Appendix 1.

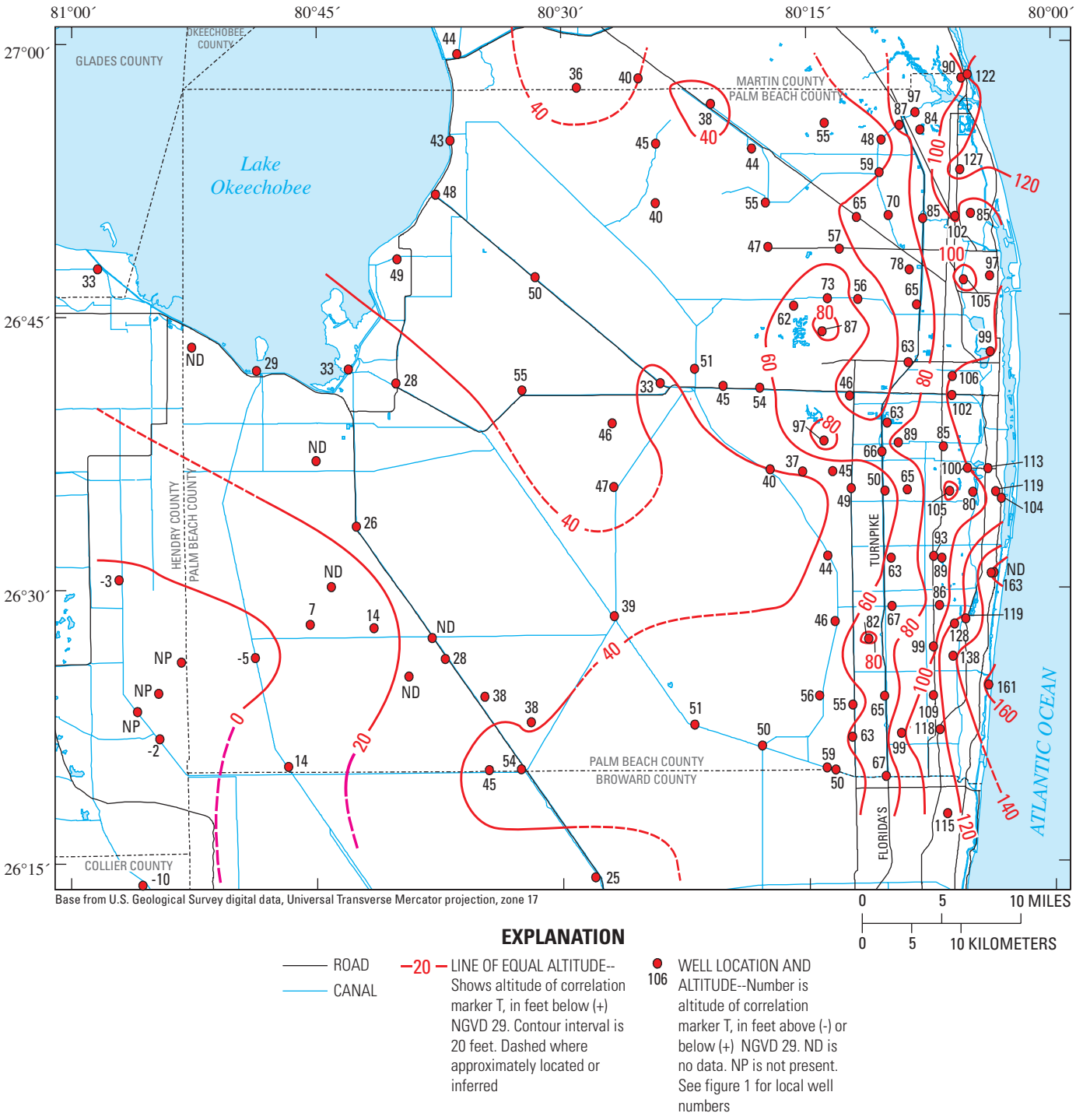

Figure 1–1. Altitude of the T marker correlation.

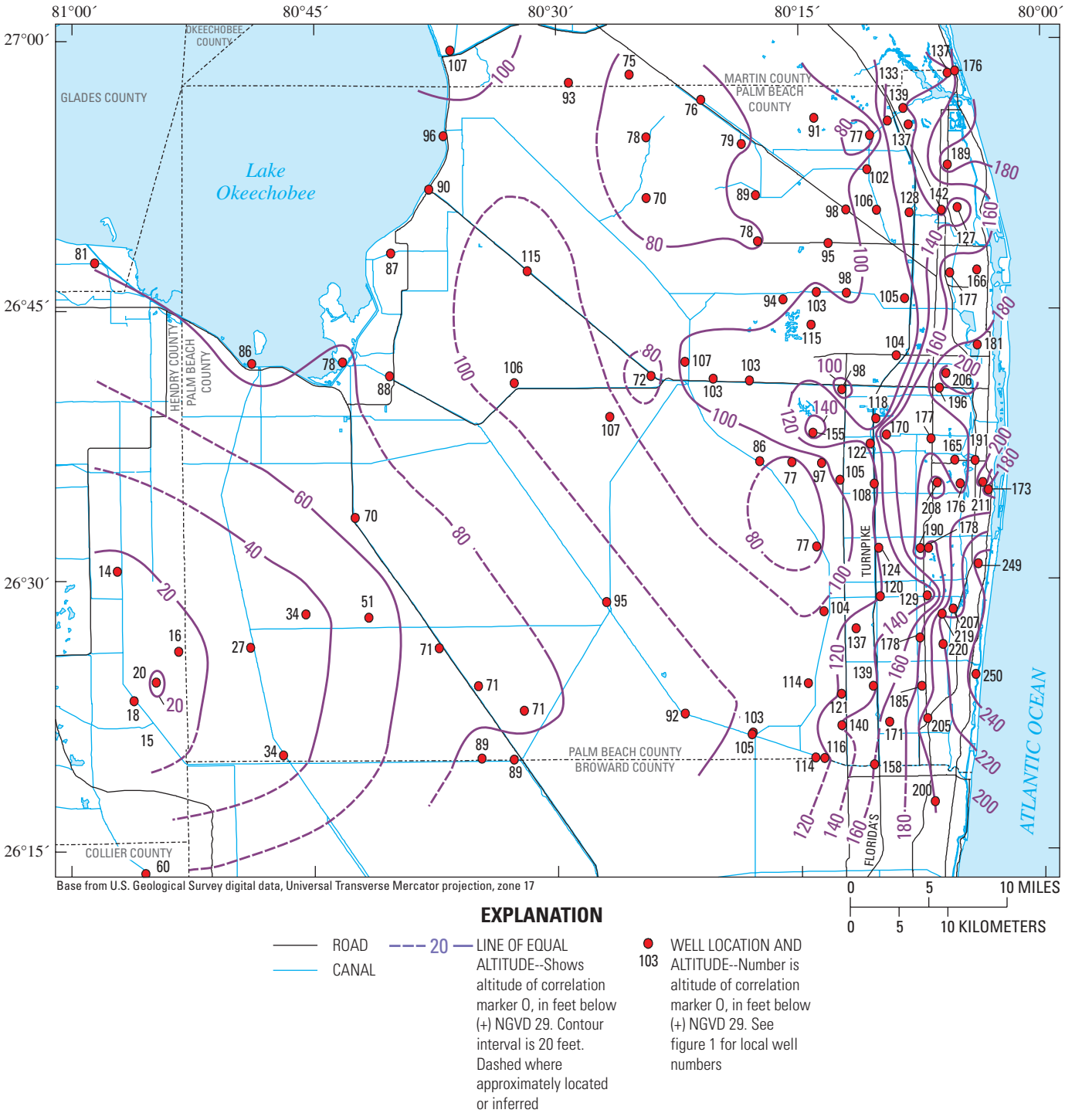

Figure 1–2. Altitude of the O correlation marker.

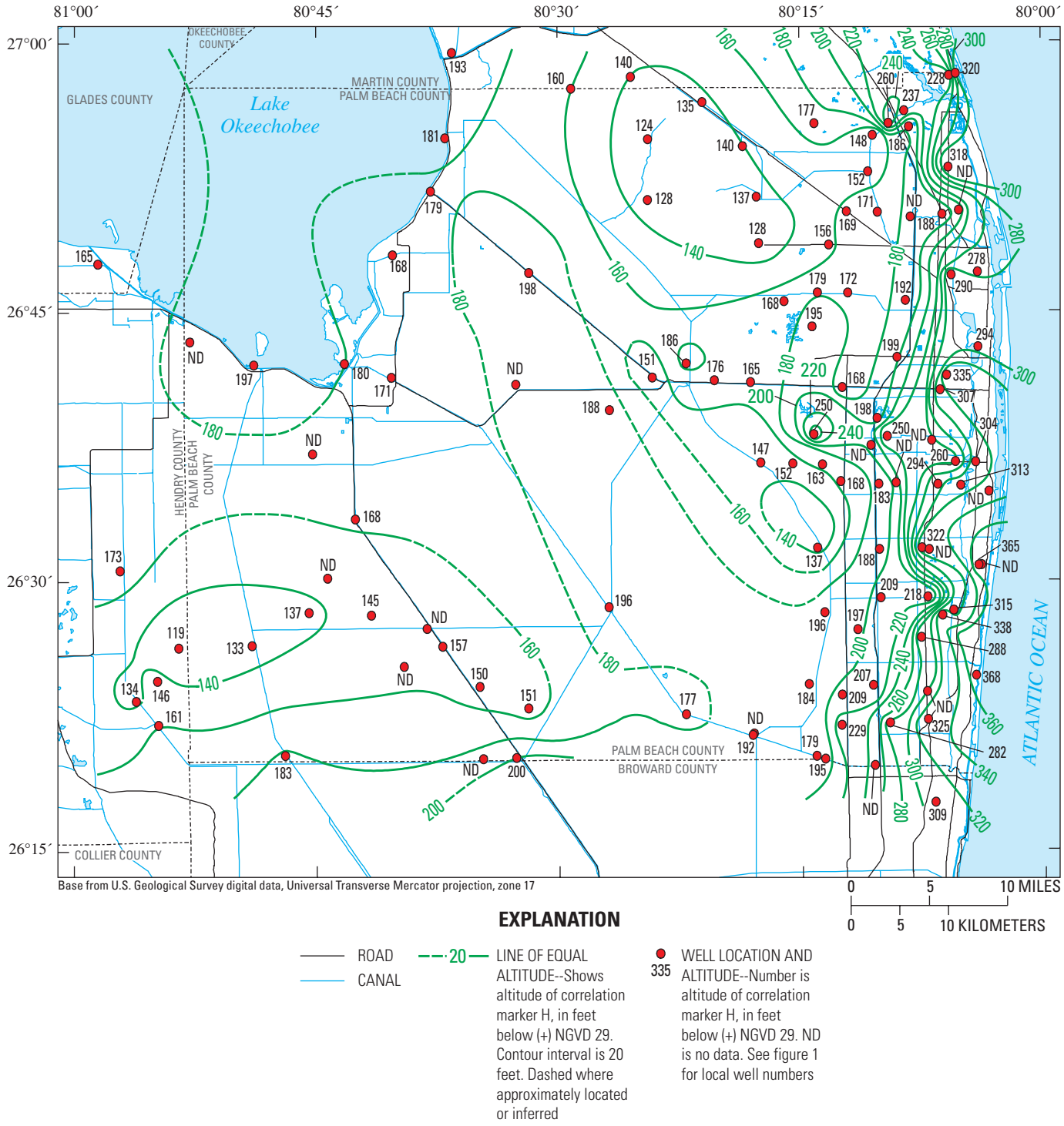

Figure 1–3. Altitude of the H correlation marker

Table 1–1. Inventory of all wells used in this study.

[Total hole depth is in feet below land surface; ASR, aqufier storage and recovery; CERP, Comprehensive Everglades Restoration Plan; NR, not reported; PBCWUD, Palm Beach County Water Utilities Department; RO, reverse osmosis; SFWMD, South Florida Water Management District; USACE, U.S. Army Corps of Engineers; USGS, U.S. Geological Survey; WTP, wastewater treatment plant]

USGS local well name	Other identifier	Source study or owner	Latitude north (dd mm ss.ss)	Longitude west (dd mm ss.ss)	Horizontal datum	Total hole depth (feet)	Altitude of land surface (feet NGVD 29)
C-1156	W-10018		26 15 00	80 57 20	NAD 27	1,000	14
C-1169	W-17614, Big Cypress Sanctuary	Reese and Cunningham (2000)	26 13 17	80 55 52	NAD 27	195	15
G-2312	BRT-19	Fish (1988)	26 13 47	80 27 37	NAD 27	229	15
G-2313	BRT-14	Fish (1988)	26 19 58	80 41 06	NAD 27	219	12
G-2314	BRT-13	Fish (1988)	26 19 52	80 50 02	NAD 27	199	20
G-2315	BRT-15	Fish (1988)	26 19 58	80 34 21	NAD 27	249	18
G-2340	BRT-20	Fish (1988)	26 14 58	80 49 47	NAD 27	199	14
G-2916	MW-1	Broward County WTP 2A ASR	26 17 36	80 06 24	NAD 27	1,200	17
HE-1108	HY-301, HM-265	SFWMD	26 24 40	80 56 50	NAD 27	132	20
HE-1110	L-3 Deep	Reese and Cunningham (2000)	26 23 09	80 55 48	NAD 27	160	15
HE-1116	W-17868, L-2 Deep	Reese and Cunningham (2000)	26 30 23	80 56 52	NAD 83	195	18
HE-1142	CP02-EAARS-CB-0005	CERP, USACE	26 25 55.6	80 53 04.4	NAD 27	184	14.09
HE-1143	CP02-EAARS-CB-0006	CERP, USACE	26 21 42.7	80 54 22.8	NAD 27	181	14.63
HE-1144	CP02-EAARS-CB-0014	CERP, USACE	26 24 12.7	80 54 27.2	NAD 27	182	15.85
M-1361	EXPM-1	Port Mayaca ASR, SFWMD	26 59 17	80 36 20	NAD 83	1,380	22.20
M-1367	CP02-NPBP1-CB-0055	CERP, USACE	26 57 57.2	80 25 17.4	NAD 83	206	27.10
PB-600		Schneider (1976)	26 36 33	80 03 57	NAD 27	345	15
PB-634		Schneider (1976)	26 30 50	80 03 35	NAD 27	188	10
PB-640		Schneider (1976)	26 55 32	80 13 56	NAD 27	236	19
PB-649		Schneider (1976)	26 56 33	80 20 52	NAD 27	205	26
PB-650		Schneider (1976)	26 57 28	80 29 00	NAD 27	193	7
PB-651		Schneider (1976)	26 54 32	80 36 45	NAD 27	236	22
PB-652A		Schneider (1976)	26 47 08	80 03 51	NAD 27	314	20
PB-653		Schneider (1976)	26 46 56	80 05 29	NAD 27	314	12
PB-654		Schneider (1976)	26 47 08	80 06 58	NAD 27	282	18
PB-655		Schneider (1976)	26 48 38	80 09 20	NAD 27	267	20
PB-657	Palm Beach County	Schneider (1976)	26 37 58	80 09 25	NAD 27	281	18
PB-658		Schneider (1976)	26 22 01	80 09 13	NAD 27	365	15
PB-665		Schneider (1976)	26 21 47	80 12 13	NAD 27	225	18

Table 1–1. Inventory of all wells used in this study.—Continued

[Total hole depth is in feet below land surface; ASR, aquifer storage and recovery; CERP, Comprehensive Everglades Restoration Plan; NR, not reported; PBCWUD, Palm Beach County Water Utilities Department; RO, reverse osmosis; SFWMD, South Florida Water Management District; USACE, U.S. Army Corps of Engineers; USGS, U.S. Geological Survey; WTP, wastewater treatment plant]

USGS local well name	Other identifier	Source study or owner	Latitude north (dd mm ss.ss)	Longitude west (dd mm ss.ss)	Horizontal datum	Total hole depth (feet)	Altitude of land surface (feet NGVD 29)
PB-666		Schneider (1976)	26 22 13	80 06 52	NAD 27	415	13
PB-667		Schneider (1976)	26 41 23	80 05 45	NAD 27	357	15
PB-668		Schneider (1976)	26 36 34	80 05 12	NAD 27	358	10
PB-669		Schneider (1976)	26 35 15	80 04 52	NAD 27	345	12
PB-670		Schneider (1976)	26 35 18	80 06 17	NAD 27	325	15
PB-671		Schneider (1976)	26 35 23	80 08 52	NAD 27	119	18
PB-672		Schneider (1976)	26 35 27	80 12 17	NAD 27	234	18
PB-673		Schneider (1976)	26 28 59	80 09 48	NAD 27	248	19
PB-674		Schneider (1976)	26 29 02	80 06 54	NAD 27	302	17
PB-675		Schneider (1976)	26 28 18	80 05 18	NAD 27	387	14
PB-676		Schneider (1976)	26 41 13	80 23 56	NAD 27	175	15
PB-677		Schneider (1976)	26 41 04	80 20 06	NAD 27	190	16
PB-678		Schneider (1976)	26 40 58	80 17 52	NAD 27	189	20
PB-679		Schneider (1976)	26 48 42	80 17 22	NAD 27	174	22
PB-681		Schneider (1976)	26 58 02	80 05 38	NAD 27	248	12
PB-690		Schneider (1976)	26 27 12	80 04 07	NAD 27	275	11
PB-694		Schneider (1976)	26 36 27	80 03 04	NAD 27	249	8
PB-695		Schneider (1976)	26 37 46	80 02 56	NAD 27	249	6
PB-699		Schneider (1976)	26 40 43	80 09 27	NAD 27	357	20
PB-708		Schneider (1976)	26 52 00	80 03 20	NAD 27	154	18
PB-712		Schneider (1976)	26 55 10	80 08 07	NAD 27	280	14
PB-715		USGS	26 51 14.7	80 17 30.8	NAD 27	81	23
PB-747	PB-733, injection	SFWMD	26 56 06	80 08 24	NAD 83	1,280	13
PB-798		Schneider (1976)	26 45 37	80 08 56	NAD 27	120	18
PB-830		Schneider (1976)	26 51 04.5	80 24 42.8	NAD 27	220	22
PB-833		Schneider (1976)	26 52 58	80 05 40	NAD 27	520	10
PB-834B		Schneider (1976)	26 34 55	80 03 08	NAD 27	201	8
PB-836		Schneider (1976)	26 40 49	80 32 22	NAD 27	240	12
PB-837		Schneider (1976)	26 47 02	80 31 34	NAD 27	200	12
PB-838		Schneider (1976)	26 51 34	80 37 38	NAD 27	240	14

Table 1–1. Inventory of all wells used in this study.—Continued

[Total hole depth is in feet below land surface; ASR, aquifer storage and recovery; CERP, Comprehensive Everglades Restoration Plan; NR, not reported; PBCWUD, Palm Beach County Water Utilities Department; RO, reverse osmosis; SFWMD, South Florida Water Management District; USACE, U.S. Army Corps of Engineers; USGS, U.S. Geological Survey; WTP, wastewater treatment plant]

USGS local well name	Other identifier	Source study or owner	Latitude north (dd mm ss.ss)	Longitude west (dd mm ss.ss)	Horizontal datum	Total hole depth (feet)	Altitude of land surface (feet NGVD 29)
PB-839		Schneider (1976)	26 41 12	80 40 03	NAD 27	220	15
PB-841		Schneider (1976)	26 20 00	80 32 20	NAD 27	250	20
PB-842		Schneider (1976)	26 20 00	80 46 40	NAD 27	240	16
PB-843		Schneider (1976)	26 41 53	80 48 33	NAD 27	575	13
PB-880		Other	26 54 37.2	80 10 30.8	NAD 27	118	17.06
PB-1026		Fischer (1980)	26 47 15	80 08 23	NAD 27	114	17
PB-1029		Swayze and others (1980)	26 48 02	80 08 13	NAD 27	129	18
PB-1038		Swayze and others (1980)	26 48 17	80 06 23	NAD 27	123	17
PB-1065	APT production well	Fischer (1980)	26 46 10	80 07 25	NAD 27	115	16
PB-1082		Swayze and others (1980)	26 50 34	80 05 01	NAD 27	200	12
PB-1083		Swayze and others (1980)	26 50 27	80 06 00	NAD 27	200	12
PB-1084		Swayze and others (1980)	26 50 27	80 10 02	NAD 27	200	18
PB-1085		Swayze and others (1980)	26 50 27	80 11 57	NAD 27	200	18
PB-1086		Swayze and others (1980)	26 50 18	80 07 58	NAD 27	200	18
PB-1087		Swayze and others (1980)	26 45 55	80 11 52	NAD 27	200	18
PB-1088		Swayze and others (1980)	26 45 55	80 13 44	NAD 27	200	19
PB-1089		Swayze and others (1980)	26 42 25	80 08 47	NAD 27	240	17
PB-1090		Swayze and others (1980)	26 37 45	80 06 40	NAD 27	200	16
PB-1091		Swayze and others (1980)	26 37 28	80 10 25	NAD 27	160	17
PB-1092		Swayze and others (1980)	26 36 23	80 13 25	NAD 27	200	18
PB-1093		Swayze and others (1980)	26 36 26	80 15 15	NAD 27	200	18
PB-1094		Swayze and others (1980)	26 36 29	80 17 14	NAD 27	180	18
PB-1095		Schneider (1976)	26 31 38	80 06 47	NAD 27	300	17
PB-1096		Schneider (1976)	26 31 38	80 09 52	NAD 27	220	20
PB-1097		Swayze and others (1980)	26 31 45.2	80 13 42.4	NAD 27	160	16
PB-1098		Swayze and others (1980)	26 48 36	80 13 01	NAD 27	180	20
PB-1099		Swayze and others (1980)	26 52 50	80 10 36	NAD 27	180	18
PB-1100		Swayze and others (1980)	26 20 07	80 13 45	NAD 27	200	15
PB-1101		Swayze and others (1980)	26 24 05	80 07 18	NAD 27	220	19
PB-1102		Swayze and others (1980)	26 27 11	80 11 14	NAD 27	235	18

Table 1–1. Inventory of all wells used in this study.—Continued

[Total hole depth is in feet below land surface; ASR, aquifer storage and recovery; CERP, Comprehensive Everglades Restoration Plan; NR, not reported; PBCWUD, Palm Beach County Water Utilities Department; RO, reverse osmosis; SFWMD, South Florida Water Management District; USACE, U.S. Army Corps of Engineers; USGS, U.S. Geological Survey; WTP, wastewater treatment plant]

USGS local well name	Other identifier	Source study or owner	Latitude north (dd mm ss.ss)	Longitude west (dd mm ss.ss)	Horizontal datum	Total hole depth (feet)	Altitude of land surface (feet NGVD 29)
PB-1103		Swayze and others (1980)	26 24 03	80 10 16	NAD 27	240	21
PB-1104		Swayze and others (1980)	26 26 45	80 07 18	NAD 27	340	20
PB-1105		Swayze and others (1980)	26 19 39	80 10 09	NAD 27	217	15
PB-1106		Swayze and others (1980)	26 22 28	80 21 49	NAD 27	217	23
PB-1107		Swayze and others (1980)	26 28 07.9	80 13 16.7	NAD 27	200	15
PB-1108		Swayze and others (1980)	26 24 03	80 14 13	NAD 27	200	14
PB-1109		Swayze and others (1980)	26 51 15	80 17 31	NAD 27	171	23
PB-1144	PBF-1	BRDVW CONDOS, SFWMD	26 58 11	80 05 13	NAD 83	1,038	13
PB-1166	IW-1	Pratt & Whitney	26 54 06	80 18 22	NAD 27	3,310	25
PB-1168	IW-1	PBCWUD System 9 North	26 23 34	80 12 11	NAD 27	3,300	20
PB-1173	MW-1	ACME Improvement District	26 38 04	80 13 57	NAD 27	2,010	17
PB-1176	IW-1	Royal Palm Beach	26 44 04	80 14 04	NAD 27	3,300	17.83
PB-1184	IW-1	Pahokee	26 48 01	80 39 59	NAD 27	3,510	13.03
PB-1192	RO IW-1	Boynton Beach RO Reject	26 31 44	80 07 17	NAD 27	3,312	19.42
PB-1195	ASR MW-1	Boynton Beach East WTP	26 30 49	80 03 45	NAD 27	435	18.90
PB-1197	RO-5	Jupiter RO	26 55 24	80 09 22	NAD 27	1,665	17
PB-1544	APT site 9 deep test well	USGS	26 38 57.9	80 10 09.5	NAD 83	260	18
PB-1545	APT site 9 production well	USGS	26 38 57.9	80 10 09.5	NAD 83	160	18
PB-1546	APT site 15 deep test well	USGS	26 56 06	80 13 55	NAD 27	170	20
PB-1547	APT site 15 production well	USGS	26 56 06	80 13 55	NAD 27	120	20
PB-1550	APT site 14 deep test well	USGS	26 51 34	80 17 27	NAD 27	180	23
PB-1555	APT site 13 deep test well	USGS	26 48 43	80 12 50	NAD 27	190	19
PB-1558	APT site 12 deep test well	USGS	26 48 34	80 19 34	NAD 27	200	20
PB-1564	APT site 11 deep test well	USGS	26 45 55	80 15 17	NAD 27	220	20
PB-1567	APT site 10 deep test well	USGS	26 41 01	80 16 30	NAD 27	190	17
PB-1571	APT site 8 deep test well	USGS	26 35 09	80 10 22	NAD 27	260	19
PB-1574	APT site 2 deep test well	USGS	26 25 53	80 12 15	NAD 27	240	19
PB-1576	APT site 16 deep test well	USGS	26 32 55	80 13 36	NAD 27	190	17
PB-1578	APT site 7 deep test well	USGS	26 37 02	80 05 19	NAD 27	270	10
PB-1581	APT site 1 deep test well	USGS	26 21 47	80 10 16	NAD 27	320	17

Table 1–1. Inventory of all wells used in this study.—Continued

[Total hole depth is in feet below land surface; ASR, aquifer storage and recovery; CERP, Comprehensive Everglades Restoration Plan; NR, not reported; PBCWUD, Palm Beach County Water Utilities Department; RO, reverse osmosis; SFWMD, South Florida Water Management District; USACE, U.S. Army Corps of Engineers; USGS, U.S. Geological Survey; WTP, wastewater treatment plant]

USGS local well name	Other identifier	Source study or owner	Latitude north (dd mm ss.ss)	Longitude west (dd mm ss.ss)	Horizontal datum	Total hole depth (feet)	Altitude of land surface (feet NGVD 29)
PB-1586	APT site 6 deep test well	USGS	26 34 43	80 03 30	NAD 27	420	18
PB-1598	APT site 4 deep test well	USGS	26 28 05	80 10 16	NAD 27	270	19
PB-1603	APT site 5 deep test well	USGS	26 32 16	80 06 17	NAD 27	390	15
PB-1605	APT site 3 deep test well	USGS	26 26 36	80 06 21	NAD 27	430	15
PB-1607	APT site 17 deep test well	USGS	26 52 48	80 10 38	NAD 27	220	18
PB-1608	APT site 17 production well	USGS	26 52 48	80 10 38	NAD 27	150	18
PB-1613		USGS	26 54 27	80 24 15	NAD 27	162	25
PB-1614		USGS	26 56 33	80 20 30	NAD 27	155	24
PB-1693	ASR MW-1	West Palm Beach ASR	26 42 58	80 03 49	NAD 83	1,191	18.97
PB-1695	PBF-3,4,5; Lake Lytal	SFWMD	26 40 34	80 06 09	NAD 27	2,490	15
PB-1696	W-7500	Sugar Cane Growers Coop	26 25 06	80 39 15	NAD 27	1,705	11
PB-1702	ASR-1	Delray Beach North Storage Reservoir	26 28 01	80 05 59	NAD 27	1,200	21.20
PB-1703	W-17554, G-200	Reese and Cunningham (2000)	26 26 07	80 48 37	NAD 27	221	20
PB-1704	W-17747, Sod Farm	Reese and Cunningham (2000)	26 23 59	80 34 34	NAD 27	201	11
PB-1761	B-6 Core Test	USGS	26 21 19.1	80 17 41.8	NAD 27	120	10
PB-1765	ASR EXW-1, Hillsboro Canal West Site 1	SFWMD	26 21 19	80 17 42	NAD 83	1,225	10
PB-1769	PBC-2	SFWMD (Saltwater monitoring network)	26 35 22	80 03 30	NAD 27	337	15
PB-1775	ASR FAMW, Hillsboro Canal East	PBCWUD	26 20 00	80 13 13	NAD 27	1,650	16.33
PB-1777	PBF-7, South Bay	SFWMD	26 41 58	80 42 57	NAD 27	2,504	10
PB-1781	CP02-NPBP1-CB-0056	CERP, USACE	26 42 00.2	80 21 50.6	NAD 83	205	13.90
PB-1782	CP02-NPBP1-CB-0057	CERP, USACE	26 45 32.6	80 08 18	NAD 83	206	17.80
PB-1783	CP02-NPBP1-CB-0058	CERP, USACE	26 45 28.1	80 15 48	NAD 83	205	21.60
PB-1784	DMW-2	Highland Beach RO Reject	26 24 40	80 03 54	NAD 83	425	8
PB-1785	CP02-EAARS-CB-0001	CERP, USACE	26 26 07.3	80 37 00.4	NAD 27	180	11.84
PB-1786	CP02-EAARS-CB-0002	CERP, USACE	26 28 00.1	80 45 13.7	NAD 27	182	13.38
PB-1787	CP02-EAARS-CB-0003	CERP, USACE	26 27 49	80 41 21	NAD 27	183	12.15
PB-1788	CP02-EAARS-CB-0004	CERP, USACE	26 22 39	80 31 46	NAD 27	180	11.39
PB-1789	CP02-EAARS-CB-0007	CERP, USACE	26 23 52.9	80 35 16.6	NAD 27	76	11.82
PB-1790	CP02-EAARS-CB-0008	CERP, USACE	26 28 13.1	80 38 38.4	NAD 27	67	11.56
PB-1792	CP02-EAARS-MW-0010	CERP, USACE	26 23 58.3	80 40 52.5	NAD 27	73	11.92

Table 1–1. Inventory of all wells used in this study.—Continued

[Total hole depth is in feet below land surface; ASR, aqufier storage and recovery; CERP, Comprehensive Everglades Restoration Plan; NR, not reported; PBCWUD, Palm Beach County Water Utilities Department; RO, reverse osmosis; SFWMD, South Florida Water Management District; USACE, U.S. Army Corps of Engineers; USGS, U.S. Geological Survey; WTP, wastewater treatment plant]

USGS local well name	Other identifier	Source study or owner	Latitude north (dd mm ss.ss)	Longitude west (dd mm ss.ss)	Horizontal datum	Total hole depth (feet)	Altitude of land surface (feet NGVD 29)
PB-1794	MP2-A, ENR	Harvey and others (2002)	26 38 19.4	80 25 38.3	NAD 27	101.9	15.6
PB-1797	MP3-A, ENR	Harvey and others (2002)	26 38 54.5	80 26 40.1	NAD 27	191	17.20
PB-1798	MP3-B, ENR	Harvey and others (2002)	26 38 54.5	80 26 40.1	NAD 27	190.9	17.2
PB-1801	BP-DMW-W	SFWMD	26 20 54.27	80 17 49.33	NAD 83	107	12.44
PB-1802	BP-SMW-W	SFWMD	26 20 54.36	80 17 49.33	NAD 83	32	12.48
PB-1803	HASR-SASMW-1	SFWMD	26 21 17.7	80 17 41.5	NAD 27	208	11
PB-1804	LEC 7, S-6 Pump Station	This study	26 28 29.4	80 26 54.2	NAD 83	230	12
PB-1805	LEC 8, US 27, bend to north	This study	26 33 59	80 42 35.7	NAD 83	200	12
PB-1806	LEC 9, US 441 & C-51	This study	26 40 46.5	80 12 10.7	NAD 83	205	20
PB-1807	LEC 10, APT site 8, Turnpike and Lantana Rd	This study	26 35 12.3	80 10 21.4	NAD 83	205	19
PB-1808	LEC 11, SR 710 & C-18	This study (data not used)	26 48 47.6	80 09 21.4	NAD 83	200	18
W-5435			26 47 28	80 58 14	NAD 27	1,200	5

Table 1–2. PB-1761 (B-6 core test) lithologic description.

[Descriptions by R.S. Reese, March 2006. All references to "sandstone," "sand" or "sandy" imply dominantly quartz sand unless otherwise specified, such as carbonate or shell sand. Color is according to the Rock-color chart based on the Munsell system (1948). Continuous core from surface to total depth of 120 ft]

Top (feet)	Bottom (feet)	Thickness (feet)	Recovered (feet)	Primary rock type	Color	Grain size	Notes
0.0	5.0	5.0	0.5	Sandy limestone	Light gray	Fine-medium quartz sand	Abundant quartz sand in matix. May be more of a sandstone.
5.0	9.0	4.0	3.5	Sandy floatstone-rudstone	White to yellowish-gray to light gray		Abundant quartz sand (fine-medium) in places. High moldic porosity. Many shells dissolved; schizoporella bryozoan
9.0	10.0	1.0	0.3	Sandstone	Yellowish-gray	Fine-medium	Quartzose, with abundant shells
10.0	15.0	5.0	No recovery	Cuttings: sandstone	Pinkish gray	Fine-medium	Quartzose, no shells
15.0	17.0	2.0	~2	Sandstone	Yellowish-gray to light gray	Fine-coarse	Quartzose; abundant large shells; more abundant lime grains in lower part; light to medium light gray mottling which could be infilling or burrowing
17.0	20.0	3.0	< 1.0	Limestone	Light to medium-light gray	Abundant shell fragments	Matrix is quartz sandstone and gray mottled sandy micrite
20.0	25.0	5.0	4.0	Limestone	Similar to above	More shells than above	Laminated calcrete at 21 ft (light and gray layers); gastropod rich layer with abundant lime mud infilling at 21.5 ft; lower part is mostly stacked whole molusk shells—most shells are not leached out (original shell material); high porosity
25.0	30.0	5.0	2.0	Limestone-grainstone	As above	Coarse shell coquina	Solidary coral fragments at 26.5 ft
30.0	35.0	5.0	<1.0	Sand	Yellowish-gray	Fine, well sorted	Loose; occasional quarter to penny-sized calm shells similar to above; trace black grains
35.0	40.0	5.0	<1.0	Sand	Yellowish-gray	Fine-coarse, mostly fine	Loose; more shells than above; rare black grains; Lower part grades to brown blebs imbedded in matrix; (could be organic matter or FeO in soil zone)
40.0	44.5	4.5	4.0	Sand	Very light gray to yellowish-gray	Fine, well sorted	Abundant coarse shell fragments; black grains—trace to 1 or 2%; may grade into lime sand in places
44.5	45.0	0.5	0.4	Lime mudstone	Light brownish gray		
45.0	47.0	2.0	1.5	Sand	Yellowish-gray	Fine, poorly sorted	Silty to muddy; grades down to abundant large shells
47.0	48.0	1.0	1.0	Lime mudstone to shell hash	Very light gray		
48.0	49.0	1.0	1.0	Floatstone	Very light gray to light gray	Very coarse whole shells (original material)	Dense, low porosity; some fine quartz sand in matix; steep irregular dissolution surface at top with some infilling of brownish material from above; solidary coral on top of slope

Table 1–2. PB-1761 (B-6 core test) lithologic description.—Continued

[Descriptions by R.S. Reese, March 2006. All references to "sandstone," "sand" or "sandy" imply dominantly quartz sand unless otherwise specified, such as carbonate or shell sand. Color is according to the Rock-color chart based on the Munsell system (1948). Continuous core from surface to total depth of 120 ft]

Top (feet)	Bottom (feet)	Thickness (feet)	Recovered (feet)	Primary rock type	Color	Grain size	Notes
49.0	50.0	1.0	0.0	Assumes two feet recovered from 47–50 ft is from top of interval			
50.0	53.0	3.0	1.5	Floatstone, similar to above	Very light gray to light gray	May be more of a sandstone at top (upper few inches)	Shell fragments are dense; another steep dissolution surface a few inches from top with conch shells on top; trace black grains
53.0	54.5	1.5	1.5	Floatstone, similar to above		May be more fine quartz sand	Areas of mottled darker gray limestone; may be bioturbated; looks like areas of dissolution coated with darker gray limestone
54.5	55.0	0.5	0.5	Floatstone, same as above	Grades to medium or medium dark gray in places	Very coarse shell fragments	Large monastria coral at bottom
55.0	57.0	2.0	1.0	Floatstone, similar to above	Mottled yellowish-gray to medium or medium dark gray		Dense; large whole pelypod shells in lower part, also monastria coral fragments; lower part is sandstone to mudstone, yellowish-gray, muddy, silty with medium grained quartz common
57.0	60.0	3.0	0.7	Laminated calcrete	Yellowish-gray to medium or medium dark gray		Mostly mudstone grading down to sandstone(?), brecciated layers and shell material; medium gray layer at top (surface coating with crinulated bottom); at bottom—piece of monastria coral and shell coquina
60.0	65.0	5.0	0.1 to 0.2	Mudstone	White to medium gray		Hard, dense, abundant shell fragments; pin point porosity
65.0	70.0	5.0	0.9	Sand	Yellowish-gray	Fine (silty to coarse), poorly to moderate sorted	Shell fragments common; fine grained black grains common (trace to 2 or 3%); some coarse quartz grains
70.0	75.0	5.0	1.3	Mudstone		Abundant shell fragments	Trace fine black grains; pinpoint porosity
		Grades down to:		Shell		Muddy	Unconsolidated; some whole shells; lime sand to mud matrix; shell fragments increase with depth
75.0	76.0	1.0	0.4	Sand, as above at 65 ft			
76.0	80.0	4.0	1.9	Sand, same as above	Gray color increasing		Abundant coarse grain shell flakes; black grains more common (5–10%); in lower part abundant whole or mostly whole small to medium molusk shells
80.0	85.0	5.0	1.8	Sandstone to sandy grainstone	Light gray	Fine-coarse	50–50 quartz grains(?); lime grains are limestone and shell; quartz grains tend to be finer; phosphatic; coarser grained and less quartz toward bottom
85.0	90.0	5.0	1.3	Grainstone to wackstone	Similar to above		Overall less quartz sand than above; grades down to lime mud matrix with some large original clam shells

Table 1–2. PB-1761 (B-6 core test) lithologic description.—Continued

[Descriptions by R.S. Reese, March 2006. All references to "sandstone," "sand" or "sandy" imply dominantly quartz sand unless otherwise specified, such as carbonate or shell sand. Color is according to the Rock-color chart based on the Munsell system (1948). Continuous core from surface to total depth of 120 ft]

Top (feet)	Bottom (feet)	Thickness (feet)	Recovered (feet)	Primary rock type	Color	Grain size	Notes
90.0	91.0	1.0	0.5	Packstone to wackstone	White to very light gray	Medium to coarse	Minor quartz grains; trace phosphate
91.0	95.0	4.0	0.7?	Packstone, similar to above			Quartz grains may be 10–20%, but may dominate in lower part
95.0	96.0	1.0	0.9	Floatstone down to grainstone-packstone	Very light to light gray	Medium to coarse	Dense; quartzose; phosphatic; grainstone in lower part is less dense and coarser grained (pinkish gray color at bottom)
96.0	100.0	4.0	1.9	Sandstone	Very light to light. gray	Medium to coarse	Trace up to 2% phosphate; limestone and shell fragments common
		Grades down to:		Shelly sandstone or grainstone		Coarse (pea size) shell fragments	Less dense and more porous; more phosphate; quartzose matrix; more lime mud in matrix; high porosity in shelly layers
100.0	103.0	3.0	1.8	Floatstone	Light gray	Medium to coarse	Matrix is medium-coarse and quartose (up to 50%) with some limestone fragments as well as shell fragments; some lm mud in matrix, also trace of phosphate
103.0	105.0	2.0	1.0	Floatstone, similar to above			Abundant small shells in layers; eroded and dissolved large (up to 3-in. thick) pieces of remanent limestone which are dense and have an abundant micrite matrix—they are sitting at an angle with large holes infilled with mostly shell material
105.0	110.0	5.0	0.0	No recovery			
110.0	111.0	1.0	0.6	Shell hash	White to yellowish-gray	Fine quartz sd matrix	Shells are mostly pea size with common gastropods
111.0	111.7	0.7	0.7	Shell hash, as above	Assumes 1.8 ft recovered from 111 to 115 ft is from top of interval		
111.7	115.0	3.3	1.1	Grainstone to packstone	Very light to light gray	Medium to coarse (quartz)	Dense; abundant quartz grains;lime mud matrix; trace phosphate; ranges to floatstone as at 100 ft; quartz grains and lime mud matrix is variable; some moldic porosity in lower part
115.0	120.0	5.0	1.7	Grainstone to packstone	Similar to above		Less dense, friable, soft, higher porosity; quartz grain rich in places; trace phosphate;
		Lower part:					Has prevalent dense micrite pieces (eroded limestone chunks similar to pieces at 103 ft)
		Lowest piece		Similar to friable grainstone at top			Has coarse, gray limestone fragments floating in matrix

Table 1–3. PB-1804 (LEC-7) lithologic description.

[Descriptions by R.S. Reese, August 4, 2006. All references to "sandstone," "sand" or "sandy" imply dominantly quartz sand unless otherwise specified, such as calcareous or shell sand. Color is according to the Rock-Color chart based on the Munsell system (1948); source of samples: 2-ft intervals taken by SPT or rotary cuttings down to 200 ft and cuttings at 5-ft intervals down to total depth of 230 ft. SPT, standard penetration test methodology using split barrel sampler. A more detailed description of the lithology for this well is on file with the U.S. Geological Survey]

Depth interval (feet)	Recovery method	Primary rock type	Color	Grain size and modifiers	Notes
0–4	SPT	Fill	Light gray		
4–8	All SPT	Peat	Dark brown to black		
8–18	All SPT	Mudstone to sand	White to light to yellowish-gray and pale yellowish-brown	Very fine-fine quartz	Clay rich—occurring as beds(?) and matrix; common large shell fragments; large limestone fragments
18–40	SPT for 18-22 ft; remainder is cuttings	Floatstone to rudstone to wackstone	Very light to yellowish to light olive gray	Fine sand	Abundant coarse shell fragments and small gastropods in carbonate mud matrix; well cemented; variable sand content; good porosity from 24 to 30 ft; common spar pieces or cement in places
40–50	Cuttings except SPT for 42-44 and 48-50	Marl to sandstone	Light to medium light gray to light olive gray	Fine quartz	Also mudstone and wackstone; abundant clay with fine black specs and lime mud matrix; limestone and large shell fragments; trace dark sand grains
50–62	All cuttings	Wackstone to sandstone	White to light gray to light olive gray	Fine quartz (?)	Common shell fragments; spar pieces; some brown mudstone pieces
62–68	Cuttings except SPT for 64-66	Wackstone to mudstone	Light gray to yellowish-gray	Fine quartz	Common large white shell fragments and large fossils; clay/lime mud as grain coatings and some pieces; one piece has dark organic matter in pits
68–70	Cuttings	Clay and sandstone	Light olive gray	Very fine-fine	With very fine dark flecks
70–98	SPT for 70-74,76-78, 86-88, 92-96; remainder is cuttings	Mudstone-wackstone-floatstone-packstone-sandstone	Yellowish-gray to light gray to light olive gray	Very fine-fine quartz	Abundant shell fragments; some clay/mud coatings in upper part; some blackening of surfaces; moldic and vuggy porosity from 70 to 80 ft and 86 to 98 ft
98–100	SPT	Sand and shell	Light gray to dark gray	Medium-coarse quartz	Clear quartz grains; 20% dark limestone fragments; 30–40% shell fragments; 1–3% phosphate grains; floating fine-grained sandstone pieces
100–110	All cuttings	Mudstone	Very light to light gray	Fine-medium quartz	Hard; variable quartz; some moldic porosity, increasing toward base
110–130	All SPT	Rudstone to floatstone	Light to medium gray	Medium-coarse quartz	Quartz in matrix (10–20%); good moldic porosity; trace to 2% phosphate grains, very fine to fine; vugs filled with quartz and limestone grains and lime mud; in lower part matrix has 50–50 quartz and carbonate grains along with carbonate mud; spar at bottom

Table 1–3. PB-1804 (LEC-7) lithologic description.—Continued

[Descriptions by R.S. Reese, August 4, 2006. All references to "sandstone," "sand" or "sandy" imply dominantly quartz sand unless otherwise specified, such as calcareous or shell sand. Color is according to the Rock-Color chart based on the Munsell system (1948); source of samples: 2-ft intervals taken by SPT or rotary cuttings down to 200 ft and cuttings at 5-ft intervals down to total depth of 230 ft. SPT, standard penetration test methodology using split barrel sampler. A more detailed description of the lithology for this well is on file with the U.S. Geological Survey]

Depth interval (feet)	Recovery method	Primary rock type	Color	Grain size and modifiers	Notes
130–160	Cuttings for 132-134; remainder is SPT	Sand	Light gray to light olive gray to gray-olive	Very fine-fine	Well sorted; has silt and clay or lime mud matrix that increases downward; 3–5% phosphate grains, very fine to fine; some coarse shell fragments (5%)
160–180	SPT for 162-164; remainder is cuttings	Mudstone	Light olive gray	Fine-coarse	Variable fine to coarse quartz sand; some sandstone; moldic to pinpoint porosity; some coarse white shell fragments; clay/mud matrix from 176 to 178 ft
180–182	Cuttings	Mudstone to crystalline limestone	Light gray to light olive gray	Fine-coarse spar	Similar to 160–162 ft; good vuggy porosity(?)
182–200	All SPT	Sand	Light to yellowish- to light olive gray	Very fine to fine, silty	Phosphate grains, very fine, 5–10% increasing to 10–20% downward; in middle to lower part: some pieces of sandstone of similar composition; trace to minor clay in matrix in places
200–230	All cuttings	Sand	Dusky yellowish-green to dark greenish gray	Very fine to fine, clayey	Abundant clay matrix;10% very fine phosphate grains; clay increasing to 30–50% at 215 ft; common large white pelecypod shell fragments in upper part

Table 1–4. PB-1805 (LEC-8) lithologic description.

[Descriptions by R.S. Reese, November 8, 2008. All references to "sandstone," "sand" or "sandy" imply dominantly quartz sand unless otherwise specified, such as lime sandstone or shell sandstone. Color is according to the Rock-Color chart based on the Munsell system (1948); Continuous core to 73 ft; SPT to 200 ft. S, only a small portiion of the core barrel content was saved; SPT, standard penetration test methodology using split barrel sampler. A more detailed description of the lithology for this well is on file with the U.S. Geological Survey]

Depth interval (ft)	Recovered (feet)	Primary rock type	Color	Grain size and modifiers	Notes
0–8	No recovery				
8–13	2.8	Mudstone	Light to medium-light gray	Pebble-sized shell infills	Karst surface at 8 ft. Large vertical dissolution feature at 9 ft infilled with coarse broken shell debris; common vertical root marks (holes)
13–23	5.2	Mudstone	White	Chalky at 13 ft	Common vertical root marks (holes); dense at top down to soft and crumbly
23–28	4.0	Mudstone to marl	White to yellowish-gray	Clay to fine-coarse shell	Soft and plastic when wet. Ubiquitous fine to coarse shell fragments
28–33	3.0	Floatstone	Yellowish-gray to white	Mud to pebble-sized shell	Irregular surface at top lined with gray matirix; upper part has abundant floating smooth-shelled gastropods (1/4 in.); lower part has common large shells with matrix of mud and fine shell fragments
33–43	4.1	Floatstone	Light to medium gray	Mud to granule and pebble-sized shell	Dense with gray micrite matrix, mottled appearance; irregular infilling of dissolution features with yellowish-gray mudstone constaining some medium quartz grains; shell lag(?) in top 0.3 ft; low to moderate permeability
43–53	No recovery				
53–73	2.3	Floatstone to sandstone	Medium light gray to grayish yellowish green	Mud to pebble-sized shell	Irregular to rounded pieces with prevalent dissolution; common moldic porosity; patches of calcite spar lining vugs; some whole large shells
				and fine to medium quartz sand	May border on quartz sandstone in places; more mud (micrite) matrix in lower part and trace of fine to medium phosphate grains; overall, high permeability and porosity in upper part and decreasing downward
73–200	SPT only	Samples missing			

Table 1–5. PB-1806 (LEC-9) lithologic description.

[Descriptions by R.S. Reese, August 29, 2007. All references to "sandstone," "sand" or "sandy" imply dominantly quartz sand unless otherwise specified, such as calcareous or shell sand. Color is according to the Rock-Color chart based on the Munsell system (1948); SPT samples from 63 to 69 ft and below 138 ft to total depth of 205 ft, remainder was continuous core; SPT samples below 138 to 150 ft were continous 2-ft intervals, and below 150-ft samples were 2 ft out every 5-ft interval. S, only a small portiion of the core barrel content was saved; SPT, standard penetration test methodology using split barrel sampler. A more detailed description of the lithology for this well is on file with the U.S. Geological Survey]

Depth interval (feet)	Recovered (feet)	Primary rock type	Color	Grain size and modifiers	Notes
0–38	S	Sand	Yellowish-gray to pale brown	Fine-coarse	Moderately to well sorted
38–53	2.0	Sand	Very light gray to light olive gray	Fine-coarse	Silty to muddy matrix; trace dark minerals or phosphate grains; lost circulation at 51 ft
53–58	4.0	Sand	Light to medium gry	Medium-coarse	Moderately well sorted; loose; phosphate or dark minerals grains 5 to 10%; common limestone grains in lower part
58–69	3 by core and 6 by SPT	Sand to interbedded sandstone or limestone	Yellowish-gray	Fine-coarse	Poorly sorted; carbonate silt-mud matrix; sandstone to packstone; 5% phosphate grains
69–74	1.0	Sandstone to limestone	Very light gray	Fine-medium	Well cemented to loose and rotten; concretions near top; silty, muddy sand matrix packed around hard pieces; up to 5% phosphate grains; some porosity
74–84	2.3	Shell sand to sandstone	Very light to yellowish-gray	Medium-coarse	Abundant coarse shell fragments; 1–5% phosphate grains
84–99	4.9	Rudstone	Light to medium light gray	Fine to very coarse	Pelecypod rich; high moldic to vuggy porosity; coarse sand infilling some vugs; concretions at top; trace to 2% phosphate grains
99–109	3.0	Floatstone to sandstone	Very light gray to light gray	Fine-coarse	Broken to rotten and vuggy; high porosity; spar to lime mud matrix; up to 3% phosphate grains
109–124	5.5	Sandstone to floatstone	Very light gray to light gray	Medium-coarse	Rubbly and broken, concretions at top; very high porosity that may be due to borrowing; micrite to spar matrix
124–134	7.6	Sand, carbonate to minor packstone	Yellowish-gray	Fine-coarse	Shell fragments and variable quartz grains; carbonate mud-silt matrix increasing downward; Minor fine to coarse phosphate grains; plastic in lower part
134–138	No recovery				
138–160	SPT	Sand, carbonate to quartzose	Yellowish-gray	Fine-coarse	Variable carbonate silt-mud matrix; trace to 2% medium-coarse phosphate grains
163–180	SPT	Sand	Light olive gray	Fine	Poorly- to moderately well-sorted; mud-silt matrix; 1–2% fine phosphate grains
183–190	SPT	Sand	Yellowish-gray	Fine-medium	Less mud-silt matrix; trace to 2% phosphate grains
193–200	SPT	Sand	Light olive gray	Fine	Occasional mottled green clay patches; trace to occasional fine to very fine and very coarse phosphate grains
200–205	No recovery				

Table 1–6 PB-1807 (LEC-10) lithologic description.

[Descrioptions by R.S. Reese, November 22, 2008. All references to "sandstone," "sand," or "sandy" imply dominantly quartz sand unless otherwise specified, such as carbonate or shell sand. Color is according to the Rock-Color chart based on the Munsell system (1948); Continuous core to 125 ft; SPT to 190 ft; SPT were continuous 2-ft intervals from 123 to 143 ft and 2-ft sample for every 5-ft interval from 143 to 190 ft; total well depth 205 ft. SPT, standard penetration test methodology using split barrel sampler. A more detailed description of the lithology for this well is on file with the U.S. Geological Survey]

Dept interval (feet)	Recovered (feet)	Primary rock type	Color	Grain size and modifiers	Notes
0–9	No Recovery		Ran roller bit to fit core barrel		
9–13	No Recovery				
13–18	0.3	Sand	Pale yellowish-brown	Medium to coarse	Well sorted; some white shell fragments
18–33	3.1	Sand	Pale brown	Fine to medium	Well sorted, loose, trace shell fragments
33–53	5.1	Sand	Yellowish-gray to pale yellowish-orange to dark yellowish-brown	Very fine to coarse	Poorly sorted, silty; dark brown color may be due to organic material and can occur in layers
53–68	1.5	Sand	Very pale orange	Medium to coarse	Moderate to well sorted; has rock fragments from 53 to 58 ft and 63 to 68 ft, medium to light gray, medium-grained, sandstone to rudstone
68–78	3.3	Sandstone to grainstone(?)	Very light to light gray	Fine to medium-coarse	Dense; common dissolution vugs, subhorizontal and tabular in shape—probably represent cross-bedding with dissolution of shell layers; moderate to good permeability
78–93	3.6	Sandstone to rudstone	Very light gray to very light olive gray	Very fine to coarse	Dense; dissolution vugs similar to above indicating some cross-bedding, vugs up to 1/4 to 1/2-in. diamater; abundant coarse flat shell fragments in places; rounded to broken pebble sized pieces in places; trace to 1% phosphate grains in lower 5 ft; low to high permeability, high permeability in upper 5 ft; layer of loose sand in top 0.4 ft, fine to medium grained
93–118	No Recovery				May have been mostly sand, but in old test well at same site (PB-1571) in this interval predominantly limestone (but interbedded with sand) was recovered
118–123	0.4	Floatstone to grainstone	Very light to light gray	Fine to pebble	Abundant medium-coarse rounded quartz grains and limestone to shell grains, white; common 1/8 to 1/4-in. vugs, one vug up to 1/2 in.; 1–3% very fine phosphate grains; moderate to good permeability
123–125	1.3	Upper part: sand	Yellowish-gray	Fine	Approx 50% carbonate grains; 1% very fine to fine phosphate grains
	0.8	Lower part: floatstone to grainstone	Very light to light gray	Fine quartz to pebble	Dense; abundant fine quartz and shell fragments in micrite matrix; common vug poroosity (up to 1/4-in. diameter); moderate permeability
125–133	SPT	Sand with rock layers	Yellowish-gray to light gray	Fine to medium	Poorly to moderate well sorted; predominantly carbonate grains; 1–8% very fine to fine phosphate grains; rock pieces are coarse-grained sandstone to mudstone to floatstone—may occur as thin layes
133–141	SPT	Floatstone to rudstone	White to light gray to yellowish-gray	Coarse to pebble	Predominantly carbonate grains, but abundant coarse, rounded quartz grains; 1% fine to coarse phosphate grains; abundant small to pinpoint vugs; moderate to good permeability (highest permeability from 137 to 139 ft)

Table 1–6 PB-1807 (LEC-10) lithologic description.—Continued

[Descrioptions by R.S. Reese, November 22, 2008. All references to "sandstone," "sand," or "sandy" imply dominantly quartz sand unless otherwise specified, such as carbonate or shell sand. Color is according to the Rock-Color chart based on the Munsell system (1948); Continuous core to 125 ft; SPT to 190 ft; SPT were continuous 2-ft intervals from 123 to 143 ft and 2-ft sample for every 5-ft interval from 143 to 190 ft; total well depth 205 ft. SPT, standard penetration test methodology using split barrel sampler. A more detailed description of the lithology for this well is on file with the U.S. Geological Survey]

Dept interval (feet)	Recovered (feet)	Primary rock type	Color	Grain size and modifiers	Notes
141–143	SPT	Sand	Light olive gray	Medium to coarse	Predominantly carbonate grains; some gray limestone grains; 1% fine phosphate grains
143–148	No recovery				
148–180	SPT	Sand	Yellowish-gray to light olive gray to greenish gray	Fine to coarse	Predominantly carbonate grains; poorly sorted; silt to mud matrix that generally increases downward; occasional pebble-sized rock or shell fragments; 1–3% phosphate grains; from 168 to 180 ft: predominantly medium-coarse grained, but sticky and clumpy
180–183	No recovery				
183–190	SPT	Sand to floatstone	Greenish gray	Medium to pebble	Abundant pebble-sized shell fragments; still has mud matrix; sample from 188 to 190 ft: predominantly floastone, which may have some vuggy permeability; moderate to high permeability

Table 1–7. Summary of geologic units and flow zones for wells with lithologic descriptions.

[Descriptions by R.S. Reese on the following dates: PB-1761, Mar. 2006; PB-1804, Aug. 4, 2007; PB-1805, Nov. 8, 2008; PB-1806, Aug. 29, 2007; PB-1807, Nov. 22, 2008. Depths are in feet below land surface]

Geologic units	Depth (feet)	Flow zones[1]	Depth (feet)	Comments
PB-1761 (B-6 core test)				
Miami Limestone	0–9	Major	17–23	Screened interval depth is from 0 to 111 ft.
Ft Thompson Formation	9–30	Major	47–58	
Caloosahatchee Marl	30–60	Minor	69–76	
Pinecrest Sand Member of the Tamiami Formation	60–113	Minor	83–85	
Ochopee Limestone Member of the Tamiami Formation	[2]113–120	Minor	91–93	
		Minor	98–103	
PB-1804 (LEC-7)				
Fill and Peat	0–8	Minor	[3]24–30	Screened interval depth is from 38 to 188 ft and top of sand pack is at 33 ft.
Lake Flirt Marl	8–18	Major	45–73	
Ft. Thompson	18–40	Minor	90–100	
Caloosahatchee Marl?	40–50	Minor	[4]140–143	
Pinecrest Sand Member of the Tamiami Formation	50–110			
Ochopee Limestone Member of the Tamiami Formation	110–200			
Peace River Formation of the Hawthorrn Group	[2]200–230			
PB-1805 (LEC-8)				
Fill and Soil	0–8	Minor	[3]8–13(?)	Screened interval depth is from 40 to 90 ft and top of sand pack is at 36 ft.
Ft. Thompson? Formation	8–23	Major	40–43	
Calooshatchee Marl?	23–33	Major	69–80	
Pinecrest Sand Member of the Tamiami Formation	[5]33–82	Minor	86–90	
Ochopee Limestone Member of the Tamiami Formation	82–180(?)			
Peace River Formation of the Hawthorrn Group	[2,6]180(?)-200			
PB-1806 (LEC-9)				
Fill and Soil	0–8?	None?		Screened interval depth is from 68 to 123 ft and top of sand pack is at 66 ft.
Undifferentiated shallow sand	8–53	Minor	68–73	
Pinecrest Sand Member of the Tamiami Formation	53–109	Major	87–93	
Ochopee Limestone Member of the Tamiami Formation	109–160	Minor	97–100	
Peace River Formation of the Hawthorrn Group	[2]160–200	Minor	113–120	
PB-1807 (LEC-10)				
Fill and Soil	Unknown	Minor	[7]13–18(?)	Screened interval depth is from 70 to 140 ft and top of sand pack is at 68 ft.
Undifferentiated shallow sands	Down to 68	Major	70–92	
Pinecrest Sand Member of the Tamiami Formation	68–118	Minor	108–120	
Ochopee Limestone Member of the Tamiami Formation	[2]118–205	Minor	133–140	
Peace River Formation of the Hawthorrn Group	Not reached (interpreted to be at 210 to 220 ft in PB-1571 at same site)			

[1]Flow zone characterizations based on flow and fluid properties geophysical logs unless noted otherwise in comments.

[2]Base not reached.

[3]Based on lithologic samples.

[4]Based mostly on fluid logs and ambient heat pulse flowmeter.

[5]Top of the Tamiami Formation could be higher (at 30 ft based on bipass surface at this depth and change to marine conditions).

[6]Top of Hawthorn uncertain because of missing samples.

[7]Based on lithologic samples (medium to coarse well sorted sand)

Table 1–8. Hydrogeologic unit boundaries and correlation marker depths determined in this study.

[All depths are in feet below land surface; Land surface altitude is feet above NGVD 29; Abbreviations: IC, inconclusive; ISD, inadequate sample description; ND, not determined; NP, not present; NR, not reached at total depth; QGL, questionable geophysical logs; PSQ, poor sample quality; --, evidence for separation of zone 2 from zone 3 not found. Cells shaded in dark gray in first column indicate lithologic and geophysical log plot is available for well in appendix 2. Cells shaded in light gray in last four columns indicate borehole gamma ray log was not available for determining depth of marker]

USGS local well name	Total hole depth	Land surface altitude	Zone 1 depth		Zone 2 depth		Zone 3 depth		Depths of gamma ray and lithologic correlation markers			
			Top	Bottom	Top	Bottom	Top	Bottom	F (blue)	T (red)	O (purple)	H (green)
C-1156	1,000	14	NP	NP	0	25	60	150	ND	ND	ND	ND
C-1169	195	15	NP	NP	0	17	75	139	NP	[1]5	[1]75	ND
G-2312	229	15	NP	NP	40	74	105	170	ND	[2]40	ND	ND
G-2313	219	12	12	28	42	82	106	155	ND	ND	ND	ND
G-2314	199	20	0	30	NP	NP	40	155	ND	ND	ND	ND
G-2315	249	18	0	53	NP	NP	116	192	28	63	107	ND
G-2340	199	14	0	17	NP	NP	60	147		[3]21	ND	ND
G-2916	1,200	17	IC	IC	IC	IC	IC	IC	42	132	217	326
HE-1108	132	20	NP	NP	0	25	75	132	NP	[4]NP		
HE-1110	160	15	NP	NP	NP	NP	35	148	NP	[4]NP	33	149
HE-1116	195	18	0	11	NP	NP	31	152	NP	15	32	191
HE-1142	184	14.09	ND	ND	ND	ND	ND	ND	NP	NP	30	133
HE-1143	181	14.63	ND	ND	ND	ND	ND	ND	NP	13	30	176
HE-1144	182	15.85	ND	ND	ND	ND	ND	ND	NP	NP	36	162
M-1361	1,380	22.20	23	45	111	125	NP	NP	41	66	129	216
M-1367	206	27.10	IC	IC	IC	IC	107	110	26	68	102	167
PB-600	345	15	NP	NP	NP	NP	210	298	57	128	206	319
PB-634	188	10	IC	IC	NP	NP	NP	NP	118	NR		
PB-640	236	19	22	40	70	--	--	120	25	74	110	196
PB-649	205	26	28	55	77	92	NP	NP	22	64	102	161
PB-650	193	7	21	27	58	80	110	140	34	43	100	167
PB-651	236	22	22	46	90	--	--	140	40	65	118	203
PB-652A	314	20	34	90	IC	IC	IC	IC	65	117	186	298
PB-653	314	12	NP	NP	NP	NP	NP	NP	67	117	189	302
PB-654	282	18	NP	NP	80	--	--	152	ND	ND	ND	ND
PB-655	267	20	NP	NP	46	--	--	152	ND	ND	ND	ND
PB-657	281	18	NP	NP	70	135	NP	NP	53	107	188	268
PB-658	365	15	NP	NP	100	--	--	220	42	114	186	297
PB-665	225	18	10	30	90	150	170	220	41	81	158	247
PB-666	415	13	NP	NP	NP	NP	NP	NP	39	131	218	338
PB-667	357	15	NP	NP	NP	NP	NP	NP	47	121	221	350
PB-668	358	10	37	43	NP	NP	190	235	51	110	175	270
PB-669	345	12	IC	IC	NP	NP	IC	IC	38	92	188	325

Table 1–8. Hydrogeologic unit boundaries and correlation marker depths determined in this study.—Continued

[All depths are in feet below land surface; Land surface altitude is feet above NGVD 29; Abbreviations: IC, inconclusive; ISD, inadequate sample description; ND, not determined; NP, not present; NR, not reached at total depth; QGL, questionable geophysical logs; PSQ, poor sample quality; --, evidence for separation of zone 2 from zone 3 not found. Cells shaded in dark gray in first column indicate lithologic and geophysical log plot is available for well in appendix 2. Cells shaded in light gray in last four columns indicate borehole gamma ray log was not available for determining depth of marker]

USGS local well name	Total hole depth	Land surface altitude	Zone 1 depth		Zone 2 depth		Zone 3 depth		Depths of gamma ray and lithologic correlation markers			
			Top	Bottom	Top	Bottom	Top	Bottom	F (blue)	T (red)	O (purple)	H (green)
PB-670	325	15	70	116	120	220	NP	NP	62	120	223	309
PB-671	119	18	IC	IC	85	NR at 119	NR	NR	29	83	NR	
PB-672	234	18	IC	IC	70	--	--	161	27	67	123	186
PB-673	248	19	NP	NP	90	140	NP	NP	25	86	139	228
PB-674	302	17	70	85	115	--	--	200	36	103	146	235
PB-675	387	14	44	56	100	190	NP	NP	69	133	221	329
PB-676	175	15	IC	IC	30	60	75	115	19	48	87	166
PB-677	190	16	15	35	NP	NP	IC	IC	29	61	119	192
PB-678	189	20	NP	NP	NP	NP	NP	NP	33	74	123	185
PB-679	174	22	NP	NP	75	100	NP	NP	26	69	100	150
PB-681	248	12	45	80	NP	NP	NP	NP	46	102	149	240
PB-690	275	11	21	130	NP	NP	NP	NP	ND	ND	ND	ND
PB-694	249	8	31	100	NP	NP	NP	NP	ND	ND	ND	ND
PB-695	249	6	NP	NP	NP	NP	NP	NP	ND	ND	ND	ND
PB-699	357	20	IC	IC	95	125	IC	IC	ND	ND	ND	ND
PB-708	154	18	IC	IC	105	NR	NR	NR	ND	ND	ND	ND
PB-712	280	14	NP	NP	110	--	--	160	57	98	151	200
PB-747	1,280	13	PSQ	PSQ	PSQ	PSQ	PSQ	PSQ	54	110	152	250
PB-798	120	18	NP	NP	45	120	NR	NR	ND	ND	ND	ND
PB-830	220	22	3	19	ISD	ISD	ISD	ISD	27	62	92	150
PB-833	520	10	30	100	135	200	NP	NP	58	137	199	328
PB-834B	201	8	21	50	112	180	NR	NR	41	112	181	NR
PB-836	240	12	ISD	ISD	ISD	ISD	ISD	ISD	35	67	118	NR
PB-837	200	12	10	30	ISD	ISD	ISD	ISD	28	62	127	[5]210
PB-838	240	14	20	37	60	100	IC	IC	30	62	104	193
PB-839	220	15	ISD	ISD	ISD	ISD	ISD	ISD	28	43	103	186
PB-841	250	20	ISD	ISD	ISD	ISD	ISD	ISD	30	74	109	220
PB-842	240	16	ISD	ISD	ISD	ISD	ISD	ISD	4	30	50	199
PB-843	575	13	ISD	ISD	ISD	ISD	ISD	ISD	24	42	99	210
PB-880	118	17.06	NP	NP	64	90	90	117	29	65	94	166
PB-1026	114	17	NP	NP	54	114	NR	NR	42	95	NR	NR
PB-1029	129	18	NP	NP	56	129	NR	NR	ND	ND	ND	ND
PB-1038	123	17	NP	NP	96	114	NR	NR	ND	ND	ND	ND

Table 1–8. Hydrogeologic unit boundaries and correlation marker depths determined in this study.—Continued

[All depths are in feet below land surface; Land surface altitude is feet above NGVD 29; Abbreviations: IC, inconclusive; ISD, inadequate sample description; ND, not determined; NP, not present; NR, not reached at total depth; QGL, questionable geophysical logs; PSQ, poor sample quality; --, evidence for separation of zone 2 from zone 3 not found. Cells shaded in dark gray in first column indicate lithologic and geophysical log plot is available for well in appendix 2. Cells shaded in light gray in last four columns indicate borehole gamma ray log was not available for determining depth of marker]

USGS local well name	Total hole depth	Land surface altitude	Zone 1 depth		Zone 2 depth		Zone 3 depth		Depths of gamma ray and lithologic correlation markers			
			Top	Bottom	Top	Bottom	Top	Bottom	F (blue)	T (red)	O (purple)	H (green)
PB-1065	115	16	NP	NP	54	96	NR	NR	ND	ND	ND	ND
PB-1082	200	12	40	90	120	138	138	150	61	97	139	NR
PB-1083	200	12	30	55	107	--	--	192	56	114	154	200
PB-1084	200	18	NP	NP	46	--	--	151	40	88	124	189
PB-1085	200	18	NP	NP	40	--	--	140	38	83	116	187
PB-1086	200	18	NP	NP	47	136	NP	NP	47	103	146	NR
PB-1087	200	18	NP	NP	48	--	--	140	37	74	116	190
PB-1088	200	19	NP	NP	54	--	--	131	48	92	122	198
PB-1089	240	17	NP	NP	44	--	--	145	38	80	121	216
PB-1090	200	16	NP	NP	72	148	NR	NR	48	101	193	NR
PB-1091	160	17	NP	NP	64	140	NP	NP	52	83	139	NR
PB-1092	200	18	NP	NP	63	118	NP	NP	30	63	115	181
PB-1093	200	18	NP	NP	49	--	--	120	27	55	95	170
PB-1094	180	18	19	40	58	100	110	140	33	58	104	165
PB-1095	300	17	46	93	106	160	NP	NP	56	106	195	NR
PB-1096	220	20	NP	NP	85	--	--	180	36	83	144	208
PB-1097	160	16	NP	NP	80	--	--	120	21	60	93	153
PB-1098	180	20	NP	NP	40	--	--	120	35	77	115	176
PB-1099	180	18	NP	NP	35	100	IC	IC	35	77	120	170
PB-1100	200	15	5	35	57	120	130	163	34	74	129	194
PB-1101	220	19	60	120	120	200	NP	NP	80	128	204	NR
PB-1102	235	18	NP	NP	100	--	--	200	49	100	155	215
PB-1103	240	21	NP	NP	86	--	--	180	42	86	160	228
PB-1104	340	20	55	80	104	192	210	240	52	119	198	308
PB-1105	217	15	IC	IC	80	--	--	180	46	82	173	NR
PB-1106	217	23	15	41	60	101	139	161	35	74	115	200
PB-1107	200	15	IC	IC	69	117	138	143	36	61	119	211
PB-1108	200	14	13	24	61	112	130	141	27	70	128	198
PB-1109	171	23	NP	NP	IC	IC	NP	NP	31	78	112	160
PB-1144	1,038	13	PSQ	PSQ	PSQ	PSQ	PSQ	PSQ	63	130	189	333
PB-1166	3,310	25	ISD	ISD	ISD	ISD	ISD	ISD	32	69	104	165
PB-1168	3,300	20	QGL, ISD	QGL, ISD	QGL, ISD	QGL, ISD	QGL, ISD	QGL, ISD	32	75	141	229
PB-1173	2,010	17	NP?	NP?	NP?	NP?	NP?	NP?	61	114	172	267

Table 1–8. Hydrogeologic unit boundaries and correlation marker depths determined in this study.—Continued

[All depths are in feet below land surface; Land surface altitude is feet above NGVD 29; Abbreviations: IC, inconclusive; ISD, inadequate sample description; ND, not determined; NP, not present; NR, not reached at total depth; QGL, questionable geophysical logs; PSQ, poor sample quality; --, evidence for separation of zone 2 from zone 3 not found. Cells shaded in dark gray in first column indicate lithologic and geophysical log plot is available for well in appendix 2. Cells shaded in light gray in last four columns indicate borehole gamma ray log was not available for determining depth of marker]

USGS local well name	Total hole depth	Land surface altitude	Zone 1 depth		Zone 2 depth		Zone 3 depth		Depths of gamma ray and lithologic correlation markers			
			Top	Bottom	Top	Bottom	Top	Bottom	F (blue)	T (red)	O (purple)	H (green)
PB-1176	3,300	17.83	ISD	ISD	ISD	ISD	ISD	ISD	46	105	133	213
PB-1184	3,510	13.03	30	50	57	90	IC	IC	31	63	101	181
PB-1192	3,312	19.42	60	90	100	IC	IC	IC	60	112	209	341
PB-1195	435	18.90	30	80	IC	IC	IC	IC	118	182	268	384
PB-1197	1,665	17	NP	NP	120	--	--	210	58	104	150	277
PB-1544	260	18	NP	NP	66	--	--	146	42	81	136	216
PB-1546	170	20	NP	NP	60	--	--	136	23	76	110	ND
PB-1550	180	23	NP	NP	63	106	NP	NP	ND	ND	ND	ND
PB-1555	190	19	[6]PB-1098	[6]PB-1098	[6]PB-1098	[6]PB-1098	[6]PB-1098	[6]PB-1098	ND	ND	ND	ND
PB-1558	200	20	NP	NP	87	--	--	127	ND	ND	ND	ND
PB-1564	220	20	[6]PB-1088, [6]PB-1783	[6]PB-1088, [6]PB-1783	[6]PB-1088, [6]PB-1783	[6]PB-1088, [6]PB-1783	[6]PB-1088, [6]PB-1783	[6]PB-1088, [6]PB-1783	ND	ND	ND	ND
PB-1567	190	17	NP	NP	60	117	NP	NP	ND	ND	ND	ND
PB-1571	260	19	[7]PB-1807	[7]PB-1807	[7]PB-1807	[7]PB-1807	[7]PB-1807	[7]PB-1807	ND	ND	ND	ND
PB-1574	240	19	NP	NP	77	--	--	150	ND	ND	ND	ND
PB-1576	190	17	NP	NP	70	IC	IC	IC	ND	ND	ND	ND
PB-1578	270	10	NP	NP	161	--	--	231	ND	ND	ND	ND
PB-1581	320	17	[6]PB-658	[6]PB-658	[6]PB-658	[6]PB-658	[6]PB-658	[6]PB-658	ND	ND	ND	ND
PB-1586	420	18	40	104	158	--	--	223	ND	ND	ND	ND
PB-1598	270	19	NP	NP	100	--	--	184	ND	ND	ND	ND
PB-1603	390	15	[6]PB-1095	[6]PB-1095	[6]PB-1095	[6]PB-1095	[6]PB-1095	[6]PB-1095	ND	ND	ND	ND
PB-1605	430	15	47	120	150	180	IC	IC	83	153	235	ND
PB-1607	220	18	NP	NP	34	92	107	140	38	73	102	169
PB-1613	162	25	NP	NP	60	--	--	115	24	70	103	149
PB-1614	155	24	24	44	67	--	--	110	ND	ND	ND	ND
PB-1693	1,191	18.97	ISD	ISD	ISD	ISD	ISD	ISD	51	118	200	313
PB-1695	2,490	15	ISD	ISD	ISD	ISD	ISD	ISD	50	117	211	322
PB-1696	1,705	11	IC	IC	50	--	--	125	ND	ND	ND	ND
PB-1702	1,200	21.20	IC	IC	IC	IC	IC	IC	80	149	240	360
PB-1703	221	20	NP	NP	15	19	80	92	NP	15	47	153
PB-1704	201	11	17	42	NP	NP	73	160	18	49	82	161
PB-1761	[8]120	10	[7]PB-1803	[7]PB-1803	[7]PB-1803	[7]PB-1803	[7]PB-1803	[7]PB-1803	22	60	113	NR
PB-1765	1,225	10	[7]PB-1803	[7]PB-1803	[7]PB-1803	[7]PB-1803	[7]PB-1803	[7]PB-1803	28	60	115	202

Table 1–8. Hydrogeologic unit boundaries and correlation marker depths determined in this study.—Continued

[All depths are in feet below land surface; Land surface altitude is feet above NGVD 29; Abbreviations: IC, inconclusive; ISD, inadequate sample description; ND, not determined; NP, not present; NR, not reached at total depth; QGL, questionable geophysical logs; PSQ, poor sample quality; --, evidence for separation of zone 2 from zone 3 not found. Cells shaded in dark gray in first column indicate lithologic and geophysical log plot is available for well in appendix 2. Cells shaded in light gray in last four columns indicate borehole gamma ray log was not available for determining depth of marker]

USGS local well name	Total hole depth	Land surface altitude	Zone 1 depth		Zone 2 depth		Zone 3 depth		Depths of gamma ray and lithologic correlation markers			
			Top	Bottom	Top	Bottom	Top	Bottom	F (blue)	T (red)	O (purple)	H (green)
PB-1769	337	15	45	100	NP (all sand)		235	308	67	137	229	NR
PB-1775	1,650	16.33	ND, close to PB-1100		ND, close to PB-1100		ND, close to PB-1100		41	66	132	211
PB-1777	2,504	10	ISD	ISD	ISD	ISD	ISD	ISD	28	43	88	190
PB-1781	205	13.90	PSQ	PSQ	PSQ	PSQ	PSQ	PSQ	29	65	121	200
PB-1782	206	17.80	PSQ	PSQ	PSQ	PSQ	PSQ	PSQ	42	83	123	210
PB-1783	205	21.60	PSQ	PSQ	PSQ	PSQ	PSQ	PSQ	43	84	116	190
PB-1784	425	8	ISD	ISD	ISD	ISD	ISD	ISD	68	169	258	376
PB-1785	180	11.84	4	18	30	39	66	95	13	40	83	169
PB-1786	182	13.38	NP	NP	3	24	Poorly developed		NP	20	47	150
PB-1787	183	12.15	ND	ND	ND	ND	ND	ND	4	26	63	157
PB-1788	180	11.39	ND	ND	49	58	ND	ND	14	49	82	162
PB-1797	191	17.20	16	35	60	102	IC	IC	28	63	124	205
PB-1803	208	11	10	30	47	115	138	163	Same site as PB-1761 and PB-1765			
PB-1804	[8]230	12	18	36	47	100	NP	NP	22	51	107	208
PB-1805	[8]200	12	5	18	38	80	86	90	13	38	82	[5]180
PB-1806	[8]205	20	NP	NP	67	100	114	129	28	66	118	188
PB-1807	[8]205	19	NP	NP	70	120	133	145	38	69	127	[5]202
PB-1808	200	18							ND	ND	ND	ND
W-5435	1,200	5	NP	NP	IC	IC	IC	IC	10	38	86	170

[1]Depths for T and O markers from Reese and Cunningham (2000).

[2]T marker is top of Tamiami Formation (from Fish 1988, section B-B′).

[3]T marker is top of Tamiami Formation (from Fish 1988, section E-E′).

[4]Tamiami Formation at land surface.

[5]Marker not reached at total depth, but estimated.

[6]Use boundaries from this well, which is located nearby.

[7]Use boundaries from this well, which is located at same site.

[8]Detailed lithologic description available for well in appendix tables.

[9]Samples collected but no geophysical logs run

Table 1–9*A*. Hydraulic well test descriptions and locations.

[Sources and references for this appendix table are given in table 1–9*C*. Abbreviations: dd mm ss.s, degrees, minutes, and seconds; APT, aquifer performance test; LWDD, Lake Worth Drainage District; NA, not applicable; NR, not reported; SFWMD, South Florida Water Management District; USGS; U.S. Geological Survey. Test type: M, multiwell constant rate; P, Packer test; R, single well constant rate; S, step drawdown; SC, specific capacity]

Table 1–9*A*, 1–9*B* cross reference	Production well identifier	Production well diameter (inches)	Test date	Test type	Source and references	Operator	Test description and site number	Monitoring well identifier	Latitude north (dd mm ss.s)	Longitude west (dd mm ss.s)	Horizontal datum
1	C-1171	6	04/29/98	M	1a	USGS	Big Cypress Sanctuary	2 wells	26 13 17	80 55 51	NAD 27
2	G-2312J	6	NR	M	1b	USGS	Twenty Six Mile Bend	NR	26 13 47	80 27 37	NAD 27
3	G-2312K	6	NR	SC	1b	USGS	Twenty Six Mile Bend	None	26 13 47	80 27 37	NAD 27
4	G-2313A	6	NR	SC	1b	USGS	North Everglades central	None	26 19 58	80 41 06	NAD 27
5	G-2313B	6	NR	SC	1b	USGS	North Everglades central	None	26 19 58	80 41 06	NAD 27
6	G-2313C	6	NR	S	1b	USGS	North Everglades central	None	26 19 58	80 41 06	NAD 27
7	HE-303	NR	06/03/58	M	1c	USGS	S & M Farms; Reese and Cunningham, 2000, fig. 23, site 7	2 wells	26 23 47	80 58 16	NAD 27
8	H-M-235	NR	02/27/86	M	9	Missimer	U.S Sugar Corporation, South Division Ranch; Smith and Adams, 1988, fig. 66, site 15	4 wells	26 25 41	80 57 59	NAD 27
9	H-M-301	NR	11/06/86	M	9	Missimer	U.S Sugar Corporation, South Division Ranch; Smith and Adams, 1988, fig. 66, site 16	3 wells	[1]NR	[1]NR	NA
10	H-M-328	NR	04/17/87	M	9	Missimer	U.S Sugar Corporation, South Division Ranch; Smith and Adams, 1988, fig. 66, site 17	3 wells	26 17 43	80 56 36	NAD 27
11	PB-1065	6	05/03/78	M	1d	USGS	Riviera Beach	8 wells	26 46 10	80 07 25	NAD 27
12	PB-1233	NR	NR	SC	1f	USGS	Specific capacity test, Swayze and Miller, 1984, table 3.2–1,site 3	None	26 22 04.0	80 06 39	NAD 27
13	PB-1239	NR	NR	SC	1f	USGS	Specific capacity test, Swayze and Miller, 1984, table 3.2–1,site 2	None	26 20 48.0	80 07 45	NAD 27
14	PB-1250	NR	NR	SC	1f	USGS	Specific capacity test, Swayze and Miller, 1984, table 3.2–1,site 4	None	26 30 47.0	80 04 05	NAD 27

Table 1–9*A*. Hydraulic well test descriptions and locations.—Continued

[Sources and references for this appendix table are given in table 1–9*C*. Abbreviations: dd mm ss.s, degrees, minutes, and seconds; APT, aquifer performance test; LWDD, Lake Worth Drainage District; NA, not applicable; NR, not reported; SFWMD, South Florida Water Management District; USGS; U.S. Geological Survey. Test type: M, multiwell constant rate; P, Packer test; R, single well constant rate; S, step drawdown; SC, specific capacity]

Table 1–9*A*, 1–9*B* cross reference	Production well identifier	Production well diameter (inches)	Test date	Test type	Source and references	Operator	Test description and site number	Monitoring well identifier	Latitude north (dd mm ss.s)	Longitude west (dd mm ss.s)	Horizontal datum
15	PB-1267	NR	NR	SC	1f	USGS	Specific capacity test, Swayze and Miller, 1984, table 3.2–1,site 5	None	26 28 05.0	80 04 27	NAD 27
16	PB-1310	NR	NR	SC	1f	USGS	Specific capacity test, Swayze and Miller, 1984, table 3.2–1,site 7	None	26 34 53.0	80 03 19	NAD 27
17	PB-1336	NR	NR	SC	1f	USGS	Specific capacity test, Swayze and Miller, 1984, table 3.2–1,site 15	None	26 42 23.0	80 12 57	NAD 27
18	PB-1343	NR	NR	SC	1f	USGS	Specific capacity test, Swayze and Miller, 1984, table 3.2–1,site 17	None	26 20 35.0	80 11 45	NAD 27
19	PB-1361	NR	NR	SC	1f	USGS	Specific capacity test, Swayze and Miller, 1984, table 3.2–1,site 19	None	26 50 54.0	80 07 44	NAD 27
20	PB-1365	NR	NR	SC	1f	USGS	Specific capacity test, Swayze and Miller, 1984, table 3.2–1, site 1	None	26 36 08.0	80 05 25	NAD 27
21	PB-1415	NR	NR	SC	1f	USGS	Specific capacity test, Swayze and Miller, 1984, table 3.2–1,site 13	None	26 24 58.0	80 07 00	NAD 27
22	PB-1545	6	07/03/86	M	1e	USGS	USGS, site 9	PB-1544	26 38 58	80 10 09.5	NAD 83
23	PB-1545	6	07/20/07	R	2	USGS	USGS, site 9	None	26 38 58	80 10 09.5	NAD 83
24	PB-1545	6	08/31/87?	M	10	SFWMD	USGS, site 9	PB-1544? (D-1A)	26 38 58	80 10 09.5	NAD 83
25	PB-1547	6	07/16/86	M	1e	USGS	USGS, site 15	PB-1546	26 56 06	80 13 55	NAD 27
26	PB-1551	6	07/30/86	M	1e	USGS	USGS, site 14	PB-1550	26 51 34	80 17 27	NAD 27
27	PB-1557	6	08/07/86	M	1e	USGS	USGS, site 13	PB-1555	26 48 43	80 12 50	NAD 27
28	PB-1559	6	11/19/86	M	1e	USGS	USGS, site 12	PB-1558	26 48 34	80 19 34	NAD 27
29	PB-1565	6	11/04/86	M	1e	USGS	USGS, site 11	PB-1564	26 45 55	80 15 17	NAD 27
30	PB-1568	6	12/08/86	M	1e	USGS	USGS, site 10	PB-1569	26 41 01	80 16 30	NAD 27

Table 1–9*A*. Hydraulic well test descriptions and locations.—Continued

[Sources and references for this appendix table are given in table 1–9*C*. Abbreviations: dd mm ss.s, degrees, minutes, and seconds; APT, aquifer performance test; LWDD, Lake Worth Drainage District; NA, not applicable; NR, not reported; SFWMD, South Florida Water Management District; USGS; U.S. Geological Survey. Test type: M, multiwell constant rate; P, Packer test; R, single well constant rate; S, step drawdown; SC, specific capacity]

Table 1–9*A*, 1–9*B* cross reference	Production well identifier	Production well diameter (inches)	Test date	Test type	Source and references	Operator	Test description and site number	Monitoring well identifier	Latitude north (dd mm ss.s)	Longitude west (dd mm ss.s)	Horizontal datum
31	PB-1572	6	11/11/86	M	1e	USGS	USGS, site 8	PB-1571	26 35 09	80 10 22	NAD 27
32	PB-1575	6	11/05/86	M	1e	USGS	USGS, site 2	PB-1574	26 25 53	80 12 15	NAD 27
33	PB-1577	6	12/02/86	M	1e	USGS	USGS, site 16	PB-1576	26 32 55	80 13 36	NAD 27
34	PB-1577	6	07/09/87	M	10	SFWMD	USGS, site 16	PB-1576	26 32 55	80 13 36	NAD 27
35	PB-1580	6	11/13/86	M	1e	USGS	USGS, site 7	PB-1578	26 37 02	80 05 19	NAD 27
36	PB-1582	6	11/04/86	M	1e	USGS	USGS, site 1	PB-1581	26 21 47	80 10 16	NAD 27
37	PB-1582	6	07/01/87	M	10	SFWMD	USGS, site 1	PB-1581	26 21 47	80 10 16	NAD 27
38	PB-1599	6	02/12/87	M	1e	USGS	USGS, site 4	PB-1600	26 28 05	80 10 16	NAD 27
39	PB-1604	6	02/17/87	M	1e	USGS	USGS, site 5	PB-1603	26 32 16	80 06 17	NAD 27
40	PB-1608	6	02/23/87	M	1e	USGS	USGS, site 17	PB-1607	26 52 48	80 10 38	NAD 27
41	PB-1769	2	09/20/07	R	2	USGS	A. G. Holly Rehabilitation Center	None	26 35 22	80 03 30	NAD 27
42	PB-1792	4	04/05/07	R	2	USGS	CP02-EAARS-CB-0010	None	26 23 58	80 40 52.5	NAD 27
43, 44	PB-1794	2	Various dates	R	3	USGS	ENR MP2-A	None	26 38 19	80 25 38	NAD 27
45	PB-1801	2	04/18/07	M	2	USGS	BP-DMW-W	PB-1802 in shallower zone	26 20 54	80 17 49.3	NAD 83
46	PB-1803	4	04/17/07	R	2	USGS	HASR-SAS-MW-1	None	26 21 18	80 17 41.5	NAD 27
47	PB-1804	4	04/09/07	R	2	USGS	Hillsboro Canal near pump station S-6	None	26 28 29	80 26 54.2	NAD 83
48	PB-1805	4	05/25/07	R	2	USGS	U.S. Hwy 27 at bend to the north	None	26 33 59	80 42 35.7	NAD 83
49	PB-1806	4	01/15/08	R	2	USGS	Southern Blvd and U.S. 441 at S-155A	None	26 40 47	80 12 10.7	NAD 83
50	PB-1807	4	03/28/08	R	2	USGS	Lantana Rd and Florida Turnpike on LWDD canal E-2E	None	26 35 12	80 10 22	NAD 83
51	PW	4	05/24/87	M	7	Murray-Milleson, Inc	Seminole Tribe; Smith and Adams, 1988, fig. 66, site 18	3 wells	[1]NR	[1]NR	NA

Table 1–9*A*. Hydraulic well test descriptions and locations.—Continued

[Sources and references for this appendix table are given in table 1–9*C*. Abbreviations: dd mm ss.s, degrees, minutes, and seconds; APT, aquifer performance test; LWDD, Lake Worth Drainage District; NA, not applicable; NR, not reported; SFWMD, South Florida Water Management District; USGS; U.S. Geological Survey. Test type: M, multiwell constant rate; P, Packer test; R, single well constant rate; S, step drawdown; SC, specific capacity]

Table 1–9*A*, 1–9*B* cross reference	Production well identifier	Production well diameter (inches)	Test date	Test type	Source and references	Operator	Test description and site number	Monitoring well identifier	Latitude north (dd mm ss.s)	Longitude west (dd mm ss.s)	Horizontal datum
52, 53	S10C	2	Various dates	R	3	USGS	WCA-2A	None	26 22 15	80 21 4.1	NAD 27
54	TPW	6	05/10/89	M	8	Murray-Milleson, Inc	Miccosuke Tribe (North site); Murray-Milleson, Inc., 1989, fig. 2	3 wells	[2]NR	[2]NR	NA
55	TW-1	4	06/03/99	R	6	Montgomery Watson for SFWMD	Stormwater Treatment Area 3 and 4	None	[3]NR	[3]NR	NA
56	TW-2C	8	04/27/99	M	5	Montgomery Watson for SFWMD	ASR pilot test site, Site 1	4 wells	26 21 24	80 17 19.3	NAD 83
57	TW-3	4	08/04/99	M	6	Montgomery Watson for SFWMD	Stormwater Treatment Area 3 and 4	6 wells	[4]26 22 28	[4]80 35 47	NAD 83
58	TW-3	4	06/10/99	R	6	Montgomery Watson for SFWMD	Stormwater Treatment Area 3 and 4	None	[4]26 22 28	[4]80 35 47	NAD 83
59	TW-5	4	06/17/99	R	6	Montgomery Watson for SFWMD)	Stormwater Treatment Area 3 and 4	None	[4]26 22 27	[4]80 40 02	NAD 83
60	7R_TQ2	10	07/10/80	M	4	Gee & Jensen	Pumping well for Tequesta wellfield APT (7/10/80)	4 wells	26 57 34	80 05 35	NAD 27
61	BOCA_PW-1	NR	01/10/85	NR	4	Camp, Dresser, & McKee	Boca Raton test production well for wellfield expansion near Clint Moore Road	NR	26 24 14	80 07 46	NAD 27
62	BURMA-TEST	NR	02/03/88	M	4	Geraghty & Miller, Inc.	Burma Road Parcel test well	3 wells	26 48 01	80 05 23	NAD 27
63	FHV_W5	8	04/13/83	M	4	CH2M-HILL	Palm Springs Forest Hill Village Wellfield	5 wells	26 38 48	80 07 47	NAD 27
64	HBWW-4	NR	10/20/78	NR	4	Camp, Dresser, & McKee	Highland Beach West Wellfield well #4	NR	26 24 36	80 04 44	NAD 27

Table 1–9*A*. Hydraulic well test descriptions and locations.—Continuedd

[Sources and references for this appendix table are given in table 1–9*C*. Abbreviations: dd mm ss.s, degrees, minutes, and seconds; APT, aquifer performance test; LWDD, Lake Worth Drainage District; NA, not applicable; NR, not reported; SFWMD, South Florida Water Management District; USGS; U.S. Geological Survey. Test type: M, multiwell constant rate; P, Packer test; R, single well constant rate; S, step drawdown; SC, specific capacity]

Table 1–9*A*, 1–9*B* cross reference	Production well identifier	Production well diameter (inches)	Test date	Test type	Source and references	Operator	Test description and site number	Monitoring well identifier	Latitude north (dd mm ss.s)	Longitude west (dd mm ss.s)	Horizontal datum
65	JPW-16	NR	12/25/82	S	4	Geraghty & Miller, Inc.	Jupiter Water Plant production well #16	None	26 54 44	80 07 31	NAD 27
66	JUNO_PW-5A	NR	05/15/79	M	4	Barker, Osha, & Anderson, Inc.	Town of Juno Beach pumping well 5A	5 wells	26 52 36	80 03 18	NAD 27
67	JWSPW-13	NR	11/29/78	M	4	Geraghty & Miller, Inc.	Jupiter	4 wells	26 55 34	80 07 45	NAD 27
68	LM_PW-3	NR	07/29/82	M	4	Geraghty & Miller, Inc.	Lake Magnolia pumping well #3	3 wells	26 44 06	80 03 59	NAD 27
69	LSL_B-3	NR	08/20/85	NR	4	PBS&J, Inc.	Lantana Sanitary Landfill discharge well B-3	NR	26 36 06	80 11 23	NAD 27
70	LTC_PW-3	NR	03/10/80	M	4	NR	Lost Tree Club	3 wells	26 50 50	80 03 45	NAD 27
71	MORI_PW-1A	6	03/23/87	M	4	SFWMD	Morikami Park (SFWMD)	3 wells	26 25 43	80 09 19	NAD 27
72	PBCE-2	2	11/01/86	NR	4	Geraghty & Miller, Inc.	Palm Beach Country Estates well #2	NR	26 54 44	80 09 29	NAD 27
73	PBCE-3	2	11/01/86	NR	4	Geraghty & Miller, Inc.	Palm Beach Country Estates #3	NR	26 54 45	80 10 16	NAD 27
74	PBCWW_TW-1	6	01/01/79	M	4	Russel & Axom	Palm Beach County proposed Western Well Field site test well 1	2 wells	26 41 58	80 08 55	NAD 27
75	PBLL-PW1	6	05/01/87	M	4	SFWMD	Lake Lytal Park surficial aquifer test	16 wells	26 40 35	80 06 07.9	NAD 27
76	PBMT_PW-1	NR	08/03/87	M	4	SFWMD	Military Trail APT production well 1 (SFWMD)	4 wells	26 53 47	80 06 12	NAD 27
77	PBPOC_PW	NR	12/25/81	M	4	H.L. Searcy, Consulting Engineer, Inc.	Pumping well for Palm Beach Park of Commerce APT (1981)	1 well	26 54 18	80 16 28	NAD 27
78	RIVBEN-3	2	11/01/86	NR	4	Geraghty & Miller, Inc.	Riverbend Park well #3	NR	26 55 39	80 10 33	NAD 27

Table 1–9*A*. Hydraulic well test descriptions and locations.—Continued

[Sources and references for this appendix table are given in table 1–9*C*. Abbreviations: dd mm ss.s, degrees, minutes, and seconds; APT, aquifer performance test; LWDD, Lake Worth Drainage District; NA, not applicable; NR, not reported; SFWMD, South Florida Water Management District; USGS; U.S. Geological Survey. Test type: M, multiwell constant rate; P, Packer test; R, single well constant rate; S, step drawdown; SC, specific capacity]

Table 1–9*A*, 1–9*B* cross reference	Production well identifier	Production well diameter (inches)	Test date	Test type	Source and references	Operator	Test description and site number	Monitoring well identifier	Latitude north (dd mm ss.s)	Longitude west (dd mm ss.s)	Horizontal datum
79	RI_PW-851	NR	12/25/85	M	4	Barker, Osha, & Anderson, Inc.	City of Riviera Beach pumping well 851	3 wells	26 45 36	80 06 42	NAD 27
80	SEM_PW-1	8	11/04/83	M	4	NR	Seminole Manor Water Treatment Plant pumping well 1	1 well	26 34 48	80 05 56	NAD 27
81	SSH_PW-1	6	08/09/87	NR	4	SFWMD	South Shore pumping well #1 (SFWMD)	NR	26 38 55	80 14 40	NAD 27
82	WPB_PW-1	NR	06/10/82	M	4	Geraghty & Miller, Inc.	West Palm Beach Regional Wastewater Treatment Plant pumping well #1	5 wells	26 44 51	80 07 21	NAD 27

[1]Location not reported, estimated from Smith and Adams (1988 fig. 66);

[2]Location not reported, estimated from Murray-Milleson, Inc. (1989, fig. 2);

[3]Location not reported, estimated from Montgomery Watson Americas, Inc. (1999, fig. 4.1).

[4]Location not reported, estimated from Montgomery Watson Americas, Inc. (1999, fig. 4.1) and aerial photographs.

Table 1–9*B*. Hydraulic well test results.

[Depths are in feet below land surface. Altitude of land surface is feet above NGVD 29 (numbers in boldface type are estimated from topographic map). Method of analysis: SC, specific capacity; Theis, Theis (1935) confined aquifer; Theis Rec, Theis (1935) residual drawdown recovery; Bouwer, Bower (1989) and Bouwer and Rice (1976) slug test; C-J, Cooper and Jacob (1946) confined aquifer; H-J, Hantush and Jacob (1955) leaky aquifer; Hantush, Hantush (1960) leaky aquifer. Other annotations: K, hydraulic conductivity; MW, monitoring well; NR, not reported; PW, production well; SFWMD, South Florida Water Management District; USGS, U.S. Geological Survey; WTP, water treatment plant; --, not applicable]

Table 1–9*A*, 1–9*B* cross reference	Production-well identifier	Test date	Altitude of land surface (feet)	Depth of open interval tested (feet)	Permeable zones interpreted to be open in PW [1](Z1, Z2, Z3)	Pumping rate (gallons per minute)	Length of pumping period (hours) or step test number	Specific capacity (gallons per minute per foot)	Transmissivity (square feet per day)	Method of analysis	Estimated depths of total interval tested (feet)	Problems and comments
1	C-1171	04/29/98	15	75–135	3	222	5.0		[2]70,000	H-J for MWs and Theis Rec for PW	75–140	
									30,000	C-J for PW		
2	G-2312J	NR	15	110–140	3	NR	NR		[2]22,000	Theis; C-J; H-J; Cooper (1963)	106–140	
3	G-2312K	NR	15	40–50	2	NR	NR	NR	[2]9,000	SC	40–62	
4	G-2313A	NR	12	12–22	1	NR	NR	NR	[2]18,000	SC	12–22	
5	G-2313B	NR	12	46–81	2	NR	NR		[2]9,000	SC	46–82	
6	G-2313C	NR	12	106–146	3	NR	NR		[2]26,000	Step drawdown	106–146	
7	HE-303	06/03/58	**15**	NR-120	3	1,400	43		[2]31,000	Cooper (1963)		
8	H-M-235	02/27/86	**15**	65–125	3	754	72		14,000	H-J		
9	H-M-301	11/06/86	**15**	76–124	3	831	72		44,000	H-J		
10	H-M-328	04/17/87	**15**	75–133	3	508	71		66,000	H-J		
11	PB-1065	05/03/78	16	55–95	2	220	24		[2]11,000	Hantush		
12	PB-1233	NR	**17**	100–120	1	2,435	NR	406	[3]81,200	SC		
13	PB-1239	NR	**17**	108–124	1	2,440	NR	222	[3]44,400	SC		
14	PB-1250	NR	**17**	50–70	1	1,050	NR	131	[3]26,200	SC		
15	PB-1267	NR	**17**	57–108	1	1,000	NR	60	[3]12,000	SC		
16	PB-1310	NR	**17**	50–80	1	1,500	NR	188	[3]37,600	SC		
17	PB-1336	NR	**17**	64–70	2	450	NR	192	[3]38,400	SC		
18	PB-1343	NR	**17**	160–170	3	580	NR	118	[3]23,600	SC		
19	PB-1361	NR	**17**	72–102	1	700	NR	467	[3]93,400	SC		
20	PB-1365	NR	**17**	95–117	1	500	NR	100	[3]20,000	SC		
21	PB-1415	NR	**17**	63–69	1	100	NR	31	[3]6,200	SC		
22	PB-1545	07/03/86	18	70–160	2 and 3	433	4.65		[2]150,000	C-J for MW	56–180	Good fit for all MW data
						434	Step 4		67,000	C-J for PW		
23	PB-1545	07/20/07	18	70–153	2 and 3	307.46	2.9		[2]160,000	Theis Rec for PW		Retest
									73,000	C-J for PW		

Table 1–9*B*. Hydraulic well test results.—Continued

[Depths are in feet below land surface. Altitude of land surface is feet above NGVD 29 (numbers in in boldface type are estimated from topographic map). Method of analysis: SC, specific capacity; Theis, Theis (1935) confined aquifer; Theis Rec, Theis (1935) residual drawdown recovery; Bouwer, Bower (1989) and Bouwer and Rice (1976) slug test; C-J, Cooper and Jacob (1946) confined aquifer; H-J, Hantush and Jacob (1955) leaky aquifer; Hantush, Hantush (1960) leaky aquifer. Other annotations: K, hydraulic conductivity; MW, monitoring well; NR, not reported; PW, production well; SFWMD, South Florida Water Management District; USGS, U.S. Geological Survey; WTP, water treatment plant; --, not applicable]

Table 1–9*A*, 1–9*B* cross reference	Production-well identifier	Test date	Altitude of land surface (feet)	Depth of open interval tested (feet)	Permeable zones interpreted to be open in PW [1](Z1, Z2, Z3)	Pumping rate (gallons per minute)	Length of pumping period (hours) or step test number	Specific capacity (gallons per minute per foot)	Transmissivity (square feet per day)	Method of analysis	Estimated depths of total interval tested (feet)	Problems and comments
24	PB-1545	08/31/87?	18	70–160	2 and 3	824	2.81		220,000	C-J for MW		Reported well: USGS9_S-1
25	PB-1547	07/16/86	20	75–115	2 and 3	214	8.4		[2]6,800	C-J for MW	60–156	Early time (100 min) fit for MW data
						238	Step 4		6,300	C-J for PW		
26	PB-1551	07/30/86	23	70–130	2 and 3	212	4.95		[2]4,500	C-J for MW	63–146	Good early time (20 min) fit for MW data
						88	Step 1		3,600	C-J for PW		
27	PB-1557	08/07/86	19	50–120	2 and 3	329	6.13		[2]23,000	C-J for MW	30–130	Good early time (50 min) fit for MW data
						360	Step 4		4,000	C-J for PW		
28	PB-1559	11/19/86	20	93–153	3	109	5.97		[2]2,600	C-J for MW	87–144	Good early time (40 min) fit for MW data
						80	Step 3		3,000	C-J for PW		
29	PB-1565	11/04/86	20	68–128	2 and 3	180	3.83		[2]4,800	C-J for MW	40–154	Good early time (170 min) fit for MW data
						210	Step 4		4,000	C-J for PW		
30	PB-1568	12/08/86	17	84–164	2 and 3	160	5.57		[2]14,000	C-J for MW	10–170	Good early time (60 min) fit for MW data
						189	Step 4		7,200	C-J for PW		
31	PB-1572	11/11/86	19	106–206	2 and 3	403	2.16		180,000	C-J for MW	60–220	Early time (65 min) fit for MW data
						406	Step 4		[2]10,000	C-J for PW		
32	PB-1575	11/05/86	19	80–180	2, minor 3	318	3		[2]31,000	C-J for MW	77–183	Good early time (60 min) fit for MW data
						360	Step 4		18,000	C-J for PW		
33	PB-1577	12/02/86	17	56–146	2, minor 3	398	2		[2]36,000	C-J for MW	54–150	Early time (30 min) fit for MW data
						326	Step 3		40,000	C-J for PW		

Table 1–9*B*. Hydraulic well test results.—Continued

[Depths are in feet below land surface. Altitude of land surface is feet above NGVD 29 (numbers in in boldface type are estimated from topographic map). Method of analysis: SC, specific capacity; Theis, Theis (1935) confined aquifer; Theis Rec, Theis (1935) residual drawdown recovery; Bouwer, Bower (1989) and Bouwer and Rice (1976) slug test; C-J, Cooper and Jacob (1946) confined aquifer; H-J, Hantush and Jacob (1955) leaky aquifer; Hantush, Hantush (1960) leaky aquifer. Other annotations: K, hydraulic conductivity; MW, monitoring well; NR, not reported; PW, production well; SFWMD, South Florida Water Management District; USGS, U.S. Geological Survey; WTP, water treatment plant; --, not applicable]

Table 1–9*A*, 1–9*B* cross reference	Production-well identifier	Test date	Altitude of land surface (feet)	Depth of open interval tested (feet)	Permeable zones interpreted to be open in PW [1](Z1, Z2, Z3)	Pumping rate (gallons per minute)	Length of pumping period (hours) or step test number	Specific capacity (gallons per minute per foot)	Transmissivity (square feet per day)	Method of analysis	Estimated depths of total interval tested (feet)	Problems and comments
34	PB-1577	07/09/87	17	56–146	2, minor 3	726	1.93		38,000	C-J for MW		Early time (33 min) fit for MW data
									33,000	Theis Rec for MW		
35	PB-1580	11/13/86	10	151–221	2 and 3	337	5.12		7,700	C-J for MW	150–250	Good early time (20 min) fit for MW data
						172	Step 1		[2]5,700	C-J for PW		
36	PB-1582	11/04/86	17	90–220	2 and 3	332	5		[2]56,000	C-J for MW	87–220	Early time (100 min) fit for MW data
37	PB-1582	07/01/87	17	90–220	2 and 3	536	3.93		86,000	Theis Rec for MW		
									90,000	C-J for MW		Good fit for all MW data
38	PB-1599	02/12/87	19	110–230	2 and 3	408	6		[2]30,000	C-J for MW	100–250	?, Only very early time fit (10 to 20 min) for MW data
						401	Step 4		42,000	C-J for PW		
39	PB-1604	02/17/87	15	60–170	1 and 2	335	6		[2]20,000	C-J for MW	57–180	Good early time (60 min) fit for MW data
						271	Step 3		20,000	C-J for PW		
40	PB-1608	02/23/87	18	50–150	2 and 3	332	6		[2]15,000	C-J for MW	34–150	Early time (30 min) fit for MW data
						332	Step 4		17,000	C-J for PW		
41	PB-1769	09/20/07	15	232–337	3	39	3.01		[2]7,000	Theis Rec for PW	235–308	Theis Rec—good trend; C-J—High scatter in data (2 in. well)
									4,600	C-J for PW		
42	PB-1792	04/05/07	11.92	61.5–71.5	3	18.5	2.24		Not approved	Theis Rec for PW	57–87	Results of test not approved because of low drawdown in aquifer
									Not approved	C-J for PW		

Table 1–9*B*. Hydraulic well test results.—Continued

[Depths are in feet below land surface. Altitude of land surface is feet above NGVD 29 (numbers in in boldface type are estimated from topographic map). Method of analysis: SC, specific capacity; Theis, Theis (1935) confined aquifer; Theis Rec, Theis (1935) residual drawdown recovery; Bouwer, Bower (1989) and Bouwer and Rice (1976) slug test; C-J, Cooper and Jacob (1946) confined aquifer; H-J, Hantush and Jacob (1955) leaky aquifer; Hantush, Hantush (1960) leaky aquifer. Other annotations: K, hydraulic conductivity; MW, monitoring well; NR, not reported; PW, production well; SFWMD, South Florida Water Management District; USGS, U.S. Geological Survey; WTP, water treatment plant; --, not applicable]

Table 1–9*A*, 1–9*B* cross reference	Production-well identifier	Test date	Altitude of land surface (feet)	Depth of open interval tested (feet)	Permeable zones interpreted to be open in PW [1](Z1, Z2, Z3)	Pumping rate (gallons per minute)	Length of pumping period (hours) or step test number	Specific capacity (gallons per minute per foot)	Transmissivity (square feet per day)	Method of analysis	Estimated depths of total interval tested (feet)	Problems and comments
43	PB-1794	Various dates	15.6	18.6–40.3	1	10–12	NR		1,100	Bouwer for PWs	13–35	Uses average K from tests of 10 wells in vicinity
44	PB-1794	Various dates	15.6	58–101	2	10–12	NR		5,200	Bouwer for PWs	35–100	Uses average K from test of 6 wells in vicinity
45	PB-1801	04/18/07	12.4	85–105	2	49	0.5		[2]10,000	Theis Rec for PW	77–122	Tested twice with same results; estimated depths of total interval tested are from Bennett, M.W., 2006 (unpublished report), Hydrogeologic investigataion and seepage analysis, Bishop Property Excavation Project, Palm Beach County, Florida: South Florida Water Management District.
									10,000	C-J for PW		
46	PB-1803	04/17/07	11	155–175	3 (well confined)	7.7	1.74		3,000	Theis Rec for PW	138–163 (gray limestone aquifer)	Good fit for late time data for Theis Rec; good fit for all data for C-J
									[2]6,000	C-J for PW		
47	PB-1804	04/09/07	12	38–188	2	72	3.5		60,000	Theis Rec for PW	47–95	For Theis Rec -weak to moderate fit, but repeated in earlier test; C-J, good fit for all data except early time; correction made for steady background decline
									[2]10,000	C-J for PW		

Table 1–9*B*. Hydraulic well test results.—Continued

[Depths are in feet below land surface. Altitude of land surface is feet above NGVD 29 (numbers in in boldface type are estimated from topographic map). Method of analysis: SC, specific capacity; Theis, Theis (1935) confined aquifer; Theis Rec, Theis (1935) residual drawdown recovery; Bouwer, Bower (1989) and Bouwer and Rice (1976) slug test; C-J, Cooper and Jacob (1946) confined aquifer; H-J, Hantush and Jacob (1955) leaky aquifer; Hantush, Hantush (1960) leaky aquifer. Other annotations: K, hydraulic conductivity; MW, monitoring well; NR, not reported; PW, production well; SFWMD, South Florida Water Management District; USGS, U.S. Geological Survey; WTP, water treatment plant; --, not applicable]

Table 1–9*A*, 1–9*B* cross reference	Production-well identifier	Test date	Altitude of land surface (feet)	Depth of open interval tested (feet)	Permeable zones interpreted to be open in PW [1](Z1, Z2, Z3)	Pumping rate (gallons per minute)	Length of pumping period (hours) or step test number	Specific capacity (gallons per minute per foot)	Transmissivity (square feet per day)	Method of analysis	Estimated depths of total interval tested (feet)	Problems and comments
48	PB-1805	05/25/07	12	40–90	2 and 3	33.6	3.03		12,000	Theis Rec for PW	38–73	Theis Rec—early time fit, C-J—late time fit, well confined; well poorly developed with high drawdown (17 ft)
									[2]6,000	C-J for PW		
49	PB-1806	01/15/08	20	68–123	2 and 3	20	3.04		[2]10,000	Theis Rec for PW	67–129	Low pumping rate resulted from high drawdown and lift
									[2]4,000	C-J for PW		
50	PB-1807	03/28/08	19	70–140	2 and 3	85	3.02		Not approved	Theis Rec for PW	68–148	Results of test not approved because of large difference in results for drawdown and recovery analyses and high well loss.
									Not approved	C-J for PW		
51	PW	05/24/87	**15**	63–120	3	197	12		70,000	Glover; Jacob for MWs		
52	S10C	Various dates	22.4	12.6–34	1	10–12	NR		3,900	Bouwer for PWs	14–46	Uses average K from tests of 5 wells in vicinity
53	S10C	Various dates	22.4	62.6–101.4	2	10–12	NR		12,000	Bouwer for PWs	46–118	Uses average K from tests of 2 wells in vicinity
54	TPW	05/10/89	**15**	55–135	Minor 2, 3	440	69		44,000	H-J distance drawdown for MWs		
55	TW-1	06/03/99	**12**	35–65	2	186	8		27,000	Theis Rec for PW		

Table 1–9*B*. Hydraulic well test results.—Continued

[Depths are in feet below land surface. Altitude of land surface is feet above NGVD 29 (numbers in in boldface type are estimated from topographic map). Method of analysis: SC, specific capacity; Theis, Theis (1935) confined aquifer; Theis Rec, Theis (1935) residual drawdown recovery; Bouwer, Bower (1989) and Bouwer and Rice (1976) slug test; C-J, Cooper and Jacob (1946) confined aquifer; H-J, Hantush and Jacob (1955) leaky aquifer; Hantush, Hantush (1960) leaky aquifer. Other annotations: K, hydraulic conductivity; MW, monitoring well; NR, not reported; PW, production well; SFWMD, South Florida Water Management District; USGS, U.S. Geological Survey; WTP, water treatment plant; --, not applicable]

Table 1–9*A*, 1–9*B* cross reference	Production-well identifier	Test date	Altitude of land surface (feet)	Depth of open interval tested (feet)	Permeable zones interpreted to be open in PW [1](Z1, Z2, Z3)	Pumping rate (gallons per minute)	Length of pumping period (hours) or step test number	Specific capacity (gallons per minute per foot)	Transmissivity (square feet per day)	Method of analysis	Estimated depths of total interval tested (feet)	Problems and comments
56	TW-2C	04/27/99	**11**	85–115	2	798	72		16,000	Thiem (1906) and C-J constant time (average) for MWs	85–115	Results from different wells varied greatly
57	TW-3	08/04/99	**12**	50–80	2 and 3	200	96		27,000	Thiem (1906) and C-J constant time (average) for MWs	50–80	Rainfall event and background level changes during test
58	TW-3	06/10/99	**12**	50–80	2 and 3	210	7		30,000	Theis Rec for PW		
59	TW-5	06/17/99	**12**	55–85	3	210	8		30,000	Theis Rec for PW		
60	7R_TQ2	07/10/80	**17**	50–90	1	457	72		47,000	Boulton (1963?)		Only late-time estimates included
61	BOCA_PW-1	01/10/85	**17**	135–185	2	1,400	73		28,000	NR		
62	BURMA-TEST	02/03/88	**17**	132–162	2 and 3	213	24		7,000	Jacob (probably C-J)		
63	FHV_W5	04/13/83	**17**	123–170	2 and 3	1,600	2,880		170,000	Hantush		
64	HBWW-4	10/20/78	**17**	85–105	1	322	24.7		18,000	NR		Water table aquifer; found report
65	JPW-16	12/25/82	**17**	130–165	3	668	NR		11,000	Step drawdown		
66	JUNO_PW-5A	05/15/79	**17**	40–55	1	NR	71.25		25,000	NR		
67	JWSPW-13	11/29/78	**17**	136–200	Minor 2, 3	568	24		8,000	Boulton (1963?)		Found report
68	LM_PW-3	07/29/82	**17**	85–155	1, minor 2	600	NR		40,000	Theis Rec		
69	LSL_B-3	08/20/85	**17**	70–120	2	446	24		61,000	NR		Found report
70	LTC_PW-3	03/10/80	**17**	144–159	2	155	3.17		3,700	Boulton (1963?)		Reported value in disagreement with values for the 3 MWs. Used value representative of the 3 MWs.

Table 1–9*B*. Hydraulic well test results.—Continued

[Depths are in feet below land surface. Altitude of land surface is feet above NGVD 29 (numbers in in boldface type are estimated from topographic map). Method of analysis: SC, specific capacity; Theis, Theis (1935) confined aquifer; Theis Rec, Theis (1935) residual drawdown recovery; Bouwer, Bower (1989) and Bouwer and Rice (1976) slug test; C-J, Cooper and Jacob (1946) confined aquifer; H-J, Hantush and Jacob (1955) leaky aquifer; Hantush, Hantush (1960) leaky aquifer. Other annotations: K, hydraulic conductivity; MW, monitoring well; NR, not reported; PW, production well; SFWMD, South Florida Water Management District; USGS, U.S. Geological Survey; WTP, water treatment plant; --, not applicable]

Table 1–9*A*, 1–9*B* cross reference	Production-well identifier	Test date	Altitude of land surface (feet)	Depth of open interval tested (feet)	Permeable zones interpreted to be open in PW [1](Z1, Z2, Z3)	Pumping rate (gallons per minute)	Length of pumping period (hours) or step test number	Specific capacity (gallons per minute per foot)	Transmissivity (square feet per day)	Method of analysis	Estimated depths of total interval tested (feet)	Problems and comments
71	MORI_PW-1A	03/23/87	**17**	116–185	2	890	74		70,000	C-J		
72	PBCE-2	11/01/86	**17**	140–170	3	75	0.5		5,000	C-J		
73	PBCE-3	11/01/86	**17**	50–80	2	120	0.5		4,000	C-J		
74	PBCWW_TW-1	01/01/79	**17**	80–120	2	1,450	72		180,000	NR		
75	PBLL-PW1	05/01/87	16	94–120	2	1,000	72		47,000	C-J		Early time (10 min) fit only
76	PBMT_PW-1	08/03/87	**17**	40–250	1,2, and 3	189	72		27,000			
77	PBPOC_PW	12/25/81	**17**	74–94	2, minor 3(?)	225	24		13,000	Neuman partial penetration (probably Neuman (1974))		
78	RIVBEN-3	11/01/86	**17**	140–170	3	75	0.5		7,000	Jacob (probably C-J)		
79	RI_PW-851	12/25/85	**17**	70–130	2	1,380	4.42		100,000	Time-drawdown		Method not reported, but a leakance value was reported, indicating a leaky aquifer solution
80	SEM_PW-1	11/04/83	**17**	100–120	1	1,000	2.87		35,000	Hantush and C-J		
81	SSH_PW-1	08/09/87	**17**	50–91	2	92	44.2		3,500	Neuman (1972)		
82	WPB_PW-1	06/10/82	**17**									

[1]Minor indicates only part of zone is open or thickness of zone is minor compared to thickness of other zone(s).
[2]Approved value for USGS test.
[3]Uses a factor of 200 to compute transmissivity from specific capacity.

Table 1–9*C*. Sources and references for hydraulic well tests

[Hydraulic well test information provided in tables 1–9*A* and 1–9*B*]

Citatlion number	Source or reference
1a	Tests run in previous USGS study; Reese, R.S., and Cunningham, K.J., 2000, Hydrogeology of the gray limestone aquifer in souhern Florida: U.S. Geological Survey Water-Resources Investigations Report 99–4213, 244 p.
1b	Tests run in previous USGS study; Fish, J.E., 1988, Hydrogeology, aquifer characteristics, and ground-water flow of the surficial aquifer system, Broward County, Florida: U.S. Geological Survey Water-Resources Investigations Report 87–4034, 92 p.
1c	Tests run in previous USGS study; Klein, Howard, Schroeder, M.C., and Lichtler, W.F., 1964, Geology and ground-water resources of Glades and Hendry Counties, Florida: Florida Geological Survey Report of Investigations 37, 101 p.
1d	Tests run in previous USGS study; Fischer, J.N., Jr., 1980, Evaluation of a cavity-riddled zone of the shallow aquifer near Riviera Beach, Palm Beach County, Florida: U.S. Geological Survey Water-Resources Investigations Report 80–60, 39 p.
1e	Tests run in previous USGS study; unpublished by the USGS, test approved by internal memo dated 4/8/1988.
1f	Tests run in previous USGS study; Swayze, L.J., and Miller, W.L., 1984, Hydrogeology of a zone of secondary permeability in the surficial aquifer of eastern Palm Beach County, Florida: U.S. Geological Survey Water-Resources Investigations Report 83–4249, 39 p.
2	Tests done in this study
3	Tests run in previous USGS study; Harvey, J.W., Krupa, S.L., Gefvert, Cynthia, and others, 2000, Interaction between ground water and surface water in the northern Everglades and relation to water budget and mercury cycling: study methods and appendixes: U.S. Geological Survey Open-File Report 00–168, 411 p. and Harvey, J.W., Krupa, S.L., Gefvert, Cynthia, and others, 2002, Interactions between surface water and ground water and effects on mercury transposrt in the north-central Everglades: U.S. Geological Survey Water-Resources Investigations Report 02–4050, 82 p.
4	Data from SFWMD DBHYDRO database; production well identifier is station name.
5	Montgomery Watson, 1999, Final report on Site 1 detailed analysis: SFWMD Contract No. C-9765, submittal memo on 9–22–1999, 20 p. and appendixes.
6	Montgomery Watson Americas, Inc., 1999, Stormwater Treatment Area No. 3 and 4, field investigations and seepage analysis report: SFWMD contract, 48 p. and appendixes.
7	Murray-Milleson, Inc., 1987, Hydrogeologic study for the Seminole Tribe of Florida, 15 p. and appendix.
8	Murray-Milleson, Inc., 1989, Hydrogeologic study of Miccosukee Indian Reservation in Broward County, Florida, 27 p. and appendix.
9	Smith, K.R. and Adams, K.M., 1988, Ground water resource assessment of Hendry County, Florida: South Florida Water Management District Technical Publication 88–12: 109 p. and appendixes.
10	Repeat tests run by SFWMD.

Table 1–10. Water-quality data collected in this study.

[All depths are below land surface, in feet. Abbreviations: deg, degrees; NM, not measured; mg/L, milligrams per liter; µg/l, micrograms per liter; wf, water filtered; wu, water unfiltered; ROE, residue on evaporation]

USGS local well name	Date (mm/dd/yyyy)	Time (hhmm)	Depth of open interval (feet)	Zone open	Specific conductance at 25 deg C (µS/cm)	Water temperature, (deg C)	Residue ROE at 180 deg C, wf (mg/L)	Chloride, wf (mg/L)	Sulfate, wf (mg/L)	Calcium, wf (mg/L)	Strontium, wf (µg/L)	H-2/H-1, wu (per mil)	O-18/O-16, wu (per mil)	Sr-87/Sr-86, wf ratio	Boron, wf (µg/L)	Boron-11/Boron-10 (per mil)
PB-715	05/23/06	1529	72-81	2	764	NM	471	38	3.31	121	1,052	13.8	2.45	0.70910	20	NM
PB-830	05/23/06	1355	120–129	Below 3	5,130	NM	3,030	1,250	277	174	2,100	5.2	0.54	0.70902	508	32.3
PB-880	06/15/06	1123	90–117	3	949	25.1	593	46.5	25.9	111	1,165	9.0	1.37	0.70910	67	NM
PB-1097	05/23/06	1030	80–83	2	923	NM	552	81.3	1.95	124	2,078	-0.9	-0.89	0.70905	20	NM
PB-1107	05/23/06	1119	95–103	2	837	NM	521	80.7	11.1	105	1,350	2.4	0.01	0.70920	18	NM
PB-1545	05/18/06	1119	67–153	2 and 3	668	NM	409	43	7.29	106	1,838	2.6	0.16	0.70913	10	NM
PB-1547	05/24/06	1051	75–112	2 and 3	1,040	NM	629	160	7.01	114	1,071	1.8	-0.11	0.70911	20	NM
PB-1608	05/24/06	1157	50–145	2 and 3	5,770	NM	3,510	1,340	386	271	2,846	3.5	0.14	0.70917	329	33.0
PB-1761	06/06/06	1508	0–111	1 and 2	1,370	24.2	778	206	48.7	81.6	1,800	5.2	1.18	NM	NM	NM
PB-1785	05/30/06	1132	166–174	Below 3	7,460	NM	3,570	1,670	147	99.4	3,155	7.3	0.84	0.70901	630	24.0
PB-1786	06/01/06	1334	170–180	Below 3	12,300	NM	8,330	3,130	1,790	491	5,557	5.5	0.25	0.70903	1,130	33.8
PB-1787	06/01/06	1440	176–187	Below 3	10,500	24.7	6,030	2,990	338	93.8	2,412	5.6	0.52	0.70899	1,162	29.0
PB-1789	06/01/06	1057	64–74	2	1,500	25.5	868	186	20.8	86.7	3,438	4.7	0.29	0.70901	114	NM
PB-1790	06/01/06	1142	55–65	2	1,110	25.8	676	119	56.6	81.4	2,740	7.0	0.73	0.70907	42	NM
PB-1794	06/02/06	1231	99–101	3	16,800	24.8	10,400	4,730	838	79	2,318	12.0	1.65	0.70907	1,205	36.5
PB-1797	06/02/06	1124	176–191	Below 3	29,700	NM	19,200	9,530	1,540	269	5,588	13.2	1.8	0.70894	2,640	32.6
PB-1798	06/02/06	1148	98–100	3	1,310	25.3	808	178	75	93.1	2,970	9.4	1.25	0.70907	98	NM
PB-1801	06/06/06	1217	85–105	2	1,480	24.6	864	185	24.6	134	3,211	4.8	0.38	0.70909	73	NM
PB-1802	06/06/06	1236	20–30	1	1,060	25.1	638	114	9.06	98.2	2,620	1.4	-0.15	0.70906	32	NM