62
		0-7	water
		7-56	organic silt (Qm)
		56-69	rock (diabase)
113	NJGS files		Parkway bridge boring 52
		0-4	water
		4-40	organic silt and shells (Qm)
		40-51	fine gray sand, some silt (K)
		51-62	decomposed rock (weathered diabase)
		62-91	rock (diabase)
114	NJGS files		Parkway bridge boring 40
		0-10	water
		10-58	organic silt (Qm)
		58-64	coarse brown sand and gravel, trace clay (Qrt)
		64-66	rock (diabase)
115	NJGS files		Parkway bridge boring 18
		0-14	fill (af)
		14-22	silt, plant remains (Qm)
		22-26	sand, silt, plant remains (Qm)
		26-40	gravel, sand (Qm)
		40-55	decomposed rock (weathered diabase)
116	NJGS files		Parkway bridge boring 9
		0-14	silt and clay (af over Qm)
		14-30	sand, gravel (Qrt)
		30-54	clay and silt (K)
		54-68	clay, gravel (K)
		68-77	decomposed rock (weathered diabase)
		77-87	rock (diabase)
117	NJGS files		Route 9 bridge boring 2
		0-7	water
		7-32	river mud (Qm)
		32-37	reddish sand and gravel (Qrt)
		37-49	brown sand and gravel (Qrt)
		49-52	brown clay and serpentine (weathered diabase)
		52-57	serpentine (weathered diabase)
		57-62	trap rock (diabase)
118	NJGS files		Route 9 bridge boring 26
		0-9	water
		9-53	black river mud and shells (Qm)
		53-57	clayey brown sand and gravel (Qrt)
		57-71	clay (K over weathered diabase)
		71-77	disintegrated rock (weathered diabase)
		77-81	trap (diabase)
119	NJGS files		Route 9 bridge boring 14
		0-12	water
		12-58	river mud (Qm)
		58-68	dirty brown sand and gravel (Qrt)
		68-70	serpentine (weathered diabase)
		70-74	trap rock (diabase)
120	NJGS files		Route 9 bridge boring 16
		0-10	water
		10-40	river mud (Qm)
		40-63	fine-to-coarse light-gray sand (K)
		63-70	decomposed limestone (weathered diabase)
		70-73	trap rock (diabase)
121	NJGS files		Route 9 bridge boring 20
		0-17	water
		17-21	mud (Qm)
		21-27	reddish-brown clayey sand and gravel (Qrt)
		27-65	very-fine-to-fine light-gray sand and some clay (K)
		65-72	decomposed limestone (weathered diabase)
		72-75	trap rock (diabase)
122	N 26-41-511	0-2	silt (Qm)
		2-8	sand (Qrt)
		8-25	sand and gravel (Qrt)
		25-33	silty clay (K)
		33-42	sand (K)
		42-50	gray black clay (K)
123	N 26-41-512	0-11	sand and silt (af over Qm)
		11-25	sand (Qrt)
		25-39	sand and gravel (Qrt)
		39-51	gray clay (K)
		51-65	sand and clay (K)
		65-75	gray and brown clay (K)
		75-85	red brown clay (K)
		85-107	brown and white clay (K or weathered rock)
124	N 26-41-278	0-59	silt (Qm)
		59-65	sand (Qrt)
		65-75	sandy silt (Qrt)
		75-83	sand and gravel (Qrt)
		83-86	hard clay (weathered diabase)
		at 86	trap rock (diabase)
125	N 26-41-275	0-69	silt (Qm)
		69-92	sand, gravel at base (Qrt)
		92-126	clay and sand (K)
		at 126	trap rock (diabase)
126	N 26-41-276	0-8	water
		8-85	silt (Qm)
		85-88	gravel (Qrt)
		88-132	mixed clay (K)
		at 132	rock (diabase)
127	N 26-41-276	0-8	water
		8-94	silt (Qm)
		94-112	mixed clay (K)
		at 112	rock (diabase)
128	N 26-41-273	0-27	water
		27-45	silt and sand (Qm)
		45-55	sand and gravel (Qrt)
		55-61	silt (Qrt)
		61-64	clay (Qrt)
		64-76	silt and sand (Qrt)
		76-80	boulders (Qrt)
		at 80	rock (diabase)
129	N 26-41-273	0-3	water
		3-20	silt and gravel (Qm over Qrt)
		20-53	sand (Qrt)
		53-56	clay (K)
		56-96	mixed clay (K)
		at 96	rock (diabase)
130	26-9400	0-30	metal, glass, wood, paper, sand, etc. fill (aft)
		30-36	dark-gray silty clay with layers of light-gray medium-to-fine sand (K)
131	26-9068		abbreviated log
		0-40	cinder, brick, metal, soil fill (aft)
		40-45	red-brown clayey silty gravelly medium-to-fine sand (Qtm)
		45-57	brown, gray, white fine sand and clay (K)
132	26-28814	0-19	yellow sand and gravel with clay lenses (Qtm)
		19-97	soft gray clay (K)
		97-104	medium-to-coarse weathered white coarse sand (K)
		104-118	gray clay (K)
		118-140	medium-to-coarse weathered gray quartz sand with trace clay lense (K)
		140-145	gray clay (K or weathered shale)
133	26-10574		abbreviated log
		0-20	red-brown sand, little silt and clay, trace gravel (Qtm)
		20-32	dark-gray medium-to-fine sand, little clayey silt, trace fine gravel (K)
134	26-7096		abbreviated log
		0-30	red-brown silty clayey sand with some gravel (Qtm)
		30-47	brown-yellow sand and gravel (Qpa?)
		47-54	dark-gray plastic silty clay (K)
135	26-30698	0-2	fill material
		2-8	brown silt, sand, gravel (Qtm)
		8-15	brown sand, gravel (Qpa?)
		15-20	white sand (Qpa?)
		20-35	gray sand and gravel (Qpa?)
		35-40	brown medium-to-fine sand and gravel (Qpa?)
		40-45	gray silty clay (K)
		45-52	gray silty clay with mica (K)
136	26-7200		abbreviated log
		0-5	cinders on gray-green silty clay (af over Qm)
		5-15	red-brown clayey silty sand with gravel (Qtm)
		15-42	red-brown, yellow-orange sand and gravel (Qpa)
		42-45	light-gray silty very micaceous clay (K)
137	26-7267	0-13	fill of cement, cinder, sand, clay, gravel (af)
		13-21	gray clay with peat moss (Qm)
		21-39	brown coarse-to-fine sand and gravel (Qpa)
		39-111	gray silty clay with layers of gray fine sand and some wood (K with lignite)
		111-137	gray coarse-to-medium sand with wood (K with lignite)
		137-140	gray clay, layer of gray medium-to-fine sand (K)
138	26-12857		abbreviated log
		0-5	fill dirt
		5-42	gray and red silt, fine sand, and clay (Qtm)
		42-60	brown and gray clay and fine sand (K)
139	NJGS files		boring B4 from Lippincott, Jacobs, and Gouda (1995)
		0-12	black river mud (Qm)
		12-41	reddish-brown coarse-to-fine sand, trace silt, little gravel (Qm)
		41-105	dark-gray silty clay with organic matter, trace fine sand (Qm)
		105-116	gravel (Qpa)
		at 116	refusal on cobble or bedrock
140	NJGS files		boring B3 from Lippincott, Jacobs, and Gouda (1995)
		0-11	black river mud (Qm)
		11-22	black, green to reddish-brown coarse-to-fine sand, trace silt and fine gravel (Qm)
		22-41	interbedded black organic silty clay and reddish-brown coarse-to-fine sand (Qm)
		41-110	dark-gray silty clay, some peat and shell fragments (Qm)
		110-120	gravel with alternating layers of sand, silt, clay (Qpa)
		at 120	refusal on cobble or bedrock
141	26-28568		abbreviated log
		0-51	red-brown fine-to-medium sand, some silt and clay and fine-to-medium gravel (Qtm)
		51-52	gray clayey silt with mica (K)
142	26-16641		abbreviated log
		0-20	red-brown, brown silty, clayey, gravelly sand (Qtm)
		20-32	yellow-brown silty coarse-to-fine sand (K or Qtm)
		32-38	white-tan sandy silty clay (K)
143	26-11042		abbreviated log
		0-20	red-brown sandy silty clay, trace medium-to-fine gravel (Qtm)
144	26-18368	0-24	red medium sand (Qtm)
		24-46	red weathered shale (Qtm or K, Qsw unlikely)
145	26-5842		abbreviated log
		0-8	fill
		8-36	red-brown clayey sandy silt, trace fine gravel (Qtm)
146	26-4071	0-250	sand and clay (Qtm over K)
		250-650	trap (diabase)
147	N 26-41-266		well 1
		0-50	red clay and coarse gravel (Qtm)
		50-190	black to dark-brown clay, minor sand (K)
		190-523	varicolored rock (possible hornfels rock)
148	26-15929		abbreviated log
		0-20	red clay, trace medium-to-fine red sand (Qtm)
149	26-22638	0-5	fill
		5-12	sand, fine, silty with clay (Qtm)
		12-20	sand, fine, silty with fractured shale (Qtm)
		20-45	weathered shale (K, Qsw unlikely)
150	26-24632		abbreviated log
		0-14	gravel, wood, concrete fill
		14-31	red-brown silty sand, some gravel (Qtm)
		31-39	dark-gray micaceous clayey silt (K)
151	26-23061	0-29	reddish-brown silty sand with some gravel and cobbles mixed (Qtm)
		29-40	reddish brown sand and silt (Qpa?)
152	26-5216	0-20	silty clay (Qt)
		20-22	silty clay and gravel (Qt)
		22-48	gray clay (K)
		48-60	gray silty sand and clay (K)
153	26-5213	0-12	clay, sand, gravel (Qt)
		12-19	silty clay, trace of sand (Qt)
		19-23	silty sand, some clay (Qt)
		23-59	gray silty sandy clay (K)
		59-63	clay and sand (K)
		63-99	gray clay (K)
		99-123	gray clay and sand (K)
		123-138	green clay (weathered diabase?)
		138-139	basalt (diabase)
154	NJGS files		Outerbridge Crossing boring 14+28
		0-15	red clay and sand (Qtm)
		15-75	gray clay and sand (K)
155	NJGS files		Outerbridge Crossing boring 25+00
		0-5	fill
		5-22	soft mud, clay, and sand (Qm)
		22-44	blue clay (K)
		44-50	fine sand, stiff gray clay (K)
156	26-4934	0-8	brown silty sand, little clay (Qtm)
		8-12	brown and gray silty clay (K)
		12-20	gray-black silty clay with partings of mica and fine sand, some lignite (K)
157	26-19837		abbreviated log
		0-11	brown silty clayey sand, some gravel (Qtm)
		11-18	brown silty clay, trace fine sand (Qtm)
		18-36	brown fine-to-medium sand, trace fine gravel (Qpa)
		36-50	gray silty clay, trace fine sand and lignite (K)
158	NJGS files		Outerbridge Crossing boring 38+82
		0-25	yellow clay (Qtm)
		25-39	brown sand and gravel (Qpa)
		39-125	black, gray, red clay, some fine white sand (K)
159	NJGS files		Outerbridge Crossing boring 58+86
		0-48	silt (Qm)
		48-60	gray sand (Qm over Qbn)
		60-90	coarse brown sand (Qbn)
		90-95	clay, sand, gravel (Qbn)
		95-105	hardpan (Qbn?)
		105-110	brown sand (Qtm or Qpa)
		110-119	gray fine-to-coarse sand and clay, some beach sand (K)
160	26-13984		abbreviated log
		0-10	water
		10-40	gray soft silt, some sand and shells (Qm)
		40-45	gray sandy silt (Qm)
		45-50	brown firm sand and gravel (Qpa)
		50-70	gray and red silt, clay, and sand, very firm (K)
161	26-7230	0-7	fill (af)
		7-15	organic silt (Qm)
		15-20	gray silty sandy clay (Qtm)
		20-27	gray silty clay with yellow sand seams and lignite (K)
162	26-4688	0-16	dry brown clay (Qt)
		16-78	dark gray clay (K)
		78-98	sand, fine gray clay, streaks of lignite (K)
		98-122	red shale
		122-134	brown soft rock
		134-146	red and gray shale rock
		146-402	gray to black hard rock (diabase)
163	26-9967		abbreviated log
		0-15	red-brown, gray-brown silty sand (Qt)
		15-46	dark gray silty clay, some medium-to-fine sand layers, some mica and lignite (K)
164	26-10085		abbreviated log
		0-12	gray to brown sandy silt, trace gravel (Qt)
		12-46	dark gray clay, silt, and medium-to-fine sand, some lignite (K)
165	26-18987	0-7	fill
		7-14	red-brown silty clay, trace sand and gravel (Qt)
		14-24	gray medium-to-fine sand, trace silt (K)
		24-25	black silty clay (K)
166	26-10971	0-38	gray silty clay (K)
		38-45	clay and sand (K)
		45-59	sand (K)
167	N 26-31-891	0-40	red clay, sand, gravel (Qt)
		40-55	pinkish, medium-to-coarse sand, with rounded red shale grains (Qsu)
		55-65	medium-to-coarse white sand and granules (K)
		65-75	light-gray sandy clay over green decomposed trap (K over weathered diabase)
		75-77	dark green trap (diabase)
168	N 26-31-892	0-50	glacial drift (Qt)
		50-73	Raritan formation (K)
		73-80	greenish baked shale
169	26-21745	0-36	glacial till (Qt)
		36-55	fine-to-coarse brown sand, gravel, and cobbles (Qsu)
		55-56	white beach sand (K)
170	26-9604	0-4	silt, sand, clay fill (af)
		4-8	dark-gray silty clay, some sand (af over Qm)
		8-12	brown, gray organic silty clay and meadow mat (Qm)
		12-20	olive-black silty clay (Qm)
		20-27	red silt, trace of clay (Qbnl)
171	26-5356		abbreviated log
		0-4	sand and gravel fill (af)
		4-16	soft gray, black, brown clay (Qm)
		16-41	red-brown dense fine-to-coarse sand, some gravel and silt (Qt)
		41-53	light-gray medium-to-fine sand, very dense (K)
		53-72	very tough gray-green clay (weathered hornfels)
		72-78	hard gray-black weathered hornfels rock
172	26-5313		abbreviated log
		0-11	sandy fill (af)
		11-19	dark-brown clayey peat (Qm)
		19-54	very tough red silt, trace clay and fine sand (Qbnl)
		54-64	brown sandy clayey silt, some gravel (Qt)
		64-75	very tough green to gray clay (weathered diabase)
		at 75	diabase fragments, refusal
173	26-5314		abbreviated log
		0-11	clay and sand fill (af)
		11-20	gray clay and peat (Qm)
		20-59	dense red-brown coarse-to-fine sand and some gravel (Qbn over Qt)
		59-70	very stiff gray clay (K over weathered shale)
		at 70	weathered shale, refusal
174	26-5316		abbreviated log
		0-14	fill (af)
		14-18	soft brown moist peat (Qm)
		18-31	red sandy silty clay, trace gravel (Qt)
		31-55	red-brown coarse-to-fine sand and gravel (Qsu)
		55-73	very dense light-gray medium-to-fine sand (K)
		73-96	hard gray to green clay; some black, brown veins (weathered diabase)
		at 96	weathered diabase
175	26-9706	0-5	clay and gravel (af)
		5-22	gummy gray clay with interbedded lenses of sand (Qm)
		22-45	decomposed red shale (K over weathered shale)
		45-67	red to gray shale
		67-74	dense hard rock--limestone or granite (diabase)
176	26-25346		abbreviated log
		0-10	stone and sand fill (af)
		10-18	peat (Qm)
		18-45	red-brown clayey sandy silt, trace gravel (Qt)
		45-52	fine-to-medium gray sand (K)
177	NJGS files	0-21	fill (af)
		21-24	silt (Qm)
		24-58	sand and gravel (Qbn over Qt)
178	26-28361	0-16	dark-reddish-brown fine-to-medium silty sand (Qt)
		16-42	dark-reddish-brown coarse-to-fine sand, trace silt (Qt)
		42-70	light-green-gray clay (K)
179	26-28352	0-16	dark-reddish-brown fine-to-medium silty sand (Qt)
		16-42	dark-reddish-brown coarse-to-fine sand, trace silt (Qt or Qsu)
		42-70	light-gray-green clay (K)
180	26-28359	0-16	dark-reddish-brown fine-to-medium silty sand (Qt)
		16-42	dark-reddish-brown coarse-to-fine sand, trace silt (Qt or Qsu)
		42-70	light-gray-green clay (K)
181	26-17050		abbreviated log
		0-54	gray to reddish-brown clayey silty sand, little fine-to-coarse gravel; sandier below 27 feet (Qt, possibly over Qsu)
		54-59	white to gray fine-to-medium sand (K)
		59-90	white to gray clay, becoming green and brittle with depth (K over weathered diabase)
182	N 26-31-971	0-20	red clay and sand (Qt)
		20-40	gray sand and gravel (Qsu?)
		40-75	clay and sand (K)
		75-78	red shale
		78-148	trap (diabase)
		148-150	red sandstone
		150-157	trap (diabase)
183	26-30216	0-38	red-brown coarse-to-fine sand, some silt, little gravel (Qt)
		38-65	white coarse-to-fine sand, little silt (K)
		65-69	layered white sand and clay (K)
		at 69	gray silt and clay (K)
184	26-30214	0-35	red-brown coarse-to-fine sand, trace gravel and clayey silt (Qt)
		35-68	brown-white coarse-to-fine sand, trace silt and fine gravel (K)
		at 68	decomposed shale
185	26-28367	0-15	dark-reddish-brown silty fine sand, trace clay (Qt)
		15-35	dark-reddish-brown fine-to-medium sand, trace silt (Qt)
		35-48	dark-reddish-brown medium-to-coarse sand, trace coarse gravel (Qsu?)
		48-70	light-gray-green clay (K)
186	26-5175	0-10	stones, sand fill (af)
		10-12	peat (Qm)
		12-21	black clay and silt (Qm)
		21-24	red clay and sand (Qbnl)
		24-26	red clay (Qbnl)
		26-33	red shale and gravel (Qt)
187	26-15044	0-24	brown medium-to-coarse sand, gravel, cobbles (Qt)
		24-40	brown fine sand (Qsu?)
188	26-14632		abbreviated log
		0-14	reddish-brown sandy silty clay, some gravel (Qt)
		14-22	reddish-brown clayey sand, trace gravel (Qt)
189	26-21239		abbreviated log
		0-9	sandy, gravelly fill (af)
		9-10	gray silty clay (Qm)
		10-41	red-brown to light-gray silty clayey sand, some gravel (Qt)
		41-49	light-brown clay and silt, trace fine sand (K)
		49-50	green-gray fractured rock (diabase?)
190	N 26-31-863	0-8	soft gray meadow mat (Qm)
		8-14	yellow and gray clay, sand and gravel (Qal)
		14-40	red clayey sand and gravel (Qt)
		at 40	hard red sandy red shale
191	N 26-31-863	0-10	gray clay and medium-to-coarse sand with shell fragments (Qm)
		10-21	slightly clayey medium-to-coarse red sand (Qt)
		21-31	compact red clay and shale fragments (Qt over Qsw)
192	N 26-31-865	0-43	red sandy clay, some gravel (Qt)
		at 43	stiff bluish-gray micaceous clay (K)
193	26-1269	0-21	silt, clay, and gravel (Qt)
		21-200	shale
194	26-18360		abbreviated log
		0-17	red silty clay, trace sand and gravel (Qt)
		17-18	red siltstone
195	26-24837		abbreviated log
		0-14	red to gray silty clayey sand, some gravel (Qt)
		14-18	red siltstone
196	26-28597	0-10	mixed red clay, sand, gravel (Qt)
		10-24	soft red shale
197	26-2266	0-29	red clay (Qt)
		29-350	red shale
198	26-1428	0-30	clay and boulders (Qt)
		30-298	shale
199	26-9469	0-9	brown, reddish-brown, tan clayey sand, trace gravel (Qt)
		9-17	red shale
200	26-2372	0-5	clay (Qt)
		5-359	red shale
201	26-6896	0-16	red-brown sandy clayey silt, trace gravel (Qt)
		16-18	red shale
202	226-27105	0-8	brownish-tan silty clay (Qt)
		8-15	red shale
203	26-564	0-10	red, white, yellow clay (af or Qt)
		10-30	red hard pan (Qt)
		30-50	very muddy fine sand (Qsu? or Qt)
		50-60	hard red clay (Qsw)
		60-115	hard red sand rock
204	26-1201	0-40	clay, sandy clay (Qt)
		40-204	red shale
205	25-11829	0-11	hardpan (Qt)
		11-27	soft shale and clay (Qsw)
		27-505	red shale
206	26-4375	0-12	dirt (Qt)
		12-120	sandstone
207	26-1654	0-53	red clay (Qt)
		53-500	red shale
208	26-4118	0-35	sand and gravel (Qt, possibly over Qsu)
		35-200	red shale
209	26-4944	0-50	sand (Qt, possibly over Qsu)
		50-700	red shale
210	26-11291		abbreviated log
		0-18	red sandy clayey silt, some gravel (Qt)
		18-24	fine-to-medium sand and gravel (Qsu or Qt)
211	26-10667	0-4	fill
		4-11	red medium sand, some gravel (Qt)
		11-14	weathered shale
212	26-10669	0-4	fill
		4-11	red medium sand, some gravel (Qt)
		11-15	weathered red shale
213	26-11416	0-4	fill
		4-20	silty sand (Qt)
214	26-520	0-25	sand and clay (Qt)
		25-109	rock
215	26-381	0-8	clay and silt (Qal)
		8-20	sand and gravel (Qal over Qrw)
		20-23	silt and clay (Qt or Qsw)
		23-30	soft red shale (Qt or Qsw)
		30-50	red shale
216	26-380	0-8	clay and silty sand (Qal)
		8-18	medium sand and a little clay (Qal)
		18-24	coarse sand and gravel (Qal over Qrw)
		24-28	soft shale (Qt or Qsw)
		28-51	red shale
217	26-724	0-76	sand and gravel (Qic)
			screened 21-38 feet, yield 355 gpm
218	26-1595	0-45	red sand and gravel (Qrw)
		45-300	red shale rock
219	26-9620		abbreviated log
		0-18	red-brown silty clay, some sand, trace gravel (Qrw)
		18-26	brown coarse-to-fine sand, little clayey silt, trace fine gravel (Qrw)
220	26-629	0-40	earth (Qrw over Qt)
		40-300	red rock
221	26-6711	0-5	brown silty sand, trace fine gravel (Qt)
		5-13	red-brown silty clay (Qt)
		13-18	gray silty sand, trace gravel (Qsu)
222	26-50	0-21	red dirt (Qt)
		21-349	red shale
223	26-5251	0-25	overburden (Qt)
		25-254	red rock
224	26-4447	0-10	clay and sand (Qt)
		10-359	red shale
225	26-120	0-7	fill
		7-31	red clay (Qt)
		31-37	broken red shale, clay and boulders (Qt)
		37-266	red shale
226	26-1124	0-30	hard clay (Qt)
		30-250	red shale and hard sandstone streaks
		250-285	red and purple shale
		285-308	hard red and purple shale
227	26-530	0-10	red and yellow clay (Qt)
		10-20	red hard pan (Qt)
		20-35	hard red clay (Qt)
		35-96	red sand rock
228	26-5108		abbreviated log
		0-16	red-brown sandy silt and clay, trace gravel (Qt)
		16-23	angular red-brown shale and siltstone fragments and clay and silt (Qsw)
229	26-5786	0-27	red-brown sandy silt and clay, some weathered shale fragments (Qt)
		27-37	red-brown clay and silt with angular shale fragments (Qsw)
		37-47	red-brown shale
230	26-10560	0-8	brown silty clay (Qt)
		8-10	brown sandy clay with large gravel (Qt)
		10-15	decomposed red-brown shale (Qsw)
231	26-10490	0-14	red sandy-clayey silt with red shale fragments (Qt)
		14-20	decomposed red sandy shale
232	26-9158	0-5	soft, silty clay (Qt)
		5-6	reddish silty sand (Qt)
		6-12	reddish weathered shale
233	26-522	0-5	red and yellow sandy clay (Qt)
		5-25	red hard pan (Qt)
		25-40	hard red clay (Qt)
		40-60	red sand rock
234	NJGS files	0-3	mud (Qal)
		3-20	sand and gravel (Qal or Qrw)
		at 20	rock or boulder
235	26-428	0-42	sand and clay (Qt)
		42-81	rock
236	26-8781	0-10	clay (af over Qm?)
		10-15	clay, sand (Qt or Qbnl)
		15-20	sand (Qt)
		20-25	sand, gravel (Qt)
237	26-14186	0-10	red-brown coarse sand and gravel (Qt)
		10-15	red-brown coarse sand and gravel, trace clay (Qt)
		15-25	red-brown medium-to-coarse sand, trace gravel (Qt)
		25-29	red-brown coarse sand and gravel (Qt or Qsu)
		29-30	weathered shale (Qsw)
238	26-24304	0-21	red clay, silt (Qt)
		21-28	sand, cobbles (Qt or Qsu)
		28-29	red clay (Qt or Qsw)
239	26-14426	0-23	red silty clay (Qt)
		23-35	brown-red sand and gravel (Qt or Qsu)
240	26-82	0-50	red dirt and rock (Qt)
		50-405	red rock
241	26-5547	0-5	red silty clay, trace sand, occasional cobble, very dense (Qt)
		5-10	red silty clay, trace sand, dense (Qt)
		10-15	red silty clay, trace sand (Qt)
		15-20	wet red silty clay (Qt or Qsu)
242	26-7505	0-23	red-brown clayey silt (Qt)
		23-29	red-brown coarse-to-fine sand and coarse-to-fine gravel (Qsu or Qt)
243	26-22308	0-21	red-brown silt and clay (Qal over Qt)
		21-23	red-brown decomposed shale (Qsw)
		23-40	red-brown shale
244	26-26065	0-10	silty clay (Qt)
		10-28	red-brown coarse sand, trace silt (Qsu or Qt)
245	26-26335	0-7	red-brown silt, some clay (Qt)
		7-18	red-brown medium sand (Qsu or Qt)
		18-20	red shale
246	26-23758	0-17	red-brown sandy clay (Qt)
		17-20	coarse sand and gravel (Qsu or Qt)
		20-22	red clay lenses (Qsu or Qt)
247	26-29549	0-20	silty clay (Qt)
		20-25	weathered shale (Qsw)
		25-155	red shale
248	26-14834	0-10	red-brown till with red shale fragments (Qt)
		10-60	Brunswick shale
249	26-29799		abbreviated log
		0-15	red hard silt with some gravel, little sand (Qt)
		15-24	red very dense fine-to-coarse gravel and fine-to-coarse sand, little silt (Qt or Qsu)
		24-31	red, gray, green moist hard silt and weathered shale (Qsw)
250	26-19868	0-5	red-brown clayey silt with rock fragments (Qt)
		5-12	red-brown clayey silt (Qt)
		12-19	red-brown clayey silt, trace sand (Qt)
		19-32	red-brown silty clay with fine gravel and rock fragments (Qt)
		32-40	red-brown decomposed shale
251	26-238	0-10	red hardpan (Qt)
		10-30	yellow mud with streaks of fine muddy sand (Qsu or Qt)
		30-60	gray, black, red, green silt (K?)
		60-85	green, white, blue clay (K over weathered shale)
		85-146	mica rock (shale?)
252	26-26108	0-13	red-brown fine sand with gravel, silt, clay (Qt)
		13-33	red-brown medium-to-fine sand and gravel with silt (Qsu or Qt)
		33-37	gray silty clay (K)
253	N 26-31-685		abbreviated log
		0-31	red-brown sandy gravelly clay (Qt)
254	N 26-31-688		abbreviated log
		0-6	red sandy clay (Qt)
		6-36	yellow and gray fine-to-medium lignitic sand with some clayey streaks (K)
		36-47	greenish-gray and dull-red clay (K over Qsw)
		at 47	soft, weathered shale
255	26-5052	0-115	clay, sand (Qt over K)
		115-300	shale
256	N 26-31-891		log by M. E. Johnson, NJGS, abbreviated here
		0-40	red clay, sand, gravel (Qt)
		40-50	pinkish medium-to-coarse sand, with rounded grains of red shale (Qsu)
		50-65	white medium-to-coarse sand and pea gravel (K)
		65-74	light-gray sandy clay (K)
		74-77	green decomposed trap (weathered diabase)
		at 77	dark-green trap (diabase)
257	26-4936		abbreviated log
		0-14	brown and gray silty clay with fragments of red sandstone (Qtm)
		14-30	black and gray silty clay with partings of fine sand and mica; some lignite (K)
258	26-7714	0-160	sand, clay (Qtm over K)
		160-580	serpentine (probably diabase)
259	26-8679	0-23	reddish-brown medium-to-coarse sand, gravel, silt (Qt)
		23-26	reddish-brown coarse sand, gravel, clay, shale fragments (Qt)
260	26-8466		abbreviated log
		0-7	cinder, gravel, sand, clay fill (af)
		7-15	dark-gray silt, peat, and clay (Qal)
		15-18	gravel and silty sand (Qal or Qt)
		18-55	red-brown shale
261	26-5968		abbreviated log
		0-8	brown, orange, red silty clay, some sand and gravel (af)
		8-10	meadow mat (Qm)
		10-12	dark-brown silty clay and meadow mat (Qm)
		12-16	olive-gray silty clay trace fine sand (Qbnl)
		16-18	red silty clay and fine sand (Qbnl)
		18-21	red-gray silty clay, trace gravel (Qt)
		21-22	red weathered shale (Qsw)
262	26-5967	0-5	gray, orange silty clay (af)
		5-7	black, brown meadow mat and organic silty clay (Qm)
		7-20	red silt, trace of clay, gravel, and fine sand (Qt)
		20-26	red silt, fine sand, trace clay (Qt)
		26-27	red weathered shale (Qsw)
263	26-22622	0-8	white soda ash (af)
		8-16	brown peat (Qm)
		16-29	red-brown till--silty clay with gravel (Qt)
		29-30	red-brown shale
264	26-22608	0-10	gravel, silty sand, silty clay (af)
		10-24	peat to medium sand and gravel (Qm over Qt)
		24-42	medium silty sand and gravel (Qt)
		at 42	bedrock
265	26-22567	0-13	stone, concrete, gravel fill (af)
		13-24	brown peat (Qm)
		24-40	red-brown till (Qt)
266	26-19873	0-12	black silty clay with wood--fill (af)
		12-24	peat grading to organic silt with some sand (Qm)
		24-29	red-brown clayey silt, some fine-to-medium sand and trace of gravel (Qt)
		29-34	red-brown fine-to-medium sand and some clay and fine gravel with shale fragments (Qt)
		34-40	red-brown shale
267	26-19876	0-13	black sand, silt, cinders, gravel, wood (af)
		13-25	dark-brown and gray peat and organic clayey silt and sand (Qm)
		25-42	red-brown clayey silt, some fine-to-coarse gravel and sand (Qt)
		42-45	red-brown shale
268	26-22560	0-14	fill (af)
		14-22	brown peat (Qm)
		22-26	gray silty sand (Qm)
		26-36	red-brown silty till (Qt)
		36-40	red-brown shale
269	26-19749		abbreviated log
		0-12	clay and silt fill (af over Qm)
		12-22	red-brown silty clay, some sand (Qbnl)
		22-32	red silty clay and shale fragments (Qt)
		32-54	red shale
270	26-15657		abbreviated log
		0-6	silt and clay fill (af)
		6-10	gray peat, organic silt, shell fragments (Qm)
		10-26	red clay, silt, sand, little gravel (Qt)
		26-28	weathered Brunswick (Qsw)
		28-46	rock
271	26-5293		abbreviated log
		0-7	slag, cinder, brick fill (af)
		7-14	black-gray organic clay (Qm)
		14-42	red-brown clayey silt with some sand and pebble-to-cobble gravel (Qt)
		at 42	bedrock
272	26-19748		abbreviated log
		0-8	sand, clay, wood fill (af)
		8-16	black silty clay and peat (Qm)
		16-30	red-brown silty clay, trace gravel and sand (Qt)
		30-51	red shale
273	26-22858	0-8	brown to black medium-to-fine sand and silt (af)
		8-15	organic peat (Qm)
		15-23	gray clayey silt with peat (Qm)
		23-40	red-brown silt (Qt)
		40-45	red till (Qt)
		45-50	red decomposed sandstone (Qsw)
274	26-22861	0-10	brown to black sand, wood, cinders (af)
		10-20	gray clayey silt, trace peat (Qm)
		20-25	gray fine sandy silt (Qm)
		25-35	red-brown silt (Qt)
		35-40	red till (Qt)
		40-55	decomposed red sandstone (Qsw)
		55-60	red sandstone
275	26-22856	0-5	gray sand, silt, gravel, wood (af)
		5-20	peat and gray silty clay (Qm)
		20-30	red till (Qt)
		30-40	red-brown clay and silt (Qt)
		40-45	red-brown till (Qt)
		45-50	red shale
276	26-28653		abbreviated log
		0-10	silt, sand, clay fill (af)
		10-16	dark-brown silt and peat, trace clay (Qm)
		16-25	reddish-brown silty clay, some gray organic seams (Qm over Qbnl?)
		25-51	reddish-brown clayey silt with fine sand seams (Qbnl over Qt?)
		51-71	shale rock
277	26-28657	0-8	fill (af)
		8-12	black silt, organic clay (Qm)
		12-15	peat (Qm)
		15-20	gray silty clay (Qm or Qbnl)
		20-40	reddish-brown silty clay with trace fine sand and gravel seams (Qt)
		40-45	reddish-brown decomposed shale rock (Qsw)
		45-50	shale rock
278	26-10390	0-10	fill (af)
		10-27	black organic silt (Qm)
		27-41	red-brown clay (Qbnl over Qt)
		41-57	gray siltstone
279	NJGS files		abbreviated log
		0-9	cinder, brick, sand, gravel fill (af)
		9-20	peat (Qm)
		20-26	dark-gray river mud and vegetable matter (Qm)
		26-39	gray, reddish-brown silty sand and gravel (Qt or Qbn)
		39-59	reddish-brown clayey silt, numerous shale and sandstone fragments (Qt or Qsw)
		59-72	gray and green shale
280	NJGS files		abbreviated log
		0-14	cinder, sand, gravel fill (af)
		14-28	black, dark gray soft river mud (Qm)
		28-45	gray medium-to-coarse sand and gravel (Qt or Qbn)
		45-50	hard gray shale
281	NJGS files		abbreviated log
		0-13	cinders, sand, gravel, sulfer fill (af)
		13-28	soft brown peat and dark gray river mud (Qm)
		28-35	gray silty sand and gravel (Qt or Qbn)
		35-43	light-gray medium sand (Qt or Qbn)
		43-50	reddish-brown decomposed shale (Qt or Qsw)
		50-55	hard gray sandstone
282	NJGS files	0-22	water (drilled from dock)
		22-30	very soft dark gray river mud (Qm)
		30-35	medium-to-coarse brown sand and gravel (Qt or Qbn)
		35-40	hard gray shale
283	26-25830	0-15	gray clay, sand, gravel (af)
		15-25	gray clay (Qm)
		25-40	gray fine-to-medium sand and fine-to-coarse gravel (Qbn)
		40-45	red clayey gravel (Qbn or Qt)
		45-55	red till (Qt)
		55-60	gray decomposed shale (Qsw)
		60-65	green marl (Qsw?)
284	NJGS files	0-26	water (drilled from dock)
		26-30	soft river mud and fine sand (Qm)
		30-37	reddish-brown silty sand and gravel (Qt)
		37-47	reddish-brown decomposed shale and clayey silt (Qt or Qsw)
		47-60	soft greenish decomposed shale (Qsw)
		60-72	hard gray shale
285	NJGS files		abbreviated log
		0-4	cinders, sand, gravel fill (af)
		4-15	very soft dark-gray river mud (Qm)
		15-25	soft sandy river mud with peat and shells (Qm)
		25-35	gray medium-to-coarse silty sand and some small gravel (Qbn or Qt)
		35-49	reddish-brown coarse silty sand and gravel, some large gravel (Qt)
		49-53	soft red sandstone with limey shale nodules and clayey silt (Qsw)
		53-60	greenish soft decomposed shale (Qsw)
		60-65	hard dark-gray shale
286	26-10386	0-11	black organic sand (Qm)
		11-35	red-brown clay (Qbnl over Qt)
		35-60	red siltstone
287	N 26-32-411	0-6	gray clay and roots and red medium sand (Qm)
		6-13	tough red silty clay (Qbnl or Qt)
		13-19	rusty-red fine sand with shale pebbles (Qt)
		19-21	red sandy, micaceous red shale
288	26-26175	0-37	red-brown fine sand with gravel, silt, clay (Qt)
289	N 26-31-636	0-36	sand and small variegated pebbles (Qt)
		36-42	red clay, sand, gravel (Qt)
		42-47	typical glacial material of variegated color and type (Qt)
290	26-15616		abbreviated log
		0-5	gravelly fill
		5-22	red sandy clay, some gravel (Qt)
291	26-14699		abbreviated log
		0-17	reddish-brown sandy silty clay, little to some gravel (Qt)
292	26-433	0-39	sand (Qt)
		39-108	rock
293	26-4159	0-45	gravel (Qt)
		45-300	red shale
294	26-26189	0-20	red-brown fine sand, some silt, some gravel (Qt)
		20-27	red-brown fine silty sand with gravel (Qt)
295	N 26-31-662	0-30	red gravelly and sandy clay, some shale fragments (Qt)
296	26-26740	0-33	red-brown silty-clayey fine sand, some gravel (Qt)
		33-36	decomposed rock (Qsw)
297	26-26183		abbreviated log
		0-30	red-brown silty fine sand, some gravel (Qt)
		30-36	red-brown decomposed rock (Qsw)
298	26-4139	0-40	clay (Qt)
		40-145	diabase
299	26-22031	0-10	miscellaneous fill (af)
		10-21	peat with silt (Qm)
		21-30	fine silty sand, some fine gravel (Qbn or Qt)
		30-33	fine-to-coarse sand and gravel (Qbn or Qt)
		33-46	till (Qt)
		46-50	decomposed rock
300	26-30178		abbreviated log
		0-10	silty sand fill (af)
		10-14	brown peat (Qm)
		14-18	gray fine-to-medium sand, some silt (Qm)
		18-42	red-brown sandy clayey silt, trace gravel (Qt)
		42-49	gray silt and fine sand (Qt or Qsu or K)
301	N 26-32-456	0-45	yellowish sand (af over Qm over Qt?)
		45-50	bluish sand mixed with black clay (K?)
		50-60	fine white clay (K or weathered diabase)
		at 60	trap rock (diabase)
302	26-5795	0-40	red overburden with roundstones (Qt)
		40-70	gray sand (K)
		70-150	Palisades traprock (diabase)
303	26-30330		abbreviated log
		0-9	miscellaneous fill (af)
		9-10	gray silt and clay, trace shells (Qm)
		10-25	red sandy, clayey silt, trace gravel and fragmented shale (Qt)
		25-42	gray, orange, red interbedded clay, silt, and sand (K)
304	26-891	0-10	clay and sand (Qt)
		10-20	sand and gravel (Qt)
		20-24	gray clay (K?)
		24-33	gray sand (K?)
		33-42	gray sand (K?)
		at 42	clay (K?)
305	26-892	0-3	clay (Qt)
		3-14	red clay and gravel (Qt)
		14-24	fine red sand (Qt or Qsu)
		24-28	fine gray sand (K?)
		28-40	fairly coarse gray sand (K?)
		at 40	gray clay (K?)
306	26-8525		abbreviated log
		0-8	brown fine-to-coarse sand, trace gravel (Qt)
		8-31	red silty sand, trace clay and fine gravel (Qt)
307	26-29566	0-8	red-brown silty medium-to-fine sand with gravel (Qt)
		8-14	red-brown silty medium-to-fine sand (Qt)
		14-36	red-brown silty clayey sand with gravel (Qt)
		36-38	red-brown silty coarse-to-fine sand (Qt)
		38-39	white and green decomposed rock (weathered diabase)
308	26-29514	0-30	red-brown silty sand with little gravel (Qt)
		30-40	gray silty fine sand (K)
309	N 26-31-689	0-15	red clay with a few sand grains (Qt)
		15-25	red slightly clayey fine-to-coarse sand and gravel including angular quartz, chert, sandstone and trap grains (Qt)
		25-35	reddish-brown sand and gravel (Qt or Qsu)
		35-43	pinkish-buff fine-to-coarse sand (K)
		at 43	white sandy clay with light-green streaks (K or weathered diabase)
310	26-26232	0-40	reddish-brown sand, silt, clay, gravel (Qt)
		at 40	refusal (diabase?)
311	26-19611	0-5	fill (af)
		5-9	reddish clayey gravel (Qt)
		9-40	fine-to-coarse sand with some clay and gravel (Qt or Qsu)
		40-50	reddish-brown fine-to-coarse sand with some clay and gravel (Qt or Qsu)
		50-57	grayish clay (K)
312	26-9305		abbreviated log
		0-7	reddish-brown to dark-brown sand (af)
		7-30	gray silt and peat (Qm)
		30-50	reddish-brown medium-to-coarse sand (Qt or Qbn)
313	26-1829	0-12	fill (af)
		12-20	muck (Qm)
		20-30	gray clay (Qm)
		30-45	fine sand (Qbnl or Qt)
		45-55	sand and gravel mixed with brown sand (Qt or Qbn)
		55-62	white sand (K)
		62-71	gray clay (K)
		71-106	grayish-green clay (K over weathered diabase)
		106-168	gray rock (diabase)
314	26-23039		abbreviated log
		0-28	silty clayey sand with some gravel (Qt)
		28-30	saprolite clay (weathered diabase)
		30-38	diabase
315	26-23038		abbreviated log
		0-37	silty-sandy clay to clayey sand with trace gravel (Qt)
		37-41	saprolite clay (weathered diabase)
		41-42	rock (diabase)
316	26-21918		abbreviated log
		0-19	concrete and slag fill (af)
		19-20	peat, organic silt (Qm)
		20-27	gray medium sand, trace rounded fine-to-medium gravel (Qbn or Qt)
		27-35	red medium sand, trace gravel (Qbn or Qt)
		35-38	red silty fine sand, trace rounded to subangular gravel (Qt)
		38-42	diorite (diabase)
317	26-21919		abbreviated log
		0-14	black slag fill (af)
		14-16	gray clay (Qm)
		16-32	red to brown fine-to-medium sand, some silt, little gravel (Qt or Qbn)
		32-38	red fine sand and gravel till (Qt)
		38-40	saprolite (weathered diabase)
		40-44	diorite (diabase)
318	26-5680	0-2	cement fill (af)
		2-8	gray silty clay (Qm)
		8-9	brown coarse-to-medium sand (Qm)
		9-18	gray silty clay (Qm)
		18-28	gray silty clay and peat (Qm)
		28-31	light-gray coarse sand (Qm)
		31-37	red coarse-to-medium sand and gravel (Qt)
		at 37	bedrock
319	26-5679	0-28	slag (af)
		28-33	gray silty clay (Qm)
		33-41	medium gravel mixed with red clay (Qt)
		41-52	fine-to-medium sand with gravel, trace clay (Qt)
320	26-5678	0-19	slag (af)
		19-35	gray clay and brown peat (Qm)
		35-36	gray clay and silt (Qm)
		36-48	fine-to-medium sand and gravel (Qt)
		48-52	decomposed limestone--white clay and trace of fine sand (weathered diabase)
321	26-5677		abbreviated log
		0-16	sand and slag fill (af)
		16-38	gray clay with organics (Qm)
		38-45	gray clayey fine-to-medium sand with gravel (Qt)
		45-54	red sandy loam with medium gravel (Qt)
		54-57	decomposed rock--white clay (weathered diabase)
322	26-5676	0-14	slag and miscellaneous fill (af)
		14-33	gray clay with organics (Qm)
		33-53	fine-to-medium sand and gravel (Qt)
		at 53	red silty clay (Qt or weathered diabase)
323	26-3009	0-42	red clay (Qt)
		42-55	red shale
		55-75	gray rock
		75-78	trap rock (diabase)
324	Lovegreen, 1974		boring on section 12
		0-7	water
		7-25	organic silt, clay, meadow material, shells (Qm)
		25-45	brown and gray sand (Qt or Qal)
		45-49	green, gray, yellow clay (weathered diabase)
		49-50	diabase
325	Lovegreen, 1974		boring on section 12
		0-20	water
		20-35	organic silt, clay, meadow material, shells (Qm)
		35-45	brown and gray sand (Qt or Qal)
		45-72	gray varved silt and clay with lignite (K)
326	Lovegreen, 1974		boring on section 12
		0-17	fill
		17-21	brown and gray sand, gravel, boulders (af?)
		21-42	brown and gray varved clay (Qbnl)
		42-60	brown and gray sand, gravel, boulders (Qt)
		60-70	red and gray clay (K)
		70-78	gray varved silt and clay with lignite (K)
		78-102	gray sand (K)
		102-155	green, gray, yellow mottled clay (K over weathered shale)
		155-180	red shale and arkosic sandstone
327	NJGS files		Outerbridge Crossing boring 69+95, C2
		0-37	water
		37-57	silt and sand (Qm)
		57-66	large gravel (Qt)
		66-98	fine gray sand (K)
		98-120	red clay (K or weathered shale)
328	NJGS files		Outerbridge Crossing boring 76+70
		0-6	water
		6-30	silt (Qm)
		30-50	mud and silt (Qm)
		50-58	gray clay and sand (Qt)
		58-63	sand (Qt)
		63-108	gray clay (K)
		108-120	red clay (K or weathered shale)
329	26-5884		abbreviated log
		0-20	reddish-brown sandy clay with stones (Qt)
		at 20	red shale
330	26-5885		abbreviated log
		0-12	reddish-brown sandy clay (Qt)
		at 12	rock
331	N 26-31-725	0-18	red clayey gravel (Qt)
		18-23	boulder (Qt)
		23-46	red clayey gravel (Qt)
		46-59	clean water-bearing red gravel (Qsu?)
		59-63	gray fine sand (Qsu?)
		at 63	red shale
332	NJGS files		Outerbridge Crossing boring 33+00
		0-5	fill
		5-9	sand and gray clay (Qtm)
		9-18	yellow and gray clay (Qtm)
		18-20	red clay, gray sand and gravel (Qtm)
		20-27	gray clay and sand (K)
		27-42	dark-gray clay (K)
		42-47	gray clay and fine beach sand (K)
333	NJGS files		Linden powerplant boring 11
		0-7	meadow mat (Qm)
		7-14	brown fine sand, some silt (Qm)
		14-18	red fine sand, some silt and clay (Qbnl)
		18-24	red clay, some gravel (Qt)
		24-26	red soft weathered shale (Qsw)
		26-31	red shale rock
334	NJGS files		Linden powerplant boring 9
		0-10	meadow mat (Qm)
		10-18	gray fine sand, some organic silt (Qm)
		18-24	red clay and gravel (Qt)
		24-26	red soft weathered shale (Qsw)
		26-31	red shale rock
335	NJGS files		Linden powerplant boring 6
		0-14	meadow mat (Qm)
		14-16	gray fine sand, some organic silt (Qm)
		16-26	red clay, some gravel, trace sand (Qt)
		26-31	red soft weathered shale (Qsw)
		31-36	red shale rock
336	NJGS files		Linden powerplant boring 20
		0-15	brown meadow mat (Qm)
		15-18	gray river mud, some peat (Qm)
		18-32	red and brown silty clay, shattered shale, some gravel (Qt)
		32-43	rock
337	NJGS files		Linden powerplant boring 18
		0-2	fill (af)
		2-19	river mud (Qm)
		19-21	gray sand and river mud (Qm)
		21-27	red clay, some shale and sand (Qt)
		27-34	red clay, some fine gravel, some shale (Qt)
		34-39	rock
338	NJGS files		Linden powerplant boring 29
		0-12	miscellaneous fill (af)
		12-19	river mud (Qm)
		19-24	gray sand, some clay and vegetable matter (Qm)
		24-29	gray sand and gravel, some clay (Qt)
		29-32	red clay, sand, and gravel (Qt)
		32-36	red clay and shale (Qt)
		36-41	rock
339	NJGS files		Linden powerplant boring 28
		0-9	meadow mat and river mud (Qm)
		9-14	river mud and vegetable matter (Qm)
		14-19	gray sand and vegetable matter (Qm)
		19-23	gray clay some gravel and red shale (Qt)
		23-32	red clay and shale (Qt over Qsw)
		32-72	red shale rock
340	NJGS files		Linden powerplant boring 47
		0-9	river mud (Qm)
		9-22	red clay, some gravel (Qt)
		at 22	top of rock
341	NJGS files		Linden powerplant boring 40
		0-2	river muck and gray sand (Qm)
		2-9	red sandy clay (Qbnl or Qt)
		9-11	red sandy clay, soft shale (Qt over Qsw)
		11-16	rock
342	N 26-41-266		well 2
		0-20	red clay (Qtm)
		20-55	gray clay mixed with gravel (Qtm)
		55-140	tough gray clay (K)
		140-160	gray clay, sand, and wood (K with lignite)
		160-175	red clay (weathered shale)
		175-463	red shale
343	N 26-41-266		well 3
		0-10	fill
		10-35	hardpan (Qtm)
		35-55	yellow sand and gravel (Qpa)
		55-132	gray clay (K)
		132-141	fine gray sand, a little black clay (K)

[1]Numbers of the form xx-xxxx (for example, 26-29514) are well permit numbers issued by the N. J. Department of Environmental Protection, Bureau of Water Allocation. Numbers of the form N xx-xx-xxx (for example, N 26-41-266) are New Jersey Atlas Sheet grid locations of entries in the N. J. Geological Survey permanent note collection. The notation "NJGS files" indicates records of borings or wells on file at the N. J. Geological Survey that are not entered in the permanent note collection. These borings were made for various construction projects. Notations of the form "Lovegreen, 1974" refer to logs provided in the cited publication.

[2]All descriptions are as they appear in the original source, except for minor format, punctuation, and spelling changes. Most logs are drillers' reports; a few are reports of geologists or engineers. Inferred map units and comments by author are in parentheses. Logs identified as "abbreviated" have been condensed for brevity. Some descriptions of bedrock and thin surface fill and soil layers have also been omitted or condensed for brevity. "NR" indicates "not reported". For wells completed in surficial material, the screened interval in feet below land surface and yield in gallons per minute (gpm) are provided below the geologic log.

[3]In feet below land surface.

Table 2.--Composition of pebbles in surficial units.

Site	Unit	Number of Pebbles	Percentage of pebbles: red shale and sandstone	gray shale and sandstone	Pensauken Fm.[1]	gneiss	conglomerate[2]	basalt
1	Qab	116	86	6	3	2	2	1
2	Qtm	138	72	9	4	11	2	0
3	Qtm	146	68	14	4	10	1	2
4	Qtm	121	69	9	11	8	2	2
5	Qmt	128	70	15	8	5	2	0
6	Qmt	143	70	8	11	10	1	0
7	Qmt	136	81	11	1	7	0	0
8	Qmt	185	59	5	23	11	1	0
9	Qmt	159	75	8	11	4	0	1
10	Qmt	144	69	10	13	8	0	0
11	Qtm	137	73	11	5	7	1	2
12	Qtm	169	59	15	18	7	1	0
13	Qt	138	72	7	9	10	1	0
14	Qt	143	70	11	4	11	1	2
15	Qt	118	85	7	2	7	0	0
16	Qt	123	81	12	2	3	2	0
17	Qt	119	84	5	1	7	2	0
18	Qrw	181	72	9	2	17	1	0
19	Qt	110	91	4	0	2	1	2
20	Qt	169	71	7	2	18	1	0
21	Qt[3]	110	73	15	4	7	0	0
21	Qt[4]	128	78	16	2	4	0	0
22	Qtm	188	48	10	40	3	0	0
23	Qtm	171	41	6	48	3	0	0
24	Qtm	165	39	10	35	7	1	8
25	Qtm	146	68	7	18	5	2	0
26	Qtm	168	59	12	20	4	1	4
27	Qtm	181	55	19	25	1	0	0
28	Qtm	165	45	25	26	2	1	0
29	Qtm	179	20	18	56	2	1	0
30	Qtm	160	29	5	62	2	1	0
31	Qt	184	65	9	12	11	0	3
32	Qic	143	70	16	8	6	0	0

[1]Quartz and quartzite; 1-4% chert.
[2]Purple to red-brown quartzite-conglomerate of the Green Pond Formation.
[3]Count in till.
[4]Count in gravel bed in till.