

Appendix A. Selected well records

Well number	Permit number	Owner	Driller	Altitude of land surface (feet)	Completion date	Hole depth (feet below land surface)	Diameter of screen (inches)	Screen interval (feet below land surface)
AA Dc 17	AA-73-6354	Southland Corp.	Branham Contractors	110.01	8/23/1976	40	2	33-40
AA Fd 49	--	Old South Country Club	Wolford's Well & Pump Service	120	8/24/1989	800	--	--
CA Bb 1	--	Lyons, Gorman	--	144	--	--	--	--
CA Cc 55	--	US Navy: Naval Research Lab	Delmarva Drilling	95.98	1/28/1974	1018	4	858 - 868
CA Db 96	CA-94-4191	MD Geological Survey	A.C. Schultes of Maryland	151.56	12/9/2002	1660	4	930 - 960
CA Dc 35	CA-73-0718	US Geological Survey	Delmarva Drilling	91.6	10/2/1974	1000	2	750 - 760
CA Fd 51	CA-73-1449	US Geological Survey	Milton Stroud	129.4	9/29/1976	390	2	342 - 352
CA Fd 71	CA-88-3340	Chesapeake Ranch Water Co.	A.C. Schultes of Maryland	110	4/30/1993	1295	4	810 - 929*
CA Fd 85	CA-94-3305	MD Geological Survey	Sydnor Hydrodynamics	105.98	11/14/2001	1664	4	1,535 - 1,633*
CA Gd 6	--	Calvert Marina	Washington Pump & Well	12.73	1942	170	6	472 - 493
CH Ac 11	CH-04-0515	Pot-O-Gold, Inc.	Shannahan Artesian Well	10	9/2/1960	173	2	134 - 173*
CH Bb 1	--	US Navy	--	29	1899	388	8	206 - 388*
CH Bb 2	--	US Navy	--	26.6	1902	409	8	207 - 390*
CH Bb 4	--	US Navy	--	33.8	7/27/1910	394	8	265 - 394*
CH Bb 5	--	US Navy	--	42.8	7/27/1910	395	8	271 - 391*
CH Bb 6	--	US Navy	--	38	1915	397.5	8	251 - 397*
CH Bb 7	--	US Navy	--	38.9	1915	419	8	255 - 399*
CH Bb 8	--	US Navy	--	36.1	1915	397	8	223 - 394*
CH Bb 9	--	US Navy	--	32.1	1915	398.5	8	185 - 376*
CH Bb 12	CH-01-3284	Town of Indian Head	Shannahan Artesian Well	95	12/10/1953	515	10	238 - 298*
CH Bb 14	CH-01-1907	US Navy (Powder Factory)	Washington Pump & Well	29	10/10/1952	452	7.5	209 - 452*
CH Bb 15	CH-02-1710	US Navy (Powder Factory)	Shannahan Artesian Well	29.21	12/17/1955	600	--	--
CH Bb 16	CH-02-2351	US Navy (Powder Factory)	Shannahan Artesian Well	52	3/8/1956	600	--	--
CH Bb 17	--	US Navy	Sydnor Hydrodynamics	52	1957	294	10	240 - 294
CH Bb 19	CH-72-0122	US Navy	Layne-Atlantic	90	9/14/1972	405	12	270 - 380
CH Bc 2	--	US Navy (Naval Ordnance Station)	--	16.5	1918	409	--	--
CH Bc 3	--	US Navy (Powder Factory)	--	18.7	1918	--	--	--
CH Bc 5	--	US Navy	Sydnor Hydrodynamics	38.2	1918	430	--	--
CH Bc 6	--	Potomac Heights	Layne-Atlantic	65	5/19/1941	417	8	362 - 412
CH Bc 12	CH-00-4720	Ford's Wonder Bar	Columbia Pump & Well	155.9	10/4/1949	234	--	--
CH Bc 15	CH-01-1904	US Navy (Powder Factory)	Washington Pump & Well	76.5	3/28/1952	258	7.5	242 - 250
CH Bc 22	CH-04-1840	Milman, Harry	Shannahan Artesian Well	145	4/28/1961	281	2	271 - 281
CH Bc 23	CH-03-0288	Town of Indian Head	Shannahan Artesian Well	65	4/15/1958	352	8	229 - 311*
CH Bc 24	CH-02-0874	Potomac Heights	Layne-Atlantic	72	10/10/1955	446	10	383.5 - 435*
CH Bc 49	CH-02-8980	Virginia Investment Co.	F. Haggmann	33	1/1/1958	404	8	340 - 403.7*
CH Bc 67	CH-72-0053	Town of Indian Head	Shannahan Artesian Well	30	12/19/1971	522	5	488 - 522*
CH Bc 68	CH-67-0051	Potomac Heights	Layne-Atlantic	75	2/24/1967	540	8	414 - 464*
CH Bc 70	CH-73-2329	Town of Indian Head	C. Z. Enterprizes	35	8/1/1979	483	8	372 - 442*
CH Bc 72	CH-81-0992	Town of Indian Head	Sydnor Hydrodynamics	34	9/26/1984	58	6	224 - 347*
CH Bc 74	CH-81-2919	Montrose Farms	Shannahan Artesian Well	150	7/9/1988	80	2	550.5 - 642*
CH Bc 75	CH-92-0500	Chapmans Landing	Sydnor Hydrodynamics	124.59	6/25/1993	1160	8	820 - 923*
CH Bc 77	CH 88-1028	Chapmans Landing	Branham Contractors	96.64	8/10/1990	990	6	925 - 955
CH Bc 80	CH-94-0897	MD Geological Survey	A.C. Schultes of Maryland	123.13	8/26/1996	1140	4	1,085 - 1,115*
CH Bd 46	CH-81-1714	Charles Co. DPF, Eutaw Forest	Sydnor Hydrodynamics	180	6/26/1986	859	4	700 - 820*
CH Bd 52	CH-94-0899	MD Geological Survey	A.C. Schultes of Maryland	47.5	9/30/1996	1043	4	1,043 - 1,095*

Appendix A. Continued

Aquifer	Pumping-test data						Remarks	Well number
	Static water level (feet below land surface)	Date reported	Yield (gallons per minute)	Drawdown (feet)	Specific capacity (gallons per minute per foot)	Duration of test (hours)		
Surficial	18	8/23/1976	35	7	5.0	4	h	AA Dc 17
--	--	--	--	--	--	--	c	AA Fd 49
Surficial	--	--	--	--	--	--	h	CA Bb 1
Upper Patapsco	84	1/28/1974	130	112	1.2	--	c,h	CA Cc 55
Upper Patapsco	192	12/10/2002	73	33	2.2	24	c,q	CA Db 96
Magothy	82	10/2/1974	12	98	0.1	--	h	CA Dc 35
Piney Point	115	9/20/1976	20	50	0.4	2	h	CA Fd 51
Upper Patapsco	133	5/10/1993	70	55.37	1.3	24	q	CA Fd 71
Lower Patapsco	120.3	11/27/2001	82.4	18.6	4.4	24	c,q	CA Fd 85
Aquia	36	--	150	75	2.0	--	h	CA Gd 6
Lower Patapsco	--	9/2/1960	50	--	--	4	q	CH Ac 11
Lower Patapsco	--	1933	150	--	2.1	--	q	CH Bb 1
Lower Patapsco	--	1938	134	--	4.2	--	q	CH Bb 2
Lower Patapsco	--	1944	80	--	--	--	q	CH Bb 4
Lower Patapsco	--	3/--/1961	85	--	--	--	q	CH Bb 5
Lower Patapsco	--	12/--/1960	100	--	--	--	q	CH Bb 6
Lower Patapsco	--	3/--/1961	95	--	--	--	q	CH Bb 7
Lower Patapsco	--	3/5/1945	155	--	--	--	q	CH Bb 8
Lower Patapsco	--	10/8/1960	110	--	--	--	q	CH Bb 9
Lower Patapsco	149	12/10/1953	220	54.5	4.0	8	q	CH Bb 12
Lower Patapsco	159	10/10/1952	128	181	0.7	24	q	CH Bb 14
Lower Patapsco	150	1956	25	--	--	4	q	CH Bb 15
Lower Patapsco	100	--	300	--	--	4	q	CH Bb 16
Lower Patapsco	105	10/--/1960	450	--	1.3	--	q	CH Bb 17
Lower Patapsco	150	9/14/1972	500	98	5.1	24	q	CH Bb 19
Lower Patapsco	--	1938	132	--	10.2	--	q	CH Bc 2
Lower Patapsco	--	--	--	--	--	--	q	CH Bc 3
Lower Patapsco	--	12/--/1960	130	--	--	24	q	CH Bc 5
Lower Patapsco	--	--	385	--	6.0	--	q	CH Bc 6
Upper Patapsco	125	10/4/1949	12	35	0.3	3	q	CH Bc 12
Lower Patapsco	--	--	--	--	--	--	q	CH Bc 15
Upper Patapsco	145	4/28/1961	20	75	0.3	4	q	CH Bc 22
Lower Patapsco	141	4/15/1958	240	65	3.7	24	q	CH Bc 23
Lower Patapsco	122	10/10/1955	250	13	19.2	4	h,q	CH Bc 24
Lower Patapsco	52	1/1/1958	190	108	1.8	48	q	CH Bc 49
Lower Patapsco	102	12/12/1971	300	79	3.8	24	q	CH Bc 67
Lower Patapsco	148	2/24/1967	517	140	3.7	24	q	CH Bc 68
Lower Patapsco	80	8/11/1979	96	226	0.4	24	q	CH Bc 70
Lower Patapsco	95.8	9/26/1984	160	60	2.7	24	q	CH Bc 72
Lower Patapsco	--	--	--	--	--	--	q	CH Bc 74
Patuxent	121	6/25/1993	500	85	5.9	72	q	CH Bc 75
Patuxent	94	8/10/1990	270	80	3.4	24	h	CH Bc 77
Patuxent	129.07	8/29/1996	37	146.41	0.3	12	q	CH Bc 80
Lower Patapsco	233.5	6/26/1986	90	54.5	1.7	--	q	CH Bd 46
Patuxent	48.5	10/8/1996	60	50.1	1.2	12	q	CH Bd 52

Appendix A. Continued

Well number	Permit number	Owner	Driller	Altitude of land surface (feet)	Completion date	Hole depth (feet below land surface)	Diameter of screen (inches)	Screen interval (feet below land surface)
CH Be 57	CH-81-1194	Charles Co. DPF, Smallwood West	Layne-Atlantic	212.26	6/12/1985	1802	4	1,660 – 1,696
CH Be 58	--	Charles Co. DPF, Smallwood West	Layne-Atlantic	212.5	8/29/1985	1170	8	925 – 1,160*
CH Be 60	CH-81-1468	US Geological Survey	East Coast Well & Pump	212.8	5/5/1986	700	4	610 - 625
CH Bf 134	CH-70-0067	Charles Co. DPF	Sydnor Hydrodynamics	202.09	8/28/1970	564	4	402 - 546*
CH Bf 146	CH-81-0593	Charles Co. DPF, St. Paul	Sydnor Hydrodynamics	192.8	12/23/1983	1660	6	1,059 – 1,417*
CH Bf 147	CH-81-0738	Charles Co. DPF, St. Paul	Sydnor Hydrodynamics	195	2/29/1984	121	12	1,059 – 1,417*
CH Bf 150	CH-81-1195	Charles Co. DPF, White Oak Drive	Sydnor Hydrodynamics	215	7/24/1985	103	8	797 – 1,336*
CH Bf 151	CH-81-1265	US Geological Survey	East Coast Well & Pump	192.8	4/23/1986	680	4	645 - 660
CH Bf 157	CH-81-1846	US Geological Survey	W. C. Services	225	9/9/1986	642	4	608 - 623
CH Bf 158	CH-81-1847	US Geological Survey	W. C. Services	193	9/17/1986	802	4	630 - 645
CH Bg 17	CH-94-5325	MD Geological Survey	A.C. Schultes of Maryland	199.16	3/3/2003	1660	--	1,299 – 1,343*
CH Cb 7	CH-01-1908	US Navy	Washington Pump & Well	36	3/3/1952	400	7.5	154 - 167
CH Cb 8	CH-01-1932	US Navy	Shannahan Artesian Well	38	5/28/1953	242	12	85 - 242*
CH Cb 9	CH-01-1931	Board of Education	Shannahan Artesian Well	24.3	6/30/1953	623.3	8	191 - 280*
CH Cb 10	--	US Navy (Powder Factory)	Washington Pump & Well	20	1945	610	--	--
CH Cb 11	--	US Navy	Washington Pump & Well	10	1945	454	--	--
CH Cb 16	CH-01-3185	US Navy (Powder Factory)	Shannahan Artesian Well	31	1954	605	8	208 - 302*
CH Cb 18	CH-01-5753	US Navy	Shannahan Artesian Well	30.5	4/20/1954	452	8	261 - 295
CH Cb 19	CH-01-3185	US Navy	Shannahan Artesian Well	32	5/15/1954	605	8	208 - 302*
CH Cb 26	--	US Navy	Sydnor Hydrodynamics	5	1958	600	4	185 - 230*
CH Cb 28	CH-04-1102	US Navy	Layne-Atlantic	5	1/17/1961	331	10	190 - 290*
CH Cb 29	--	US Navy	Sydnor Hydrodynamics	12.4	1956	350	10	228 - 286*
CH Cb 34	CH-72-0121	US Navy	Layne-Atlantic	30	7/10/1972	233	12	217 - 232
CH Cb 35	CH-81-0572	US Navy	East Coast Well & Pump	25	12/6/1984	503	4	433 - 486*
CH Cb 38	--	US Navy	Calvert Well	4	5/30/1978	250	2	220 - 235
CH Cb 39	CH-73-2804	Sweden Point Marina	Shannahan Artesian Well	10	12/17/1980	300	4	301 - 383*
CH Cb 40	CH-73-0357	General Smallwood State Park	Shannahan Artesian Well	80	5/6/1974	301	4	287 - 301
CH Cc 5	CH-00-6948	Scott, Miriam	Marvin Seek	170	11/24/1950	274	--	--
CH Cc 34	CH-94-0898	MD Geological Survey	A.C. Schultes of Maryland	41.82	7/17/1996	1170	4	874 - 955*
CH Cd 7	CH-00-2998	Hawthorne Country Club	Washington Pump & Well	160	9/28/1948	564.5	5.5	554.5 - 564.5
CH Cd 9	CH-00-9771	Board of Education	Washington Pump & Well	149	5/28/1952	423	5.5	416 - 423
CH Cd 24	CH-03-3114	US Navy	Sydnor Hydrodynamics	175	3/3/1955	1003	5.5	885 - 970*
CH Cd 43	CH-70-0008	Charles Co. Community College	Patuxent Pump & Well	68	9/13/1969	540	4	521 - 536
CH Ce 3	--	Town of La Plata	Sydnor Hydrodynamics	186	1929	625	6	621 - 625
CH Ce 18	CH-03-1514	Army Corps of Engineers	James R. Bell	197	1/27/1959	1219	6	1,178 – 1,211
CH Ce 37	CH-73-0219	US Geological Survey	Sydnor Hydrodynamics	184.95	11/9/1973	40	4	1,174 – 1,340*
CH Ce 55	--	Town of La Plata	--	--	--	--	--	--
CH Ce 56	CH 94-1111	Town of La Plata	Sydnor Hydrodynamics	196.48	3/18/1997	1307	4	896 – 1,258*
CH Ce 57	CH 94-1112	Town of La Plata	Sydnor Hydrodynamics	193.47	2/17/1997	1871	4	1,406 – 1,698*
CH Cg 24	CH-94-4194	MD Geological Survey	Sydnor Hydrodynamics	171.04	1/16/2002	1667	4	795 - 825
CH Da 1	CH-00-1548	Sullivan, E.	Wilson	27.5	8/1/1947	210	--	--
CH Da 18	CH-73-0586	PEPCO, Douglas Point	A.C. Schultes of Maryland	89.9	11/19/1975	772	8	684 - 740*
CH Ee 16	--	Bowling, J. B.	--	40	--	23	--	--
CH Ee 56	CH-04-1097	Zimmerman, A. H.	Shannahan Artesian Well	145	12/10/1960	503	2	493 - 503
CH Ee 78	CH-73-1965	Charles Co. DPF, Clifton-on-the-Potomac	Leazer Pump & Well	75	10/31/1979	1220	7	1,148 – 1,199*

Appendix A. Continued

Aquifer	Pumping-test data						Remarks	Well number
	Static water level (feet below land surface)	Date reported	Yield (gallons per minute)	Drawdown (feet)	Specific capacity (gallons per minute per foot)	Duration of test (hours)		
Patuxent	199.4	6/12/1985	36	80	0.5	--	c,h	CH Be 57
Lower Patapsco	236.6	8/29/1985	550	113.7	4.8	24	h,q	CH Be 58
Upper Patapsco	131.9	4/23/1986	27	144	0.2	24	q	CH Be 60
Magothy	182	8/28/1970	250	60	4.2	77	h	CH Bf 134
Lower Patapsco	200.5	12/21/1983	164	46.4	3.5	8	q	CH Bf 146
Lower Patapsco	--	--	--	--	--	--	q	CH Bf 147
Lower Patapsco	228	7/24/1985	554	85	6.5	24	c,q	CH Bf 150
Upper Patapsco	235	4/23/1986	90	103	0.9	12	q	CH Bf 151
Upper Patapsco	266.5	9/8/1986	30	90.6	0.3	24	q	CH Bf 157
Upper Patapsco	222.9	9/17/1986	50	123.9	0.4	24	q	CH Bf 158
Lower Patapsco	253	3/4/2003	60	39	1.5	24	c,q	CH Bg 17
Lower Patapsco	86	--	200	73	2.7	24	q	CH Cb 7
Lower Patapsco	52	5/28/1953	559	79	7.1	24	q	CH Cb 8
Lower Patapsco	52	6/30/1953	310	140	2.2	24	q	CH Cb 9
Patuxent	--	1953	52	--	--	--	q	CH Cb 10
Lower Patapsco	30	1945	80	127	0.6	--	q	CH Cb 11
Lower Patapsco	--	--	--	--	--	--	q	CH Cb 16
Lower Patapsco	77	4/20/1954	350	133.5	2.6	12	q	CH Cb 18
Lower Patapsco	95	5/15/1954	363	92	3.9	24	q	CH Cb 19
Lower Patapsco	48	12/3/1958	23	12	1.9	--	q	CH Cb 26
Lower Patapsco	65	1/17/1961	275	135	2.0	40	q	CH Cb 28
Lower Patapsco	--	1957	383	--	--	--	q	CH Cb 29
Lower Patapsco	83	7/10/1972	250	117	2.1	24	c,q	CH Cb 34
Patuxent	84	12/6/1984	226	171	1.3	24	q	CH Cb 35
Lower Patapsco	18	5/30/1978	20	82	0.2	5	q	CH Cb 38
Lower Patapsco	79	12/17/1980	32	87	0.4	24	q	CH Cb 39
Lower Patapsco	107	5/6/1974	17	22	0.8	10	q	CH Cb 40
Upper Patapsco	68	11/24/1950	8	--	--	4	q	CH Cc 5
Patuxent	48.52	7/19/1996	50	141.65	0.4	12	q	CH Cc 34
Upper Patapsco	165	--	35	100	0.4	12	q	CH Cd 7
Upper Patapsco	130	5/28/1952	40	204	0.2	18	q	CH Cd 9
Lower Patapsco	178	3/3/1955	65	135	0.5	48	q	CH Cd 24
Upper Patapsco	90	9/13/1969	36	63	0.6	--	h	CH Cd 43
Upper Patapsco	160	1929	60	71	0.9	--	q	CH Ce 3
Lower Patapsco	190	11/14/1958	210	158	1.3	66	q	CH Ce 18
Lower Patapsco	189.35	11/8/1973	120	29.64	4.1	24	q	CH Ce 37
Lower Patapsco	--	--	--	--	--	--	q	CH Ce 55
Lower Patapsco	--	--	--	--	--	--	q	CH Ce 56
Patuxent	--	--	--	--	--	--	c,q	CH Ce 57
Upper Patapsco	219.25	1/16/2002	56.27	34.17	1.7	24	c,q	CH Cg 24
Lower Patapsco	21	8/1/1947	18	8	2.3	5	q	CH Da 1
Patuxent	--	--	--	--	--	--	h	CH Da 18
Surficial	--	--	--	--	--	--	h	CH Ee 16
Upper Patapsco	130	12/10/1960	16	23	0.7	4	q	CH Ee 56
Lower Patapsco	126.42	10/31/1979	116.68	113.58	1.0	24	q	CH Ee 78

Appendix A. Continued

Well number	Permit number	Owner	Driller	Altitude of land surface (feet)	Completion date	Hole depth (feet below land surface)	Diameter of screen (inches)	Screen interval (feet below land surface)
CH Ee 91	CH-81-0761	Charles Co. DPF, Clifton-on-the-Potomac	Layne-Atlantic	68.19	--	1104	6	1,000 – 1,096*
CH Ee 94	CH-94-3763	Mirant Corp.	A.C. Schultes of Maryland	25	6/10/2001	1141	8	1,080 – 1,120
CH Fe 3	CH-03-9674	Austin, T. R.	Shannahan Artesian Well	9	7/23/1960	373	2	368 - 373
CH Fe 5	CH-73-2765	USS Realty Development	Sydnor Hydrodynamics	12	1/22/1981	900	6	520 - 857*
CH Ff 60	CH-81-0762	Swan Point	Layne-Atlantic	12	3/30/1984	1100	6	808 - 982*
PG Fd 62	--	Washington Gas Light Co.	Eakle & Holder Drilling	228.6	8/00/1956	1812	--	1,545 – 1,580
PG Hf 31	PG-73-0065	Mirant Corp.	Shannahan Artesian Well	10.02	7/7/1973	676	4	1,007 – 1,541*
SM Bb 27	--	Charlotte Hall Veterans Home	--	164	--	--	--	--
SM Bc 39	SM-94-3921	MD Geological Survey	Sydnor Hydrodynamics	161.54	3/18/2002	1600	4	1,492 – 1,532*
SM Dd 50	SM-73-3082	US Geological Survey	Shannahan Artesian Well	99.4	10/26/1978	579	3	505 - 515
SM Dd 72	SM-94-3616	MD Geological Survey	A.C. Schultes of Maryland	109.99	5/16/2001	1650	4	1,300 – 1,330
SM Df 26	--	Clarke, Thomas	Lee Herbert	110	1940	--	--	--
SM Df 66	SM-73-1990	US Geological Survey	Milton Stroud	15	7/15/1976	341	2	248 - 258
SM Df 71	SM-73-3431	US Geological Survey	Paul Kanaar	69.15	7/9/1979	620	2	550 - 560
SM Df 84	SM-81-0119	MD Geological Survey	A.C. Schultes of Maryland	108.39	1/5/1983	2682	4	831 - 912*
SM Df 100	SM-94-3113	US Navy	A.C. Schultes of Maryland	21	8/17/2000	--	8	706 - 905*
SM Ef 56	SM-67-0089	US Geological Survey	East Coast Well & Pump	108	12/5/1966	1509	4	317 - 322
SM Ff 36	SM-73-1478	Kitts Point Utility Corp.	Patuxent Pump & Well	5.5	10/29/1975	940	6	594 - 618
SM Ff 65	SM-94-3700	US Navy	A.C. Schultes of Maryland	10	8/10/2001	1050	8	635 - 874*

Owner abbreviations:

Co.	Company or county
Corp.	Corporation
DPF	Department of Facilities
Inc.	Incorporated
MD	Maryland
PEPCO	Potomac Electric Power Company
US	United States

Driller abbreviations:

A. C. Schultes of Maryland
Branham Well Drilling Contractors
Calvert Well Drilling Company
Columbia Pump & Well Company
C. Z. Enterprises, Incorporated
Delmarva Drilling Company
Eakle & Holder Drilling Company
East Coast Well & Pump, Incorporated
Layne-Atlantic Company
Leazer Pump & Well Company, Incorporated
Patuxent Pump & Well, Incorporated
Shannahan Artesian Well Company
Sydnor Hydrodynamics, Incorporated
Washington Pump & Well Company
W. C. Services, Incorporated
Wolford's Well & Pump Service, Incorporated

Other abbreviations:

--	= none or no data
*	= Screen interval includes blank sections
c	= included in cross sections
h	= hydrograph
q	= water quality analysis

Appendix A. Continued

Aquifer	Pumping-test data						Remarks	Well number
	Static water level (feet below land surface)	Date reported	Yield (gallons per minute)	Drawdown (feet)	Specific capacity (gallons per minute per foot)	Duration of test (hours)		
Lower Patapsco	103	1/25/1984	317	192	1.7	24	q	CH Ee 91
Lower Patapsco	121	6/10/2001	370	231	1.6	24	c	CH Ee 94
Upper Patapsco	10	7/23/1960	17	--	--	4	q	CH Fe 3
Upper Patapsco	17	1/22/1981	340	183	1.9	24	q	CH Fe 5
Lower Patapsco	24	3/30/1984	506	56	9.0	24	c,q	CH Ff 60
Patuxent	--	--	--	--	--	--	h	PG Fd 62
Lower Patapsco	6	7/7/1973	93	19	4.9	24	c	PG Hf 31
Aquia	--	--	--	--	--	--	c	SM Bb 27
Lower Patapsco	190.61	3/28/2002	66.25	36.89	1.8	24	c,q	SM Bc 39
Aquia	124	10/26/1978	12	36	0.3	4	h	SM Dd 50
Lower Patapsco	131	5/16/2001	70	29	2.4	24	c,q	SM Dd 72
Surficial	--	--	--	--	--	--	h	SM Df 26
Piney Point	41	7/15/1976	12	21	0.6	4	h	SM Df 66
Aquia	123	7/9/1979	20	23	0.9	1	h	SM Df 71
Upper Patapsco	115	1/5/1983	200	50	4.0	24	c,h,q	SM Df 84
Upper Patapsco	--	--	--	--	--	--	c,q	SM Df 100
Piney Point	115	12/5/1966	45	185	0.2	4	c	SM Ef 56
Upper Patapsco	5	10/29/1975	300	90	3.3	24	q	SM Ff 36
Upper Patapsco	--	--	--	--	--	--	c	SM Ff 65

Appendix B. Selected water-quality analyses for wells screened in the Upper Patapsco, Lower Patapsco, and Patuxent aquifers in Calvert, Charles, and St. Mary's Counties

[deg C, degrees Celsius; $\mu\text{S}/\text{cm}$, microsiemens per centimeter at 25° Celsius; mg/L, milligrams per liter; $\mu\text{g}/\text{L}$, micrograms per liter; pCi/L, picoCuries per liter; *, lab pH; <, less than; E, estimated; M, measured; --, not reported]

Well number	Date	pH, field	Temperature (deg C)	Specific conductance ($\mu\text{S}/\text{cm}$)	Residue @180 deg C	Sodium (mg/L)	Potassium (mg/L)	Calcium (mg/L)	Magnesium (mg/L)	Sulfate (mg/L as SO_4)	Alkalinity (mg/L as CaCO_3)
Upper Patapsco aquifer											
CA Db 96	2/4/2003	7.0	18.5	240	127	12.1	10.4	13.9	9.13	3.9	110
CA Fd 71	5/10/1993	7.9	20.7	202	126	44	4.4	0.69	0.36	5.1	96
CH Bc 12	3/28/1950	7.8	--	357	224	70	8.6	5.9	2.4	13	--
CH Bc 22	2/7/1956	8.2	--	260	--	--	--	--	--	--	--
CH Be 60	4/23/1986	7.4	17	310	181	64	6.1	2.5	1	7.7	150
CH Bf 151	3/11/1986	7.5	15	335	163	20	12	26	9.1	9.4	149
CH Bf 157	9/8/1986	8.2	19	300	188	24	12	25	8.8	8.5	157
CH Bf 158	9/30/1986	8.5	19	260	160	35	8	11	4.6	9.9	124
CH Cc 5	4/2/1952	7.9	--	411	265	88	7.6	5.9	3.5	7.5	--
CH Cd 7	4/3/1952	7.9	--	465	306	116	4.9	2.1	0.2	4	--
CH Cd 9	3/9/1961	7.9	--	423	275	96	5.7	3	0.1	5.2	--
CH Ce 3	1/22/1947	8.0	--	514	338	121	4.7	1.1	0.8	11	--
CH Cg 24	1/29/2002	7.3	19.8	281	--	48.3	7.24	6.63	3.03	8.6	131
CH Ee 56	3/9/1961	7.6	16.5	301	186	66	2.6	2	0.2	8	--
CH Fe 3	12/15/1961	8.2	16	355	225	86	3.8	1.2	<.05	8.2	--
CH Fe 5	1/21/1981	7.9	19.5	430	325	130	3.3	0.4	0.2	15	230
SM Df 84	1/5/1983	8.4	20.5	261	171	68	2.5	0.59	0.32	6	157
SM Df 100	8/11/2000	8.4	21	238	165	56.3	2.3	0.39	0.203	4.6	177
SM Ff 36	5/15/2001	9.8	18	582	349	126	7.01	1.52	0.463	0.2	293
Lower Patapsco aquifer											
CA Fd 85	11/28/2001	8.7	25.2	414	264	102	1.7	1.08	0.261	13.6	213
CH Ac 11	3/9/1961	6.8	15.7	149	122	30	2.3	1.8	0.4	0.2	--
CH Bb 1	7/13/1956	8.0	--	299	229	69	2.9	0.7	0.1	9.6	--
CH Bb 2	5/28/1952	8.3	--	342	222	78	2.5	0.3	0.2	10	--
CH Bb 4	5/28/1952	8.2	--	291	215	68	2.7	0.4	0.1	16	--
CH Bb 5	7/13/1956	8.0	14.5	270	202	67	2.4	0.3	<.05	11	--
CH Bb 6	5/17/1988	7.9	17	286	196	67	2.3	0.27	0.25	9	123
CH Bb 7	5/17/1988	7.9	18	315	202	70	2.3	0.31	0.27	10	135
CH Bb 8	10/14/1957	7.9	15.5	314	227	69	3.2	0.4	0.5	10	--
CH Bb 9	5/17/1988	7.8	17	262	187	62	1.8	0.36	0.34	11	122
CH Bb 12	5/19/1988	7.2	18.4	750	477	170	7.7	5.8	3.9	4.8	334
CH Bb 14	10/14/1957	7.8	15.5	314	218	66	3.2	0.4	0.5	9.4	--
CH Bb 15	1/5/1956	8.2	--	352	238	60	5.2	6.8	4.4	1.6	--
CH Bb 16	3/1/1956	8.3	--	325	--	--	--	--	--	--	--
CH Bb 17	5/24/1988	7.7	19.1	497	307	110	3.6	4.4	0.86	2.1	182

Appendix B. Continued

Chloride (mg/L)	Fluoride (mg/L)	Iron (µg/L)	Manganese (µg/L)	Arsenic (µg/L)	Nitrite plus nitrate (mg/L as N)	Phosphorus (mg/L)	Total organic carbon (mg/L)	Silica (mg/L)	Radon- 222 (pCi/L)	Gross alpha- particle activity (pCi/L)	Gross beta- particle activity (pCi/L)	Well number
										Upper	Patapsco	aquifer
0.94	0.39	4900	89	0.3	<.06	--	E.4	9.1	150	7	17	CA Db 96
1.9	0.3	110	18	--	--	--	--	11	--	--	--	CA Fd 71
1.2	0.5	--	--	--	--	--	--	16	--	--	--	CH Bc 12
2.8	--	--	--	--	--	--	--	--	--	--	--	CH Bc 22
1.6	0.5	85	29	<1	--	0.11	--	10	--	--	--	CH Be 60
0.9	0.2	350	24	<1	--	0.03	0.1	9.7	--	--	--	CH Bf 151
1.2	0.2	500	20	<1	--	0.03	0.4	9.3	--	--	--	CH Bf 157
0.7	0.4	530	14	<1	--	0.01	0.5	9.9	--	--	--	CH Bf 158
0.5	0.9	--	--	--	--	--	--	19	--	--	--	CH Cc 5
7	1.3	--	--	--	--	--	--	24	--	--	--	CH Cd 7
0.5	0.9	--	--	--	--	--	--	36	--	--	--	CH Cd 9
3.8	1.2	--	--	--	--	--	--	34	--	--	--	CH Ce 3
2	0.4	270	15.1	0.3	0.05	0.103	3.4	10.5	--	--	--	CH Cg 24
2	0.6	--	--	--	--	--	--	17	--	--	--	CH Ee 56
2.5	0.7	--	--	--	--	--	--	13	--	--	--	CH Fe 3
1.3	1.3	220	20	--	--	--	--	36	--	--	--	CH Fe 5
1.8	0.3	30	10	1	<.100	0.38	0.4	12	--	--	--	SM Df 84
1.74	0.4	51	9.3	--	--	--	--	12.6	--	--	--	SM Df 100
2	1.1	<10	<3.2	--	--	--	--	14.3	--	--	--	SM Ff 36
										Lower	Patapsco	aquifer
2.07	0.4	105	12.5	<.2	<.05	--	E.4	13.5	140	M	2	CA Fd 85
2.2	0.4	--	--	--	--	--	--	45	--	--	--	CH Ac 11
11	0.8	--	--	--	--	--	--	30	--	--	--	CH Bb 1
20	0.6	--	--	--	--	--	--	19	--	--	--	CH Bb 2
10	0.8	--	--	--	--	--	--	25	--	--	--	CH Bb 4
6.1	0.9	--	--	--	--	--	--	34	--	--	--	CH Bb 5
7.5	0.9	45	14	--	--	--	0.3	33	--	--	--	CH Bb 6
11	1	78	7	--	--	--	0.1	33	--	--	--	CH Bb 7
8.5	0.9	--	--	--	--	--	--	36	--	--	--	CH Bb 8
2.9	0.8	34	10	--	--	--	0.2	34	--	--	--	CH Bb 9
49	0.3	1000	89	--	--	--	3.5	35	--	--	--	CH Bb 12
11	0.8	--	--	--	--	--	--	34	--	--	--	CH Bb 14
15	0.3	--	--	--	--	--	--	37	--	--	--	CH Bb 15
13	--	--	--	--	--	--	--	--	--	--	--	CH Bb 16
47	0.8	410	7	--	--	--	1.2	30	--	--	--	CH Bb 17

Appendix B. Continued

Well number	Date	pH, field	Temperature (deg C)	Specific conductance ($\mu\text{S}/\text{cm}$)	Residue @180 deg C	Sodium (mg/L)	Potassium (mg/L)	Calcium (mg/L)	Magnesium (mg/L)	Sulfate (mg/L as SO_4)	Alkalinity (mg/L as CaCO_3)
CH Bb 19	5/18/1988	7.6	17.4	473	319	110	3.6	0.75	0.73	3.6	217
CH Bc 2	10/14/1957	7.8	15.5	255	193	59	3.2	0.4	0.1	10	--
CH Bc 3	5/17/1988	8.0	18	281	193	67	2	0.19	0.14	8.3	131
CH Bc 5	5/25/1988	8.0	16.2	420	272	100	3.5	0.65	0.51	9.1	154
CH Bc 6	5/19/1988	8.0	17.2	252	186	57	1	0.05	0.03	14	110
CH Bc 15	4/14/1955	7.8	--	299	215	68	3.6	0.6	1	7.3	--
CH Bc 23	5/19/1988	7.5	18.5	720	462	140	7.2	4.1	3.1	3.9	327
CH Bc 24	5/26/1988	7.2	17.7	659	410	80	9.9	34	14	42	202
CH Bc 49	5/19/1988	7.6	17	294	206	68	2.8	0.58	0.27	10	132
CH Bc 67	5/19/1988	7.7	18.4	675	402	150	4	0.29	0.24	7.3	154
CH Bc 68	5/19/1988	7.8	16.4	244	182	58	1.2	0.12	0.12	18	113
CH Bc 70	5/19/1988	7.7	18.4	242	181	60	1.8	0.09	0.14	13	112
CH Bc 72	5/19/1988	7.8	17.2	264	197	64	2.3	0.33	0.19	10	123
CH Bc 74	10/25/1989	7.9	16.9	239	167	55	--	0.22	0.04	15	101
CH Bd 46	6/26/1986	7.4	18.1	410	297	95	3.7	0.6	0.3	13	209
CH Be 58	8/28/1985	7.6	21	350	210	70	2.6	0.9	0.3	16	132
CH Bf 146	12/21/1983	8.0	23	260	204	64	1.5	0.48	0.11	11	135
CH Bf 147	2/27/1984	7.4	22	270	304	66	1.6	0.24	0.19	9.3	132
CH Bf 150	7/16/1985	8.3	22.5	245	183	56	1	0.21	0.12	23	102
CH Bg 17	3/4/2003	8.0	20.6	240	152	54.2	3.21	1.09	0.512	5.8	119
CH Cb 7	5/11/1988	6.8	14	290	--	63	2.7	2.8	1.7	9.9	134
CH Cb 8	8/26/1953	6.9	--	536	339	47	2.7	23	19	0.8	--
CH Cb 9	5/17/1988	7.8	16.5	370	242	76	2.8	0.83	0.74	11	146
CH Cb 11	5/18/1988	7.5	17.2	590	374	140	4.6	1.5	0.74	8.3	234
CH Cb 16	4/27/1961	7.6	--	340	232	76	3.5	0.3	0.1	12	--
CH Cb 18	5/17/1988	7.6	16.5	481	304	110	2.8	0.42	0.51	7.6	181
CH Cb 19	5/18/1988	8.0	18.5	374	242	86	2.7	0.52	0.48	8.1	156
CH Cb 26	11/12/1958	7.5	10	334	220	73	4.3	1.4	0.8	11	--
CH Cb 28	5/18/1988	7.5	16.5	297	201	66	3.9	1.7	1.3	12	129
CH Cb 29	5/17/1988	8.0	17	302	207	70	2	0.25	0.21	10	138
CH Cb 34	5/17/1988	7.0	14.5	1310	768	270	7.5	8.1	8.7	12	367
CH Cb 38	5/18/1988	7.7	16.8	290	201	62	3	1.1	1	15	134
CH Cb 39	11/2/1989	7.9	15.5	257	183	66	--	0.18	0.21	12	126
CH Cb 40	11/2/1989	7.6	15	384	249	85	--	0.78	0.77	10	186
CH Cd 24	5/12/1960	7.8	--	279	200	--	--	1.2	1.2	13	--

Appendix B. Continued

Chloride (mg/L)	Fluoride (mg/L)	Iron (µg/L)	Manganese (µg/L)	Arsenic (µg/L)	Nitrite plus nitrate (mg/L as N)	Phosphorus (mg/L)	Total organic carbon (mg/L)	Silica (mg/L)	Radon- 222 (pCi/L)	Gross alpha- particle activity (pCi/L)	Gross beta- particle activity (pCi/L)	Well number
21	0.6	170	27	--	--	--	1.3	35	--	--	--	CH Bb 19
2.5	0.8	--	--	--	--	--	--	37	--	--	--	CH Bc 2
6.2	0.8	59	6	--	--	--	0.3	33	--	--	--	CH Bc 3
42	0.8	260	18	--	--	--	0.3	25	--	--	--	CH Bc 5
2.9	0.9	69	1	--	--	--	0.5	37	--	--	--	CH Bc 6
6	1.1	--	--	--	--	--	--	36	--	--	--	CH Bc 15
41	0.4	760	88	--	--	--	3.5	34	--	--	--	CH Bc 23
60	0.5	1400	43	--	--	--	2	33	--	--	--	CH Bc 24
8.8	0.7	130	8	--	--	--	0.6	33	--	--	--	CH Bc 49
120	1.5	110	14	--	--	--	<.1	35	--	--	--	CH Bc 67
1.6	0.7	57	2	--	--	--	0.2	36	--	--	--	CH Bc 68
1.3	0.9	80	6	--	--	--	0.1	35	--	--	--	CH Bc 70
3.7	0.8	97	11	--	--	--	0.5	36	--	--	--	CH Bc 72
1.3	--	21	2	--	--	--	0.3	35	--	--	--	CH Bc 74
2.9	1.4	220	24	<.1	--	1.1	0.3	33	--	--	--	CH Bd 46
1.9	1	31	18	<.1	--	1	1	38	--	--	--	CH Be 58
2.1	0.9	60	10	--	--	--	--	33	--	--	--	CH Bf 146
2.6	0.9	140	20	--	--	--	--	83	--	--	--	CH Bf 147
4	0.4	7	2	<.1	--	0.37	--	21	--	--	--	CH Bf 150
0.78	1.26	204	13.9	<.3	<.06	--	E.3	10.2	330	M	4	CH Bg 17
7.1	0.9	370	55	--	--	--	--	33	--	--	--	CH Cb 7
101	<.05	--	--	--	--	--	--	32	--	--	--	CH Cb 8
22	1.1	110	19	--	--	--	0.6	33	--	--	--	CH Cb 9
45	1.2	480	21	--	--	--	<.1	34	--	--	--	CH Cb 11
11	1.3	--	--	--	--	--	--	35	--	--	--	CH Cb 16
40	1.1	170	19	--	--	--	0.8	33	--	--	--	CH Cb 18
18	0.8	100	16	--	--	--	0.7	35	--	--	--	CH Cb 19
13	1.1	--	--	--	--	--	--	35	--	--	--	CH Cb 26
7.2	1.1	640	30	--	--	--	0.2	32	--	--	--	CH Cb 28
7	0.8	110	10	--	--	--	0.1	34	--	--	--	CH Cb 29
210	0.5	2400	370	--	--	--	5.2	39	--	--	--	CH Cb 34
3.1	1	460	22	--	--	--	0.2	33	--	--	--	CH Cb 38
2.3	--	280	11	--	--	--	0.3	34	--	--	--	CH Cb 39
1.7	--	610	24	--	--	--	0.5	32	--	--	--	CH Cb 40
7.5	1.2	--	--	--	--	--	--	40	--	--	--	CH Cd 24

Appendix B. Continued

Well number	Date	pH, field	Temperature (deg C)	Specific conductance (µS/cm)	Residue @180 deg C	Sodium (mg/L)	Potassium (mg/L)	Calcium (mg/L)	Magnesium (mg/L)	Sulfate (mg/L as SO ₄)	Alkalinity (mg/L as CaCO ₃)
CH Ce 18	6/17/1959	7.9	--	273	210	--	--	0.4	0.6	15	--
CH Ce 37	11/9/1973	7.7	--	275	--	70	1.7	0.2	0.1	17	--
CH Ce 55	6/26/1997	7.4	--	394	--	--	--	--	--	--	--
CH Ce 56	3/19/1997	7.7	--	370	302	79.2	2.08	0.52	0.167	13.4	162
CH Da 1	3/20/1951	7.4	11	371	244	54	7.6	15	9.4	9	--
CH Ee 78	6/16/1978	7.8	23	620	402	140	2.4	1	0.4	24	--
CH Ee 91	1/12/1984	7.5*	--	--	298	100	2.1	0.4	0.2	12	204
CH Ff 60	5/1/1984	7.8	22	345	315	88	1.8	0.28	0.15	12	180
SM Bc 39	3/28/2002	8.4	26	297	188	69.9	0.98	0.4	0.139	10	147
SM Dd 72	5/15/2001	8.3	22.5	420	267	97.2	1.26	0.45	0.189	15.2	207
Patuxent aquifer											
CH Bc 75	11/24/1996	7.9	19.5	306	214	68	1.8	0.47	0.08	7.7	129
CH Bc 80	8/29/1996	7.8	--	593	378	150	3.3	0.48	0.23	7.8	252
CH Bd 52	10/8/1996	7.7	20.3	425	278	98	2.4	0.83	0.15	8.4	192
CH Cb 10	10/18/1955	7.5	--	464	308	104	1.1	1.4	1	6.6	--
CH Cb 35	5/18/1988	7.8	19.1	575	366	130	3.4	0.39	0.39	7.7	227
CH Cc 34	7/19/1996	7.8	21.4	373	244	85	2.5	0.29	0.11	9	151
CH Ce 57	2/19/1997	7.3	23	1010	602	220	3.8	1.7	0.52	10	366

Appendix B. Continued

Chloride (mg/L)	Fluoride (mg/L)	Iron (µg/L)	Manganese (µg/L)	Arsenic (µg/L)	Nitrite plus nitrate (mg/L as N)	Phosphorus (mg/L)	Total organic carbon (mg/L)	Silica (mg/L)	Radon- 222 (pCi/L)	Gross alpha- particle activity (pCi/L)	Gross beta- particle activity (pCi/L)	Well number
2	0.9	--	--	--	--	--	--	41	--	--	--	CH Ce 18
2.1	1.2	--	--	--	--	--	--	37	--	--	--	CH Ce 37
--	--	--	--	--	--	--	--	--	360	--	--	CH Ce 55
1.86	1.1	249	13.2	--	<.05	--	--	41	380	6.4	5.6	CH Ce 56
6.8	0.1	--	--	--	--	--	--	32	--	--	--	CH Da 1
31	0.8	490	20	--	--	--	--	42	--	--	--	CH Ee 78
9.6	1.1	380	20	--	--	--	--	4	--	--	--	CH Ee 91
1.7	1.4	100	10	--	--	--	--	37	--	--	--	CH Ff 60
2.29	0.7	--	340	E.1	--	--	--	15.7	--	--	--	SM Bc 39
2.03	0.7	49	8.1	<.2	<.05	--	4.2	14.5	--	1.4	1	SM Dd 72
Patuxent aquifer												
16	0.9	17	2	--	--	--	--	22	--	--	--	CH Bc 75
43	0.9	48	8	--	--	--	--	16	--	--	--	CH Bc 80
20	0.8	80	9	--	--	--	--	34	--	--	--	CH Bd 52
28	0.7	--	--	--	--	--	--	33	--	--	--	CH Cb 10
44	1.2	110	120	--	--	--	<.1	34	--	--	--	CH Cb 35
21	1.3	100	13	--	0.09	1.3	--	38	--	--	--	CH Cc 34
96	1.2	450	28	--	--	--	--	41	--	--	--	CH Ce 57

Appendix C. Summary of palynological data from Southern Maryland test wells

[Palynological analyses for wells CA Db 96, CH Cg 24, SM Bc 39, and SM Dd 72 were performed by Dr. Gilbert Brenner of the State University of New York at New Paltz, on unwashed drill cuttings from four test wells in Southern Maryland. Uphole contamination was extensive, and dating was based on the first occurrence of diagnostic forms working downward in the sample sequence. Palynological analyses for SM Df 84 were performed on core samples (Hansen and Wilson, 1984)]

Well	Altitude (feet relative to sea level)	Depth of sample interval (feet below <u>land surface</u>)		Stratigraphic determination		Formation	Palynozone
		Top	Bottom				
CA Db 96	152	600	620	Paleocene	--	Aquia	--
		700	720	Upper Cretaceous	Maestrichtian(?)	Monmouth(?)	--
		780	800	Upper Cretaceous	Santonian	Magothy	--
		880	890	<i>Barren</i>	--	--	--
		1,000	1,015	Upper Cretaceous	Early Cenomanian	Upper Patapsco	III
		1,235	1,240	Cretaceous	Albian or Early Cenomanian(?)	Patapsco(?)	II or III(?)
		1,340	1,360	Lower Cretaceous	Albian	Patapsco	IIB
		1,440	1,460	Lower Cretaceous	Albian	Patapsco	IIB
		1,520	1,540	Lower Cretaceous	Albian	Patapsco	IIB
		1,590	1,610	Lower Cretaceous	Late Aptian(?) to Early Albian	Lower Patapsco or Arundel	--
CH Cg 24	171	520	530	Paleocene	Danian(?)	Brightseat(?)	--
		550	560	Upper Cretaceous	Campanian(?)	Upper Matawan or Monmouth	--
		610	620	Upper Cretaceous	Early Campanian(?)	Lower Matawan	--
SM Bc 39	162	600	610	Paleocene(?)	--	Aquia(?)	--
		620	630	Paleocene or Upper Cretaceous	Maestrichtian	Aquia/Brightseat or Monmouth	--
		640	650	Upper Cretaceous	Late Santonian(?) to Campanian	Magothy or Matawan	--
SM Dd 72	110	600	620	Lower Cretaceous	Albian	Upper Patapsco	IIB or IIC(?)
		640	660	<i>Barren</i>	--	--	--
		660	680	<i>Barren</i>	--	--	--
		680	700	<i>Barren</i>	--	--	--
		720	740	Lower Cretaceous	Albian	Upper Patapsco	IIB(?) or IIC
		760	780	<i>Barren</i>	--	--	--
		930	950	<i>Barren</i>	--	--	--
		950	970	Lower Cretaceous	Albian	Patapsco	IIB
		1,070	1,090	Lower Cretaceous	Albian	Lower Patapsco	IIA(?)
		1,110	1,130	Lower Cretaceous	Albian	Lower Patapsco	IIA(?)
		1,130	1,150	Lower Cretaceous	Albian	Lower Patapsco	IIA
		1,330	1,350	Lower Cretaceous	Early Albian	Lower Patapsco	IIA(?)
		1,550	1,570	Lower Cretaceous	Early Albian	Arundel	I(?)
		1,570	1,590	Lower Cretaceous	Early Albian	Arundel	I(?)
		1,590	1,610	Lower Cretaceous	Early Albian	Arundel	I(?)
1,650	1,650	<i>Barren</i>	--	--	---		

Appendix C. Continued

Well	Altitude (feet relative to sea level)	Depth of sample interval (feet below <u>land surface</u>)		Stratigraphic determination	Formation	Palynozone	
		Top	Bottom				
SM Df 84	108	725		Paleocene(?)	--	--	
		875		Paleocene	--	--	
		940		Paleocene	--	--	
		1,085		Cretaceous	Middle Albian	Patapsco	IIB-1
		1,170		Cretaceous	Middle Albian	Patapsco	IIB-1
		1,265		Cretaceous	Middle Albian	Patapsco	IIB-1
		1,350		<i>Barren</i>	--	--	--
		1,860		<i>Barren</i>	--	--	--
		1,940		<i>Barren</i>	--	--	--
		2,110		<i>Barren</i>	--	--	--
		2,992	2,302	<i>Barren</i>	--	--	--
		2,367	2,368	<i>Barren</i>	--	--	--
		2,500	2,510	<i>Barren</i>	--	--	--
		2,609	2,619	Cretaceous(?)	--	--	Pre-zone 1(?)

Appendix D. Ground-water appropriation permits and pumpage simulated in the Piney Point aquifer

[*, Public-supply appropriation; for abbreviations, see page 236]

Map identifier (fig. 50)	GAP number	User name	Average GAP (as of 2002)	Pumpage (thousand gallons per day)			
				1952	1982	1994	2002
1	CA53G002*	Scientists Cliffs Association, Inc.	33	0	33	21	28
2	CA56G002*	CA CO Comm., White Sands Subdivision (previously White Sands Corp.)	10	2	6	5	4
3	CA59G001*	CA CO Comm., Hunting Hills	10	0	56	10	5
4	CA60G202*	Chesapeake Ranch Water Company	40	0	0	0	0
5	CA62G001*	Beaches Water Company, Inc., Long Beach	69	0	88	61	94
6	CA66G001*	Edward Crooks (Western Shores Estates)	25	0	0	29	9
7	CA68G009*	CA CO Comm., Calvert Water System (previously Kenwood Beach)	25	0	21	18	16
8	CA74G002*	CA CO Comm., Dares Beach	25	0	32	14	19
9	CA78G011*	CA CO Comm., Calvert Beach Park West	40	0	11	27	10
10	CA89G006	Brisco, James T.	50	0	0	0	0
11	SM52G002*	Waring, Henry T., Lord Calvert Trailer Park (previously James Hill Trailer Park)	150	49	148	203	47
12	SM74G118	NAS Patuxent River	140	154	0	296	43
13	SM67G001*	SMMC, Greenview Knolls Subdivision	20	7	56	2	30
14	SM56G008*	Maryland Manor Mobile Home Park (previously Mayjack, Inc.)	0	10	21	0	0
15	SM52G004*	SMMC, Lexington Park-Town Creek-California (previously Town Creek Water Company)	200	82	150	261	197
16	SM92G050	Hill, Adrian F., & Paul Zack	10	0	0	0	0
17	SM56G006*	Chance Water Company, Waring Subdivision	12	5	10	0	0
18	SM69G003*	Lexington Est. Mobile Home Park	10	0	0	0	8
19	SM76G010*	SMMC, Hollywood	8	0	9	8	0
20	SM92G031	Hollywood Supply	8	0	0	0	8
21	DO54G102	Cambridge Country Club	11	0	0	13	3
22	DO63G005*	DO CO Sanitary District	26	0	19	22	124
23	DO71G005*	Municipal Utilities Comm.	1,400	0	2,735	1,284	969
24	DO74G007	University of Maryland	100	0	0	67	49
25	DO88G031	Hendler, Nelson	45	0	0	0	4
26	DO89G020	Flinchum, Allen J.	40	0	0	0	0
27	DO90G038	Hendler, Nelson	50	0	0	0	0
28	DO94G014	Blackwater National Wildlife Refuge	10	0	0	0	0
29	TA46G001	Trappe Packing Corp.	80	182	103	13	4
30	TA71G102	Cal-Mar Associates LTD	38	0	0	26	21
31	TA79G006*	Trappe, Town of	210	36	70	147	113
32	TA89G004	Louis Foehrkolb, Inc.	46	0	0	0	0
33	TA90G005	Burda, Franz	50	0	0	15	6

Appendix E. Ground-water appropriation permits and pumpage simulated in the Aquia aquifer

[*, Public-supply appropriation; for abbreviations, see page 236]

Map identifier (fig. 52)	GAP number	User name	Average GAP (as of 2002)	Pumpage (thousand gallons per day)			
				1952	1982	1994	2002
1	CA32G001	U.S. Navy, Solomons Test Facility	100	519	74	0	0
2	CA32G002	U.S. Naval Research Laboratory, Randle Cliffs	100	63	21	0	0
3	CA52G001	Calvert County Hospital	44	4	34	0	0
4	CA53G102*	Scientists Cliffs Water Association, Inc.	17	20	17	13	11
5	CA59G002*	CA CO Comm., Chesapeake Heights on the Bay (previously Cassell Utility Company)	75	3	45	60	76
6	CA59G003	Shri LTD Partnership, Regency Manor Mobile Home Park	20	0	1	20	10
7	CA59G101*	CA CO Comm., Hunting Hills	10	0	0	10	5
8	CA60G002*	Chesapeake Ranch Water Company	900	0	135	483	791
9	CA62G201*	Beaches Water Company, Inc., Long Beach	49	27	0	7	39
10	CA66G005*	CA CO Comm., Lakewood Subdivision	15	0	32	21	16
11	CA69G010	Calvert Cliffs Nuclear Power Plant, Inc. (previously Baltimore Gas & Electric Company)	450	0	177	166	392
12	CA70G005	CA CO Board of Education, Calvert High School and Career Center	20	0	4	12	39
13	CA70G007	CA CO Comm., Calvert County Industrial Park	25	0	6	40	44
14	CA72G003*	Chesapeake Beach, Town of (previously Chesapeake Beach Water System)	371	10	69	214	319
15	CA73G013*	CA CO Comm., Paris Oaks Subdivision	29	0	9	16	23
16	CA73G014	Dominion Cove Point LNG	22	0	4	1	6
17	CA74G005*	CA CO Comm., Town of Prince Frederick	245	0	86	255	347
18	CA74G102*	CA CO Comm., Dares Beach	25	0	0	27	12
19	CA77G016	CA CO Comm., Jail & Alcohol Rehab Center	33	0	0	16	21
20	CA78G004*	CA CO Comm., Summit & The Highlands Subdivision	129	0	0	81	213
21	CA78G008*	CA CO Comm., Mason Road, Woodridge Subdivision	10	0	3	6	5
22	CA84G003*	CA CO Comm., Solomons Island	350	0	0	187	319
23	CA86G003*	Beach Creek Assoc, Chesapeake Lighthouse Townhouses	63	0	0	0	0
24	CA86G007*	CA CO Comm., St. Leonard municipal supply	25	0	0	0	32
25	CA88G009*	North Beach, Town of	200	0	0	109	163
26	CA90G007	U.S. Eel (Aquaculture)	82	0	0	0	0
27	CA90G008	Dundrik Development Group (Market Place Shopping Center)	30	0	0	4	12
28	CA93G048	Navy Recreation Center, Solomons	100	0	0	89	64
29	CA94G004	U.S. Naval Research Laboratory, Randle Cliffs	30	0	0	0	15
30	CA94G028	CA CO Comm.	6	0	0	0	7
31	CA95G030*	CA CO Comm., Walnut Creek Phase III	15	0	0	0	13

Appendix E. Continued

[*, Public-supply appropriation; for abbreviations, see page 236]

Map identifier (fig. 52)	GAP number	User name	Average GAP (as of 2002)	Pumpage (thousand gallons per day)			
				1952	1982	1994	2002
32	CA96G026*	CA CO Comm., Cross Point Subdivision	37	0	0	0	32
33	CA99G018*	J & H Properties LTD, Marley Run Subdivision	38	0	0	0	10
34	CH69G001*	CH CO Comm., Clifton-on-the-Potomac	10	0	41	4	0
35	CH70G203*	La Plata, Town of	70	0	0	0	0
36	CH80G020*	CH CO Dept. of Public Works, Benedict	56	0	0	23	22
37	CH88G040	Garner, A.W., Plainfield Farm	173	0	0	0	0
38	SM70G010*	SMMC, Piney Point Subdivision and Lundeberg School of Seamanship	70	8	0	65	58
39	SM32G001	U.S. Navy, Webster Outlying Field	30	0	3	48	14
40	SM50G002	Operating Partnership Support (previously Steuart Petroleum Company)	25	21	20	11	7
41	SM88G002*	SMMC, Landings at Piney Point Subdivision	30	0	0	1	19
42	SM79G010	MD Tidewater Admin., Piney Point Aquaculture Center	61	0	208	0	0
43	SM69G001	St. Mary's College, MD Environmental Center	76	16	43	80	104
44	SM95G009*	SMMC, Whaler's Creek Run	53	0	0	0	10
45	SM83G016*	SMMC, Hunting Quarter Subdivision	41	0	0	11	48
46	SM89G029	Magnani, Donald	22	0	0	0	0
47	SM91G021*	SMMC, Southgate Center Townhouse Subdivision	14	0	0	2	10
48	SM86G060*	SMMC, Wilderness Run Subdivision	35	0	0	9	29
49	SM76G024	The Arundel Corporation (previously Green Acres Drive-In, Inc.)	40	0	14	0	0
50	SM73G003*	SMMC, Cedar Cove Pine Hill Run	160	0	67	118	115
51	SM46G001*	SMMC, Lexington Park	1,450	262	802	1,204	1,710
52	SM67G009	SM CO Public Schools, Leonardtown Vocational Center (previously Leonardtown High School)	30	0	10	21	0
53	SM69G017*	SMMC, Cherry Cove/Breton Bay Estates	85	0	53	97	139
54	SM76G014*	SMMC, Wildewood Subdivision and Technology Park	350	0	38	173	227
55	SM74G002*	SMMC, Tubman Douglas Subdivision	50	0	32	42	46
56	SM65G002*	SMMC, St. Clements Shores	55	0	30	46	50
57	SM67G101*	SMMC, Greenview Knolls Subdivision	80	0	0	80	75
58	SM84G070*	San Souci Estates	0	0	0	0	0
59	SM74G018	NAS Patuxent River	710	1,291	910	812	712
60	SM94G004*	SMMC, Laurel Glen Subdivision	55	0	0	0	212
61	SM67G003*	Leonardtown, Commissioners of	525	35	332	412	476
62	SM89G008	Dean-Kelly, Patty L., Fish Farm	10	0	0	0	0
63	SM72G004*	Downes, Thomas., Mt. Pleasant Water Company	13	0	9	12	11

Appendix E. Continued

[*, Public-supply appropriation; for abbreviations, see page 236]

Map identifier (fig. 52)	GAP number	User name	Average GAP (as of 2002)	Pumpage (thousand gallons per day)			
				1952	1982	1994	2002
64	SM76G004	SMMC, St. Mary's Industrial Park	34	0	8	24	0
65	SM98G025*	Vallandingham & Assoc., J., Villages of Leonardtown	20	0	0	0	0
66	SM95G042	Southstar LTD Partnership, Chaney Enterprises (Loveville Wash Plant)	119	0	0	0	0
67	SM76G025	Int'l. Assoc. of Machinists, Placid Harbor Training Center	15	0	5	5	10
68	SM74G043*	SMMC, Fenwick Manor Subdivision	25	3	17	21	27
69	SM97G002	SM CO Public Schools, Chopticon High School	20	0	0	0	0
70	SM92G010	SM CO Dept. of Recreation and Parks, Wicomico Shores Golf Course	60	0	0	0	34
71	SM71G004*	SMMC, King and Kennedy Estates	31	0	23	21	23
72	SM76G003*	SMMC, Country Lakes Subdivision	240	0	41	209	266
73	SM74G035*	SMMC, Birch Manor Subdivision	30	0	24	26	22
74	SM88G109	Patuxent Development Company, Inc., Mechanicsville Shopping Center	13	0	0	0	0
75	SM89G010*	SMMC, Persimmon Hills	40	0	0	0	22
76	SM81G018	MD Environmental Service, Charlotte Hall Veterans Home	70	0	0	45	41
77	SM86G016*	SMMC, Laurel Ridge Subdivision	61	0	0	41	49
78	SM66G006	Charlotte Hall Shopping Center	57	0	8	36	80
79	SM74G025*	SMMC, Rolling Acres, Indian River, and Summit	59	0	25	51	64
80	SM83G022	Wentworth Nursery, Inc.	15	0	0	12	0
81	SM86G041	Howlin Concrete, Inc.	6	0	0	0	5
82	SM99G018	Howlin Concrete, Inc.	10	0	0	0	6
83	AA01G019	Park Place Associates	360	0	0	0	0
84	AA48G001*	Rose Haven Utilities, Inc	80	0	0	61	63
85	AA48G004	AA CO Board of Education	14	0	6	2	0
86	AA54G003	Woodfield Fish & Oyster Company	50	28	25	5	1
87	AA55G012	AA CO Dept. Parks & Recreation	10	0	0	0	0
88	AA58G008*	Southdown Waterworks	40	2	38	0	0
89	AA60G008*	Wayson's Properties, Inc.	47	0	54	38	53
90	AA66G055*	Kamakoti Investors, Ltd	38	0	71	0	32
91	AA71G020	AA CO Dept of Utilities	20	0	26	9	1
92	AA73G013*	Heilman & Richard Nelson	40	0	0	0	16
93	AA76G014*	Boone's Mobile Estates	75	0	22	19	32
94	AA83G032	Marbro Company	144	0	0	0	0
95	AA86G045*	Charles A. Shoemaker	11	0	0	10	7
96	AA90G005	Alliant Techsystems, Inc.	18	0	0	22	21

Appendix E. Continued

[*, Public-supply appropriation; for abbreviations, see page 236]

Map identifier (fig. 52)	GAP number	User name	Average GAP (as of 2002)	Pumpage (thousand gallons per day)			
				1952	1982	1994	2002
97	AA93G024	Central Sod Farms, Inc.	65	0	0	7	29
98	PG71G002	Brandywine Country Club	46	0	0	0	0
99	PG96G005	Andrews Air Force Base	79	0	0	0	84
100	QA56G001	S.E.W. Friel	320	41	101	145	245
101	QA65G004	University of Maryland, Wye Research and Education Center	96	0	0	0	5
102	QA69G003	Armour Swift Eckrich	100	0	32	34	51
103	QA71G007	S.E.W. Friel	123	19	54	58	35
104	QA76G003	Prospect Bay Home Owners	100	0	1	8	19
105	QA79G010*	Queenstown, Commissioners of	77	0	51	56	110
106	QA80G013*	QA CO Sanitary District	125	0	7	61	96
107	QA82G002*	QA CO Sanitary District	27	0	0	23	46
108	QA83G005*	QA CO Sanitary District	15	0	0	11	13
109	QA84G004	Kent Island Joint Venture	23	0	0	20	10
110	QA90G012	University of Maryland, Wye Research and Education Center	50	0	0	0	1
111	QA92G003	Schaefer, Louis	200	0	0	0	11
112	QA92G044*	QA CO Sanitary District	88	0	0	52	69
113	QA92G047	Drummer, Gordon	50	0	0	0	0
114	QA93G011	Rhodes, Jr., Temple	148	0	0	0	0
115	QA95G001	Central Sod Farms of Maryland	411	0	0	0	199
116	QA99G045	Callahan, Philip	206	0	0	0	49
117	TA69G002	Meba Engineering School	15	0	2	0	10
118	TA70G002*	Oxford, Town of	140	55	133	121	137
119	TA71G002*	Martingham Utilities	65	0	21	25	34
120	TA71G105*	Easton Utilities Comm.	150	125	259	106	160
121	TA73G101*	Jenson's, Inc.	10	0	0	0	5
122	TA74G205	TA CO Park Board	70	0	0	24	12
123	TA79G004*	St. Michaels, Commissioners of	325	117	229	268	252
124	TA81G101	Talbot Country Club, Inc.	10	0	0	2	20
125	TA82G008	TA CO Dept. Public Works	10	0	0	4	5
126	TA86G009	Petronis, Henry	65	0	0	42	0

Appendix F. Ground-water appropriation permits and pumpage simulated in the Magothy aquifer

[*, Public-supply appropriation; for abbreviations, see page 236]

Map identifier (fig. 53)	GAP number	User name	Average GAP (as of 2002)	Pumpage (thousand gallons per day)			
				1952	1982	1994	2002
1	CA70G004	CA CO Comm., Cavalier Country	55	0	50	46	50
2	CA72G001	Northern High School	18	0	10	17	12
3	CA72G002	CA CO Comm., Shores of Calvert Water Company	35	0	33	39	34
4	CA98G124	Swann, J. Allen	45	0	0	0	27
5	CH55G001*	Trimac Water Company, Forest Park Subdivision	13	0	14	8	5
6	CH55G006	MD Dept. of Public Safety, Southern MD Pre-Release Unit	26	0	9	23	22
7	CH62G003	Chaney Enterprises LTD (previously Charles County Sand & Gravel), Waldorf Concrete	10	0	2	8	8
8	CH63G002*	Idlewood Park, Inc., Idlewood Mobile Home Park	25	0	0	9	10
9	CH63G008*	Charles County Gardens Water Company	22	0	34	20	0
10	CH65G007*	White Plains Water Company, Capital and Halley Estates	22	0	19	21	6
11	CH66G008	Mount Carmel Woods	5	0	14	6	5
12	CH67G009*	CH CO Comm., Brookwood Estates Subdivision	10	0	0	0	3
13	CH68G008*	Beantown Water Assoc., Beantown Park Subdivision	14	0	14	10	10
14	CH70G009*	CH CO Comm., Piney Church Well	280	0	2,415	100	219
15	CH70G109*	CH CO Comm., Towne Plaza Well	250	0	0	233	519
16	CH70G209*	CH CO Comm., Pinefield Well	200	0	0	136	244
17	CH70G309*	CH CO Comm., Mattawoman Beantown Well	200	0	0	92	131
18	CH70G409*	CH CO Comm., Billingsley Road Well	350	0	0	358	400
19	CH70G509*	CH CO Comm., Westwood Drive Well	510	0	0	428	85
20	CH70G609*	CH CO Comm., John Hanson Middle School	700	0	0	478	734
21	CH70G709*	CH CO Comm., St. Charles Well	300	0	0	264	310
22	CH70G809*	CH CO Comm., Cleveland Park Estates	80	0	0	0	99
23	CH71G004*	Pine Hill Water Company	15	0	13	14	4
24	CH76G017*	CH CO Dept. of Public Works	0	0	14	0	0
25	CH77G033	MD Tidewater Admin., Cedarville Fish Hatchery	150	0	49	100	137
26	SM85G051*	Heart's Desire Subdivision	5	0	0	1	3
27	AA32G001	Annapolis, City of	10	188	155	427	0
28	AA56G002*	Sylvan Shores Services	55	35	43	51	74
29	AA60G208*	Wayson's Properties, Inc.	14	0	0	0	0
30	AA65G032*	Berk, Maurice H.	80	0	66	100	37
31	AA68G011	AA CO Dept. of Utilities	25	0	23	15	18
32	AA71G026	AA CO Dept. of Utilities	12	0	21	0	0

Appendix F. Continued

[*, Public-supply appropriation; for abbreviations, see page 236]

Map identifier (fig. 53)	GAP number	User name	Average GAP (as of 2002)	Pumpage (thousand gallons per day)			
				1952	1982	1994	2002
33	AA72G009*	Annapolis, City of	2,000	2,684	2,469	1,848	2,436
34	AA75G023*	Riva Developers, Inc.	30	0	26	0	0
35	AA76G007*	AA CO Dept. of Utilities	540	0	0	0	0
36	AA77G048*	Annapolis Landing	75	0	36	0	0
37	AA81G039	Millennium Holdings	14	0	4	14	4
38	AA83G007*	Chesapeake Harbour, Inc.	14	0	0	0	0
39	AA88G044	Central Sod Farms, Inc.	126	0	0	0	0
40	AA88G058	Moreland, Joan	200	0	0	0	0
41	AA88G059	Moreland, Joan	150	0	0	0	0
42	AA88G060	Moreland, Joan	50	0	0	0	0
43	AA90G045	Washington Brick and Terracotta	61	0	0	0	85
44	AA92G022*	Kamakoti Investors LTD	38	0	0	87	0
45	AA96G122	Harwood Landfill, Inc.	70	0	0	0	40
46	AA97G030	Crofton Athletic Complex	16	0	0	0	0
47	AA98G028	Safeway, Inc., Deale Store	13	0	0	0	0
48	DO71G105*	Municipal Utilities Comm.	350	0	0	79	263
49	PG00G003	Denison, John	10	0	0	0	10
50	PG00G008	Arbortech, Inc.	10	0	0	0	2
51	PG53G006*	Sauerwein, Estate of	10	11	0	4	0
52	PG56G007	Juvenile Services, Dept. of	65	69	71	53	18
53	PG59G001	Aggregate Industries	35	0	10	0	0
54	PG61G005	Simpson Land Company, The	16	0	14	0	0
55	PG61G008*	Bowie, City of	200	0	2,401	103	268
56	PG62G007	Mirant—Chalk Point LLC	660	0	606	414	346
57	PG63G003*	Utilities of MD, Inc.	600	0	0	360	389
58	PG70G002	WSSC	30	0	15	25	1
59	PG71G007	Marlboro Square, Inc.	15	0	0	3	0
60	PG75G006	Fairways Group L.P., The	45	0	0	1	26
61	PG77G012	Bardon, Inc.	69	0	0	28	75
62	PG79G002	Andrews Air Force Base	105	0	72	71	141
63	PG82G200	U.S. Navy, Cheltenham	63	0	90	0	0
64	PG90G022	Maryland Veteran's Comm.	20	0	0	0	0
65	PG90G025	Marson, Jr., Edward	31	0	0	0	0

Appendix F. Continued

[*, Public-supply appropriation; for abbreviations, see page 236]

Map identifier (fig. 53)	GAP number	User name	Average GAP (as of 2002)	Pumpage (thousand gallons per day)			
				1952	1982	1994	2002
66	PG91G015	Washington Brick and Terracotta Company	129	0	0	0	53
67	PG95G019	Marlton Golf Club	40	0	0	0	27
68	QA70G102*	QA CO Sanitary District	92	0	0	54	0
69	QA84G016*	QA CO Sanitary District	46	0	0	14	44
70	QA84G017*	QA CO Sanitary District	10	0	0	0	0
71	QA85G009	QA CO Dept. Parks & Recreation	45	0	0	6	24
72	QA85G024*	QA CO Sanitary District	144	0	0	34	40
73	QA85G030	Kent Island LTD Partnership	28	0	0	1	0
74	QA89G024*	QA CO Comm.	7	0	0	49	0
75	QA89G026	Queenstown Harbor Golf Links	72	0	0	236	0
76	QA94G007*	QA CO Sanitary District	342	0	0	0	38
77	QA96G009	U.S. Links, Inc.	65	0	0	0	0
78	TA71G005*	Easton Utilities Comm.	1,100	363	919	523	914

Appendix G. Ground-water appropriation permits and pumpage simulated in the Upper Patapsco aquifer

[*, Public-supply appropriation; for abbreviations, see page 236]

Map identifier (fig. 54)	GAP number	User name	Average GAP (as of 2002)	Pumpage (thousand gallons per day)			
				1952	1982	1994	2002
1	CH65G011*	CH CO Comm., Mariellen Park Water	26	0	17	16	16
2	CH66G108*	CH CO Comm., Mt. Carmel Woods Estates (previously Carmel Utilities)	15	0	0	12	8
3	CH68G001	CH CO Community College	8	0	12	14	12
4	CH69G003*	Oak Hill Water Assoc.	16	0	14	19	25
5	CH69G005	CH CO Board of Education, Pomfret Technical Center	15	0	7	8	3
6	CH70G001*	Turkey Hill Water Company	16	0	13	13	9
7	CH70G103*	La Plata, Town of	90	0	0	0	0
8	CH71G002*	Avon Crest Subdivision	9	0	7	7	6
9	CH72G002*	USS Real Estate, Swan Point Development	60	0	0	21	44
10	CH72G006*	Newtown Estates Water Company	15	0	24	11	0
11	CH74G007	CH CO Comm., White Plains Park	65	0	27	50	25
12	CH74G010*	CH CO Comm., Bel Alton Development	29	0	13	29	25
13	CH75G001	CH CO Board of Education, McDonough High School	35	0	12	7	12
14	CH75G004	CH CO Board of Education, Piccowaxen Middle School	25	0	5	3	2
15	CH87G023	Southern Maryland Sand & Gravel	9	0	0	0	0
16	CH88G025	Hawthorne Country Club of Charles County	17	0	0	3	15
17	CH96G032	Chaney Enterprises LTD, Waldorf Wash Plant	73	0	0	0	26
18	SM01G009	U.S. Navy, Webster Outlying Field	30	0	0	0	10
19	SM66G009	Point Lookout State Park	25	0	3	17	7
20	SM01G011	Denison, John - Nursery	15	0	0	0	14
21	SM89G074*	SMMC, Whalers Creek Run/Greenbriar Subdivision	53	0	0	4	10
22	SM01G012	NAS Patuxent River	120	0	0	0	0
23	SM98G021*	SMMC, First Colony, Myrtle Point, Wildwood	200	0	0	0	172
24	SM00G004*	Qualshire, LLC, Forrest Farm Subdivision	46	0	0	0	0
25	SM87G009	Route 347 Realty Corp.	45	0	0	0	0
26	SM87G109*	Route 347 Realty Corp.	165	0	0	0	0
27	SM72G001*	SMMC, Wicomico Shores	150	0	13	40	111
28	AA32G003	U.S. Naval Academy	2,000	1,028	1,900	1,308	963
29	AA32G101	Annapolis, City of	500	384	299	416	0
30	AA66G042	Chaney Enterprises LTD	10	0	6	5	0
31	AA70G041	U.S. Naval Academy Golf Course	85	0	172	29	60
32	AA88G023*	Spa Landing LTD Partnership	180	0	0	0	0

Appendix G. Continued

[*, Public-supply appropriation; for abbreviations, see page 236]

Map identifier (fig. 54)	GAP number	User name	Average GAP (as of 2002)	Pumpage (thousand gallons per day)			
				1952	1982	1994	2002
33	AA89G041	C.H.K. Development Corp.	70	0	0	19	21
34	AA90G024	AA CO Dept. of Parks & Recreation	23	0	0	4	0
35	AA99G041*	Berk, M. & Al Polichicchio	16	0	0	0	0
36	DO71G205*	Municipal Utilities Comm.	1,750	0	0	804	404
37	PG01G011	Pax 40, LLC	10	0	0	0	0
38	PG51G003*	Cedar Ridge Company	12	0	78	0	0
39	PG55G011*	Calvert Manor Corp.	24	3	16	17	21
40	PG63G006*	Cedarville Park, Inc.	60	0	44	38	13
41	PG77G038	Bardon, Inc.	10	0	0	0	0
42	PG79G006	Behnke Nurseries Company	25	0	0	0	0
43	PG84G001	Mirant—Chalk Point Power Plant	660	0	392	488	296
44	PG87G003	MD-NCPPC	30	0	0	12	43
45	PG89G001	Mirant—Chalk Point Power Plant	20	0	0	12	9
46	PG90G023	Percontee, Inc.	70	0	0	37	48
47	PG93G003	Panda-Brandywine Power Plant	64	0	0	0	67
48	PG96G017	Bowie, City of	18	0	0	0	9
49	QA97G037	Hunters Oak LLC	62	0	0	0	134
50	TA71G205*	Easton Utilities Comm	1,200	0	0	1,036	772

Appendix H. Ground-water appropriation permits and pumpage simulated in the Lower Patapsco aquifer

[*, Public-supply appropriation; for abbreviations, see page 236]

Map identifier (fig. 55)	GAP number	User name	Average GAP (as of 2002)	Pumpage (thousand gallons per day)			
				1952	1982	1994	2002
1	CH53G010*	Green Meadows Water Company	10	0	8	7	3
2	CH54G003*	Indian Head Manor	14	0	12	23	4
3	CH55G003*	CH CO Dept. of Public Works, Bryans Road	273	0	115	162	135
4	CH55G008*	Potomac Heights	225	120	138	227	54
5	CH56G001*	Utilities Services, Inc., Indian Head Manor	24	0	0	0	0
6	CH57G003*	Indian Head, Town of (previously Woodland Village)	338	15	16	257	282
7	CH60G004*	Red Hills Water Company	14	0	0	13	5
8	CH65G008*	Jenkins Lane Water Company	14	7	9	10	4
9	CH66G005*	CH CO, Potomac Utilities Corp., Strawberry Hill	120	0	93	69	97
10	CH67G002*	CH CO Comm., Newtown Village	15	0	7	13	11
11	CH67G011	Mirant Power Plant, Morgantown	700	0	607	644	423
12	CH67G109*	CH CO Comm., Brookwood Estates/Utilities	30	0	0	51	24
13	CH68G002*	Du-Mar Estates Water Company, Marbury Estates	14	0	19	11	8
14	CH68G004*	Utilco, Inc., Pomfret Estates (previously Pennco, Inc.)	13	0	0	12	3
15	CH68G009	CH CO Board of Education, Lackey High School	10	0	7	9	8
16	CH69G101*	Cliffon Potomac Assoc	138	0	0	0	0
17	CH70G003*	La Plata, Town of	1,144	118	323	565	775
18	CH71G005	U.S. Naval Ordnance Station-Main Base (Surface Warfare Center), Indian Head	1,240	855	740	1,089	797
19	CH71G105	U.S. Naval Surface Warfare Center (Stump Neck)	25	0	0	19	28
20	CH72G102	Swan Point Development	60	0	0	1	25
21	CH75G002*	CH CO, Ellenwood Subdivision	35	0	25	19	26
22	CH76G011*	CH CO Dept. of Public Works, Chapel Point Woods Subdivision	24	0	0	18	23
23	CH77G036*	CH CO Comm., Laurel Branch Subdivision	154	0	6	101	154
24	CH78G015*	CH CO Comm., Eutaw Forest Subdivision	80	0	15	64	67
25	CH83G012*	CH CO Comm., St. Paul Well	600	0	0	581	372
26	CH83G014*	CH CO Comm., Cliffon-St. Anne's	85	0	0	48	47
27	CH83G112*	CH CO Comm., Smallwood West Well	600	0	0	617	566
28	CH83G212*	CH CO Comm., White Oak Drive	600	0	0	576	541
29	CH83G312*	CH CO Comm., Billingsley Road Well	800	0	0	672	641
30	CH83G412*	CH CO Comm., Cleveland Park	800	0	0	0	383
31	CH88G003*	Baldus Real Estate, Montrose Heights	41	0	0	0	0
32	CH88G062*	CH CO Comm., Breeze Farm	55	0	0	0	0
33	CH89G032*	CH CO Comm., Settle Woods/Bensville	299	0	0	0	163

Appendix H. Continued

[*, Public-supply appropriation; for abbreviations, see page 236]

Map identifier (fig. 55)	GAP number	User name	Average GAP (as of 2002)	Pumpage (thousand gallons per day)			
				1952	1982	1994	2002
34	AA68G006*	AA CO Dept. of Utilities	2,880	0	366	1,616	628
35	AA72G209*	Annapolis, City of	4,500	0	198	2,542	1,999
36	AA86G070*	AA CO Dept. of Utilities	1,000	0	0	0	770
37	PG52G004*	Potomac Vista Corp.	18	0	12	17	0
38	PG57G003	Shields (Trust), Wynnifred	50	0	0	10	10
39	PG60G003	Ft. Washington Marina	14	0	0	0	0
40	PG61G108*	Bowie, City of	1,500	0	0	829	1,039
41	PG66G006	MD-NCPPC	16	0	0	0	0
42	PG77G008	Fred Ryder Enterprises	11	0	0	32	27
43	PG81G106	Silver Hill Aggregates	10	0	0	0	3
44	PG88G008	Fairways Golf Corp.	51	0	0	12	0
45	PG95G003	University of Maryland	75	0	0	0	0
46	PG96G003	Gallahan, III, William A	10	0	0	0	4
47	PG98G014	Gotham Golf Partners	34	0	0	0	17
48	QA97G050*	QA CO Sanitary District	750	0	0	0	459

**Appendix I. Simulated pumpage at individual wells in well fields at
Solomons, Chesapeake Ranch, Lexington Park, NAS
Patuxent River, and Leonardtown (for locations see figure 51)**

Map ID (fig. 51)	GAP	Well number	Simulated pumpage, in thousand gallons per day			
			1952	1982	1994	2002
Piney Point aquifer						
15a	SM52G004	SM Df 49	7	13	22	28
15b	SM52G004	SM Df 69	3	6	10	13
15c	SM52G004	SM Df 101	7	13	23	29
15d	SM52G004	SM Ef 89	65	118	206	268
12a	SM74G118	SM Df 39	54	30	103	0
12b	SM74G118	SM Dg 20	14	8	27	0
12c	SM74G118	SM Dg 21	86	47	165	1
Aquia aquifer						
8a	CA60G002	CA Fd 38	0	23	82	135
8b	CA60G002	CA Fd 70	0	30	109	179
8c	CA60G002	CA Fe 30	0	41	149	244
8d	CA60G002	CA Fd 71	0	40	143	233
22a	CA84G003	CA Fd 68	0	0	93	159
22b	CA84G003	CA Fd 69	0	0	93	159
51a	SM46G001	SM Df 42	24	73	109	133
51b	SM46G001	SM Df 62	84	257	386	470
51c	SM46G001	SM Df 76	19	57	85	104
51d	SM46G001	SM Df 78	23	71	106	129
51e	SM46G001	SM Df 86	45	137	206	250
51f	SM46G001	SM Df 89	20	62	93	114
51g	SM46G001	SM Df 91	33	101	152	185
51h	SM46G001	SM Df 92	15	45	67	82
59a	SM74G018	SM Df 1	14	10	9	8
59b	SM74G018	SM Df 10	31	22	19	18
59c	SM74G018	SM Df 103	29	20	18	17
59d	SM74G018	SM Df 61	77	54	48	44
59e	SM74G018	SM Df 93	177	124	111	102
59f	SM74G018	SM Df 94	5	4	3	3
59g	SM74G018	SM Df 95	118	83	74	68
59h	SM74G018	SM Df 96	178	126	112	103
59i	SM74G018	SM Df 97	71	50	44	41
59j	SM74G018	SM Df 98	134	95	84	78
59k	SM74G018	SM Df 99	117	82	74	68
59l	SM74G018	SM Dg 14	16	11	10	9
59m	SM74G018	SM Dg 15	36	26	23	21
59n	SM74G018	SM Dg 16	162	114	102	94
59o	SM74G018	SM Dg 18	39	27	24	22
59p	SM74G018	SM Dg 19	8	5	5	4
59q	SM74G018	SM Dg 22	2	1	1	1
59r	SM74G018	SM Dg 23	80	56	50	46
61a	SM67G003	SM Dd 30, 66	9	83	103	119
61b	SM67G003	SM Dd 39, 65	9	83	103	119

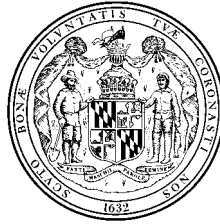
Abbreviations used in Appendixes D through I

AA CO	Anne Arundel County
CA CO	Calvert County
CH CO	Charles County
DO CO	Dorchester County
QA CO	Queen Anne's County
SM CO	St. Mary's County
TA CO	Talbot County
Admin	Administration
Assoc	Association
Comm.	Commissioners, Commission
Corp.	Corporation
Dept.	Department
Est	Estate
Ft.	Fort
GAP	Ground-water appropriation permit
Inc.	Incorporated
Int'l	International
LLC	Limited liability company
LNG	Liquefied Natural Gas
LTD	Limited
MD	Maryland
MD-NCPPC	Maryland National Capital Parks & Planning Commission
NAS	Naval Air Station
PEPCO	Potomac Electric Power Company
SMMC	St. Mary's Metropolitan Commission
St.	Saint
U.S.	United States
WSSC	Washington Suburban Sanitary Commission

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MARYLAND DEPARTMENT OF NATURAL RESOURCES
Resource Assessment Service
Tawes State Office Building
580 Taylor Avenue
Annapolis, Maryland 21401
Toll free number: 1-(877) 620-8DNR
Out of State call: (410) 260-8021
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www.dnr.state.md.us

MARYLAND GEOLOGICAL SURVEY
2300 St. Paul Street
Baltimore, Maryland 21218
(410) 554-5500
www.mgs.md.gov



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