

**REGIONAL GROUND-WATER STUDY  
TOWN OF NEWBURGH  
ORANGE COUNTY, NEW YORK**

Prepared for

Orange County Water Authority

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Lawler, Matusky & Skelly Engineers  
Environmental Science & Engineering Consultants  
One Blue Hill Plaza  
Pearl River, New York 10965

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**ATTACHMENT**

**Attachment**

- A Fleetwood Well Information

**MAP**

Groundwater Inventory Map ("GIM")

**REGIONAL GROUND-WATER STUDY  
TOWN OF NEWBURGH  
ORANGE COUNTY, NEW YORK**

**EXECUTIVE SUMMARY**

Mr. Michael O'Connell, Town of Newburgh treatment plant operator, estimates that the Town's present and near-future average water demand for the public system is about 2.39 million gallons per day (mgd). The Consolidated Water District is supplied by surface water from the Chadwick Lake reservoir and Delaware Aqueduct Tap. Until the fall of 1993, the system had used water from the Fleetwood well, a bedrock well that produced about 0.06 mgd.

Mr. William Hauser, consultant for the City of Newburgh, estimates that the City's present and near-future average water demand for the public system is about 3.78 mgd. The City of Newburgh is supplied by surface water impounded in Washington Lake and Brown's Pond. The supply also is supplemented by a Catskill Aqueduct tap.

Data indicate that limited sand and gravel aquifers of variable yield capacities are present in the Town of Newburgh and near the City of Newburgh. The bedrock aquifer, which includes isolated faults, is suitable to supply wells yielding up to 80 gpm.

The surface water supplies for the Town and the City both meet the average daily water demand. Increased future demand can be augmented by increased yield from the aqueduct taps.

**INTRODUCTION**

The Orange County Water Authority retained Lawler, Matusky and Skelly Engineers (LMS) to conduct a regional groundwater study for the Town of Newburgh, and the City of Newburgh, which are both supplied primarily by surface water. The Town's and City's existing water supplies were reviewed to:

- C inventory existing and proposed municipal water supplies within the Town
- C evaluate the ability to meet present and future demands

- C map the sand and gravel aquifers within the Town
- C document current land use and potential ground-water contamination problems within the Town which may impact potential groundwater supplies.

The Town of Newburgh municipal water supply consists almost exclusively of the Chadwick Lake Reservoir, supplemented by the Delaware Aqueduct tap system and the Fleetwood well, to a lesser extent.

The City of Newburgh municipal water supply consists of water impounded at Washington Lake as a primary supply. An impoundment at Brown's Pond (also called the Silver Stream Reservoir) is used as an auxiliary source. A Catskill Aqueduct Tap is also used as an auxiliary source. Water from the tap feeds into Silver Stream.

**EXISTING WATER SUPPLY SYSTEMS**

**Town of Newburgh Consolidated Water District**

The Consolidated Water District has an average day demand of 2.39 million gallons per day (mgd) with a maximum day demand of approximately 4.0 mgd. The Town's water supply sources include the Chadwick Lake Reservoir, Shaft 5A of the New York City Delaware Aqueduct, and until the fall of 1993, the Fleetwood well.

**Chadwick Lake Reservoir**

Mr. Michael O'Connell, filtration plant operator, reported that surface water supplied from the Chadwick Lake Reservoir is the primary source for the Town. The reservoir has a reported annual safe yield of 2.1 mgd. The Chadwick Lake Filtration Plant has a present design capacity of 2.5 mgd with a major rehabilitation planned for 1996 which would increase the plant capacity to 3.4 mgd. The raw water intake piping has a hydraulic capacity of 5.6 mgd.

**Delaware Aqueduct Tap**

Water supply from the Delaware Aqueduct tap is used to supplement the Chadwick Lake Reservoir supply. The tap facility has been designed to supply up to 5.0 mgd (this design has been reviewed and approved by the Orange County Department of

Health). The maximum allowable withdrawal permitted by agreement with New York City is based on the residential population of the water district and New York City's current per capita usage. Presently, based on this criteria, Newburgh is limited to a maximum draw of approximately 3.5 mgd. The Town will be able to utilize its full withdrawal upon completion of the chlorine detention tank located immediately adjacent to the tap facility. Until that time, based on disinfection requirements, the Town is limited to approximately 1.5 mgd maximum draw.

#### **Well Supply in Service**

Mr. James Osborne, Town Engineer, reported that one supply well, the Fleetwood well (Groundwater Inventory Map ["GIM"], Well NT-1), was in service until the fall of 1993. The present well yield capacity and available well data are presented on Tables 1 and 2, and Attachment A (O'Connell, 1993).

#### **Low Producing Wells in Service**

A file search conducted at the Orange County Department of Health (OCDOH) indicated that there are six developments (businesses, subdivisions and trailer parks) supplied by wells producing less than the reporting criteria of 50,000 gpd. The most notable is Well 1 at Newburgh Park Motors, which was yield tested at 40 gpm.

#### **City of Newburgh**

Mr. Bill Hauser of McGoey, Hauser and Edsall, Consulting Engineers, reported that the City of Newburgh is not divided into water districts and is supplied exclusively by surface water. Information gathered from the short information form obtained at the OCDOH indicates that the primary source is Washington Lake, which is fed by Murphy's ditch and the Silver Stream tributaries. Browns Pond (Silver Stream Reservoir) is an auxiliary source. The Catskill Aqueduct Tap which feeds into Silver Stream also is an auxiliary source (Hauser, 1993).

#### **Stewart Airport**

Mr. Pat Hines of McGoey, Hauser and Edsall, Consulting Engineers, reported that Stewart Airport is currently supplied by a Catskill Aqueduct tap from the Town of New Windsor. Portions of the facility along Route 17K are supplied by individual groundwater wells (Hines, 1993).

### **PROPOSED COMMUNITY WATER-SUPPLY SYSTEMS**

The following is a proposed community water-supply system in the Town of Newburgh.

#### **High Ridge Development**

The High Ridge development will consist of 317 single family dwellings. The average water-supply requirement is about 89,200 gpd or 62 gpm (Leggette, Brashears & Graham [LBG], 1990). Approximate well locations for the five wells installed at the High Ridge development (GIM, Wells NT-2, NT-3, NT-4, NT-5, NT-6) are located on the Newburgh plate, and the well data are presented on Table 1. New community water suppliers are required by the New York State Department of Health (NYSDOH) to develop two independent sources of supply, each capable of delivering the average demand of the system. If the wells are in bedrock and yields are less than 50 gpm, the guidelines require development of double the daily demand, or 124 gpm, with the best well out of service (LBG, 1990). The maximum development capacity from the two best wells (GIM, Wells NT-3 and NT-6) is reported to be over 167 gpm (LBG 1990, 1991).

#### **Consolidated Water District**

A new water treatment plant has been proposed for the Delaware Aqueduct Tap. This plant is projected to treat 5.2 mgd with the ability to expand capacity to 7.0 mgd (O'Connell, 1993A).

## **WATER SUPPLY DEMAND**

### **Consolidated Water District**

With the two water sources in service, the present supply meets the average daily water demands and maximum daily water demands (peak summer water demand); estimated to be 2.39 and 4.02 mgd, respectively. The maximum yield capacities of the combined two existing water sources is estimated to be 5.6 mgd.

### **City of Newburgh Water District**

The current water supply meets the current average daily water demand of 3.78 mgd (Hauser, 1993) and the current maximum daily demand of 5.15 mgd. The maximum yield capacity of 9.6 mgd is based on the treatment plant capacity.

### **Projected Water Demands**

Table 4 indicates that existing and proposed yield capacity of the Consolidated Water District (Town of Newburgh) has an estimated maximum yield capacity of 5.6 mgd. The Delaware Aqueduct Tap maximum yield is based on population; as the population increases the tap yield will be increased proportionally. A significant long-term water demand has been projected for the Stewart Airport Expansion. Current estimates project a demand of 1.02 mgd to be met using surface water after the year 2000 (Finkle, 1993).

The water demand for the City of Newburgh is expected to change with population changes. The yield capacity of the city system is more than adequate to serve any increase in demand.

## **GEOLOGY**

The aerial extent of the sand and gravel aquifer in the Newburgh region has been mapped by Frimpter (1972) as presented in a report entitled "Ground-Water Resources of Orange and Ulster Counties, New York". Most of the sand and gravel aquifers identified by Frimpter are characterized by isolated pockets of sand and gravel located within the Gidneytown Stream valley. One of these isolated aquifers, which is located where Route 84 crosses the stream, is reported to sustain individual well yields between 300 and 1000 gpm. Another isolated occurrence of saturated sand and gravel is mapped

within the Quassaick Creek valley near the Orange/Ulster County boundary with reported well yields up to 300 gpm (Frimpter, 1972).

### **Sand and Gravel Aquifers**

An unpublished surficial geologic map prepared by Fisher (1975) indicates extensive sand and gravel deposits trending north-south along two linear corridors occupied by the New York State Thruway and Orange Lake. Smaller sand and gravel deposits with similar trends occur in the Route 9W Corridor to the east, and the extreme northwest section of the Town.

A second unpublished map prepared by Slayton (1980) indicates a saturated sand and gravel deposit in the northwest corner of the City of Newburgh. More detailed information or well data is not available from this report.

### **Bedrock Aquifer**

The Geologic Map of New York, Lower Hudson Sheet (Fisher, et al., 1970), indicates that the majority of the Town of Newburgh is underlain by the Martinsburg Formation which consists of shale and carbonates of the Wappingers Group. These bedrock units are cut by several faults. The faults relocated crystalline Precambrian granites in the vicinity of the New York State Thruway/Interstate 84 interchange, to be in contact with the Wappingers Group carbonates (Freedman, 1982). The faults extend south beyond Lake Washington, and north of the City of Newburgh east of Route 9W.

Several faults are mapped in the vicinity of the Town, likely resulting in high secondary permeability. These fault zones would be a favorable location to target the development of high yielding bedrock wells.

## **LAND USE**

The majority of the land use in the Town is residential. Residential land use is very dense in the City of Newburgh and in the subdivisions in the Town adjacent to the City. The far western, northwestern, and northeastern sections of the Town are lightly populated. Throughout the Town, residential land use follows the main roads.

Commercial land use dominates the main streets in the City and the main roads of the Town. Broadway/Route 17K and State Routes 9W, 32 and

52 are the principal corridors for commercial development.

Industrial land use is dominant along the Hudson River, in several industrial parks and throughout the City of Newburgh. Some vacant agricultural land exists in the northern part of the Town.

### **WATER QUALITY**

Water quality from the bedrock aquifer is generally good. All parameters from the Fleetwood well (Attachment A) and High Ridge development wells passed the NYSDOH drinking water standards.

The Chadwick Lake reservoir has reported historical water quality problems typical of surface water systems. A problem with turbidity and elevated concentrations of residual manganese was solved. An additional problem with trihalomethanes was also solved in 1986 (O'Connell, 1993A).

### **INVENTORY OF GROUNDWATER CONTAMINATION PROBLEMS**

#### **Existing Ground-Water Contamination Problems**

LMS reviewed existing known ground-water contamination sites listed in New York State Department of Conservation (NYSDEC) files. These files included inactive hazardous waste sites, remediation projects (NYSDEC Spill Response), solid waste sites, and RCRA sites for the Town and City of Newburgh. The file search indicated that a number of known and potential ground-water contamination sites exist throughout the Town and the City of Newburgh.

Information regarding private septic disposal sites, salt storage sites, and sewage treatment facilities for the Town of Newburgh was gained through Ms. Norma Jacobson, Planning Board Secretary, and Mr. Michael O'Connell, filter plant operator (Jacobs, 1993; O'Connell, 1993).

#### **Construction and Demolition Landfill**

Ambrosio/Cocoa Lane disposal site located on Weyants Road one mile west of Fostertown.

#### **Active Remediation Project**

The Sunoco station located at 307 Broadway in Newburgh is an active remediation project.

#### **Active Remediation Project**

The Mobil station located at 20 River Road in Newburgh is an active remediation project.

#### **Active Remediation Project**

The Mobil station located at 1117 Union Avenue in Newburgh is an active remediation project.

#### **Active Remediation Project**

The Mobil station located at 310 Broadway in Newburgh is an active remediation project.

#### **Town Landfill**

The Danskammer Landfill is a NYSDEC registered landfill.

#### **Construction and Demolition Landfill**

Closed landfill for construction and demolition debris located on Fostertown Road.

#### **Registered Inactive Hazardous Waste Disposal Site**

F&T Darrigo is an inactive hazardous waste disposal site located on Lakeside Road consisting of septage lagoons and land spreading operations.

#### **Registered Inactive Hazardous Waste Disposal Site**

DuPont-Stauffer is an inactive hazardous waste disposal site located on South Street used for the disposal of incinerator ash containing heavy metal oxides, and slurry wastes containing caustics, pigments, PVC resins, and solvents (NYSDEC 1993).

#### **Registered Hazardous Waste Disposal Site**

The New Windsor Town Landfill located immediately south of the Town of Newburgh border is an inactive hazardous waste disposal site located on Silver Stream Road. Reported wastes disposed at the site include paint sludge, corrosives, and adhesive waste water. An investigation has confirmed the presence of inorganic contaminants in ground-water (NYSDEC, 1993).

### **Potential Ground-Water Contamination Problems**

Information about potential ground-water contamination sites was obtained from:

- ! FOIL request to NYSDEC (LMS, 1993); and
- ! Land use data from the Orange County, New York Real Property Tax Assessment data base (Space Track, 1993).

The following summarizes the potential ground-water contamination sites, including the NYSDEC's potential inactive hazardous waste and solid waste facility sites from the foil request from the NYSDEC. In addition, a list of possible ground-water contamination sites has been developed by LMS in conjunction with Town personnel (Jacobson and O'Connell, 1993).

### **Registered Inactive Hazardous Waste Disposal Site**

Stewart Airport-DOT, located on Route 17K, is the Air Force base pesticide burial area located adjacent to a former landfill at the southeast side of the Air National Guard Base. An RI/FS is in progress at the site.

### **Registered Inactive Hazardous Waste Disposal Site**

American Felt and Filter Co, located on Walsh Avenue in New Windsor just south of the City of Newburgh. The site contains known ground-water contaminant, 1,1,1-trichloroethane, discharging into Quassaick Creek.

### **Registered Inactive Hazardous Waste Disposal Site**

MacBeth Kollmorgan Corp., listed in Newburgh is located in New Windsor.

### **Private Septic Disposal Site**

Abandoned sludge dumps are reported on Quaker Street at the Feeder Farm Property. Dumping was discontinued during the 1980s.

### **Private Septic Disposal Site**

Abandoned sludge dumps are reported on Lakeside Road at the Derego Property. Dumping, which included filter plant sludge, was discontinued during the 1980s.

### **Town Salt Storage**

Salt storage facility at the Highway Garage on Gardnertown Road.

### **New York State Thruway Salt Storage**

Salt storage facility located at the maintenance garage on Union Avenue.

### **New York State Thruway Septic Disposal Site**

Service Area at Quaker Street which discharges treated wastewater onto the Noble property in the vicinity of Orange Lake.

### **New York State Thruway Septic Disposal Site**

Service area at Hiverman Lane which discharges treated wastewater into a tributary stream of Orange Lake.

### **Town Sewage Treatment Facilities**

Meadow Hill subdivision treatment which is connected to the City of Newburgh.

### **Proposed Sewage Treatment Facility**

High Ridge sewage treatment plant is proposed to discharge treated wastewater into Tin Brook.

### **Town Sewer Treatment Facility**

Wintergreen Plant, located on Wintergreen Avenue off Route 42, consists of a subsurface sand filter which discharges treated wastewater into a nearby stream.

### **Town Sewer Treatment Facility**

Colden Park development located on Route 17K near Montgomery contains a trickling filter.

Each property in Orange County has a land use code number. Properties with land use code numbers associated with potential contamination of ground water were identified through analysis of the Real Property Tax Assessment data base by Space Track, Inc. The types of land uses in the potential contamination category include:

- ! industrial facilities;
- ! gas stations;
- ! dry cleaners, and

! auto repair facilities.

Where possible, approximate locations of these sites are shown as triangles on the GIM.

### **Petroleum Bulk Storage Facilities**

The FOIL request from the NYSDEC inventoried the petroleum bulk storage facilities presented on Table 5.

The above sites are listed as potential ground-water contamination sites. Further investigations would be required to determine if contamination exists at the respective locations.

### **CONCLUSIONS**

The Town of Newburgh's present and near-future average water demand for the public system is 2.39 mgd (O'Connell, 1993). Chadwick Lake Reservoir is the primary source of water for the Consolidated Water District. The system includes the Fleetwood well (Well 1, Plate 1), which contributes about 0.06 mgd to the system, and is scheduled to be removed from the system in the near future. The water supply is also supplemented by surface water supplied from the Delaware Aqueduct Tap. The present supply meets the average daily water demands and maximum daily demands estimated to be 2.39 and 4.02 mgd, respectively. The maximum yield capacity of the combined three existing sources is estimated to be about 5.6 mgd and may be increased proportionally with population increases.

The City of Newburgh's present and near-future average water demand for the system is 3.78 mgd (Hauser, 1993). The demand is met exclusively by the Newburgh City Water District Surface Water Supply System. Projected future water demand analysis conducted by LMS indicates a slight decrease.

Many known and potential groundwater contamination sites are present in the Town and City of Newburgh. Data indicate that sand and gravel aquifers not mapped by Frimpter (1972) are present within the Town; however, information was not available regarding yield capacities of these unconsolidated deposits. Information on the bedrock aquifer in Newburgh indicates that well yields up to 80 gpm are possible, and that the bedrock aquifer is suitable for the development of moderate yielding groundwater supplies. Several major faults are present that may be targeted for development of high

yielding bedrock wells.

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Robert A. Slayton Engineers, 1980, Water System needs for the Town of Newburgh.

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**TABLE 1**  
**CITY OF NEWBURGH**

**Summary of Available Well Data**  
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Well ----- Water District	Tax Map Municipality Section ----- Block ----- Lot	Map Location ----- I.D. #	Well Status	Reported Yield (gpm) Original ----- Present	Depth of Well (feet)	Well Diameter (inches)	Length of Casing (feet)	Well Screen Length (feet) ----- Setting Interval (feet)	Aquifer	Date Drilled	Comments

gpm - Gallons per minute.  
NA - Not available.

Well Status:  
In service - active  
In service - stand by  
Inactive - equipped  
Inactive - not equipped  
Abandoned

Note: There are no water districts in the City of Newburgh which satisfy the groundwater criteria of 50,000 mgd.

**TABLE 2B  
CITY OF NEWBURGH**

**Summary of Well Yield Capacities**

**This Table Left Blank Intentionally**

Well ----- Water District	WSA No. ----- Permitted Yield (gpm)	Average Yield Capacity (gpm) ----- (gpd)	Maximum Yield Capacity (gpm) ----- (gpd)	Comments
<b>TOTALS</b>	<b>(Total Permitted Yield)</b>	<b>(Total Yield Capacity)</b>	<b>(Total Maximum Yield Capacity)</b>	

gpm - Gallons per minute.  
gpd - Gallons per day.

WSA No. - Water Supply Application Number.

Note: There are no water districts in the City of Newburgh which satisfy the groundwater criteria of 50,000 mgd.

**TABLE 4B**  
**CITY OF NEWBURGH**

Projected Water Demand  
1993 - 2020  
(mgd)

Water District	Current Maximum Yield Capacity (mgd)	Current and Proposed* Maximum Yield Capacity (mgd)	1993 <sup>1</sup> Projected Water Demand ----- Water-Supply Adequacy**	2000 <sup>2</sup> Projected Water Demand ----- Water-Supply Adequacy***	2010 <sup>2</sup> Projected Water Demand ----- Water-Supply Adequacy***	2020 <sup>2</sup> Projected Water Demand ----- Water-Supply Adequacy***
See comment	9.6	9.6	3.78 ----- + 5.82**	NA ----- NA	NA ----- NA	NA ----- NA
<b>TOTAL</b>	9.6	9.6	2.29 ----- + 5.82**	NA ----- NA	NA ----- NA	NA ----- NA

mgd - Million gallons per day.

\* Combined yield capacity of both current and proposed water supply(s).

\*\* Calculated by current maximum yield capacity minus projected water demands.

\*\*\* Calculated by current and proposed maximum yield capacity minus projected water demands.

+ Surplus water supply, mgd.

**COMMENTS:**

! City is not divided into water service districts. All data is based on overall city basis.

--EXAMPLE--

TABLE 3 (OPTION A)

MUNICIPALITY: Town of Chester (per Town, Village or City)

Summary of Water-Supply Source

[Short Summary]

Existing Source

	Water District	Ground Water (mgd)
Current Average Daily Water Demand		
Current Maximum Daily Water Demand		
Maximum Yield Capacity		
Average Yield Capacity		
<b>Proposed Sources (Average Day)</b>		
<b>TOTAL MAXIMUM YIELD CAPACITY (MGD) =</b> ----- <b>CURRENT MAXIMUM DAILY USE (MGD) =</b>		-----

mgd - Million gallons per day.

COMMENTS

- !
- !
- !
- !

OCWA.TBL/OCWADSK

**TABLE 3  
(continued)**

**CITY OF NEWBURGH**

**Summary of Water-Supply Source**

The city utilizes surface water from Lake Washington (primary source) and Brown's Pond (Silver Stream Reservoir) and the Catskill Aqueduct Tap as secondary sources.

**Existing Source**

	<b>Surface Water (mgd)</b>	<b>Ground Water (mgd)</b>
Current Average Daily Water Demand	3.78	0.0
Current Maximum Daily Water Demand	5.15	0.0
Maximum Yield Capacity	9.6	0.0
Average Yield Capacity	3.78	0.0
<b>Proposed Sources (Average Day)</b>		
<b>*TOTAL MAXIMUM YIELD CAPACITY (MGD) =</b> -----		<b>9.6</b>
<b>*CURRENT MAXIMUM DAILY USE (MGD) =</b>		<b>5.15</b>

mgd - Million gallons per day.

\* Combine surface water and ground-water sources.

**COMMENTS**

! Maximum yield capacity is based on treatment plant capacity.

! High concentrations of manganese reported.

**TABLE 1**  
**TOWN OF NEWBURGH**

**Summary of Available Well Data**

Well ----- Water District	Tax Map Municipalit y Section ----- Block ----- Lot	Map Location ----- I.D. #	Well Status	Reported Yield (gpm) Original ----- Present	Depth of Well (feet)	Well Diameter (inches)	Length of Casing (feet)	Well Screen Length (feet) ----- Setting Interval (feet)	Aquifer	Date Drilled	Comments
Well 1 ----- Fleetwood	NA	Newburgh ----- 1	In service ----- active	165 ----- NA	288	8	NA	NA ----- NA	NA	1958	Deactivated
Well 5 ----- High Ridge	NA	Newburgh ----- 2	NA	18 ----- NA	450	6	40		Bedrock	1989	Proposed community water supply
Well 7 ----- High Ridge	NA	Newburgh ----- 3	NA	87 ----- NA	270	6	32		Bedrock	1990	Proposed community water supply
Well 8 ----- High Ridge	NA	Newburgh ----- 4	NA	28 ----- NA	580	6	93		Bedrock	1990	Proposed community water supply
Well 9 ----- High Ridge	NA	Newburgh ----- 5	NA	30 ----- NA	400	6	30		Bedrock	1990	Proposed community water supply
Well 10 ----- High Ridge	NA	Newburgh ----- 6	NA	80 ----- NA	380	6	40		Bedrock	1990	Proposed community water supply

gpm - Gallons per minute. Well Status:  
NA - Not available. In service - active  
In service - stand by  
Inactive - equipped  
Inactive - not equipped  
Abandoned

**TABLE 2A**  
**TOWN OF NEWBURGH**

**Summary of Well Yield Capacities**  
**Newburgh Consolidated Water District**

Well ----- Water District	WSA No. ----- Permitted Yield (gpm)	Average Yield Capacity (gpm) ----- (gpd)	Maximum Yield Capacity (gpm) ----- (gpd)	Comments
Fleetwood ----- Consolidated	3456 ----- NA	42 ----- 60,480	NA ----- NA	Minimal information
<b>TOTALS</b>	<b>(Total Permitted Yield)</b>	<b>(Total Yield Capacity) 42</b> ----- <b>60,480</b>	<b>(Total Maximum Yield Capacity)</b> NA	

gpm - Gallons per minute.  
gpd - Gallons per day.

WSA No. - Water Supply Application Number.



**TABLE 4A**  
**TOWN OF NEWBURGH**

Projected Water Demand  
1993 - 2020  
(mgd)

Water District	Current Maximum Yield Capacity (mgd)	Current and Proposed* Maximum Yield Capacity (mgd)	1993 Projected Water Demand ----- Water-Supply Adequacy**	2000 Projected Water Demand ----- Water-Supply Adequacy***	2010 Projected Water Demand ----- Water-Supply Adequacy***	2020 Projected Water Demand ----- Water-Supply Adequacy***
Consolidated Water District	4.1	5.6	2.39 ----- + 1.71**	2.83 ----- + 2.77***	3.17 ----- + 2.43***	3.5 ----- + 2.1***
NYC Delaware Aqueduct Tap	1.5	5.0	Included in totals	Included in totals	Included in totals	Included in totals
<b>TOTAL</b>	5.6	10.6	2.39 ----- + 3.21**	2.83 ----- + 7.77***	3.17 ----- + 7.43***	3.50 ----- + 7.10***

mgd - Million gallons per day.

+ Surplus water supply, mgd.

\* Combined yield capacity of both current and proposed water supply(s).

\*\* Calculated by current maximum yield capacity minus projected water demands.

\*\*\* Calculated by current and proposed maximum yield capacity minus projected water demands.

**COMMENTS:**

! Delaware Aqueduct max. yield is based on population. As population increases so does the yield.

--EXAMPLE--

TABLE 3 (OPTION A)

MUNICIPALITY: Town of Chester (per Town, Village or City)

Summary of Water-Supply Source

[Short Summary]

Existing Source

	Water District	Ground Water (mgd)
Current Average Daily Water Demand		
Current Maximum Daily Water Demand		
Maximum Yield Capacity		
Average Yield Capacity		
<b>Proposed Sources (Average Day)</b>		
<b>TOTAL MAXIMUM YIELD CAPACITY (MGD) =</b> ----- <b>CURRENT MAXIMUM DAILY USE (MGD) =</b>		-----

mgd - Million gallons per day.

COMMENTS

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- !
- !
- !

**TABLE 3**  
**TOWN OF NEWBURGH**

**Summary of Water-Supply Source**

The Town is supplied by surface water from the Chadwick Lake Reservoir. The Delaware River Aqueduct system is used to supplement the Chadwick supply.

**Existing Source**

	Surface Water (mgd)	Ground Water (mgd)
Current Average Daily Water Demand	2.39	0.0
Current Maximum Daily Water Demand	4.02	0.0
Maximum Yield Capacity	5.6	0.0
Average Yield Capacity	2.1	0.0
<b>Proposed Sources (Average Day)</b>		
*TOTAL MAXIMUM YIELD CAPACITY (MGD) =		5.6
-----		-----
*CURRENT MAXIMUM DAILY USE (MGD) =		4.02

mgd - Million gallons per day.

\* Combine surface water and ground-water sources.

**COMMENTS**

!	Water Treatment Plant capacity	Chadwick Reservoir	Delaware Aqueduct Tap
	Current	2.5 mgd	5.0 mgd (unfiltered)
	Future (by 6/96)	3.4 mgd	5.2 mgd
	(by 2010-2015)	3.4 mgd	7.0 mgd

TABLE 5

**REGIONAL GROUNDWATER STUDY  
TOWN OF NEWBURGH  
ORANGE COUNTY, NEW YORK**

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**Petroleum Bulk Storage Facilities**

FACILITY NAME	LOCATION	MUNICIPALITY
Abbott & Mills Inc.	94 Gardnertown Road	Newburgh
AGL Welding Supply Co. Inc.	1109 Union Avenue	Newburgh
American Express Hanger	Stewart Intl. Airport/1 Express Drive	Newburgh
American Felt & Filters Inc.	311 First Street	Newburgh
Area Oil Supply Inc.	454 North Plank Road	Newburgh
Argenio Brothers, Inc.	Ruscitti Road, P.O. Box 2068	Newburgh
Arneaux Realty Corp.	245 Dupont Avenue	Newburgh
ATI 9W 184	431 Robinson Avenue	Newburgh
Atlantic Refining #0363-0282	197 N. Plank Road	Newburgh
Atlantic Refining #0363-0407	510 Broadway	Newburgh
Atlantic Refining FAC 60026	78 Route 17K & Union Avenue	Newburgh
Avis Rent A Car	211 Broadway	Newburgh
Balmville Citgo	Rt. 32 N. Plank Road	Newburgh
Balmville School and Annex	484 Route 9W	Newburgh
Bard Chevrolet Inc.	453 Broadway	Newburgh
Bard Chevrolet Inc.	453 Broadway	Newburgh
Belcher	393-403 Broadway	Newburgh
Bridge Auto Service	130 N. Plank Road	Newburgh
Bridge Exxon #7304	401 Route 9W	Newburgh
Broadway ATI #313	405 Broadway & Lake Street	Newburgh
Broadway School	300 Broadway	Newburgh
Catania Bros. Food Inc.	145 South Plant Road	Newburgh
Central Hudson Gas & Elect. New	Little Britain Road	Newburgh

Chadwick Lake Water Plant	115 Plattekill Tpk.	Newburgh
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TABLE 5 (Page 2 of 7)

**REGIONAL GROUNDWATER STUDY  
TOWN OF NEWBURGH  
ORANGE COUNTY, NEW YORK**

**Petroleum Bulk Storage Facilities**

FACILITY NAME	LOCATION	MUNICIPALITY
Chestnut Street School	20 Chestnut Street	Newburgh
Chicks Exxon #7555	1096 Union Avenue	Newburgh
Colandrea Trucking Inc.	526 Route 9W	Newburgh
Costa Beverages Inc.	129 Lake Street	Newburgh
Cumberland Farms #3146	Route 17K & Rock-Cut Road	Newburgh
D M A A NYS Armory	355 South William Street	Newburgh
Dairy Mart 6692	60-77 Washington Terrace	Newburgh
Daley's Oil Service Inc.	29 New Road	Newburgh
Dennis Derry Service Station Inc.	842 Broadway	Newburgh
Dept. of Public Works	Pierces Road	Newburgh
East Coldenham Elementary	286 290 Route 17K	Newburgh
ERCO Contracting Corp.	178 S. Robinson Avenue	Newburgh
Exxon R/S#3-1954	1 Homewood Avenue	Newburgh
Federal Express	Governor Drive-Stewart Ind. Park	Newburgh
Fostertown School	216 Fostertown Road	Newburgh
Frankie's Sunoco Custom Service Inc.	356 N. Plank Road	Newburgh
Frankie's Sunoco Custom Service Inc.	356 N. Plank Road	Newburgh
Frye Copysystems	71 Windsor Highway	Newburgh
G&L Services	507 Broadway	Newburgh
Gallagher Truck Center, Inc.	Route 32 South	Newburgh
Gardnertown School	6 Plattekill Turnpike	Newburgh
George M. Carroll Inc.	7 Rt. 17K P.O. Box 2522	Newburgh
George M. Carroll Inc.	622 Route 9W	Newburgh
Getty 58751	91 Route 17K	Newburgh

TABLE 5 (Page 3 of 7)

**REGIONAL GROUNDWATER STUDY  
TOWN OF NEWBURGH  
ORANGE COUNTY, NEW YORK**

**Petroleum Bulk Storage Facilities**

FACILITY NAME	LOCATION	MUNICIPALITY
Getty 58266	515 Broadway	Newburgh
Gidney Avenue Memorial School	300 Gidney Avenue	Newburgh
Green House Apartments	80 Stewart Avenue	Newburgh
Grieco's Service Station Inc.	121 Mill Street	Newburgh
Gross's Service Center Inc.	5 S. Plank Road	Newburgh
Gulf Oil Products	479 US Route 9W & Fostertown Rd.	Newburgh
H P Hood	Brookside Farm Road	Newburgh
Hagle Supply	60 Mill Street	Newburgh
Harvey Bros. Inc.	P.O. Box 470, 291 Broadway	Newburgh
Henry W. Mothig Inc.	52 S. Plank Road	Newburgh
Hess Station 32294	501 Broadway	Newburgh
Highway Garage/Fleet Maintenance	36 Gardnertown Road	Newburgh
Holiday Inn of Newburgh	90 Route 17K	Newburgh
Holmes Transportation Inc.	143 A. S. Plank Road	Newburgh
Horizons on the Hudson School	137 Montgomery Street	Newburgh
Howard's Express Inc.	1107 Union Avenue	Newburgh
Hudson Valley Asphalt	Ruscitti Road, P.O. Box 2068	Newburgh
Hudson Valley News	85 Dickson Street	Newburgh
Hudson Valley News Dist. Inc.	175 Overlook Place	Newburgh
Ira D. Conklin & Sons Inc.	92 94 Stewart Avenue	Newburgh
J&R Equipment Inc.	7 Jeanne Drive	Newburgh
Johnes Home	11-15 Balmville Road	Newburgh
Joseph A. Fogarty Apts.	162 Johnston Street	Newburgh
Joyce Beverages	339 N. Plank Road	Newburgh





TABLE 5 (Page 4 of 7)

**REGIONAL GROUNDWATER STUDY  
TOWN OF NEWBURGH  
ORANGE COUNTY, NEW YORK**

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**Petroleum Bulk Storage Facilities**

FACILITY NAME	LOCATION	MUNICIPALITY
Lake Street Xtra	Lake Street & S. William Street	Newburgh
Lampacks Tire Service	275 Broadway	Newburgh
Little Britain Elementary School	Route 207	Newburgh
Little Cabin Inc. #0781	704 Route 9W	Newburgh
Lloyds Gas & Service Center	1020 Union Avenue	Newburgh
M&S Exxon #7491	91 Route 17K	Newburgh
Magyar's Service Center	704 Route 9W	Newburgh
Mason Trailer Park & Apts.	112 Mt. Airy Road	Newburgh
Meadow Hill School	50 Meadow Hill Road	Newburgh
Michael Bigg Jr. Inc.	63 Route 17K	Newburgh
Micron Clean Uniform	57 Plattekill Tpk.	Newburgh
Mid-Valley Petro Corp.	1 S. Water Street	Newburgh
Middle Hope Cold Storage Inc.	656 Route 9W North	Newburgh
Middlehope Elementary School	Overlook Drive	Newburgh
Mobil S/S 06369	310 Broadway	Newburgh
Mobil S/S 06680	246 Route 9W	Newburgh
Mobil S/S 06781	1117 Union Avenue	Newburgh
Morehead Auto Sales Inc.	553 Route 9W	Newburgh
Mt. Airy Fruit Farm Inc.	RD 1 Merritt Lane	Newburgh
Mt. Saint Mary College	330 Powell Avenue	Newburgh
Mt. St. Joseph	RD 2 Box 33 (Route 207)	Newburgh
Mt. St. Mary Convent	320 Powell Avenue	Newburgh
New Windsor School	17 5 Quassaik Avenue	Newburgh
New York State Police	Brunning Rd. Stewart Airport BX6025	Newburgh



TABLE 5 (Page 5 of 7)

**REGIONAL GROUNDWATER STUDY  
TOWN OF NEWBURGH  
ORANGE COUNTY, NEW YORK**

**Petroleum Bulk Storage Facilities**

FACILITY NAME	LOCATION	MUNICIPALITY
New York Telephone	220 Liberty Street	Newburgh
New York Telephone	Pierces Road	Newburgh
New York Telephone	1130 Union Avenue	Newburgh
Newburgh Brake Inc.	141 Route 52	Newburgh
Newburgh Free Academy	201 Fullerton Avenue	Newburgh
Newburgh Miron Lumber	250 Lake Street	Newburgh
Newburgh Packing Corp.	439 Little Britain Road	Newburgh
Newburgh Paper Box Company Inc.	80-88 S. Colden Street	Newburgh
Newburgh Park Motors Inc.	55 Route 17K	Newburgh
Newburgh Section Maint. MP60.1	New York State Thruway	Newburgh
Newburgh Taxi Service Inc.	75 Lake Street	Newburgh
Newburgh Toll Barrier MP60.1	New York State Thruway	Newburgh
Newburgh Yacht Club	P.O. Box 489	Newburgh
North Junior High	301 Robinson North	Newburgh
North Plank Mobil	175 North Plank Road	Newburgh
Northville	Fifth Avenue & Hwy. 52	Newburgh
Northville	Routes 52 & 300, Union Ave.	Newburgh
NYSDOT	112 Dickson Street	Newburgh
O.C. Newburgh Govt. Center	Liberty & Grand Street	Newburgh
Oscar Fisher Co. Inc.	Route 52 & 5th Avenue	Newburgh
Our Lady of Hope Center	434 River Road	Newburgh
Pat's Service Station	143 Ann Street	Newburgh
Pepsi Cola Newburgh Bottling Co.	237 Dupont Avenue	Newburgh
Pit Stop Quick Oil Change	1109 Union Avenue	Newburgh



TABLE 5 (Page 6 of 7)

**REGIONAL GROUNDWATER STUDY  
TOWN OF NEWBURGH  
ORANGE COUNTY, NEW YORK**

**Petroleum Bulk Storage Facilities**

FACILITY NAME	LOCATION	MUNICIPALITY
Police Headquarters	130 Gardnertown Road	Newburgh
Poughkeepsie Iron Fabricators	86 Wisner Avenue	Newburgh
Prestige Petroleum Corp.	618 Route 9W North	Newburgh
Public Safety Building	Grand Street	Newburgh
Public Service Building	105 Plattekill Tpk.	Newburgh
R.W. Henry Inc.	9 Jeanne Dr., P.O. Box 7063	Newburgh
Royal Fine Woodworking Ltd.	75-79 Carson Avenue	Newburgh
S.G. Kimball Inc.	280 Little Britain Road	Newburgh
Salese & Son Beverage Co. Inc.	P.O. Box 7289, 120 S. Plank Road	Newburgh
Sarinsky Garage Inc.	171 Windsor Hwy.	Newburgh
Sears Roebuck & Co.	1067 Union Avenue	Newburgh
South Junior High	38-63 Monument Street	Newburgh
St. Francis of Assisi School	245 Renwick Street	Newburgh
St. Luke's Hospital	70 Dubois Street	Newburgh
St. Francis of Assisi Church	145 Benkard Avenue	Newburgh
Stewart Army Subpost	Bldg. 1708	Newburgh
Stewart Field	Route 207	Newburgh
Stewart International Airport	1035 First Street	Newburgh
Stewart International Airport	1035 First Street	Newburgh
Stewart's Ice Cream - S#278	Corner Rt. 52 & Monark Dr.	Newburgh
Stewart's Ice Cream Co. - #264	Corner Rt. 9W & Carter Ave.	Newburgh
Sunoco #0011-8307	365 N. Plank Road	Newburgh
Sunoco #0006-7744	362 Windsor Hwy.	Newburgh
Sunoco #0006-8015	N. Plank Rd. Nec Rt. 9W	Newburgh

TABLE 5 (Page 7 of 7)

**REGIONAL GROUNDWATER STUDY  
TOWN OF NEWBURGH  
ORANGE COUNTY, NEW YORK**

**Petroleum Bulk Storage Facilities**

FACILITY NAME	LOCATION	MUNICIPALITY
Sunoco #0012-3497	1057 Union Street	Newburgh
Sunoco #0013-1136	307 Broadway	Newburgh
Sunshine Ford Inc.	40 Route 17K	Newburgh
Sylcox Nursing Home	56 Meadow Hill Road	Newburgh
Tastyee Bread	148 S. Robinson Avenue	Newburgh
Temple Hill School	525 Union Avenue	Newburgh
Town Hall	20-26 Union Avenue Extension	Newburgh
U-Haul of Newburgh	300 Windsor Hwy.	Newburgh
U.S. Postal Service	217 Liberty Street	Newburgh
Washington Street AJC	191 Washington Street	Newburgh
Washington's Headquarters	84 Liberty Street	Newburgh
Weller's Auto Repair Inc.	169-175 Mill Street	Newburgh
West Street School	39 West Street	Newburgh
Winona Lake Sunoco	Route 52	Newburgh