

PHASE I INVESTIGATION REPORT
BEDFORD VILLAGE WELLS
BEDFORD (T), WESTCHESTER COUNTY, NEW YORK

JUNE 1983

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1.0 BRIEF DESCRIPTION OF SITE

BEDFORD VILLAGE WELLS
Route 22 and Court Road
Bedford (T) Westchester County, New York

In 1978, the Westchester County Health Department began a monitoring program of drinking water wells in the vicinity of present and past dry cleaning establishments. In April of 1979, samples of several wells were collected and analyzed. These wells are located in the business district of Bedford Village where a dry cleaner was alleged to have been located several years ago in the arcade building. The results of this testing program revealed that three wells were contaminated with varying amounts of tetrachlorethylene (11 to 470 PPB) and trichloroethylene (2 to 80 PPB). The wells are located in the Bedford Theatre Building, the Bedford Shopping Arcade, and an Exxon Gasoline Station.

Initially, all three wells were placed under "boil water" notices by the Health Department. However, the most recent monitoring shows that only the Shopping Arcade well has unacceptable levels of tetrachloroethylene. As a result only the Shopping Arcade is currently under a "boil water" notice.

There has been no attempt to remediate the contamination other than the "boil water" notices and periodic monitoring of the wells by the Health Department.

5.0 SITE HISTORY

In 1978 the Westchester County Health Department became aware of potential drinking water problems in areas in the County where present and past dry cleaning establishments have been located. An investigative program was established where numerous well samples were collected throughout the County. The results of the investigation revealed contaminated wells in Katonah Village located in the Town of Bedford, Armonk Village located in the Town of North Castle, and Bedford Village located in the Town of Bedford. The sources of the contamination, although unidentified, are suspected to be present and past dry cleaning establishments which disposed of wastewaters into septic systems.

The Armonk and Bedford Village situations both involve private well contamination. The wells in question have been issued "boil water" orders and are periodically sampled by the Health Department.

The Bedford Village wells are located in the business district where a dry cleaner was alleged to have been located several years ago in the arcade building. The results of this testing program first revealed that in April of 1979, three wells were contaminated with varying amounts of tetrachloroethylene (11 to 470 PPB) and trichloroethylene (2 to 80 PPB). The wells are located in the Bedford Theatre Building, the Bedford Shopping Arcade, and an Exxon Gasoline Station.

Initially, all three wells were placed under "boil water" notices by the Health Department. However, the most recent monitoring shows that only the Shopping Arcade well has unacceptable levels of tetrachloroethylene. As a result only the Shopping Arcade is currently under a "boil water" notice. The Health Department continues to conduct periodic monitoring of the affected wells.

6.0 SITE INFORMATION

6.1 SITE TOPOGRAPHY

The Bedford Village wells are located on Route 22 and Court Road in the Town of Bedford, Westchester County, New York. Bedford Village is located in eastern Westchester County and is situated approximately 3.5 miles north of the Connecticut border.

Topographically, the Bedford Village is situated in an area characterized by northeast-trending ridges with scattered low-lying valleys. Drainage from the Bedford Village area flows south-southeast eventually entering the Mianus River. The Mianus River flows south and eventually feeds into the Mianus Reservoir which supplies drinking water to the Stamford, Connecticut area.

6.2 SITE HYDROGEOLOGY

The bedrock in the vicinity of Bedford Village is composed of schist, which occurs in the northern portion of the Village, and metamorphosed limestone or marble occurring to the south of the Village. Schist, which occupies over one-third of Westchester County, is typically a dark-grey, coarse grained, crystalline rock that has become a principal water-bearing aquifer in the area. Marble is less widespread, however, due to the development of large fractures and solution cavities (caves) and is, in some areas, the most prolific aquifer in the County.

Unconsolidated deposits overlying the bedrock vary in thickness from less than 20 feet to over 75 feet in some areas. Sand and gravel deposits occur in the valleys of the Stone Hill River west of the Village and the Mianus River which flows just south of the Village. Data obtained from several wells in the area indicate the outwash is of limited areal extent and is overlain by deposits of clay and silt which is probably organic due to the poor drainage of the streams.

Little information was obtained regarding the elevation or direction of ground-water flow. The surface topography indicates the Village is near a drainage divide between the Stone Hill and Mianus Rivers. This would indicate that the site is a ground-water recharge area. A small conical-shaped hill separates the Village from the north flowing Stone Hill River, however, and thus local ground-water flow is probably to the south into the outwash deposits associated with Mianus River.

6.3 PAST SAMPLING AND ANALYSIS PROGRAMS

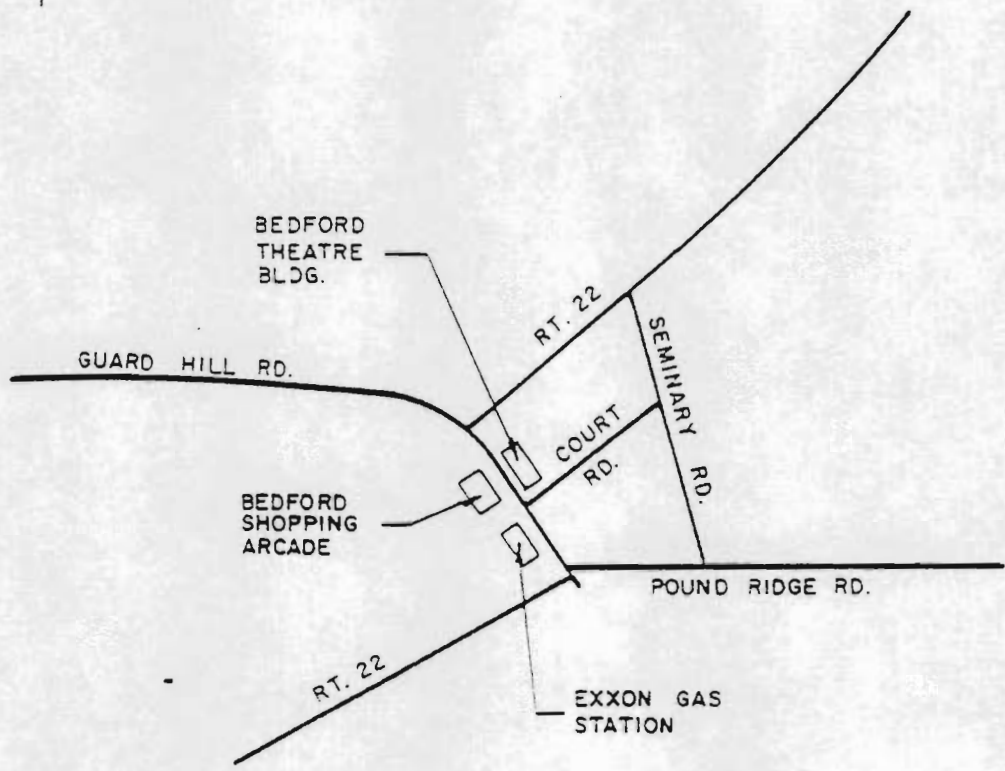
As indicated previously in this report, the Westchester County Health Department has conducted sampling and analysis of the three contaminated wells in Bedford Village on numerous occasions. Copies of all analytical results are contained in Appendix B.

In summary, the results of samples collected during the period of 1979 to 1982 at the three wells show the following range of values in parts per billion:

<u>Well Location</u>	<u>Contaminant</u>	<u>Range (PPB)</u>
Bedford Theatre	Trichloroethylene	8-13
	Tetrachloroethylene	20-60
Bedford Shopping Arcade	Trichloroethylene	22-80
	Tetrachloroethylene	120-420
Exxon Gas Station	Trichloroethylene	2-48
	Tetrachloroethylene	11-130

As can be seen from the above data, the Bedford Shopping Arcade well which is the alleged former location of a dry cleaning establishment, exhibits the highest concentrations of contaminants. Currently, the Arcade is the only well of the three remaining on a "boil water" notice from the Health Department. The Westchester County Health Department has performed extensive monitoring to identify this problem. However, due to the complexity and changing nature of such ground-water contamination

situations, it is extremely difficult to conduct a cost effective monitoring program for all potentially affected wells in the area. Monitoring of the contamination is still being conducted by the WCHD, however, it is only right to point out that the possibility exists for contamination above recommended standards to occur between sampling periods.



BEDFORD VILLAGE WELLS

FIGURE 2 - SITE SKETCH
(M.T.S.)

APPENDIX A



ANDREW P. O'ROURKE
County Executive

DEPARTMENT OF HEALTH

ANITA S. CURRAN, M.D., M.P.H.
Commissioner

Kevin M. Burger, Senior Scientist
Wehran Engineering
666 East Main Street
Middletown, New York 10940



Dear Kevin:

As discussed during our telephone conversation on May 26, 1983, the Westchester County Health Department wishes to make several comments concerning Phase I and II work related to superfund sites in this county.

Since the existing volume of information available for the three sites in Westchester is already quite large, it would appear that resources would be better utilized on the direct development of remedial actions at these sites rather than on further investigative efforts such as the drilling of exploratory wells to define contaminant plumes. The installation of GAC filtration or similar treatment to restore drinking water quality at these well sites is recommended.

Although the Katonah well is currently not in service due to the presence of chemical contamination, the town would like to put the well back into operation as a source of public water supply. A GAC treatment system would appear to be the best remedial measure.

Regarding the cluster of contaminated wells in downtown Armonk, the development of a small localized water supply to serve this area or the installation of individual water treatment units in association with the formation of a municipal maintenance district to operate and maintain the equipment would be appropriate.

In the case of the Bedford Village well, individual treatment would seem most suitable.

We hope that these comments can be incorporated into Wehran's Phase I report to the New York State Department of Environmental Conservation.

ESH:hr

cc: Calvin E. Weber, P.E. (BEQ)
J. Karell, P.E. (BEQ)
L. Kaplan, P.E., T. Eng., Twn.No.Castle
D. Crotty, P.E., T. Eng., Twn.Bedford
File

Very truly yours,

Liz Hendrick
Elizabeth S. Hendrick
Program Administrator
Bureau of Environmental Quality

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION

Code: 360006

Site Code: B

Name of Site: Bedford Village Region: 3

County: Westchester Town/City: Bedford

Street Address: Route 22, Bedford Village and Court Pond

Status of Site Narrative:

Halo-organics were discovered in three wells in 1978. Tetrachloroethylene and Trichloroethylene were found in the wells at a gas station, a shopping arcade and a theater building (public well).

Type of Site: Open Dump
 Landfill
 Structure

Treatment Pond(s)
 Lagoon(s)
 wells

Number of Ponds _____
 Number of Lagoons _____

Estimated Size 10 Acres

Hazardous Wastes Disposed? Confirmed Suspected

*Type and Quantity of Hazardous Wastes:

TYPE	QUANTITY (Pounds, drums, tons, gallons)
<u>Tetrachloroethylene</u>	<u>300 ppb in groundwater</u>
<u>Trichloroethylene</u>	<u>56 ppb in groundwater</u>

* Use additional sheets if more space is needed.

Name of Current Owner of Site: UNITED Artists Theatre Inc.

Address of Current Owner of Site: 2545 Hempstead Turnpike.

East Meadow Long Island, N.Y.

Time Period Site Was Used for Hazardous Waste Disposal:

Unknown . 19 . To . 19

Is site Active Inactive
(Site is inactive if hazardous wastes were disposed of at this site and site was closed prior to August 25, 1979)

Types of Samples: Air Groundwater None
Surface Water Soil *Wells*

Remedial Action: Proposed Under Design
In Progress Completed
Nature of Action:

Status of Legal Action: None State Federal

Permits Issued: Federal Local Government SPDES
Solid Waste Mined Land Wetlands Other

Assessment of Environmental Problems:
The groundwater is in contravention of Section 703.5, which constitutes a significant threat to the environment.

Assessment of Health Problems:
Wells are in service and under "Boil Water" Notice. The water ~~is~~ must be treated prior to consumption.

Persons Completing this Form:
Colvin Weber - W.C.H.D.
Richard Gardner - DEC - Reg 3

New York State Department of Environmental Conservation
Date 12/29/82
New York State Department of Health

36000 - BEDFORD VILLAGE
TOWN: BEDFORD
QUAD: MT KISCO
OWNER: UNITED ARTISTS THEATER INC
ADDRESS: 15-35 HAMPSHIRE TRYE
EAST MEADOW, L.I.C., N.Y. 11554

APPENDIX B

SPECIAL SAMPLING RECORD

Bedford Theater BLDG
Name

Address

Bedford MA
Municipality

Type supply COMM. PWS

Facilities served Butcher / Suler Restaurant, Flower Shop Theater
#20 APTS, LIQUOR STORE

Correspondence

<u>Date</u>	<u>Summary</u>
5/8/81	boil water tetrachloroethylene
7/15/82	remove boiled water require 2x/yr. sampling

SAMPLE RESULTS

<u>Location</u>	<u>Date</u>	<u>Trichloroethylene</u>	<u>Tetrachloroethylene</u>	<u>Others</u>
	5/14/79	9	46	
	6/12/79	9	60	
	12/14/79	13	58	
	7/25/80	9	30	
	8/24/81	8.8	49	
	8/25/81	11	54	
	3/8/82	11	38	
	3/18/82	9	35	
	6/7/82	8	20	4

CIS 12

SPECIAL SAMPLING RECORD

Bedford Arcade Bldg _____ Bedford VT
Name Address Municipality

Type supply Non corrosive PWS

Facilities served _____

Correspondence

<u>Date</u>	<u>Summary</u>
12/20/79	boil water - Tetrachloroethylene
9/19/80	" " "
4/20/81	" " "
7/13/82	" " condenser

SAMPLE RESULTS

<u>Location</u>	<u>Date</u>	<u>Trichloroethylene</u>	<u>Tetrachloroethylene</u>	<u>Others</u>
	4/18/79	56	300	
	6/12/79	54	310	
	11/25/79	33	420	
	7/25/82	29	190	
	3/24/81	81	470	
	6/21/82	22	120	51

CIS 1-2

SPECIAL SAMPLING RECORD

Bedford Exxon

Route 22

Bedford (T)

Name

Address

Municipality

Type supply private

Facilities served gas station

Correspondence

<u>Date</u>	<u>Summary</u>
10/20/79	boil water tetrachloroethylene
9/29/80	removed boil water WMS
8/3/82	OK

SAMPLE RESULTS

<u>Location</u>	<u>Date</u>	<u>Trichloroethylene</u>	<u>Tetrachloroethylene</u>	<u>Others</u> ^{CIS/02}
	5/14/79	8	32	
	11/14/79	48	130	
	7/25/80	2	12	
	7/13/82	7.5	29	20
	3/24/82	5.3	11	

APPENDIX C

HAZARDOUS WASTE DISPOSAL SITES REPORT
 NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION

47-15-11(2/80)

Code: 360006

Site Code: B

Name of Site: BEDFORD VILLAGE WELLS Region: 3

County: WESTCHESTER Town/City BEDFORD

Street Address ROUTE 22, BEDFORD VILLAGE, N.Y.

Status of Site Narrative:

PRIVATE DRINKING WATER WELLS CONTAMINATED WITH VARIOUS HALOGENATED SOLVENTS. MOST RECENT MONITORING SHOWS ONLY ONE WELL HAVING UNACCEPTABLE LEVELS OF CONTAMINATION. THIS WELL IS LOCATED IN THE BEDFORD VILLAGE SHOPPING ARCADE. NUMEROUS WELLS IN THE AREA HAVE SHOWN TRACE LEVELS OF THE CONTAMINANTS.

Type of Site: Open Dump Treatment Pond(s) Number of Ponds _____
 Landfill Lagoon(s) Number of Lagoons _____
 Structure PRIVATE WELLS

Estimated Size < 10 Acres

Hazardous Wastes Disposed? Confirmed Suspected

*Type and Quantity of Hazardous Wastes:

TYPE	QUANTITY (Pounds, drums, tons, gallons)
<u>TRICHLOROETHYLENE</u>	<u>RANGE 2-70 PPB</u>
<u>TETRACHLOROETHYLENE</u>	<u>11-420 PPB</u>
_____	_____
_____	_____
_____	_____

* Use additional sheets if more space is needed.

Name of Current Owner of Site: UNITED ARTISTS THEATRE INC.

Address of Current Owner of Site: 2545 HEMPSTEAD TURNPIKE
EAST MEADOW, L.I. N.Y. 11554

Time Period Site Was Used for Hazardous Waste Disposal:
N.A. , 19 To , 19

Is site Active Inactive
(Site is inactive if hazardous wastes were disposed of at this site and site was closed prior to August 25, 1979)

Types of Samples: Air Groundwater None
Surface Water Soil (WELLS)

Remedial Action: Proposed Under Design
In Progress Completed
Nature of Action: NONE IN PROGRESS

Status of Legal Action: NONE State Federal

Permits Issued: Federal Local Government SPDES
Solid Waste Mined Land Wetlands Other

Assessment of Environmental Problems: NONE
CONTAMINATION OF DRINKING WATER AQUIFER WITH HALOGENATED
ORGANIC SOLVENTS

Assessment of Health Problems:
POTENTIAL HEALTH PROBLEMS MAY BE INCURRED BY PERSONS
CONSUMING THE WATER WITHOUT BOILING IT.

Persons Completing this Form:
KEVIN M. BURGER

WELTRAN ENGINEERING JUNE 1983

New York State Department of Environmental Conservation

New York State Department of Health

Date