

TABLE 14
GROUND-WATER RESOURCES OF
ORANGE COUNTY, NEW YORK
ORANGE COUNTY WATER AUTHORITY
GOSHEN, NEW YORK

**Water-Quality Analyses Showing Variations in Chemical Quality
of Ground Water From the Aquifer Types in Orange County**

Parameter (mg/l unless otherwise noted)	Sand & Gravel Aquifer		Undifferentiated granite, granitic gneiss		Sedimentary Bedrock Aquifer (shale, limestone, dolomite, sandstone, siltstone and conglomerate bedrock units)	
	median and range	number of wells	median and range	number of wells	median and range	number of wells
Dissolved solids	293 130 - 590	11	180 80 - 560	10	180 44 - 610	29
Total hardness	205 112 - 320	15	NA	NA	140 109 - 180	7
Calcium hardness	119 56 - 210	10	100 89 - 160	7	87 30 - 290	28
Iron	0.05 <0.01 - 18.0	30	<0.05 <0.01 - 0.91	12	0.12 <0.03 - 19.0	35
Manganese	0.20 <0.01 - 1.3	32	0.01 <0.01 - 0.10	12	0.05 0.01 - 1.75	35
Sodium	23 5.4 - 70.6	18	15 7.9 - 59	14	10.8 2.4 - 128	35
Chloride	25 <2.0 - 512	22	19 <2.0 - 160	12	5.8 <2.0 - 160	30
Sulfate	30 13 - 155	20	13 <10.0 - 30	12	22 <5.0 - 48	30
Nitrate	0.4 <0.001 - 3.3	33	0.7 <0.2 - 2.3	16	<0.2 <0.1 - 1.8	33
Turbidity (NTU)	0.26 0.1 - 7.4	14	0.23 0.1 - 1.5	11	1.4 0.67 - 82	31

TABLE 15
GROUND-WATER RESOURCES OF
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Radon Surveillance Study of Orange County*

Water Systems	Well identification	Average radon concentration** (pCi/l)
King Estates	Well 2	500
Lake Vue Park WD	Well 1	50
Maple Brook	Well 1	2,350
Maybrook (v)	Well 6	145
Painted Apron Village	Well 2 (Artesian)	215
Pheasant Hill	Well 3	1,685
Pine Bush WD	Main Well	65
Pine Island Water Company	Well 1	320
Ridgebury Lake Acres	Well 1	780
Star Industries	Comb Wells 3 & 4	500
Surrey Meadows	Well 9	145
Washingtonville (v)	Well 1	460
Candlestick Mobile Park	Well	1,920
Greenwood Mobile Park	Well 1	3,350
Hudson View Terrace Upper	New Well 3	10,500
Mt. Airy Trailer Court	Well	50
Rock Terrace TP	Well 1	24,400
Rock Terrace TP	Well 2	11,900
Rock Terrace TP	Well 3	11,400
Rock Terrace TP	Well 1	20,100
Valley View Park	Main Well	245
Blooming Grove WD 1	Well 1	1,555
Blooming Grove WD 3	Well 1	370
Deerpark Manor	Well	365

TABLE 15
(continued)

**GROUND-WATER RESOURCES OF
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GOSHEN, NEW YORK**

Radon Surveillance Study of Orange County*

Water Systems	Well identification	Average radon concentration** (pCi/l)
Fleetwood Manor - Holiday	Well 1	295
Goshen WD 1	Well 4	105
Greenwood Lake (v)	Well 1	525
Harriman (v)	North Main Well 1	795
Hidden Valley Estates	New Well 3	70

* Slade, 1990, "Report of Statewide Surveillance for Radon in Selected Community Water Systems, New York State, 1989-1990".

** Average of two water samples collected between May and August 1989.

Note: There are a total of 29 wells, median concentrations were 460 pCi/l and the range was between 50 - 24 400 pCi/l.

TABLE 6A
GROUND-WATER RESOURCES OF
ORANGE COUNTY, NEW YORK
ORANGE COUNTY WATER AUTHORITY
GOSHEN, NEW YORK

Recharge Per Town^{1/}

Town	Town area (square miles)	Percent sedimentary	Percent metamorphic/ igneous	Recharge of sedimentary (mgd)	Recharge of metamorphic/ igneous (mgd)	Total Town recharge (mgd)
Blooming Grove	35.62	97.0	3.00	13.8	0.37	14.2
Chester	25.19	85.4	14.6	8.60	1.29	9.89
Cornwall	27.83	61.3	38.7	6.82	3.77	10.6
Crawford	40.12	100	0.00	16.0	0.00	16.0
Deerpark	70.83	100	0.00	28.3	0.00	28.3
Goshen	44.06	100	0.00	17.6	0.00	17.6
Greenville	30.21	100	0.00	12.1	0.00	12.1
Hamptonburg	26.68	100	0.00	10.7	0.00	10.7
Highlands	33.45	0.00	100	0.00	11.7	11.7
Minisink	23.12	100	0.00	9.25	0.00	9.25
Monroe	21.28	50.5	49.5	4.30	3.69	7.99
Montgomery	51.06	100	0.00	20.4	0.00	20.4
Mount Hope	25.62	100	0.00	10.2	0.00	10.2
New Windsor	36.96	98.4	1.60	14.5	0.21	14.7
Newburgh	51.84	100	0.00	20.7	0.00	20.7
Tuxedo	48.96	0.50	99.5	0.10	17.1	17.2
Wallkill	62.72	100	0.00	25.1	0.00	25.1
Warwick	105.2	67.8	32.2	28.5	11.9	40.4
Wawayanda	35.6	100	0.00	14.2	0.00	14.2
Woodbury	37.27	48.8	51.2	7.27	6.68	13.9
TOTALS	833.6	NA	NA	268.7	56.6	325.3

^{1/} Recharge per town based on area of town's political boundaries.

mgd - Million gallons per day.

NA - Not applicable.

TABLE 3

**GROUND-WATER RESOURCES OF
ORANGE COUNTY, NEW YORK
ORANGE COUNTY WATER AUTHORITY
GOSHEN, NEW YORK**

**Estimated Recharge to the Bedrock Aquifer
Per Watershed in Orange County**

Watershed	Watershed area (square miles)	Percent of sedimentary bedrock units	Percent of metamorphic/ igneous bedrock units	Estimated recharge of sedimentary bedrock units (mgd)	Estimated recharge of metamorphic/ igneous bedrock units (mgd)	Estimated total recharge per watershed* (mgd)
1	4.38	100	0.00	1.75	0.00	1.75
2	26.4	100	0.00	10.5	0.00	10.5
3	5.54	92.7	7.30	2.05	0.14	2.19
4	5.11	94.0	6.00	1.92	0.11	2.03
5	21.1	77.6	22.4	6.55	1.65	8.20
6	12.3	96.7	3.30	4.76	0.14	4.90
7	3.50	100	0.00	1.40	0.00	1.40
8	2.05	100	0.00	0.82	0.00	0.82
9	0.08	0.00	100	0.00	0.03	0.03
10	0.60	0.00	100	0.00	0.21	0.21
11	3.08	0.00	100	0.00	1.08	1.08
12	3.23	0.00	100	0.00	1.13	1.13
13	2.49	0.00	100	0.00	0.87	0.87
14	3.11	0.00	100	0.00	1.09	1.09
15	4.43	0.00	100	0.00	1.55	1.55
16	10.8	52.2	47.8	2.26	1.81	4.07
17	4.95	0.00	100	0.00	1.73	1.73
18	8.96	0.00	100	0.00	3.14	3.14
19	15.3	41.8	58.2	3.76	5.02	8.78
20	41.6	0.00	100	0.00	14.6	14.6
21	21.9	74.9	25.1	6.56	1.92	8.48
22	8.12	38.7	61.3	1.26	1.74	3.00
23	10.8	79.7	20.3	3.44	0.77	4.21
24	7.56	95.1	4.90	2.88	0.13	3.01
25	10.4	100	0.00	4.16	0.00	4.16
26	18.9	100	0.00	7.56	0.00	7.56

TABLE 3
(continued)

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**Estimated Recharge to the Bedrock Aquifer
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Watershed	Watershed area (square miles)	Percent of sedimentary bedrock units	Percent of metamorphic/ igneous bedrock units	Estimated recharge of sedimentary bedrock units (mgd)	Estimated recharge of metamorphic/ igneous bedrock units (mgd)	Estimated total recharge per watershed* (mgd)
27	6.32	100	0.00	2.53	0.00	2.53
28	8.74	100	0.00	3.50	0.00	3.50
29	5.82	78.8	21.2	1.83	0.43	2.26
30	1.09	100	0.00	0.44	0.00	0.44
31	15.7	100	0.00	6.28	0.00	6.28
32	3.55	100	0.00	1.42	0.00	1.42
33	7.84	100	0.00	3.14	0.00	3.14
34	9.63	100	0.00	3.85	0.00	3.85
35	0.10	100	0.00	0.04	0.00	0.04
36	11.7	100	0.00	4.68	0.00	4.68
37	7.79	100	0.00	3.12	0.00	3.12
38	12.3	100	0.00	4.92	0.00	4.92
39	5.71	100	0.00	2.28	0.00	2.28
40	0.06	100	0.00	0.02	0.00	0.02
41	0.01	100	0.00	0.00	0.00	0.00
42	19.4	100	0.00	7.76	0.00	7.76
43	5.20	100	0.00	2.08	0.00	2.08
44	2.45	100	0.00	0.98	0.00	0.98
45	2.42	100	0.00	0.97	0.00	0.97
46	14.0	93.2	6.80	5.22	0.33	5.55
47	20.8	82.7	17.3	6.88	1.26	8.14
48	41.0	95.0	5.00	15.6	0.72	16.3
49	22.5	92.2	7.70	8.31	0.61	8.92
50	35.5	100	0.00	14.2	0.00	14.2
51	4.68	100	0.00	1.88	0.00	1.88

TABLE 3
(continued)

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Watershed	Watershed area (square miles)	Percent of sedimentary bedrock units	Percent of metamorphic/ igneous bedrock units	Estimated recharge of sedimentary bedrock units (mgd)	Estimated recharge of metamorphic/ igneous bedrock units (mgd)	Estimated total recharge per watershed* (mgd)
52	13.7	100	0.00	5.48	0.00	5.48
53	0.54	100	0.00	0.22	0.00	0.22
54	2.83	100	0.00	1.13	0.00	1.13
55	5.13	98.6	1.40	2.02	0.03	2.05
56	0.33	0.00	100	0.00	0.12	0.12
57	0.09	0.00	100	0.00	0.03	0.03
58	0.99	0.00	100	0.00	0.35	0.35
59	1.05	0.00	100	0.00	0.37	0.37
60	0.59	0.00	100	0.00	0.21	0.21
61	1.81	0.00	100	0.00	0.63	0.63
62	3.94	0.00	100	0.00	1.38	1.38
63	0.04	0.00	100	0.00	0.01	0.01
64	0.24	0.00	100	0.00	0.08	0.08
65	0.03	0.00	100	0.00	0.01	0.01
66	1.05	56.4	43.6	0.24	0.16	0.40
67	0.15	0.00	100	0.00	0.05	0.05
68	0.25	0.00	100	0.00	0.09	0.09
69	0.14	0.00	100	0.00	0.06	0.06
70	0.25	0.00	100	0.00	0.10	0.10
71	0.16	100	0.00	0.06	0.00	0.06
72	1.39	34.7	65.3	0.19	0.32	0.51
73	0.00	100	0.00	0.00	0.00	0.00
74	1.27	18.3	81.7	0.09	0.36	0.45
75	2.31	25.1	74.9	0.23	0.61	0.84
76	0.13	100	0.00	0.05	0.00	0.05

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(continued)

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77	0.58	4.10	95.9	0.01	0.19	0.20
78	4.19	34.1	65.9	0.57	0.97	1.54
79	1.51	0.00	100	0.00	0.53	0.53
80	4.39	0.00	100	0.00	1.54	1.54
81	0.01	0.00	100	0.00	0.00	0.00
82	0.02	0.00	100	0.00	0.01	0.01
83	0.03	0.00	100	0.00	0.01	0.01
84	0.07	0.00	100	0.00	0.02	0.02
85	0.90	0.00	100	0.00	0.32	0.32
86	0.38	0.00	100	0.00	0.13	0.13
87	1.63	0.00	100	0.00	0.57	0.57
88	2.41	0.00	100	0.00	0.84	0.84
89	1.61	0.00	100	0.00	0.56	0.56
90	1.14	0.00	100	0.00	0.40	0.40
91	0.39	0.00	100	0.00	0.14	0.14
92	0.34	0.00	100	0.00	0.12	0.12
93	1.32	0.00	100	0.00	0.46	0.46
94	3.82	0.00	100	0.00	1.34	1.34
95	9.04	77.6	22.4	2.81	0.71	3.52
96	2.25	96.2	3.80	0.87	0.03	0.90
97	1.98	100	0.00	0.79	0.00	0.79
98	2.84	92.7	7.30	1.05	0.07	1.12
99	2.79	100	0.00	1.12	0.00	1.12
100	4.48	89.9	10.1	1.61	0.16	1.77
101	0.16	100	0.00	0.06	0.00	0.06

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(continued)

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Watershed	Watershed area (square miles)	Percent of sedimentary bedrock units	Percent of metamorphic/ igneous bedrock units	Estimated recharge of sedimentary bedrock units (mgd)	Estimated recharge of metamorphic/ igneous bedrock units (mgd)	Estimated total recharge per watershed* (mgd)
102	0.33	100	0.00	0.13	0.00	0.13
103	0.10	100	0.00	0.04	0.00	0.04
104	11.6	100	0.00	4.64	0.00	4.64
105	1.90	100	0.00	0.76	0.00	0.76
106	5.74	82.6	17.4	1.90	0.35	2.25
107	3.56	97.3	2.7	1.39	0.03	1.42
108	4.41	100	0.00	1.76	0.00	1.76
109	2.47	87.5	12.5	0.86	0.11	0.97
110	7.71	100	0.00	3.08	0.00	3.08
111	1.35	100	0.00	0.54	0.00	0.54
112	5.42	88.9	11.1	1.93	0.21	2.14
113	2.48	100	0.00	0.99	0.00	0.99
114	0.77	100	0.00	0.31	0.00	0.31
115	3.21	100	0.00	1.28	0.00	1.28
116	0.34	100	0.00	0.14	0.00	0.14
117	0.34	100	0.00	0.14	0.00	0.14
118	2.03	100	0.00	0.81	0.00	0.81
119	1.58	100	0.00	0.63	0.00	0.63
120	0.25	100	0.00	0.10	0.00	0.10
121	3.02	100	0.00	1.21	0.00	1.21
122	4.32	100	0.00	1.73	0.00	1.73
123	4.90	100	0.00	1.96	0.00	1.96
124	12.8	100	0.00	5.12	0.00	5.12
125	1.12	100	0.00	0.45	0.00	0.45
126	1.62	100	0.00	0.65	0.00	0.65

TABLE 3
(continued)

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Per Watershed in Orange County**

Watershed	Watershed area (square miles)	Percent of sedimentary bedrock units	Percent of metamorphic/ igneous bedrock units	Estimated recharge of sedimentary bedrock units (mgd)	Estimated recharge of metamorphic/ igneous bedrock units (mgd)	Estimated total recharge per watershed* (mgd)
127	0.51	100	0.00	0.20	0.00	0.20
128	7.54	100	0.00	3.02	0.00	3.02
129	1.42	100	0.00	0.57	0.00	0.57
130	4.95	100	0.00	1.98	0.00	1.98
131	15.2	100	0.00	6.08	0.00	6.08
132	0.31	100	0.00	0.12	0.00	0.12
133	4.84	100	0.00	1.94	0.00	1.94
134	1.21	100	0.00	0.48	0.00	0.48
135	5.23	100	0.00	2.09	0.00	2.09
136	4.08	100	0.00	1.63	0.00	1.63
137	1.37	100	0.00	0.55	0.00	0.55
138	0.31	100	0.00	0.12	0.00	0.12
139	0.86	100	0.00	0.34	0.00	0.34
140	2.28	100	0.00	0.91	0.00	0.91
141	0.13	100	0.00	0.05	0.00	0.05
142	0.51	100	0.00	0.20	0.00	0.20
143	0.40	100	0.00	0.16	0.00	0.16
144	0.24	100	0.00	0.10	0.00	0.10
145	0.27	100	0.00	0.11	0.00	0.11
146	0.78	100	0.00	0.31	0.00	0.31
147	3.88	100	0.00	1.55	0.00	1.55
148	0.64	100	0.00	0.26	0.00	0.26
149	1.17	100	0.00	0.47	0.00	0.47
150	1.68	100	0.00	0.67	0.00	0.67
151	1.00	100	0.00	0.40	0.00	0.40

TABLE 3
(continued)

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**Estimated Recharge to the Bedrock Aquifer
Per Watershed in Orange County**

Watershed	Watershed area (square miles)	Percent of sedimentary bedrock units	Percent of metamorphic/ igneous bedrock units	Estimated recharge of sedimentary bedrock units (mgd)	Estimated recharge of metamorphic/ igneous bedrock units (mgd)	Estimated total recharge per watershed* (mgd)
152	4.80	94.0	6.00	1.80	0.10	1.90
153	1.32	100	0.00	0.53	0.00	0.53
154	0.88	63.8	36.2	0.22	0.11	0.33
155	0.05	100	0.00	0.02	0.00	0.02
156	0.13	100	0.00	0.05	0.00	0.05
157	0.01	0.00	100	0.00	0.00	0.00
158	5.72	100	0.00	2.29	0.00	2.29
159	0.70	100	0.00	0.28	0.00	0.28
160	0.14	100	0.00	0.06	0.00	0.06
161	15.5	100	0.00	6.20	0.00	6.20
162	1.83	100	0.00	0.73	0.00	0.73
163	0.05	100	0.00	0.02	0.00	0.02
164	0.81	100	0.00	0.32	0.00	0.32
165	7.02	100	0.00	2.81	0.00	2.81
166	8.88	100	0.00	3.55	0.00	3.55
167	11.8	100	0.00	4.72	0.00	4.72
168	2.08	100	100	0.83	0.00	0.83
169	2.52	100	0.00	1.00	0.00	1.00
170	5.57	100	0.00	2.22	0.00	2.22
171	0.93	100	0.00	0.37	0.00	0.37
172	2.16	100	0.00	0.86	0.00	0.86
173	2.57	100	0.00	1.02	0.00	1.02
174	5.03	100	0.00	2.01	0.00	2.01
175	5.62	45.0	55.0	1.01	1.08	2.09
176	0.12	100	0.00	0.04	0.00	0.04

TABLE 3
(continued)

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**Estimated Recharge to the Bedrock Aquifer
Per Watershed in Orange County**

Watershed	Watershed area (square miles)	Percent of sedimentary bedrock units	Percent of metamorphic/ igneous bedrock units	Estimated recharge of sedimentary bedrock units (mgd)	Estimated recharge of metamorphic/ igneous bedrock units (mgd)	Estimated total recharge per watershed* (mgd)
TOTALS	838.11	NA	NA	271.78	58.46	330.24

NA - Not applicable.

* Estimated recharge to bedrock aquifers under normal precipitation conditions.

TABLE 6B
GROUND-WATER RESOURCES OF
ORANGE COUNTY, NEW YORK
ORANGE COUNTY WATER AUTHORITY
GOSHEN, NEW YORK

Estimated and Projected Water Demand Compared to
Recharge to Bedrock Aquifers Under Normal and Drought Conditions Per Town

Town	1993 water demand^{2/} (mgd)	2020 projected water demand^{2/} (mgd)	Estimated recharge to bedrock aquifer^{1/} (mgd)	Recharge during 30-year drought condition^{3/} (mgd)	Recharge during extreme drought conditions^{4/} (mgd)
Blooming Grove	0.69	1.13	14.2	9.66	5.68
Chester	1.12	1.91	9.89	6.73	3.96
Cornwall	1.57	2.04	10.6	7.21	4.24
Crawford	0.15	0.37	16.0	10.9	6.40
Deerpark	1.5	1.5	28.3	19.2	11.3
Goshen	1.97	3.11	17.6	12.0	7.04
Greenville	NA	NA	12.1	8.23	4.84
Hamptonburg	0.10	0.10	10.7	7.28	4.28
Highlands	1.51	1.71	11.7	7.96	4.68
Minisink	0.10	0.10	9.25	6.29	3.70
Monroe	2.24	4.10	7.99	5.43	3.20
Montgomery	1.33	1.94	20.4	13.9	8.16
Mount Hope	1.10	1.10	10.2	6.94	4.08
New Windsor	2.55	5.18	14.7	10.0	5.88
Newburgh	2.39	3.50	20.7	14.1	8.28
Tuxedo	0.37	0.44	17.2	11.7	6.88
Wallkill	6.70	11.8	25.1	17.1	10.0
Warwick	1.45	1.96	40.4	27.5	16.2
Wawayanda	0.72	0.43	14.2	9.66	5.68
Woodbury	0.97	1.60	13.9	9.45	5.56
TOTALS	28.53	44.02	325.1	221.1	130.0

^{1/} Recharge per town based on area of town's political boundaries.

^{2/} Estimated water demands for towns include respective villages and cities within town boundaries.

^{3/} 30-year drought recharge based on 68 percent of normal recharge.

^{4/} Extreme drought recharge based on 40 percent of normal recharge.

mgd - Million gallons per day.

NA - Data not available.

TABLE 7
GROUND-WATER RESOURCES OF
ORANGE COUNTY, NEW YORK
ORANGE COUNTY WATER AUTHORITY
GOSHEN, NEW YORK

Estimated Recharge to Bedrock Aquifers Under Normal and
Drought Conditions Per Watershed In Orange County

Watershed identification	Recharge under normal precipitation conditions (mgd)	Recharge under 30-year drought conditions ² (mgd)	Recharge under extreme drought conditions ³ (mgd)	Maximum yield po- tential from existing bedrock wells (mgd)
1	1.75	1.19	0.70	1.11
2	10.50	7.14	4.20	0.74
3	2.19	1.49	0.88	0.00
4	2.03	1.38	0.81	0.00
5	8.20	5.58	3.28	0.92
6	4.90	3.33	1.96	1.79
7	1.40	0.95	0.56	0.00
8	0.82	0.56	0.33	0.00
9	0.03	0.02	0.01	0.00
10	0.21	0.14	0.08	0.00
11	1.08	0.73	0.43	0.06
12	1.13	0.77	0.45	0.00
13	0.87	0.59	0.35	0.00
14	1.09	0.74	0.44	0.00
15	1.55	1.05	0.62	0.00
16	4.07	2.77	1.63	0.00
17	1.73	1.18	0.69	0.24
18	3.14	2.14	1.26	0.38
19	10.6	7.21	4.24	0.00
20	14.6	9.93	5.84	0.26
21	8.48	5.77	3.39	2.40
22	3.00	2.04	1.20	0.00
23	4.21	2.86	1.68	0.00
24	3.01	2.05	1.20	0.00
25	4.16	2.83	1.66	0.24
26	7.56	5.14	3.02	0.49

TABLE 7
(continued)

**GROUND-WATER RESOURCES OF
ORANGE COUNTY, NEW YORK
ORANGE COUNTY WATER AUTHORITY
GOSHEN, NEW YORK**

Estimated Recharge to Bedrock Aquifers Under Normal and
Drought Conditions Per Watershed in Orange County

Watershed identification	Recharge under normal precipitation conditions (mgd)	Recharge under 30-year drought conditions² (mgd)	Recharge under extreme drought conditions³ (mgd)	Maximum yield potential from existing bedrock wells (mgd)
27	2.53	1.72	1.01	0.00
28	3.50	2.38	1.40	0.00
29	2.26	1.54	0.90	0.25
30	0.44	0.30	0.18	0.01
31	6.28	4.27	2.51	0.06
32	1.42	0.97	0.57	0.23
33	3.14	2.14	1.26	0.07
34	3.85	2.62	1.54	0.25
35	0.04	0.03	0.02	0.16
36	4.68	3.18	1.87	0.29
37	3.12	2.12	1.25	0.00
38	4.92	3.35	1.97	0.00
39	2.28	1.55	0.91	0.00
40	0.02	0.01	0.01	0.00
41	0.00	0.00	0.00	0.00
42	7.76	5.28	3.10	0.61
43	2.08	1.41	0.83	0.43
44	0.98	0.67	0.39	0.20
45	0.97	0.66	0.39	0.19
46	5.55	3.77	2.22	1.17
47	8.14	5.54	3.26	1.22
48	16.30	11.08	6.52	0.00
49	8.92	6.07	3.57	0.50
50	14.20	9.66	5.68	1.50
51	1.88	1.28	0.75	0.00

TABLE 7
(continued)

**GROUND-WATER RESOURCES OF
ORANGE COUNTY, NEW YORK
ORANGE COUNTY WATER AUTHORITY
GOSHEN, NEW YORK**

Estimated Recharge to Bedrock Aquifers Under Normal and
Drought Conditions Per Watershed in Orange County

Watershed identification	Recharge under normal precipitation conditions (mgd)	Recharge under 30-year drought conditions² (mgd)	Recharge under extreme drought conditions³ (mgd)	Maximum yield po- tential from existing bedrock wells (mgd)
52	5.48	3.73	2.19	0.01
53	0.22	0.15	0.09	0.00
54	1.13	0.77	0.45	0.00
55	2.05	1.39	0.82	0.65
56	0.12	0.08	0.05	0.00
57	0.03	0.02	0.01	0.00
58	0.35	0.24	0.14	0.00
59	0.37	0.25	0.15	0.00
60	0.21	0.14	0.08	0.00
61	0.63	0.43	0.25	0.00
62	1.38	0.94	0.55	0.00
63	0.01	0.01	0.00	0.00
64	0.08	0.05	0.03	0.00
65	0.01	0.01	0.00	0.00
66	0.40	0.27	0.16	0.00
67	0.05	0.03	0.02	0.00
68	0.09	0.06	0.04	0.00
69	0.06	0.04	0.02	0.00
70	0.10	0.06	0.04	0.00
71	0.06	0.04	0.02	0.00
72	0.51	0.35	0.20	0.00
73	0.00	0.00	0.00	0.00
74	0.45	0.31	0.18	0.00
75	0.84	0.57	0.34	0.00
76	0.05	0.03	0.02	0.00

TABLE 7
(continued)

**GROUND-WATER RESOURCES OF
ORANGE COUNTY, NEW YORK
ORANGE COUNTY WATER AUTHORITY
GOSHEN, NEW YORK**

**Estimated Recharge to Bedrock Aquifers Under Normal and
Drought Conditions Per Watershed in Orange County**

Watershed identification	Recharge under normal precipitation conditions (mgd)	Recharge under 30-year drought conditions² (mgd)	Recharge under extreme drought conditions³ (mgd)	Maximum yield potential from existing bedrock wells (mgd)
77	0.20	0.14	0.08	0.00
78	1.54	1.05	0.62	0.00
79	0.53	0.36	0.21	0.00
80	1.54	1.05	0.62	0.00
81	0.00	0.00	0.00	0.00
82	0.01	0.01	0.00	0.00
83	0.01	0.01	0.00	0.00
84	0.02	0.01	0.01	0.00
85	0.32	0.22	0.13	0.00
86	0.13	0.09	0.05	0.00
87	0.57	0.39	0.23	0.00
88	0.84	0.57	0.34	0.00
89	0.56	0.38	0.22	0.00
90	0.40	0.27	0.16	0.00
91	0.14	0.10	0.06	0.00
92	0.12	0.08	0.05	0.00
93	0.46	0.31	0.18	0.00
94	1.34	0.91	0.54	0.00
95	3.52	2.39	1.41	0.00
96	0.90	0.61	0.36	0.00
97	0.79	0.54	0.32	0.00
98	1.12	0.76	0.45	0.00
99	1.12	0.76	0.45	0.00
100	1.77	1.20	0.71	0.00
101	0.06	0.04	0.02	0.00

TABLE 7
(continued)

**GROUND-WATER RESOURCES OF
ORANGE COUNTY, NEW YORK
ORANGE COUNTY WATER AUTHORITY
GOSHEN, NEW YORK**

Estimated Recharge to Bedrock Aquifers Under Normal and
Drought Conditions Per Watershed in Orange County

Watershed identification	Recharge under normal precipitation conditions (mgd)	Recharge under 30-year drought conditions² (mgd)	Recharge under extreme drought conditions³ (mgd)	Maximum yield po- tential from existing bedrock wells (mgd)
102	0.13	0.09	0.05	0.00
103	0.04	0.03	0.02	0.00
104	4.64	3.16	1.86	0.00
105	0.76	0.52	0.30	0.00
106	2.25	1.53	0.90	0.00
107	1.42	0.97	0.57	0.00
108	1.76	1.20	0.70	0.00
109	0.97	0.66	0.39	0.00
110	3.08	2.09	1.23	0.00
111	0.54	0.37	0.22	0.00
112	2.14	1.46	0.86	0.00
113	0.99	0.67	0.40	0.00
114	0.31	0.21	0.12	0.00
115	1.28	0.87	0.51	0.00
116	0.14	0.09	0.06	0.00
117	0.14	0.09	0.06	0.00
118	0.81	0.55	0.32	0.00
119	0.63	0.43	0.25	0.00
120	0.10	0.07	0.04	0.00
121	1.21	0.82	0.48	0.00
122	1.73	1.18	0.69	0.00
123	1.96	1.33	0.78	0.00
124	5.12	3.48	2.05	0.00
125	0.45	0.31	0.18	0.00
126	0.65	0.44	0.26	0.00

TABLE 7
(continued)

**GROUND-WATER RESOURCES OF
ORANGE COUNTY, NEW YORK
ORANGE COUNTY WATER AUTHORITY
GOSHEN, NEW YORK**

**Estimated Recharge to Bedrock Aquifers Under Normal and
Drought Conditions Per Watershed in Orange County**

Watershed identification	Recharge under normal precipitation conditions (mgd)	Recharge under 30-year drought conditions² (mgd)	Recharge under extreme drought conditions³ (mgd)	Maximum yield po- tential from existing bedrock wells (mgd)
127	0.20	0.14	0.08	0.00
128	3.02	2.05	1.21	0.00
129	0.57	0.39	0.23	0.00
130	1.98	1.35	0.79	0.00
131	6.08	4.13	2.43	0.00
132	0.12	0.08	0.05	0.00
133	1.94	1.32	0.78	0.00
134	0.48	0.33	0.19	0.00
135	2.09	1.42	0.84	0.00
136	1.63	1.11	0.65	0.00
137	0.55	0.37	0.22	0.00
138	0.12	0.08	0.05	0.24
139	0.34	0.23	0.14	0.00
140	0.91	0.62	0.36	0.00
141	0.05	0.03	0.02	0.00
142	0.20	0.14	0.08	0.73
143	0.16	0.11	0.06	1.01
144	0.10	0.07	0.04	2.23
145	0.11	0.07	0.04	0.86
146	0.31	0.21	0.12	1.03
147	1.55	1.05	0.62	2.01
148	0.26	0.18	0.10	2.09
149	0.47	0.32	0.19	0.05
150	0.67	0.46	0.27	0.00
151	0.40	0.27	0.16	0.00

TABLE 7
(continued)

**GROUND-WATER RESOURCES OF
ORANGE COUNTY, NEW YORK
ORANGE COUNTY WATER AUTHORITY
GOSHEN, NEW YORK**

Estimated Recharge to Bedrock Aquifers Under Normal and
Drought Conditions Per Watershed in Orange County

Watershed identification	Recharge under normal precipitation conditions (mgd)	Recharge under 30-year drought conditions² (mgd)	Recharge under extreme drought conditions³ (mgd)	Maximum yield potential from existing bedrock wells (mgd)
152	1.90	1.29	0.76	0.00
153	0.53	0.36	0.21	0.00
154	0.33	0.22	0.13	0.00
155	0.02	0.01	0.01	0.00
156	0.05	0.03	0.02	0.00
157	0.00	0.00	0.00	0.00
158	2.29	1.56	0.92	0.00
159	0.28	0.19	0.11	0.00
160	0.06	0.04	0.02	0.00
161	6.20	4.22	2.48	0.00
162	0.73	0.50	0.29	0.00
163	0.02	0.01	0.01	0.00
164	0.32	0.22	0.13	0.00
165	2.81	1.91	1.12	0.00
166	3.55	2.41	1.42	0.00
167	4.72	3.21	1.89	0.00
168	0.83	0.56	0.33	0.29
169	1.00	0.68	0.40	0.44
170	2.22	1.51	0.89	0.51
171	0.37	0.25	0.15	0.00
172	0.86	0.58	0.34	1.07
173	1.02	0.69	0.41	2.09
174	2.01	1.37	0.80	2.25
175	2.09	1.42	0.84	0.18
176	0.04	0.03	0.02	0.41

TABLE 7
(continued)

**GROUND-WATER RESOURCES OF
ORANGE COUNTY, NEW YORK
ORANGE COUNTY WATER AUTHORITY
GOSHEN, NEW YORK**

**Estimated Recharge to Bedrock Aquifers Under Normal and
Drought Conditions Per Watershed in Orange County**

Watershed identification	Recharge under normal precipitation conditions (mgd)	Recharge under 30-year drought conditions^{2/} (mgd)	Recharge under extreme drought conditions^{3/} (mgd)	Maximum yield po- tential from existing bedrock wells (mgd)
TOTALS	332.03	225.78	132.81	23.6

^{1/} Recharge per watershed based on watershed boundaries.

^{2/} 30-year drought recharge based on 68 percent of normal recharge.

^{3/} Extreme drought recharge based on 40 percent of normal recharge.

mgd - Million gallons per day.

TABLE 13
GROUND-WATER RESOURCES OF
ORANGE COUNTY, NEW YORK
ORANGE COUNTY WATER AUTHORITY
GOSHEN, NEW YORK

Chemical Analyses and Maximum Contaminant Levels
Required by NYSDOH for Community Water Systems

(Reference, Title 10 NYCRR Chapter 1 - State Sanitary
Code, Subpart 5-1.50)

Constituent	Maximum concentration (mg/l) ^{1/}	Constituent	Maximum concentration level (mg/l unless stated otherwise)
pH ^{2/}	--	Zinc	5.0
Specific conductivity ^{2/}	--	Color	15 units
Temperature ^{2/}	--	Corrosivity	non-corrosive
Arsenic	0.05	Odor	3 units
Barium	1.0	Turbidity	1 unit
Cadmium	0.01	Endrin	0.0002
Chromium	0.05	Lindane	0.004
Fluoride	2.2	Methoxychlor	0.05
Lead	0.05	Toxaphene	0.005
Mercury	0.002	2,4-D	0.05
Nitrate	10.0	2,4,5-TP Silvex	0.01
Selenium	0.01	Trihalomethane	0.1
Silver	0.05	Coliform (total/fecal)	1/100 ml
Chloride	250.0	Combined radium-226 and radium-228	5 pCi/l
Copper	1.0	--	--
Iron	0.3 ^{3/}	Gross alpha particle activity	15 pCi/l ^{5/}
Manganese	0.3 ^{3/}	Gross beta particle activity	50 pCi/l
Sodium	270.00 ^{4/}		
Sulfate	250.0		

- 1/ Milligrams per liter.
2/ Field measurements.
3/ Combined iron and manganese may not exceed 0.5 ppm.
4/ Recommended maximum concentration.
5/ If concentration level exceeds 15 pCi/l, analyze remaining sample for Uranium alpha particle activity.

TABLE 5
GROUND-WATER RESOURCES OF
ORANGE COUNTY, NEW YORK
ORANGE COUNTY WATER AUTHORITY
GOSHEN, NEW YORK

Sand and Gravel Aquifer Summary

Aquifer	Estimated safe yield ^{1/} (mgd)	Total yield capacity ^{2/} (mgd)	Average yield (gpm)	High yield (gpm) ----- Well identification	Low yield (gpm) ----- Well identification	Number of wells with information
Beaver Dam (O)	0.40	0.36	250	250 (MG-9)	250 (MG-9)	1
Black Meadows Creek (AA)	1.30	1.51	350	450 (CT-26)	300 (CT-18)	3
Greenwood Lake (Z)	3.80	2.65	460	590 (WT-5)	250 (WT-4)	4
Lower Neversink River Valley (L)	70.00	1.92	190.6	400 (MH-11)	26 (DP-6)	7
Manhagen Brook Valley (T)	0.40	--	--	--	--	--
Moodna Creek Valley (P)	1.00	2.45	425	750 (BG-32)	50 (BG-16)	4
Moodna Creek Valley (Q)	1.00	3.89	450	750 (CW-1)	300 (CW-3)	6
Pine Bush Valley (BB)	1.20	0.2	72	76 (CF-5)	68 (CF-4)	2
Ramapo River Valley (Y)	1.00	0.86	148.8	350 (MT-47)	70 (MT-50)	4
Rutgers Creek Valley (S)	1.60	--	--	--	--	--
Seeley Brook (W)	1.30	0.16	110	110 (CT-15)	110 (CT-15)	1
Shawangunk Kill Valley (M)	1.50	0.76	265	330 (MH-8)	200 (MG-20)	2
Southern Wallkill River Valley (U)	3.30	9.78	308.6	900 (GT-42)	30 (WL-13)	22

TABLE 5
(continued)

**GROUND-WATER RESOURCES OF
ORANGE COUNTY, NEW YORK
ORANGE COUNTY WATER AUTHORITY
GOSHEN, NEW YORK**

Sand and Gravel Aquifer Summary

Aquifer	Estimated safe yield^{1/} (mgd)	Total yield capacity^{2/} (mgd)	Average yield (gpm)	High yield (gpm) ----- Well identification	Low yield (gpm) ----- Well identification	Number of wells with information
Tin Brook Valley (I)	1.90	2.51	248.9	467 (MG-25)	100 (MG-20)	7
Wawayanda Creek Valley (V)	1.35	2.62	227.6	800 (WT-1)	20 (WT-35)	8
Woodbury Creek Valley (X)	1.00	2.11	366.3	820 (WB-1)	95 (WB-4)	4
TOTALS	92.05	31.78				

^{1/} Estimated safe yield from available recharge.

^{2/} Total maximum yield capacity from existing and proposed wells (in service and out of service). The actual present yield from the respective aquifers may be less than the total yield capacity presented.

-- No wells inventoried with yield capacities.

TABLE 9
GROUND-WATER RESOURCES OF
ORANGE COUNTY, NEW YORK
ORANGE COUNTY WATER AUTHORITY
GOSHEN, NEW YORK

Summary of Sand and Gravel Deposits
From the Soil Survey of Orange County^{1/}

Soil Symbol	Soil Series
AdA	Allard silt loam
AdB	Allard silt loam
Ba	Barbour fine sandy loam
Be	Basher fine sandy loam
CgA	Castile gravelly silt loam
CgB	Castile gravelly silt loam
CnA	Chenango gravelly silt loam
CnB	Chenango gravelly silt loam
CnC	Chenango gravelly silt loam
Fd	Fredon loam
Ha	Halsey silt loam
HoA	Hoosic gravelly sandy loam
HoB	Hoosic gravelly sandy loam
HoC	Hoosic gravelly sandy loam
HoD	Hoosic gravelly sandy loam
My	Middlebury silt loam
OkA	Oakville loamy fine sand
OkB	Oakville loamy fine sand
OtB	Otisville gravelly sandy loam
OtC	Otisville gravelly sandy loam
OtD	Otisville gravelly sandy loam
OVE	Otisville and Hoosic soils
RhA	Riverhead sandy loam
RhB	Riverhead sandy loam
RhC	Riverhead sandy loam
RhD	Riverhead sandy loam
Sb	Scarboro mucky sandy loam

TABLE 9
(continued)

**GROUND-WATER RESOURCES OF
ORANGE COUNTY, NEW YORK
ORANGE COUNTY WATER AUTHORITY
GOSHEN, NEW YORK**

**Summary of Sand and Gravel Deposits
From the Soil Survey of Orange County**

Soil Symbol	Soil Series
Tg	Tioga silt loam
UF	Udifluents-Fluvaquents complex
UhB	Unadilla silt loam
UnC	Unadilla silt loam

1/ Olsson, 1981.

gwsumry.tbl/OCWA

TABLE 8
GROUND-WATER RESOURCES OF
ORANGE COUNTY, NEW YORK
ORANGE COUNTY WATER AUTHORITY
GOSHEN, NEW YORK

Water-Budget Analysis of Villages in Orange County
Presently Utilizing Bedrock Wells

Village	Watershed identification	Water demand 1993	Projected water demand 2020	Recharge to bedrock aquifers under normal precipitation conditions^{1/}	Recharge under 30-year drought conditions to bedrock aquifers^{2/}	Recharge under extreme drought conditions to bedrock aquifers^{3/}
		(mgd)	(mgd)	(mgd)	(mgd)	(mgd)
Goshen ^{4/}	114, 176, 53, 172, 171	1.20	1.64	1.81	1.23	0.72
Harriman ^{5/}	174	0.40	0.70	1.73	1.18	0.69
Kiryas Joel ^{6/}	173	0.85	1.80	1.03	0.70	0.41
Maybrook ^{2/}	1, 170	0.34	0.44	3.98	2.71	1.60
Montgomery ^{5/}	168, 169	0.31	0.57	1.74	1.18	0.67

^{1/} Recharge to available bedrock aquifers under normal precipitation conditions to the respective watersheds.

^{2/} 30-year drought recharge estimated from 68 percent of normal recharge to the respective watersheds.

^{3/} Extreme drought recharge estimated from 40 percent of normal recharge to the respective watersheds.

^{4/} Public water-supply developed from surface water and bedrock wells.

^{5/} Public water supply developed from sand and gravel wells and bedrock wells.

^{6/} Public water supply developed from bedrock wells.

TABLE 4
GROUND-WATER RESOURCES OF
ORANGE COUNTY, NEW YORK
ORANGE COUNTY WATER AUTHORITY
GOSHEN, NEW YORK

Available Ground-Water Recharge Estimates
for the Respective Aquifers
in Orange County

Reference	Aquifer	Recharge under normal precipitation conditions (gpd)
Snaveley (1980)	sand and gravel ——	1,000,000 ——
	bedrock	400,000 ^{1/}
R. E. Wright (1982)	sand and gravel ——	790,000 - 985,000 ——
	bedrock	815,000 ^{1/}
Cervione et al. (1972)	bedrock	350,000 ^{2/}
Frimpter, 1972	sand and gravel	500,000

^{1/} Recharge estimate to till-covered sedimentary bedrock units.

^{2/} Recharge estimate to till-covered metamorphic rocks.

TABLE 12
GROUND-WATER RESOURCES OF
ORANGE COUNTY, NEW YORK
ORANGE COUNTY WATER AUTHORITY
GOSHEN, NEW YORK

**Reported and Estimated Yield of Wells Completed in
Bedrock Aquifers in Orange County**

Formation	Description	# with gpm info./ # with feet info.	Average yield (gpm)/ Average completed depth (feet)	Median yield (gpm)	Highest reported yield/Well ID Lowest reported yield/Well ID (gpm)	Estimated yield potential* (gpm)
Martinsburg Formation (On)	Shale, graywacke and siltstone	146 136	56 317	30	225 (MG-14) 3 (GT-64)	25-100
Undifferentiated Ham- ilton Group (Dh) West- ern Orange County	Shale, siltstone and sandstone	4 4	17 221	15	35 (DP-4) 4 (DP-5)	50-100
Undifferentiated Ham- ilton Group (Dh) East- ern Orange County	Sandstone, conglomer- ate, shale and graywacke	38 41	77 387	60	200 (MT-37) 4 (DP-5)	75-200
Undifferentiated Lower Devonian and Silurian Rocks (Ds)	Shale, conglomerate, sandstone, siltstone and graywacke	17 17	174 414	154	300 (WB-10) 55 (BG-23)	50-300
Onondaga Limestone (Dou)	Limestone, siltstone and shale	1 1	22 286	22	22 (DP-1) 22 (DP-1)	50-300
Oneonta (Dgo) Formation	Sandstone and shale	1 1	200 140	200	200 (DP-15) 200 (DP-15)	50-100
Wappinger Group (OEw)	Limestone, dolestone and shale	28 25	100 356	80	285 (GT-43) 20 (WT-16)	50-300
Undifferentiated Silurian Rocks II (Sbs)	Shale, sandstone, con- glomerate and siltstone	6 6	28 553	30	35 (MG-14) 12 (MH-9)	25-150
Lower Walton Formation (Dsw)	Sandstone, shale, quartz conglomerate	NA	NA	NA	NA	50-150
Helderberg Group (Dhg)	Limestone and shale	NA	NA	NA	NA	50-300
Undifferentiated Silurian Rock I (Srp)	Sandstone, shale, siltstone and dolomite	NA	NA	NA	NA	50-100
Undifferentiated Gneiss and Granite (mgu, mu)	Granitic gneiss	17 17	46 273	38	100 (WT-15) 10 (MT-5)	25-75

**TABLE 12
(continued)**

**GROUND-WATER RESOURCES OF
ORANGE COUNTY, NEW YORK
ORANGE COUNTY WATER AUTHORITY
GOSHEN, NEW YORK**

**Reported and Estimated Yield of Wells Completed in
Bedrock Aquifers in Orange County**

Formation	Description	# with gpm info./ # with feet info.	Average yield (gpm)/ Average completed depth (feet)	Median yield (gpm)	Highest reported yield/Well ID Lowest reported yield/Well ID (gpm)	Estimated yield potential* (gpm)
Calcite and Dolomite Marble (mb)	Marble	NA	NA	NA	NA	50-150

* Wells drilled at favorable well sites.

ORANGE COUNTY WATER AUTHORITY

Bedrock Well Yield

Formation	Highest reported yield	Well no.	Lowest reported yield	Well no.
Martinsburg (On)	225	MG-10	3 3	GT-64 WT-13
Differentiated Hamilton Group (Dh) ^{1/}	300	WT-6	3-5	DP-5
Undifferentiated Lower Devonian and Silurian Rocks (Ds) ^{2/}	300	WB-10 MT-26	40	BG-23
Dou	22	DP-1	22	DP-1
Dgo	200	DP-15	200	DP-15
OEW	285	GT-43	20	WT-16
mgu, mu	270	WT-40	10	MT-5
Sbs	35 35 35	MH-10 MH-11 MG-14	12	MH-9

^{1/} In Eastern Orange County: Skunnemunk Formation - sandstone, conglomerate; Bellvale Formation - shale, sandstone, Cornwall shale.

^{2/} In Orange County: Kanouse sandstone; Woodbury Creek Formation - shale, sandstone; Esopus shale; Connelly conglomerate; Central Valley sandstone.

rock2.tbl/ocwa

TABLE 11

**GROUND-WATER RESOURCES OF
ORANGE COUNTY, NEW YORK
ORANGE COUNTY WATER AUTHORITY
GOSHEN, NEW YORK**

**Bedrock Aquifers Available for Development
in the Respective Towns of Orange County**

Town	Bedrock	Town	Bedrock
1. Blooming Grove	On, Dh, Ds, Mu, OEw	11. Monroe	Ds, Dh, OEw, mgu
2. Chester	On, Dh, OEw, Mu	12. Montgomery	On
3. Cornwall	Mu, On, Ds, Dh, mgu, OEw	13. Mount Hope	Sbs, Srp, On
4. Crawford	On	14. New Windsor	On, OEw, mu
5. Deerpark	Dsw, Dgo, Dh, Dou, Srp, Sbs	15. Newburgh	Ogu, OEw, On, mu
6. Goshen	On, OEw	16. Tuxedo	OEw, mgu
7. Greenville	Sbs, On	17. Wallkill	On
8. Hamptonburgh	On, OEw	18. Warwick	OEw, mgu, mu, mb, On, Dh
9. Highlands	mgu	19. Wawayanda	On, OEw
10. Minisink	On, OEw	20. Woodbury	Dh, Ds, OEw, mgu

LEGEND:

Calcite and Dolomite Marble (mb)
Helderberg Group (Dhg)
Lower Walton Formation (Dsw)
Martinsburg Formation (On)
Oneonta Formation (Dgo)
Onondaga Limestone (Dou)
Undifferentiated Gneiss and Granite (mgu, mu)
Undifferentiated Hamilton Group Eastern Orange County (Dh)
Undifferentiated Hamilton Group Western Orange County (Dh)
Undifferentiated Lower Devonian and Silurian Rocks (Ds)
Undifferentiated Silurian Rock I (Srp)
Undifferentiated Silurian Rocks II (Sbs)
Wappinger Group (OEw)

bed.leg/OCWA

TABLE 10

**GROUND-WATER RESOURCES OF
ORANGE COUNTY, NEW YORK
ORANGE COUNTY WATER AUTHORITY
GOSHEN, NEW YORK**

**Sand and Gravel Aquifers Available for Development
in the Respective Towns of Orange County**

Town	Aquifer	Town	Aquifer
1. Blooming Grove	Moodna Creek Valley	11. Monroe	Ramapo River Valley
2. Chester	Seeley Brook Valley Black Meadow Creek Valley	12. Montgomery	Tin Brook
3. Cornwall	Moodna Creek Valley Woodbury Creek Valley	13. Mount Hope	Shawangunk Kill Valley
4. Crawford	Pine Bush Aquifer	14. New Windsor	None
5. Deerpark	Neversink-Basherkill River Valleys	15. Newburgh	None
6. Goshen	Wallkill River Valley	16. Tuxedo	Ramapo River Valley
7. Greenville	None	17. Wallkill	Wallkill River Valley
8. Hamptonburgh	Beaverdam Brook Valley	18. Warwick	Wallkill River Valley Wawayanda Creek Valley Greenwood Lake
9. Highlands	None	19. Wawayanda	Manhagen Brook Valley Rutgers Creek Valley Wallkill River Valley
10. Minisink	Rutgers Creek Valley Wallkill River Valley	20. Woodbury	Woodbury Creek Valley Ramapo River Valley

TABLE 2

GROUND-WATER RESOURCES OF
 ORANGE COUNTY, NEW YORK
 ORANGE COUNTY WATER AUTHORITY
 GOSHEN, NEW YORK

Estimated Present (1994) Withdrawal of Ground Water
 from Wells in Orange County

Supply source	Estimated yield (mgd)
Rural Water Supply from Individual Well Supplies	4.7*
Public and Private Ground-Water Supply System:	
! Sand and Gravel Well	17.1
! Bedrock Well	9.0
! Well completed (unknown aquifer type)	0.3
	Subtotal: 26.4
TOTAL	31.1

* Mostly developed from wells completed in bedrock aquifer.
 mgd Million gallons per day.

TABLE 1

GROUND-WATER RESOURCES OF
ORANGE COUNTY, NEW YORK
ORANGE COUNTY WATER AUTHORITY
GOSHEN, NEW YORK

Total Estimated Yield Capacity and Withdrawal of Wells for
Existing and Proposed Public and Private Water-Supply Systems
in Orange County (1994)

Total number of wells	Aquifer type	Total yield capacity (mgd)	Estimated withdrawal (mgd)
108	Sand and Gravel	31.8	17.1
280	Bedrock	23.6	9
27	Unknown	2.9	0.3
TOTAL 412	--	58.3	26.4

mgd Million gallons per day.

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