

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

Prepared for
Orange County Water Authority
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Groundwater Inventory Map ("GIM")

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

EXECUTIVE SUMMARY

The Pine Bush Water District incorporates the public water supply and distribution system, which serves the Pine Bush area, in the Town of Crawford. Two other community systems serve small residential developments, and incorporate relatively low producing wells. The Pine Bush Water District has three wells, which produce significant amounts of good quality water, according to Town Water Superintendent Thomas McKelvey. The combined maximum yield of the three wells is estimated to be 0.35 mgd, which is adequate to meet present day peak summer demands of 0.15 mgd. With the best producing well, the Blackhawk Well (Groundwater Inventory Map ["GIM"], Well CF-6) out of service, the remaining two wells are capable of meeting the peak summer demands. These two wells, known as the Main Well (GIM, Well CF-4) and the Kelly Well (GIM, Well CF-5), were developed in a sand and gravel aquifer, whereas the Blackhawk Well was developed in a shale aquifer. The yield of all three wells has dropped over the years, and it is anticipated that there will be a water supply deficit before the year 2020.

Frimpter (Frimpter, 1972) estimated that the sand and gravel aquifer located in the Pine Bush area is capable of producing 1 mgd or less of ground-water. This suggests that there may be potential for further development of this aquifer. There presently is insufficient field data for defining the extent of the sand and gravel aquifer, suitable for future development of high yielding wells. No other high producing wells have been identified in the Town of Crawford.

INTRODUCTION

The Orange County Water Authority retained Chumard & Associates to conduct a regional ground-water study for the Town of Crawford. The emphasis of Chumard & Associates' investigation was to:

- ! inventory existing and proposed municipal and community water supplies within the Town;

- ! determine the adequacy of existing and proposed water supplies and their ability to meet present and future demands;
- ! review zoning and land use; and
- ! review existing and potential ground-water contamination problems within the Town, which may effect existing and proposed water supplies.

The Town of Crawford's municipal water system consists of the Pine Bush Water District, which serves the unincorporated hamlet of Pine Bush, and some adjacent areas.

EXISTING WATER SUPPLY SYSTEMS

Pine Bush Water District

Well Supply in Service

Mr. Thomas McKelvey, Water Superintendent, reported that the Pine Bush Water District currently operates three production wells (McKelvey, 1993). Two of these are in sand and gravel aquifers, and the third well is in shale. The locations of these wells are shown on the GIM. The well-yield capacities and available well data are presented on Tables 1 and 2.

Well Supplies Not in Service

Wells 1 and 2 (GIM, Wells CF-1 and CF-2) were installed in 1932 and 1951 respectively, and served the Water District for a number of years. Both were eventually abandoned due to loss of production, although the causes are unclear (McKelvey, 1993). Proposed Well 3 (GIM, Well CF-3) was never constructed. Available well data are shown in Tables 1 and 2.

Proposed Well Supply Not in Service

Presently there are no proposed wells, although preliminary discussions with Town officials have included recommendations for identifying and developing new ground water sources.

**PROPOSED COMMUNITY WATER
SUPPLY SYSTEMS**

There are no proposed community water supply systems in the Town of Crawford.

WATER SUPPLY DEMAND

Pine Bush Water District

The Pine Bush Water District presently has approximately 441 service connections, including residential, commercial, and public service customers.

The estimated average daily water demand is 0.13 mgd (million gallons per day), and the estimated maximum daily demand is 0.15 mgd, as shown in Table 3. This information was obtained from the Water District monthly operating reports. The average daily water demand was calculated from the latest available twelve month period, from September 1992 to September 1993. The maximum daily demand reflects the average daily demand over the highest consecutive three month demand, which occurred in June, July, and August of 1993.

The demand is met by the three wells serving the Water District. The normal mode of operation includes simultaneous operation of the three well pumps, in response to telemetered signals, to maintain desired levels in the water storage tank.

The average and maximum yield capacities of the three (3) wells, as shown in Table 3, are calculated using the sustained safe stabilized pumping yields, as determined by the Water District Superintendent, Thomas McKelvey. These yields, expressed in gallons per minute (gpm) are shown in Table 1. They are 68 gpm, 76 gpm, and 100 gpm, respectively, for the Main Well, Kelly Well, and Blackhawk Well. The average and maximum yield capacities are calculated by considering these safe yields over a 12 hour pumping period, and a 24 hour pumping period, respectively.

Inspection of Table 3 shows that current demands are well below the combined average yield capacities of the three wells. Current average and maximum daily demands can be met with the largest producing well out of service. The maximum yield capacities of the two smallest producing wells, the Main Well, and the Kelly Well, would total 0.207 mgd, which exceeds the current maximum daily demand.

Projected Water Demands

Inspection of Table 4 shows that future water demands are expected to increase steadily. By the year 2020, water demand is projected to be 0.37 mgd, which would be the maximum daily demand. Considering the current maximum yield capacity of

0.35 mgd shown in Table 3, the Pine Bush Water District supply is projected to be adequate beyond the year 2010, but not to the year 2020. However, it must be noted that the present yield of each of the three wells is significantly less than the original yields. This is shown in Table 1. The Main well, for instance, had a demonstrated yield of 500 gpm when first developed in 1968, as compared to the present yield of 68 gpm. This well was redeveloped several years ago, with some resulting small improvement in yield. However, the expected trend is that future yield capacities will be lower than at present.

GEOLOGY

Pine Bush Aquifer

A sand and gravel aquifer at Pine Bush was identified and mapped by Frimpter (Frimpter, 1972), in a report entitled "Ground-Water Resources of Orange and Ulster Counties, New York." The areal extent of the aquifer as shown by Frimpter is approximately 0.8 square miles. It is generally overlain by deposits of silt and clay. Frimpter estimated the total potential yield of the aquifer at 1 mgd or less, and stated that there did not appear to be good hydraulic contact with nearby streams. Frimpter generally characterized the Shawangunk Kill Valley between Otisville and Pine Bush as containing irregular, mixed deposits of glacial outwash and glacial till. There presently is insufficient data to confidently establish the boundaries of the various small aquifers in this region, including the Pine Bush aquifer.

A closer examination of the probable dynamics of glacial movement and glacial deposits in the Pine Bush area is contained in a publication entitled "Pine Bush Geological Field Guide" by Edward Duncanson (Duncanson, 1988). Duncanson identified glacial lakes in the Pine Bush area formed by melt water being trapped and impounded by the retreating glacier and till dams. As these lakes eventually drained as a result of ice melt and breaching of till dams, other lakes subsequently formed downstream, to the north. An outwash island identified by Duncanson covers most of the hamlet of Pine Bush, and is in the same approximate location as the aquifer identified by Frimpter. Furthermore, an area of outwash sand and gravel is shown on a map entitled "Surficial Geologic Map of New York, Lower Hudson Sheet" by Donald H. Caldwell (Caldwell, 1989). This outwash area is

roughly similar in size to the aquifer shown by Frimpter. Its location is slightly northeasterly to that shown by Frimpter, although both include much of the same area.

It should be noted that the Main well and the Kelly well were developed in sand and gravel aquifer; both are located within the aquifer area shown by Frimpter. The Blackhawk well was developed in medium to hard shale, and is located near the boundary, or just outside the boundary of the sand and gravel aquifer.

The Main well was drilled to a depth of 92 feet. Sand and gravel was found below 67 feet. In 1968, the static water level was at 29 feet, and the well produced 500 gpm. The water level has gradually dropped over the years, and is presently below 70 feet. Water is pumped at a rate of 150 gpm although the safe yield is estimated to be 68 gpm (McKelvey, 1993). The Kelly well originally produced 150 gpm. It is being pumped at that rate, but the present safe yield is estimated to be 76 gpm (McKelvey, 1993). We do not have information about historical water levels. McKelvey (McKelvey, 1993) reported that a private well was developed in sand and gravel for a property owner on the south side of Blackhawk Road, in 1991. The well reportedly produces approximately 30 gallons per minute, at a depth of 25 feet.

Bedrock Aquifers

Bedrock geology in the Town of Crawford area is shown on a map entitled "Geologic Map of New York, Lower Hudson Sheet" by Donald Fisher (Fisher, 1970). Most of the Town is underlain by the Austin Glen Formation, from the Ordovician era, consisting of shale and graywacke. A small area in the most northerly section of the Town, including that portion of the Pine Bush hamlet north of Route 52 and generally easterly from Maple Avenue, is underlain by the Martinsburg Formation. This formation is also from the Ordovician era, and generally consists of shale, argillite, and siltstone.

There is insufficient information to establish the limits of any bedrock aquifer. The Blackhawk Well was developed in medium to hard shale, and presently is pumped at and produces 100 gpm, which is its estimated safe yield. It was pump tested at 135 gpm in 1985. The shale layer is found at a depth of 47 feet at this location. A private well recently drilled for a new car wash produced 18 gpm. This well is located

approximately 0.3 miles northeast of the Blackhawk Well. Bedrock of an unknown material was encountered below 76 feet.

LAND USE

Land use in the Town is predominantly residential, with the highest concentration being the Pine Bush area. Most of the commercial land use is in the Pine Bush area, but there also is some commercial activity in the Bullville and Thompson Ridge areas. Industrial land use, other than agriculture related, is light, and mostly confined to the Pine Bush and Bullville areas. Much of the remaining portions of the Town are agriculture, parkland, or undeveloped land. Winding Hills County Park is located along Route 17K, in the Towns of Crawford and Montgomery. The Town park is located along Red Mills Road. There is a U.S. Army Reserve Military Reservation just east of Bullville along Route 17K (Space Track, 1993).

The existing well water supply sources are located in or adjacent to the Pine Bush area, with the highest residential density in the Town. Additional development of ground water sources within the Pine Bush aquifer will be hampered by the extent of land development over the aquifer. Possible well sites that meet Health Department standards of 100 feet radius ownership and 200 feet radius of sanitary control can be found, but must be selectively chosen. Areas of sparse development that may be underlain by a portion of the Pine Bush sand and gravel aquifer might be found southwest of the hamlet, along Route 302 or Blackhawk Road - Ulsterville Road. Possible well sites underlain by the productive shale aquifer that supplies the Blackhawk well might be found in the same general area.

ALTERNATE COUNTY LANDFILL SITES

Orange County has targeted several candidate areas for further study in conjunction with possible future landfill development. Two of these areas, designated as L8 and L12, are situated in the Town of Crawford. Area L8 is generally located in the area between Crawford Street, Gillespie Street and County Road 48. No significant ground-water sources have been reported in the Site L8 area.

Area L12 is generally situated in the area between Wallkill Street, Konefal Avenue, Red Mills Road and Drexel Drive. A spring exists on the DeVries property, which is included in Area L12. The outlet

from this spring flows northerly across L12. The existence of this spring suggests the close proximity of possibly significant ground water reserves that would have an adverse impact on the suitability of Area L12 as a landfill. The approximate location of the spring is shown on the GIM.

WATER QUALITY

Good quality water is produced from all three wells in the Pine Bush Water District. Laboratory analyses of samples from all three wells indicates compliance with chemical drinking water standards. Coliform testing and volatile organics testing also indicate compliance with these standards. There is no treatment provided other than disinfection by chlorination.

Occasional customer complaints of discolored water, tastes, odors, and staining are minimized by periodic flushing of the distribution system. These are problems which typically occur within water distribution systems. The Town is considering the introduction of a sequestering agent to help maintain water quality in the distribution system. Chemical analyses of well water shows manganese levels approaching the 0.3 ppm standard. It is possible that these manganese levels, in conjunction with chlorination, may occasionally contribute to the above mentioned problems (McKelvey, 1993).

INVENTORY OF GROUND-WATER CONTAMINATION PROBLEMS

Existing Ground-Water Contamination Problems

Chumard & Associates reviewed existing known ground-water contamination sites including: New York State Department of Environmental Conservation (NYSDEC) inactive hazardous waste sites; remediation projects (NYSDEC Spill Response); solid waste sites; and Resource, Conservation and Recovery Act (RCRA) sites for the Town of Crawford. The information for this review was provided by Lawler, Matusky and Skelly Engineers (LMS, 1993), who in turn obtained it following a Freedom of Information Law (FOIL) request to the NYSDEC. In reviewing the FOIL response from the NYSDEC, only one (1) site was found that is known to have resulted in any ground-water contamination.

Crawford Town Highway Department - Thompson Ridge

A leaking oil tank affected the well water supply of a residence adjacent to the Town Highway Garage. A household filtration system was installed, and is monitored periodically. Oil concentrations in the raw water have been decreasing (McKelvey, 1993), (LMS, 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).

Several potential ground water contamination sites were identified in the FOIL response from the NYSDEC. These are listed below, along with the Town Sewage Treatment Plant.

Hancock Landfill

This was a Town-operated landfill that was closed in the 1970's. According to Town Supervisor Graham Jamison (Jamison, 1993), only household garbage was transported and deposited there. According to a report titled "Planning and Feasibility Report for Orange County, New York on Solid Waste Disposal" by Glace and Glace, Inc. (Glace, 1968), the landfill site was approximately four acres in size, and situated near the Pakanasink Creek. The site is located on the west side of Gillespie Street, northeast of Bruyn Avenue. Glace & Glace stated that the Health Department objected to the dump out of concern with possible degradation of Pakanasink Creek. No other specific information was found regarding any subsequent concern or evidence of groundwater contamination (LMS, 1993).

Cooper Septic Disposal Lagoon

This is a private disposal facility, located northwest of Route 302, and south of Ulsterville Road. There are two clay lined lagoons, and monitoring wells, according to Town Water and Sewer Superintendent Thomas McKelvey (McKelvey 1993). Mr. McKelvey also is not aware of evidence of contamination.

Middletown Septic

This private seepage hauler maintains a business address on Bullville Road, but the owner stated in a phone conversation that they only dispose of their waste loads in two municipal sewage plants, neither of which is located in the Town of Crawford.

Coutant Road Construction and Demolition Site

According to Town Highway Superintendent Steve Russell (Russell, 1993), there is a construction and demolition (C & D) site along Coutant Road, but it is located in the Town of Wallkill (LMS, 1993).

Pine Bush Equipment Recycling Facility

Mr. Steve Boniface, a principal in the company, stated in a phone conversation that they own and operate equipment to shred and mulch waste wood material, including C & D debris, branches, and other wood items. They also own equipment to facilitate the burning of stumps, which would require a NYSDEC burning permit on a case by case basis. Mr. Boniface stated that there is no other type of recycling done by his company (Boniface, 1993).

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

The FOIL request from the NYSDEC inventoried twenty two petroleum bulk storage sites in the Town of Crawford. These are listed in Table 5.

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

CONCLUSIONS

Average water demand for the Pine Bush Water

District in the Town of Crawford is approximately 0.13 mgd (McKelvey, 1993). Maximum daily demands, during the summer months, are estimate at 0.15 mgd. Maximum daily demands are projected to increase steadily in the future, to an estimated 0.37 mgd by the year 2020.

The three well water supplies for the Water District are capable of meeting present day average and maximum day demands. The maximum yield capacity for the three wells combined is estimated at 0.35 mgd. If the Blackhawk Well (GIM, Well CF-6), the best producing well, was to be taken out of service, the remaining two wells presently are capable of meeting peak summer water demands.

Well yields for all three wells are less than when first developed. Future well yields can be expected to decrease, forcing action by the Town to develop new water sources. Even if the present yields are maintained, a water supply deficit is projected by the year 2020.

It is noted that the sand and gravel aquifer in the Pine Bush area identified by Frimpter (Frimpter, 1972) is roughly similar in areal shape and size as sand and gravel outwash areas identified by Caldwell (Caldwell, 1989) and Duncanson (Duncanson, 1988). Additional field data is required to better define the extent of the sand and gravel aquifer. Frimpter estimated the potential yield of this aquifer at 1 mgd or less. Therefore, there is the potential for further development of ground water sources within this aquifer. The Blackhawk well produces 100 gpm from a shale aquifer; this suggests the potential for further bedrock aquifer development.

No other high producing aquifers or community wells are known to exist in the Town of Crawford.

REFERENCES

Fisher, Donald, Y.W. Isachsen and L.V. Rickard, 1970, "Geologic Map of New York, Lower Hudson Sheet," New York State Museum and Science Service Map and Chart Series No. 15.

Frimpter, Michael H., 1972, Ground Water Resources of Orange and Ulster Counties, New York, U.S. Geological Survey Water Supply Paper 1985.

Lawler, Matusky & Skelly Engineers, October 1993, "Environmental Data Gathering for Community Consultants, Town of Crawford, File No. 677-001.

Caldwell, Donald H., 1989, "Surficial Geologic Map of New York, Lower Hudson Sheet," New York State Museum.

Duncanson, Edward, 1988, "Pine Bush Geological Field Guide," Walden Printing Co., Inc.

Glance & Glance, Inc., 1968, "Planning and Feasibility Report for Orange County, New York on Solid Waste Disposal."

Verbal communications, August - October 1993, Graham S. Jamison, Town Supervisor, Town of Crawford.

Verbal communications, August - October 1993, Thomas McKelvey, Water and Sewer Superintendent, Town of Crawford.

Verbal communications, August - October 1993, Steve Russell, Town Highway Superintendent.

Verbal communication, October - 1993, Steve Boniface, Principal, Pine Bush Equipment.

Space Track, Inc., 1993, "Orange County Landuse Maps."

TABLE 1
REGIONAL GROUND-WATER STUDY
TOWN OF CRAWFORD
ORANGE COUNTY, NEW YORK

Summary of Available Well Data

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
Well # 1 ----- Pine Bush	Crawford 8 ----- 2 ----- 62	Crawford ----- 1	Abandoned -----	2 @ 125 each -----				-----			
Well # 2 ----- Pine Bush	Crawford 8 ----- 2 ----- 62	Crawford ----- 2	Abandoned -----	150 -----				-----			
Proposed Well ----- Pine Bush	Crawford 8 ----- 2 ----- 63.222	Crawford ----- 3	Not Built -----	100 -----							
Main ----- Pine Bush	Crawford 8 ----- 2 ----- 62	Crawford ----- 4	In Service ----- Active	500 ----- 68	93	10	76'-9"	15 -----	Sand & Gravel	1968	24" Outer Cas- ing

Kelly ----- Pine Bush	Crawford 8 ----- 2 ----- 63.221	Crawford d ----- 5	In Service ----- Active	175 ----- 76	58	8			Sand & Gravel	1956	
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gpm - Gallons per minute. NA-Not available. Well Status: In service active; In service-stand by; Inactive-equipped; Inactive-not equipped; Abandoned

TABLE 1 (Continued)
REGIONAL GROUND-WATER STUDY
TOWN OF CRAWFORD
ORANGE COUNTY, NEW YORK

Summary of Available Well Data

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
Blackhawk ----- Pine Bush	Crawford 8 ----- 2 ----- 83	Crawford rd ----- 6	In Service ----- Active	135 ----- 100	205	8	51'		Shale	1985	

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

TABLE 2
REGIONAL GROUND-WATER STUDY
TOWN OF CRAWFORD
ORANGE COUNTY, NEW YORK

Summary of Well Yield Capacities

Well ----- Water District	WSA No. ----- Permitted Yield (gpm)	Average Yield Capacity (gpm) ----- (gpd)	Maximum Yield Caacity (gpm) ----- (gpd)	Comments
Well 1 ----- Pine Bush	602 ----- 2 @ 125	-----	-----	Abandoned
Well 2 ----- Pine Bush	2008 ----- 150	-----	-----	Abandoned
Well 3 ----- Pine Bush	2846 ----- 100	-----	-----	Not Built
Main 4 ----- Pine Bush	5538 ----- 250	68 ----- 48960	68 ----- 97920	WSA #5648 Yield increased to 500 gpm.
Kelly 5 ----- Pine Bush	3122 ----- 150	76 ----- 54720	76 ----- 109440	
Blackhawk 6 ----- Pine Bush	7720 ----- 135	100 ----- 72000	100 ----- 144000	
TOTALS	(Total Permitted Yield) * ----- 785	(Total Yield Capacity) 244 ----- 175680	(Total Maximum Yield Capacity) 244 ** ----- 351360	

gpm - Gallons per minute. gpd - Gallons per day. WSA No. - Water Supply Application Number.

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* Permitted yield figured on Wells 4, 5, and 6 using WSA #5648 for Well #4.

** Average yield capacity is figured over 12 hour pumping period and maximum yield capacity is figured over 24 hour pumping period.

TABLE 4
REGIONAL GROUND-WATER STUDY
TOWN OF CRAWFORD
ORANGE COUNTY, NEW YORK

Project 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**
Pine Bush	0.35	0.35	0.15 ----- + 0.200**	0.179 ----- + 0.171**	0.255 ----- + 0.095**	0.368 ----- - 0.018**
TOTAL	0.35	0.35	0.15 ----- + 0.200**	0.179 ----- + 0.171**	0.255 ----- + 0.095**	0.368 ----- - 0.018**

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.

+ Surplus water supply, mgd.

- Water supply deficiency (mgd).

COMMENTS:

! Future water supply adequacy expected to be less than shown; well yields can be expected to decline.

TABLE 3
REGIONAL GROUND-WATER STUDY
TOWN OF CRAWFORD
ORANGE COUNTY, NEW YORK

Summary of Water-Supply Source

Existing Source

	Water District	Ground Water (mgd)
Current Average Daily Water Demand	Pine Bush	0.13
Current Maximum Daily Water Demand		0.15
Maximum Yield Capacity		0.35
Average Yield Capacity		0.17
Proposed Sources (Average Day)		
TOTAL MAXIMUM YIELD CAPACITY (MGD) = -----		0.35 -----
CURRENT MAXIMUM DAILY USE (MGD) =		0.15

mgd - Million gallons per day.

COMMENTS

- ! Maximum yield capacity estimated by considering present yield of the three (3) wells for a 24-hour period.
- ! Average yield capacity figured over a twelve (12) hour period.
- ! See Table 1 for present yields

TABLE 5
REGIONAL GROUND-WATER STUDY
TOWN OF CRAWFORD
ORANGE COUNTY, NEW YORK

Petroleum Bulk Storage Facilities

Facility Name	Location	Municipality
5 Corners Super Deli	Rt. 17K & Rt. 302	Bullville
Bullville USARC	Route 17K	Bullville
James A. Detch	Box 111, Burlingham Rd.	Bullville
Veo Express Lane	Route 17K	Bullville
Woodards Concrete Products Inc.	Box 8, Lybolt Road	Bullville
Pine Bush Elementary School	Ulsterville Road	Crawford
B & C Fuel Oil Co., Inc.	Route 52	Pine Bush
Church of the Infant Savior	Holland Avenue	Pine Bush
Crispell Middle School	Route 302	Pine Bush
D. Gilbert Couser Farm	Box 426, Drexel Drive	Pine Bush
E. J. Russell Elementary School	Holland Avenue	Pine Bush
Frank Jackowski	Box 399 RD 1, Searsville Rd.	Pine Bush
Gateway Travel Trailer Sales	P.O. Box 601, Rt. 52	Pine Bush
Getty #58802	Rt. 52 & Rt. 302	Pine Bush
Marl Brothers Inc.	Depot St., PO Box 697	Pine Bush
Pine Bush Citgo	Rt. 52 & New Street	Pine Bush
Pine Bush Equip. Co., Inc.	Route 302	Pine Bush

TABLE 5 (Continued)
REGIONAL GROUND-WATER STUDY
TOWN OF CRAWFORD
ORANGE COUNTY, NEW YORK

Petroleum Bulk Storage Facilities

Facility Name	Location	Municipality
Pine Bush High School	Route 302	Pine Bush
Scottal Ltd.	Main Street	Pine Bush
Stewart's Ice Cream Co. Inc. 290	Corner Main Street & Boniface Drive	Pine Bush
Young's Auto Wrecker, Inc.	Main Street/Rt. 52	Pine Bush
Town/Crawford Highway Dept.	P.O. Box 70, Co. Rt. 17	Thompson Ridge