New York State Department of Environmental Conservation
Division of Environmental Remediation
Bureau of Hazardous Site Control

ADDITIONS/CHANGES TO REGISTRY: SUMMARY OF APPROVALS

SITE NAME: BEDFORD VILLAGE WELLS - SHOPPING ARCADE   DEC I.D. NUMBER 360006

Current Classification 2   Volunteer Yes ___ No ___
Sign (7) below

Activity: [ ] Add as Class ___   [x] Reclassify to 4   [ ] Delist Category ___   [ ] Modify ___

Approvals:

		Yes	No	Date
1.	Regional Hazardous Waste Engineer	x		2/11/02
2.	BEEI of NYSDOH	x		4/5/02
3.	DEE	x		2/6/02
4.	[illegible] Remediation Action Bureau Director [Class 2]			1/18/02
5.	BHSC - Investigation Section	x		4/2/02
6.	BHSC - O&M Section [Class 4]	x		6/28/02

7. BPM - Brownfield & Voluntary Cleanup Section ______ Date ______

8. Site Control Section [signature] Date 7/16/02

9. Director [signature] Date 7/16/02

Completion Checklist for Registry Sites

		Completed By: Initials	Date
OWNER NOTIFICATION LETTER?	✓		7-22-02
ADJACENT PROPERTY OWNER NOTIFICATION LETTER?	✓		8-7-02
ENB/LEGAL NOTICE SENT? (For Deletion Only)	[ ]		
COMMENTS SUMMARIZED/PLACE IN REPOSITORY / FINAL NOTIFICATION SENT TO OWNER? (For Deletion Only)	[ ]		

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION
DIVISION OF ENVIRONMENTAL REMEDIATION

SITE INVESTIGATION INFORMATION

1. SITE NAME	2. SITE NUMBER	3. TOWN/CITY/VILLAGE	4. COUNTY
Bedford Village Wells - Shopping Arcade	3-60-006	Bedford	Westchester

5. REGION	6. CLASSIFICATION
3	CURRENT [2] PROPOSED [4] MODIFICATION

7. LOCATION OF SITE (Attach U.S.G.S. Topographic Map showing site location)

a. Quadrangle- Mount Kisco b. Site Latitude- 41° 12' 16" Site Longitude- 73° 38' 41"

c. Tax Map Number(s)- 84.07 - 1 - 10 d. Site Street Address- 644 to 656 Old Post Road and Vicinity

8. BRIEFLY DESCRIBE THE SITE (Attach site map showing disposal/sampling locations)

The site is a shopping center that formerly contained a dry cleaner. In 1978, the Westchester County Department of Health (WCDOH) tested private wells near the site and detected volatile organic compounds (VOCs) in these wells. The source of contamination was traced to this site and the site was listed on the Registry in 1983. A RI/FS was conducted in 1987-1989 and a ROD was issued in 1990. The remedy in the ROD included extraction and treatment to remediate contaminated groundwater and creation of a new community water supply to supply homes and businesses affected by the contamination. In 1991, the Town of Bedford was given the opportunity to purchase the Farms water supply and extend the distribution system to properties that were affected by site-related contaminants. This option was not available in 1990. The NYSDEC provided funds to purchase the Farms water supply well, install a second supply well, expand the capacity of the pump house, and complete the distribution system. After the public water supply was completed in 1997, low levels of VOCs were detected in the Farms wells. As a precautionary measure, the NYSDEC provided funds to install an air stripping tower in 1998 to remove any VOCs from the water supply before the water is distributed to the public. Groundwater monitoring has been performed since 1997 and has exhibited decreasing VOC concentrations.

a. Area- 10 acres b. Completed: ( ) Env. Property Assessment ( ) PSA ( ) SI ( ) ESI ( ) IRM (X) RI/FS (X) Construction ( ) O&M
() Other-

9. HAZARDOUS WASTE DISPOSED (Include EPA Hazardous Waste Numbers)

F002 Tetrachloroethylene

10. ANALYTICAL DATA AVAILABLE

a. ( ) Air (X) Groundwater (X) Surface Water ( ) Sediment ( ) Soil ( ) Waste ( ) Leachate ( ) EPTox ( ) TCLP
b. Contravention of Standards or Guidance Values: Groundwater standards were contravened.

Highest detections in groundwater samples:

Contaminant	1988 Concentration (ug/l)	2001 Concentration (ug/l)	GA Standard(ug/l)
Tetrachloroethylene (PCE)	210	130	5
Trichloroethylene (TCE)	71	58	5
Dichloroethylene (DCE)	520	17	5
Vinyl Chloride (VC)	22	6	2

Note that TCE, DCE and VC are breakdown products of PCE. In 2001, only one monitoring well had total VOC concentrations exceeding 100 ug/l.

11. CONCLUSION

Since all affected homes and businesses have been connected to the public water supply, the site is no longer a threat to human health. The WCDOH will continue to sample private wells still in use near the sites. The NYSDEC will connect any additional properties to the public water supply if their private wells are affected by site-related contaminants above drinking water standards. Total VOC concentrations have decreased since 1988. Due to the concentrations of total VOCs that are present in the groundwater at this site, it would not be efficient or cost effective to implement extraction and treatment or any other active groundwater remediation technology at this site. Since the extraction and treatment remedy will not be implemented and no additional remediation will be performed, the reclassification to "4" is justified.

a. Institutional Controls (IC) Required? ( ) Y (X) N b. If yes, identify c. Are these ICs in place and verified? ( ) Y ( ) N

12. SITE IMPACT DATA

a. Nearest Surface Water: Distance- 500 ft.	Direction- Northeast	Class- C			
b. Groundwater: Depth- 3 to 34 ft.	Flow Direction- Northeast	(X) Sole Source	( ) Primary	( ) Other High-Yield Aquifer	
c. Water Supply: Distance- 0.5 mi.	Direction- Southwest	Active (X) Yes	( ) No		
d. Nearest Building: Distance- 40 ft.	Direction- Southeast	Use- Former Gasoline Service Station			
e. Documented fish or wildlife mortality?	( ) Y	(X) N	h. Exposed hazardous waste?	() Y	(X) N
f. Impact on special status fish or wildlife resource?	( ) Y	(X) N	i. If proposed Classification is 2, Priority?	( ) 1 ( ) 2	( ) 3
g. Controlled Site Access?	( ) Y	(X) N	j. EPA ID# NYD980780704	HRS Score	

13. SITE OWNER'S NAME	14. ADDRESS	15. TELEPHONE NUMBER
1) Lashins Arcade Company 2)	1) 80 Business Park Drive, Armonk, New York 10504	(914) 273-5200

16. PREPARER	17. APPROVED
Jeffrey Dyber January 18, 2002	Robert L Marino 7/16/02
Signature Date	Signature Date
Jeffrey Dyber, Acting Chief, Section A, Bureau of Eastern Remedial Action	Robert L. Marino Director BHSC
Name, Title, Organization	Name, Title, Organization

STATE OF NEW YORK
DEPARTMENT OF HEALTH

Flanigan Square, 547 River Street, Troy, New York 12180-2216

Antonia C. Novello, M.D., M.P.H., Dr.P.H.
Commissioner

Dennis P. Whalen
Executive Deputy Commissioner

APR 12 2002

April 5, 2002

Mr. Robert Marino
Division of Environmental Remediation
NYS Dept. of Environmental Conservation
625 Broadway
Albany, New York 12233-7014

RE: **Reclassification Package**
Bedford Village Wells – Shopping Arcade
Site ID #360006
Bedford/Westchester County

Dear Mr. Marino:

Staff have reviewed the Registry Site Investigation Information Form and supporting documentation for the proposed reclassification of the above referenced site (i.e., from Class 2 to Class 4) on the Registry of Inactive Hazardous Waste Disposal Sites. According to the information reviewed and in accordance with the February 2002 Amended Record of Decision for the site, reclassification to Class 4 is justified. A public water supply has been constructed and all affected residences and businesses have been connected to public water. Properties in the vicinity of the affected area that continue to utilize private wells will continue to be periodically tested by the Westchester County Department of Health. A long-term groundwater monitoring program will be implemented for the site and will continue until such time that groundwater standards are achieved for site-related contaminants.

With these provisions, I concur with the proposal to reclassify the site to Class 4. If you should have any questions, please contact Mr. Geoffrey Laccetti or me at (518) 402-7880.

Sincerely,

Gary A. Litwin, Director
Bureau of Environmental Exposure Investigation

cc: Dr. G.A. Carlson
Mr. G. Laccetti/File
Mr. C. Torres - WCDOH
Mr. S. Ervolina – DEC
Mr. R. Pergadia – DEC, Reg. 3

P:\Bureau\Sites\Region_3\Westchester\360006\Reclass4.doc

New York State Department of Environmental Conservation
625 Broadway, Albany, New York 12233-7015

Erin M. Crotty
Commissioner

MEMORANDUM

TO: Dennis Farrar, Chief, Site Control Section, Bureau of Hazardous Site Control
FROM: Jeffrey Dyber, Acting Chief, Section A, Bureau of Eastern Remedial Action
SUBJECT: Bedford Village Wells - Shopping Arcade, Site No. 360006

DATE: January 18, 2002

Attached is the reclassification package for the above mentioned site. The package proposes that the site be reclassified from a Class 2 to a Class 4. The approved Proposed ROD Amendment is included as an attachment to the package. Please process the package and let me know if there are any comments. If you have any questions, do not hesitate to contact me at 402-9621.

cc: w/o attachment
File
Daybook

via e-mail
C. Vasudevan
C. Manfredi, Region 3
R. Pergadia, Region 3

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION
Division of Environmental Remediation

Inactive Hazardous Waste Disposal Report

Site Name: **Bedford Village Wells- Shopping Arcade** **Site Code:** **360006**
Class Code: **4** Region: **3** County: **Westchester** EPA Id: **NYD980780704**
Address: **Vicinity of Old Post, Court and Torleton Roads / Bedford, NY 10506**
Latitude: **41° 12' 17"** Longitude: **73° 38' 39"**
Site Type: **Dump** Estimated Size: **10 Acres**

Site Owner / Operator Information:
Current Owner(s) Name: **Lashens Arcade Company**
Current Owner(s) Address: **80 Business Park Drive / Armonk, NY 10504**
Owner(s) during disposal: ***** Multiple Site Owners *****
Operator(s) during disposal: **unknown**
Stated Operator(s) Address:
Hazardous Waste Disposal Period: **From: pre 1979 To: unknown**

Site Description:
This is a commercial and historic area in the Hamlet of Bedford Village. Properties are served by on-site sewage disposal systems and wells. Commercial use of the land varies. The area includes an apartment building. Affected wells are non-community water supplies that serve a shopping arcade and a theatre/apartment building. A gas station well is also affected. Volatile organic compounds (VOCs) were detected in various concentrations in 1978 and are still present. A dry cleaning shop, reported to have been located in the shopping arcade, now relocated, is believed to have been the major user of tetrachloroethylene in the area. The shopping arcade is served by an on-site subsurface disposal system. The wells are contaminated by an unknown source. Phase I and II Investigations have been completed. A State funded Remedial Investigation/Feasibility Study (RI/FS) has been completed. The Record of Decision called for immediate provisions for carbon filters on affected wells, development of a permanent water supply, and a pump and treat system for the groundwater. The water supply system is installed and operating. An air stripper was added to the water supply well in 1998. Four years of groundwater sampling continues to demonstrate decreasing levels of contamination in downgradient wells. A ROD amendment has been issued deleting the extraction and treatment remedy and proposes the reclassification of the site to a Class 4.

Confirmed Hazardous Waste Disposal:
Tetrachloroethylene (PCE) (F002)

Quantity:
unknown

Analytical Data Available for: **Groundwater**
Applicable Standards Exceeded in: **Groundwater** **Drinking Water**
Geotechnical Information:
Soil/Rock Type: **Clay, silt, and gravel.**
Depth to Groundwater: **Range: 1 to 35 feet.**

Legal Action: Type: Status:
Remedial Action: **Complete** Nature of action: **New public water supply.**

Assessment of Environmental Problems:
Since all affected homes and businesses have been connected to the public water supply, the site no longer presents a threat to human health.

Assessment of Health Problems:
The public health concern associated with this site is the use of water from contaminated wells. Residences and businesses that had wells with contaminant concentrations above New York State Drinking Water Standards have been provided public water. Prior to this, the affected locations had been provided with granular activated carbon (GAC) treatment systems along with water quality monitoring. Treatment to remove VOCs has been added to the public supply wells to ensure that site-related contaminants do not affect the community. A long-term monitoring plan for private wells, begun in January 1998, will ensure that groundwater users are protected from residual groundwater contamination.

New York State Department of Environmental Conservation
625 Broadway, Albany, New York 12233-7015

Erin M. Crotty
Commissioner

MEMORANDUM

TO: Michael O'Toole, Director, Division of Environmental Remediation
FROM: Salvatore Ervolina, Assistant Director, Division of Environmental Remediation
SUBJECT: Bedford Village Wells Proposed ROD Amendment, Site Nos. 360006 & 360009

DATE: DEC - 4 2001

Attached is the Proposed ROD Amendment for the Bedford Village Wells sites. Remedial Section A of the Bureau of Eastern Remedial Action is the technical lead. A Proposed ROD Amendment Summary Sheet is attached. A public meeting is scheduled for December 19, 2001.

Attached is the NYSDOH approval letter. I recommend that you approve the Proposed ROD Amendment.

Attachments

OK
MM
12/4/01

DECLARATION FOR THE RECORD OF DECISION

SITE NAME AND LOCATION

Bedford Village Wells, Shopping Arcade Site, Town of Bedford, Westchester County, New York - Site ID #360006.

STATEMENT OF BASIS AND PURPOSE

This decision document presents the selected remedial action for the Shopping Arcade Site, developed in accordance with the New York State Environmental Conservation Law (ECL), and is consistent with the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA), 42 USC Section 9601, et seq., as amended by the Superfund Amendments and Reauthorization Act of 1986 (SARA).The attached index identifies the documents that comprise the Administrative Record for the Shopping Arcade Site. The documents in the Administrative Record are the basis for the selected remedial action.

ASSESSMENT OF THE SITE

Actual or threatened releases of hazardous substances from this site, if not addressed by implementing the response action selected in this Record of Decision, present a current or potential threat to public health, welfare, or the environment.

STATEMENT OF BASIS

This decision is based on the administrative record for the Shopping Arcade Site. A copy of the record is available for public review and/or copying at the following locations:

New York State Department of Environmental Conservation, 50 Wolf Road, Albany, New York. Hours: 8:30 a.m. - 4:45 p.m., Monday - Friday.

New York State Department of Environmental Conservation Region 3 Office, 21 South Putt Corners Road, New Paltz, New York. Hours: 8:30 a.m. - 4:30 p.m., Monday - Friday

Bedford Free Library, Village Green, Bedford, New York

Bedford Hills Free Library, Main Street, Bedford Hills, New York

Bedford Town Clerk, Town House, Rt. 117, Bedford Hills, New York

DECLARATION

The selected remedy is designed to be protective of human health and the environment, is designed to comply with applicable State environmental quality standards and is cost effective. This remedy satisfies the Department's preference for treatment that reduces the toxicity, mobility or volume of hazardous substances, pollutants or contaminants as the principal goal.

Date

Edward O. Sullivan
Deputy Commissioner
Office of Environmental Remediation

New York State Department of Environmental Conservation
625 Broadway, Albany, New York 12233-7015

Erin M. Crotty
Commissioner

CONFIDENTIAL

MEMORANDUM

TO: Wayne Bayer, Bureau of Hazardous Site Control
FROM: Jeffrey Dyber, Bureau of Eastern Remedial Action
SUBJECT: Bedford Village Wells - Shopping Arcade Site, Site No. 360006

DATE: March 29, 2002

I have reviewed John Swartwout's memo to Dennis Farrar concerning the reclassification package for the Bedford Village Wells Shopping Arcade site. In his memo, Mr. Swartwout raises three concerns:

- The source of groundwater contamination was not found;
- The Registry description sheet calls the remedy "natural attenuation and monitoring" while the reclassification package prescribes long-term monitoring; and
- Since the groundwater monitoring data does not depict a consistent downward trend, the plume is a poor candidate for monitored natural attenuation.

The site was originally listed on the Registry based on the presence of chlorinated solvents, including perchlorethylene (PCE), in private drinking water wells near the Shopping Arcade. The Shopping Arcade was the site of a former dry cleaner and was the only possible source of PCE. During the Remedial Investigation, diligent efforts were made to locate the source of groundwater contamination; however, no source was located.

The Amended ROD was signed on March 19, 2002 and deleted the extraction and treatment remedy for groundwater. The Amended ROD calls for long-term monitoring of four monitoring wells until groundwater standards are met, and does not mention monitored natural attenuation. Although VOC concentrations have not decreased in every sampling event and every well, the VOC concentrations have significantly decreased since the original ROD was signed in 1990. The remedy was changed because it would not be efficient or cost effective to actively treat the groundwater at this site, given the current VOC concentrations (maximum 130 parts-per-billion of total VOCs).

If you have any questions, feel free to contact me at 402-9621.

cc: C. Vasudevan
G. Bobersky/file
J. Swartwout
Daybook

APR - 2 2002

George Dybas

Dennis

New York State Department of Environmental Conservation
Division of Environmental Remediation
Bureau of Hazardous Site Control, 11th Floor
625 Broadway, Albany, New York 12233-7014
Phone: (518) 402-9551 • **FAX:** (518) 402-9020
Website: www.dec.state.ny.us

Erin M. Crotty
Commissioner

MEMORANDUM

TO: Dennis Farrar
FROM: John Swartwout JBS
SUBJECT: Classification Package for Bedford Village Wells - Shipping Arcade, Site # 36006
DATE February 6, 2002

I have reviewed the attached reclassification package and have not signed off on it due to the concerns discussed below.

My first concern is that although the source is described as the former dry cleaner in the shopping center there is no indication that the precise source area at the dry cleaner was ever located or in any way remediated. Nor is there any explanation for the failure to remediate the source area. Remedial action at this site has apparently been limited to provision of a new water supply to impacted private users. DER policy, as outlined in the draft DER Technical Requirements Guide, is to remediate source areas wherever possible.

My second concern is the conflicting information regarding whether the selected remedy for this site is "monitoring only" or "monitored natural attenuation". The Registry description sheet calls it "natural attenuation and monitoring". Block 11 of the site investigation information form describes the future activities as sampling of private wells by WCDOH and DEC- funded connections to public water for private wells found to be impacted in the future. The amended ROD calls for semi-annual sampling of 4 monitoring wells for 5 years with subsequent annual sampling until drinking water standard are achieved. No mention is made of monitored natural attenuation.

Additionally, the site investigation information form implies that there is a consistent downward trend in groundwater contamination levels when levels have really bounced up and down considerably. The lack of a clear downward trend makes this plume a poor candidate for monitored natural attenuation, and also points to the likelihood of a source which still needs to be remediated.

attachment:

bcc: J. Rider
R. Marino
J. Swartwout
file

A. SYLVESTER

New York State Department of Environmental Conservation
Division of Environmental Remediation
Bureau of Hazardous Site Control, 11th Floor
625 Broadway, Albany, New York 12233-7014
Phone: (518) 402-9551 • **FAX:** (518) 402-9557
Website: www.dec.state.ny.us

Erin M. Crotty
Commissioner

AUG - 7 2002

This letter was sent to the people on the attached list.

Dear :

The New York State Department of Environmental Conservation (Department) maintains a Registry of sites where hazardous waste disposal has occurred. Property located at 644 and 656 Old Post Road in the Town of Bedford and County of Westchester and designated as Tax Map Number 84.07-1-10 was recently reclassified as a Class 4 in the Registry. The name and site I.D. number of this property as listed in the Registry is Bedford Village Wells-Shopping Arcade, Site #360006.

The Classification Code 4 indicates that the site is properly closed -- requires continued management.

We are sending this letter to you and others who own property near the site listed above, as well as the county and town clerks. We are notifying you about these activities at this site because we believe it is important to keep you informed.

If you currently are renting or leasing your property to someone else, please share this information with them. If you no longer own the property to which this letter was sent, please provide this information to the new owner and provide this office with the name and address of the new owner so that we can correct our records.

The reason for this recent classification decision is as follows:

- Since all affected homes and businesses have been connected to the public water supply, the site is no longer a threat to human health. The Westchester County Department of Health (WCDH) will continue to sample private wells still in use near the site. The Department will connect any additional properties to the public water supply if their private wells are affected by site-related contaminants above drinking water standards. Total volatile organic compounds (VOCs) concentrations have decreased since 1988. Due to the low concentrations of total VOCs that are present in the groundwater at this site, it

would not be efficient or cost effective to implement extraction and treatment or any other active groundwater remediation technology at this site. Since monitoring is the only action which will be performed, the reclassification to "4" is justified.

If you have questions, need additional information, or have information which you believe would be useful to us, please call the Department of Environmental Conservation's toll-free number: **1(800)342-9296**. The Department of Health maintains a Health Liaison Program (HeLP) toll-free number: **1(800)458-1158 Ext. 2-7530.**

Sincerely,

Dennis J. Farrar
Chief
Site Control Section

bcc: M. O'Toole
D. Weigel
D. Farrar
J. Swartwout
R. Pergadia, R/3
C. Manfredi, R/3
M. Duke, R/3
CPS, R/3
A. Sylvester
G. Litwin
L. Ennist

AS/srh

A. SYLVESTER

New York State Department of Environmental Conservation
Division of Environmental Remediation
Bureau of Hazardous Site Control, 11th Floor
625 Broadway, Albany, New York 12233-7014
Phone: (518) 402-9551 • **FAX:** (518) 402-9577
Website: www.dec.state.ny.us

Erin M. Crotty
Commissioner

JUL 22 2002

Lashens Company
80 Business Park Drive
Armonk, NY 10504

Dear Sir/Madam:

As mandated by Section 27-1305 of the Environmental Conservation Law (ECL), the New York State Department of Environmental Conservation (Department) must maintain a Registry of all inactive disposal sites suspected or known to contain hazardous waste. The ECL also mandates that this Department notify the owner of all or any part of each site or area included in the Registry of Inactive Hazardous Waste Disposal Sites as to changes in site classification.

Our records indicate that you are the owner or part owner of the site listed below. Therefore, this letter constitutes notification of change in the classification of such site in the Registry of Inactive Hazardous Waste Disposal Sites in New York State.

DEC Site No.: 360006
Site Name: Bedford Village Wells-Shopping Arcade
Site Address: 644 to 656 Old Post Road and Vicinity, Bedford, NY 10506

Classification change from 2 to 4

The reason for the change is as follows:

- Since all affected homes and businesses have been connected to the public water supply, the site is no longer a threat to human health. The Westchester County Department of Health (WCDH) will continue to sample private wells still in use near the site. The Department will connect any additional properties to the public water supply if their private wells are affected by site-related contaminants above drinking water standards. Total volatile organic compounds (VOCs) concentrations have decreased since 1988. Due to the low concentrations of total VOCs that are present in the groundwater at this site, it would not be efficient or cost effective to implement extraction and treatment or any other active groundwater remediation technology at this site. Since monitoring is the only action which will be performed, the reclassification to "4" is justified.

Enclosed is a copy of the New York State Department of Environmental Conservation, Division of Environmental Remediation, Inactive Hazardous Waste Disposal Site Report form as it appears in the Registry and Annual Report, and an explanation of the site classifications. The Law allows the owner and/or operator of a site listed in the Registry to petition the Commissioner of the New York State Department of Environmental Conservation for deletion of such site, modification of site classification, or modification of any information regarding such site, by submitting a written statement setting forth the grounds of the petition. Such petition may be addressed to:

Erin M. Crotty
Commissioner
New York State Department of Environmental Conservation
625 Broadway
Albany, New York 12233-1010

For additional information, please contact me at (518) 402-9553.

Sincerely,

Dennis J. Farrar
Chief
Site Control Section

Enclosures

bcc: M. O'Toole
D. Weigel
R. Marino
D. Farrar
J. Swartwout
A. Sylvester

w/Enc. (Copy of Site Report form only)
A. Grant
G. Litwin, DOH
C. Vasudevan
D. Cordisco, R/3
M. Duke, R/3
R. Pergadia, R/3
C. Manfredi, R/3

AS/srh

PROPOSED ROD AMENDMENT
BEDFORD VILLAGE WELLS SITES:
SHOPPING ARCADE (REGISTRY NO. 3-60-006)
HUNTING RIDGE MALL (REGISTRY NO. 3-60-009)

Erin M. Crotty
Commissioner

Town of Bedford / Westchester County / November 2001

Prepared by the New York State Department of Environmental Conservation
Division of Environmental Remediation

1.0 INTRODUCTION

On March 30, 1990, the New York State Department of Environmental Conservation (NYSDEC) signed two Records of Decision (ROD) which selected an overall remedy to clean up the Bedford Village Wells Sites. The two Bedford Village Wells Sites are the Shopping Arcade Site (Site #3-60-006) and the Hunting Ridge Mall Site (Site #3-60-009). The distance between the two sites is approximately one mile. The original Records of Decision provided the following remedies for both sites:

Groundwater and Surface Water

- On-site extraction and treatment of contaminated groundwater by air stripping with capabilities of a vapor phase carbon adsorption unit to insure compliance with air standards, reinjection of treated groundwater into the aquifer;
- Groundwater monitoring to ensure that groundwater remediation is being accomplished; and
- Implementation of a site specific monitoring and evaluation plan of the Mianus River and its adjacent tributaries to insure that fish and wildlife are not impacted by the site.

Water Supply

- Installation of in-house activated carbon filters for affected commercial/residential users until a new water supply can be implemented;
- Monitoring of water quality where activated carbon filters are being used;
- Development of a new community water supply to supply those homes and commercial buildings affected by contamination; and
- If during the design study, it is found that through air stripping, the aquifer can be restored to acceptable drinking water standards within an acceptable time frame (less than 5 years), the need for a new water supply will be re-evaluated and may possibly be eliminated as a part of the remedial program implemented at the sites.

In 1991, the Town of Bedford was given the opportunity to purchase the Farms public water supply and extend the distribution system to properties that were affected by site-related contaminants. When the ROD was signed in 1990, this option was not chosen because the Farms water supply was privately owned. After a study was completed by the NYSDEC's standby consultant, the NYSDEC decided to provide funds for the Town of Bedford to purchase the Farms water supply wells instead of drilling new wells. Due to the change in circumstances, the NYSDEC also decided to complete the public water supply before installing the groundwater treatment system.

The public water supply has been constructed and all of the affected residences and businesses have been connected to public water. Any additional properties utilizing private wells that are found to be contaminated with site-related compounds at concentrations exceeding drinking water standards will also be connected to the public water supply. Therefore, the contaminated groundwater is no longer a threat to public health.

Several groundwater monitoring wells associated with both sites were sampled in 1997-2001, after the completion of the public water supply. In 2001, only one monitoring well at the Shopping Arcade site had total volatile organic compound (VOC) concentrations exceeding 100 parts-per-billion (ppb). The highest VOC concentration at the Shopping Arcade site in 2001 was 130 ppb at MW-3M (see Figure 2 for the location of MW-3M), which decreased from 223 ppb in 1988. Since the RODs were signed in 1990, the NYSDEC has gained additional experience regarding the use of extraction and treatment and other active groundwater remediation technologies. Due to the concentrations of total VOCs that are present in the groundwater at this site (non-detect to 130 ppb), it would not be efficient or cost effective to implement extraction and treatment or any other active groundwater remediation technology at the Shopping Arcade site. Since a plan has been successfully implemented to address exposures associated with the site, the NYSDEC proposes the deletion of the extraction and treatment portion of the remedy for the Shopping Arcade site. Furthermore, the NYSDEC proposes that the Shopping Arcade site be reclassified to a Class 4, indicating that the site is properly closed but requires continued monitoring. The long-term monitoring program would include semiannual sampling of four groundwater monitoring wells for the first five years and subsequent annual monitoring of these four wells until they achieve drinking water standards, which is estimated at 20 years.

In 2001, only one monitoring well at the Hunting Ridge Mall site had total VOC concentrations exceeding 100 ppb. The highest VOC concentration at the Hunting Ridge Mall site was 909 ppb at MW-3M (see Figure 3 for the location of MW-3M), compared with 62 ppb in 1988. Since the RODs were signed in 1990, new technologies have been developed to remediate contaminated groundwater, including in-situ chemical oxidation. Due to the limited areal extent of the high VOC concentrations at the Hunting Ridge Mall site, in-situ chemical oxidation would be a more effective and cost efficient groundwater remedy than extraction and treatment. Therefore, the NYSDEC proposes that the groundwater remedy for the Hunting Ridge Mall site be changed to in-situ chemical oxidation.

Also, since the May 2000 surface water sampling revealed contaminant concentrations that marginally exceeded surface water standards, the NYSDEC also proposes that the monitoring plan for the Mianus River and adjacent tributaries be amended to the following: collection of surface water samples from the Mianus River and adjacent tributaries before and after implementation of groundwater remediation at the Hunting Ridge Mall site. The results of the surface water sampling will be used in conjunction with the groundwater monitoring data to determine the effectiveness of the groundwater remedy.

A public comment period has been set for December 5, 2001 to January 4, 2002 to provide an opportunity for the public to comment on these proposed changes. A public meeting is scheduled for December 19, 2001 at the Bedford Historical Hall at the Village Green in Bedford beginning at 7:00 p.m.

At the meeting, a description of the original ROD and the circumstances that have led to proposed changes in the ROD will be presented. After the presentation, a question and answer period will be held, during which the public can submit verbal or written comments on the proposal. We encourage you to review this summary and attend the meeting.

Comments will be summarized and responses provided in a Responsiveness Summary. Written comments may also be sent to:

Jeffrey Dyber, P.E., Project Manager
NYSDEC Division of Environmental Remediation
625 Broadway, 11th Floor
Albany, New York 12233-7015
518-402-9621

The information here is a summary of what can be found in greater detail in reports that have been placed in the Administrative Record for the Site. These documents are available at the following repositories:

New York State Department of Environmental Conservation
625 Broadway, 11th Floor
Albany, New York 12233-7015
(518) 402-9621
Hours: Monday to Friday 8:30 a.m. to 4:45 p.m.

New York State Department of Environmental Conservation, Region 3
21 South Putt Corners Road
New Paltz, New York 12561-1696
(845) 256-3000
Hours: Monday to Friday 8:30 a.m. to 4:45 p.m.

Bedford Free Library
Village Green
Bedford, New York 10506
(914) 234-3570
Hours: Monday 10 a.m. to 7 p.m.
Tuesday to Friday 10 a.m. to 6 p.m.
Saturday 10 a.m. to 1 p.m.

Bedford Hills Free Library
26 Main Street
Bedford Hills, New York 10507
(914) 666-6472
Hours: Monday to Wednesday 1 p.m. to 8 p.m.
Thursday to Friday 10 a.m. to 5:30 p.m.

Bedford Town Clerk
Bedford Town Hall
321 Bedford Road (Route 117)
Bedford Hills, New York 10507
(914) 666-4534
Hours: Monday to Friday 8:30 a.m. to 4:30 p.m.

The NYSDEC may modify or reject the proposed changes based on new information or public comments. Therefore, the public is encouraged to review and comment on this proposal.

2.0 Site Description and Original Remedy

2.1 Site History

The Shopping Arcade site and the Hunting Ridge Mall site are located on Old Post Road (Route 22) in the Bedford Village District, Town of Bedford, Westchester County. The Hunting Ridge Mall site is approximately one mile southwest of the Shopping Arcade site. The sites are situated in a commercial district of a suburban area. A site location map is included as Figure 1.

The geology of the sites consists of a gneissic bedrock overlain by glacial deposits. The deposits are generally composed of sorted, fine-coarse sands and silts. The bedrock is encountered at depths from approximately 5 feet to 80 feet below ground surface (bgs). Groundwater flows toward the Mianus River in a northeasterly direction from the Shopping Arcade site and a southeasterly direction from the Hunting Ridge Mall site. Groundwater depths range from approximately 3 to 34 feet bgs, depending on the location and time of year.

In 1978, the Westchester County Department of Health (WCDOH) tested several private wells in areas where existing or former dry cleaning establishments were located. VOCs were found in several private wells in the Village of Bedford. The source of this contamination was traced to a former dry cleaner at the Shopping Arcade site and a dry cleaning facility at the Hunting Ridge Mall site. In 1983, both sites were listed on the

New York State Registry of Inactive Hazardous Waste Disposal Sites.

Based on the private well testing, the Hunting Ridge Mall owner pumped out the on-site sanitary system in 1983 and removed contaminated sediment from the drainage system and nearby stream to which it discharged.

2.2 Nature and Extent of Site Contamination

As described in the original RODs and other documents, many soil, groundwater, surface water, and sediment samples were collected at the sites to characterize the nature and extent of contamination. The primary contaminants of concern were VOCs, including: tetrachloroethylene (PCE), trichloroethylene (TCE), 1,2-dichloroethene (DCE), vinyl chloride, benzene, toluene, and xylene. PCE is used in dry cleaning operations and TCE, DCE, and vinyl chloride are breakdown products of PCE. Benzene, toluene and xylene are constituents of gasoline. VOC concentrations exceeding NYSDEC standards, criteria, and guidance (SCGs) were only present in the groundwater and surface water samples.

Surface water

The Shopping Arcade site and the Hunting Ridge Mall site are located near tributaries of the Mianus River (refer to Figures 2 and 3). The tributary near the Shopping Arcade site flows southeast through three ponds before discharging into the Mianus River. The tributary near the Hunting Ridge Mall site flows southeast through two ponds before discharging into the Mianus River. The upstream pond is known as Turtle Pond.

In the 1990 Remedial Investigation/Feasibility Study (RI/FS), PCE was detected in Turtle Pond, near the Hunting Ridge Mall Site, at 40 ppb. The surface water standard for PCE is 0.7 ppb.

On May 23, 2000, NYSDEC staff collected surface water samples from the Mianus River and the two tributaries (along with their associated ponds) that are located near the sites. Refer to Figures 2 and 3 for surface water sampling results. Sampling of the tributary and ponds near the Shopping Arcade and Hunting Ridge Mall site detected maximum PCE concentrations of 2 ppb and 4 ppb, respectively. The concentration of 4 ppb was detected at the south end of Turtle Pond. No contaminants were detected from the samples obtained from the Mianus River. These sampling results indicate that the levels of PCE contamination in the tributaries and ponds have decreased since the original sampling.

Groundwater

The Remedial Investigation/Feasibility Study (RI/FS) reports prepared by NYSDEC's consultant, Dvirka and Bartilucci, in 1990 indicated that VOCs were present in the groundwater at concentrations exceeding New York State drinking water and groundwater standards (10 NYCRR Part 5 and 6 NYCRR Part 703, respectively). The RI/FS reports presented data from groundwater monitoring wells and historic groundwater samples obtained from 1979 to 1989. The maximum VOC concentrations in groundwater at the Shopping Arcade site were: PCE (710 ppb), TCE (71 ppb), DCE (520 ppb), benzene (440 ppb), toluene (35 ppb), and xylene (39 ppb). At the Hunting Ridge Mall site, the maximum VOC concentrations were: PCE (160 ppb), TCE (8 ppb), DCE (15 ppb), benzene (6 ppb), toluene (39 ppb), and xylene (9 ppb). The New York State groundwater and drinking water standard for each of the above contaminants is 5 ppb with the exception of benzene, which has a standard of 1 ppb.

After the ROD was signed in 1990, the public water supply was designed and constructed. The water supply included two wells, drawing groundwater from a deeper depth than the

contamination was known to exist. Construction of the public water supply was completed in November 1997. The location of the public water supply is shown in Figure 3. Low levels of VOC contamination (less than 5 ppb, the groundwater and drinking water standard) were subsequently discovered at the public water supply wells in 1998. An air stripping unit was added in December 1998 to remove VOCs from the source water and to ensure that the VOC concentrations did not exceed the standards. Since the air stripping unit was installed, the average PCE concentration of the untreated water at the public water supply wells has been less than 5 ppb. PCE has never been detected in the treated water.

Several groundwater monitoring wells associated with both sites were sampled in 1997-2001, after the completion of the public water supply. The maximum VOC concentrations in June 2001 for the Shopping Arcade site were: PCE (130 ppb), TCE (20 ppb), DCE (17 ppb), trichloroethane (0.4 ppb), vinyl chloride (6 ppb), benzene (0.5 ppb), and sec-butylbenzene (4 ppb). For the Hunting Ridge Mall site, the maximum VOC concentrations in June 2001 were: PCE (800 ppb), TCE (32 ppb), DCE (68 ppb), and vinyl chloride (9 ppb). In June 2001, only one monitoring well at each site had total VOC concentrations exceeding 100 ppb. MW-3M at the Shopping Arcade site and MW-3M at the Hunting Ridge Mall site had total VOC concentrations of 130 ppb and 909 ppb, respectively. At the Hunting Ridge Mall site, two monitoring wells (MW-6S and 6M) located less than 300 feet downgradient of MW-3M exhibited total VOC concentrations of 7 ppb and 3 ppb. These results indicate that the high VOC concentrations are limited to less than 300 feet from the site. The remaining monitoring wells at the Shopping Arcade and Hunting Ridge Mall sites exhibited VOC concentrations ranging from 8-87 ppb and 3-14 ppb, respectively. Locations of groundwater monitoring wells and sampling results for site-related contaminants for the Shopping Arcade Site and the Hunting Ridge Mall Site are presented in Figures 2 and 3, respectively. Also, 1997-2001 monitoring well data for all VOCs for the Shopping Arcade Site and the Hunting Ridge Mall Site are presented in Tables 1 and 2, respectively.

At the request of the Westchester County Department of Health (WCDOH), the NYSDEC collected additional groundwater samples using a direct push method at a property located east of the Hunting Ridge Mall site. Fifteen samples were obtained from seven borings at depths ranging from 38-60 feet. Only two of the boring samples (F1 and G3) exhibited VOC concentrations exceeding the SCGs. PCE was detected in F1 and G3 at 18 ppb and 7 ppb, respectively. None of the other site-related VOCs were detected in amounts exceeding SCGs. The locations of the sampling points are depicted in Figure 3. The analytical results are presented in Table 3.

2.3 Summary of Human Exposure Pathways

Prior to the installation of the public water supply, the primary pathway of exposure to contaminants was through the use of contaminated groundwater via private wells. Since the affected residences have been connected to the public water supply, there are no current human exposure pathways for the contamination remaining at these sites.

2.4 Summary of Environmental Exposure Pathways

The groundwater beneath these sites has been contaminated with VOCs and cannot be used as a drinking water resource without treatment. Although the NYSDEC will prevent human exposures to the groundwater contaminants, the groundwater resource beneath the sites has been degraded.

3.0 Description of Proposed Changes

3.1 New Information

Construction of the public water supply was completed in November 1997 at a cost of $2,000,000. After drilling the water supply well, the water was tested and was found to contain VOC concentrations that were below SCGs. To ensure that the public water supply would continue to meet drinking water standards, an air stripping tower was installed in December 1998 at a cost of $110,000 to remove any VOCs before the water is distributed to the public. The location of the public water supply is shown on Figure 3.

To date, 43 properties that utilized private wells and were affected by site-related contamination have been connected to the public water supply. The WCDOH, NYSDEC, and NYSDOH will continue to monitor private wells still in use near the sites. The NYSDEC will reimburse the WCDOH for the cost of sampling and testing these private wells. The NYSDEC will connect any additional properties to the public water supply if it is determined that their private wells are affected by site-related contamination above drinking water standards. In this manner, human exposures associated with contaminated groundwater from these sites will be effectively addressed.

3.2 Proposed Changes

The original RODs provide for the installation of an extraction and treatment system to remediate the contaminated groundwater at both sites. Several groundwater monitoring wells associated with both sites were sampled in 1997-2001, after the completion of the public water supply.

Shopping Arcade Site (3-60-006)

In 2001, only one monitoring well at the Shopping Arcade site had total VOC concentrations exceeding 100 ppb. The highest VOC concentration at the Shopping Arcade site in 2001 was 130 ppb at MW-3M (see Figure 2 for the location of MW-3M). Since the RODs were signed in 1990, the NYSDEC has gained additional experience regarding the use of extraction and treatment and other active groundwater remediation technologies in remediating contaminated groundwater. Due to the concentrations of total VOCs that are present in the groundwater at this site (non-detect to 130 ppb), it would not be efficient or cost effective to implement extraction and treatment or any other active groundwater remediation technology at the Shopping Arcade site.

As previously discussed, a plan has been successfully implemented to address exposure to residual contaminants. This plan includes treatment and monitoring of the public water supply, monitoring of private wells, and provision of an alternative water source to homes and businesses as necessary. Therefore, the NYSDEC proposes the deletion of the extraction and treatment portion of the remedy at the Shopping Arcade site. Furthermore, the NYSDEC proposes that the Shopping Arcade site be reclassified to a Class 4, indicating that the site is properly closed but requires continued monitoring. The long-term monitoring program would include semiannual sampling of four groundwater monitoring wells for the first five years and subsequent annual monitoring of these four wells until they achieve drinking water standards, which is estimated at 20 years. The following monitoring wells will be included in the monitoring program for the Shopping Arcade site: MW-3M, MW-4B, MW-6M, and MW-6B. The locations of the monitoring wells are depicted on Figure 2. The Town of Bedford and the WCDOH will continue their annual monitoring of the public water supply.

Hunting Ridge Mall Site (3-60-009)

In 2001, only one monitoring well at the Hunting Ridge Mall site had total VOC concentrations exceeding 100 ppb. The highest VOC concentration at the Hunting Ridge Mall

site was 909 ppb at MW-3M (see Figure 3 for the location of MW-3M). Since the RODs were signed in 1990, new technologies have been developed to remediate contaminated groundwater, including in-situ chemical oxidation.

In-situ chemical oxidation is a groundwater remediation technology that was not available for groundwater remediation when the RODs were issued in 1990. Since the RODs were issued, in-situ chemical oxidation has been used to remediate VOCs in groundwater at several sites in New York State. This technology involves injecting an oxidant into the groundwater which reacts with the VOCs and breaks down VOCs into non-toxic products such as carbon dioxide. Oxidants commonly used include potassium permanganate, sodium permanganate, Fenton's Reagent (hydrogen peroxide with a catalyst), and ozone. The specific oxidant would be chosen during the design stage based on pilot tests and/or bench scale tests.

Air sparging/soil vapor extraction (AS/SVE) was also evaluated as a method to remediate the contaminated groundwater at the Hunting Ridge Mall site. AS/SVE is a combination of two technologies. AS injects air into the groundwater below the contaminated zone. As the air rises through the contaminated groundwater and disperses radially, VOCs in the groundwater mix with the air and rise to the surface. SVE applies a vacuum to the vadose zone to capture the air and VOC mixture. This vapor is treated using vapor-phase carbon prior to discharge to the atmosphere.

The VOC contamination at the Hunting Ridge Mall is located at the soil-bedrock interface. AS/SVE would need to be installed into soil several feet below the contaminated depth to develop a radius of influence. Since there is no soil below the contaminated zone, AS/SVE would not be an effective remedy at this site and was dropped from consideration.

Due to the limited areal extent of the high VOC concentrations at the Hunting Ridge Mall site, in-situ chemical oxidation would be a more efficient and cost effective remedy than extraction and treatment. Therefore, the NYSDEC proposes that the groundwater remedy for the Hunting Ridge Mall site be changed to in-situ chemical oxidation. In this scenario, the oxidant would be injected at a depth of approximately 70 feet below ground surface (bgs) into the groundwater directly upgradient of MW-3M using one to two injection wells. Four new monitoring wells, including one upgradient well, and MW-3M would be used to monitor the progress and effectiveness of the remediation. The locations of the new injection and monitoring wells would be determined during the Remedial Design. After evaluating the effectiveness of the first injection event, the NYSDEC may conduct additional injection events.

The long-term monitoring program for the Hunting Ridge Mall would include six monitoring wells sampled for VOCs on a semiannual basis until drinking water standards are achieved for site-related compounds. The specific wells to be sampled would be identified in the operation and maintenance plan after the remedy is implemented. The remedy duration is estimated at three years and includes six months to construct the remedy and 2½ years of operation and maintenance.

Also, since the May 2000 surface water sampling revealed contaminant concentrations that marginally exceeded surface water standards, the NYSDEC also proposes that the monitoring plan for the Mianus River and adjacent tributaries be amended to the following: collection of surface water samples from the Mianus River and adjacent tributaries before and after implementation of groundwater remediation at the Hunting Ridge Mall site. The results of the surface water sampling will be used in conjunction with the groundwater monitoring data to determine the effectiveness

of the groundwater remedy.

4.0 Evaluation of Proposed Changes

4.1 Remedial Goals

Goals for the cleanup of the sites were established in the original ROD. The goals selected for this site are:

- Eliminate, to the extent practicable, ingestion of groundwater affected by the site that does not attain NYSDOH drinking water standards.

- Eliminate, to the extent practicable, further off-site migration of groundwater that does not attain NYSDEC Class GA Ambient Water Quality Criteria.

4.2 Evaluation Criteria

The criteria used to compare the remedial alternatives are defined in the regulation that directs the remediation of inactive hazardous waste disposal sites in New York State (6 NYCRR Part 375). For each criterion, a brief description is provided. A detailed discussion of the evaluation criteria and comparative analysis is contained in the original Feasibility Study.

The first two evaluation criteria are called threshold criteria and must be satisfied in order for an alternative to be considered for selection.

1. Protection of Human Health and the Environment. This criterion is an overall evaluation of the health and environmental impacts to assess whether each alternative is protective. It incorporates several of the criteria listed below with an emphasis on achieving the remediation goals described above.

The proposed changes would continue to protect human health and the environment. Private wells in the vicinity of the sites that are still used for drinking water will be tested regularly for site-related contaminants. Properties with private wells affected by site-related contaminants at concentrations exceeding drinking water standards have been connected to public water. If testing reveals that additional private wells are similarly impacted, these properties will be connected to the public water supply.

The chemical oxidation remedy would remediate the high VOC concentrations in groundwater at the Hunting Ridge Mall, which would result in further protection of the environment.

2. Compliance with New York State Standards, Criteria, and Guidance (SCGs). Compliance with SCGs addresses whether a remedy will meet applicable environmental laws, regulations, standards, and guidance.

The SCGs of concern for this site are the New York State drinking water and groundwater standards (6 NYCRR Part 703). Removing the groundwater treatment system from the remedy may increase the time required for the groundwater to meet drinking water standards at the Shopping Arcade site. However, a plan has been successfully implemented to address exposures associated with the contaminated groundwater. Since chemical oxidation is a more aggressive remedy than extraction and treatment, the groundwater at the Hunting Ridge Mall site would be expected to meet SCGs in a shorter period of time.

The next five "primary balancing criteria" are used to compare the positive and negative aspects of each of the remedial strategies.

3. Short-term Effectiveness. The potential short-term adverse impacts of the remedial action upon the community, the workers, and the environment during construction and

operation are evaluated. The length of time needed to achieve the remedial objectives is also estimated and compared with the other alternatives.

The original RODs estimated a three year cleanup for the Shopping Arcade site and a ten year cleanup for the Hunting Ridge Mall site. The remediation time for natural attenuation at the Shopping Arcade site has been estimated at a maximum of 20 years. The Hunting Ridge Mall remediation using in-situ chemical oxidation would be completed in approximately three years.

4. Long-term Effectiveness and Permanence. This criterion evaluates the long-term effectiveness of alternatives after implementation of the response actions. If wastes or treated residuals remain on site after the selected remedy has been implemented, the following items are evaluated: 1) the magnitude of the remaining risks, 2) the adequacy of the controls intended to limit the risk, and 3) the reliability of these controls.

The chemical oxidation remedy at the Hunting Ridge Mall would destroy the contaminants and replace them with nontoxic materials. This would therefore be a permanent remedy.

Contaminated groundwater would remain on the Shopping Arcade site following implementation of the proposed change. Since public water has been provided to affected residents, the contamination does not pose a risk to the public. The public water supply is treated by an air stripper to remove any VOCs before distribution. Unaffected private wells are tested to minimize the potential of exposure to contaminated groundwater. The reliability of the controls would not be affected by the deletion of the extraction and treatment system.

5. Reduction of Toxicity, Mobility or Volume. Preference is given to alternatives that permanently and significantly reduce the toxicity, mobility or volume of the wastes at the site.

The chemical oxidation remedy at the Hunting Ridge Mall site would actively reduce the toxicity, mobility and volume of contaminated groundwater. These goals would be accomplished by passive means at the Shopping Arcade site.

6. Implementability. The technical and administrative feasibility of implementing each alternative is evaluated. Technically, this includes the difficulties associated with the construction, the reliability of the technology, and the ability to monitor the effectiveness of the remedy. Administratively, the availability of the necessary personnel and equipment is evaluated along with potential difficulties in obtaining specific operating approvals, access for construction, etc.

The chemical oxidation remedy at the Hunting Ridge Mall would be easily implementable. The materials are widely accessible and several vendors have experience in implementing the technology. The only operation and maintenance requirements for this remedy would be additional monitoring. Since no additional remedial actions at the Shopping Arcade site would be instituted, there would be no implementability issues with the proposed change.

7. Cost. Capital and operation and maintenance costs are estimated for each alternative and compared on a present worth basis. Although cost is the last balancing criterion evaluated, where two or more alternatives have met the requirements of the remaining criteria, cost effectiveness can be used as the basis for the final decision.

The proposed change would reduce the cost of the remedy. The entire extraction and treatment capital costs for Shopping Arcade site of $872,750 would be saved by the proposed

change. For the Hunting Ridge Mall site, replacing the extraction and treatment system with in-situ chemical oxidation would reduce the capital costs from $688,875 to $212,200, for a savings of $476,675. Present worth operation and maintenance (O&M) cost savings for the Shopping Arcade would be $542,431. Present worth operation and maintenance (O&M) costs for the Hunting Ridge Mall site would be reduced from $1,019,125 to $25,705, for a savings of $993,420. Total present worth cost savings for the proposed changes would be $2,885,276.

This final criterion is considered a modifying criterion and is considered after evaluating those above. It is focused upon after public comments on the proposed ROD amendment have been received.

8. Community Acceptance - Concerns of the community regarding the proposed changes are evaluated. A "Responsiveness Summary" will be prepared that describes public comments received and how the NYSDEC will address the concerns raised. If the final remedy selected differs significantly from the proposed remedy, notices to the public will be issued describing the differences and reasons for the changes.

5.0 Summary of Proposed Changes

The NYSDEC is proposing to amend the RODs for the Bedford Village Wells Sites. The proposed change includes deletion of the extraction and treatment portion of the remedy for the Shopping Arcade site. The NYSDEC also proposes that the Shopping Arcade site be reclassified to a Class 4, indicating that the site is properly closed but requires continued monitoring. The long-term monitoring program for the Shopping Arcade site would include semiannual sampling of four groundwater monitoring wells for the first five years and subsequent annual monitoring of these four wells until they achieve drinking water standards for site-related contaminants, which is estimated at 20 years.

The remedy at the Hunting Ridge Mall site would be changed from extraction and treatment to in-situ chemical oxidation of contaminated groundwater. A chemical oxidant would be injected into the groundwater upgradient of MW-3M and would react with the VOCs in the groundwater to form nontoxic products. The long-term monitoring program for the Hunting Ridge Mall would include six monitoring wells sampled for VOCs on a semiannual basis until drinking water standards are achieved for site-related contaminants. The remedy duration is estimated at three years, which includes six months of construction and 2½ of operation and maintenance.

The public water supply has been constructed and all of the affected residences and businesses have been connected to public water. Properties in the vicinity of the affected area that continue to utilize private wells are tested periodically by the WCDOH. If any of these properties are found to be contaminated with site related compounds above drinking water standards, they will be connected to the public water supply. The NYSDEC will reimburse the WCDOH for the cost of sampling and testing these private wells.

Also, the NYSDEC also proposes that the monitoring plan for the Mianus River and adjacent tributaries be amended to the following: collection of surface water samples from the Mianus River and adjacent tributaries before and after implementation of groundwater remediation at the Hunting Ridge Mall site. The results of the surface water sampling will be used in conjunction with the groundwater monitoring data to determine the effectiveness of the groundwater remedy.

A Remedial Design would be prepared to verify the components of the conceptual design and provide the details necessary for the

construction, operation and maintenance, and monitoring of the remedial program. The estimated present worth cost savings for the amended remedy is $2,885,276.

6.0 Next Steps

As described above, a public comment period on the proposed changes to the selected remedy will be held from December 5, 2001 to January 4, 2002. A public meeting will be held on December 19, 2001 at the Bedford Historical Hall at the Village Green in Bedford beginning at 7:00 p.m. At the close of the comment period, the NYSDEC will evaluate the comments received and prepare a responsiveness summary which will be made available to the public. A notice describing the NYSDEC's final decision will be sent to all persons on the Site mailing list.

If you have questions or need additional information you may contact any of the following:

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547 River Street, Room 300
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TABLE 1: MONITORING WELL SAMPLING - ANALYTICAL RESULTS
BEDFORD VILLAGE WELLS - SHOPPING ARCADE (SITE CODE 3-60-006)

MW No.	Contaminant	1988	1997	1998	1999	9/2000	12/2000	6/2001
1B	PCE	42	2.6	23	2.8	0.5	44	5
	DCE	520	12	107	3.3	2	45	17
	TCE	71	3	19	0.9	0.9	39	6
	Vinyl Chloride	22	N/A	19	ND	ND	4	6
	Toluene	ND	0.5	0.9	0.5	ND	ND	ND
	Xylenes	ND	0.6	0.7J	0.8	ND	ND	ND
3M	PCE	210	120	480	53	68	170	130
	DCE	ND	0.5	1.8	7.5	ND	ND	ND
	TCE	13	0.6	2.3	13	0.3	0.7	ND
	TCA	ND	ND	3	ND	ND	9.7	0.4
	Benzene	ND	ND	ND	4.3	ND	ND	ND
	Toluene	ND	0.5	ND	0.8	ND	ND	ND
4B	PCE	120	90	72	200	30	46	58
	DCE	ND	1	6.3	0.5	7	11	8
	TCE	2	2	7.6	1	18	21	20
	TCA	ND	ND	ND	0.8	ND	ND	ND
	Benzene	ND	ND	2.1	ND	0.6	0.4	0.5
5B	PCE	ND	9.6	7.2	8.7	6	6	7
	DCE	ND	ND	ND	ND	ND	ND	0.5
	TCE	ND	ND	ND	0.6	0.4	ND	0.5
6M	PCE	ND	39	67	60	3	25	8
	DCE	ND	ND	0.6	2.6	ND	2	2
	TCE	ND	3	5.5	5.6	ND	6	4
	Benzene	ND	0.9	0.8	ND	ND	0.5	0.5
	sec-Butylbenzene	N/A	N/A	5.2	4.9	ND	4	4
6B	PCE	140	22	15	16	12	12	12
	DCE	ND	1.5	1.3	2.8	0.7	2	2
	TCE	6	3.3	2.6	3.5	2	3	3
	Toluene	ND	0.5	0.8	ND	ND	ND	ND

All Values are in Parts per Billion

Sampling Dates: March & October 1988; June 1997; December 1998; December 1999; September 2000; December 2000; June 2001

TABLE 2: MONITORING WELL SAMPLING - ANALYTICAL RESULTS
BEDFORD VILLAGE WELLS - HUNTING RIDGE MALL (SITE CODE 3-60-009)

MW No.	Contaminant	1988-1989	1997	1998	1999	9/2000	12/2000	6/2001
3S	PCE	33	4.1	3.6	6.3	2	2	4
3M	PCE	59	260	130	340	300	500	800
	DCE	ND	32	17.7	31	17	49	68
	TCE	3	12	5.9	16	23	23	32
	Vinyl Chloride	ND	N/A	6.6	3.9	6	9	9
6S	PCE	38	7.2	3.6	4.3	2	2	6
	DCE	4	0.7	ND	ND	ND	ND	0.6
	TCE	2	0.8	ND	ND	ND	ND	0.6
6M	PCE	33	8.3	5.5	3.6	20	2	3
	DCE	4	1.1	.5J	ND	4	ND	ND
	TCE	2	1	0.6	ND	5	ND	ND
	Toluene	ND	ND	0.7	ND	ND	ND	ND
7S	PCE	ND	2.7	1	0.7	0.8	ND	2
	DCE	ND	6.3	0.9	17	ND	ND	ND
	TCE	ND	2.2	ND	1.2	0.6	ND	0.8
	Vinyl Chloride	ND	N/A	ND	0.7	ND	ND	ND
7M	PCE	ND	0.5	ND	ND	0.3	0.5	0.7
	DCE	ND	11	21	ND	16.4	19	11
	TCE	ND	0.7	1	ND	3	4	2
	Vinyl Chloride	ND	N/A	1	ND	0.5	ND	ND

All Values are in Parts per Billion

Sampling Dates: January 1988; February 1989; June 1997; December 1998; December 1999; September 2000; December 2000; June 2001

TABLE 3
BEDFORD WELLS - HUNTING RIDGE MALL SITE (3-60-009)
GEOPROBE GROUNDWATER SAMPLING RESULTS

Sample ID	A1	B1	B2	B3	C1	D1	D2	NY State Groundwater Standard
Depth (feet)	45	55	45	40	38	55	45	
Date Collected	02/05/01	02/05/01	02/05/01	02/05/01	02/05/01	02/15/01	02/15/01	
COMPOUND NAME	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1,2-Dichloroethylene	ND	ND	ND	ND	ND	ND	ND	5
Trichloroethylene	ND	ND	ND	ND	ND	ND	ND	5
Tetrachloroethylene	ND	ND	ND	ND	ND	ND	ND	5
Acetone	ND	ND	ND	ND	ND	ND	ND	50

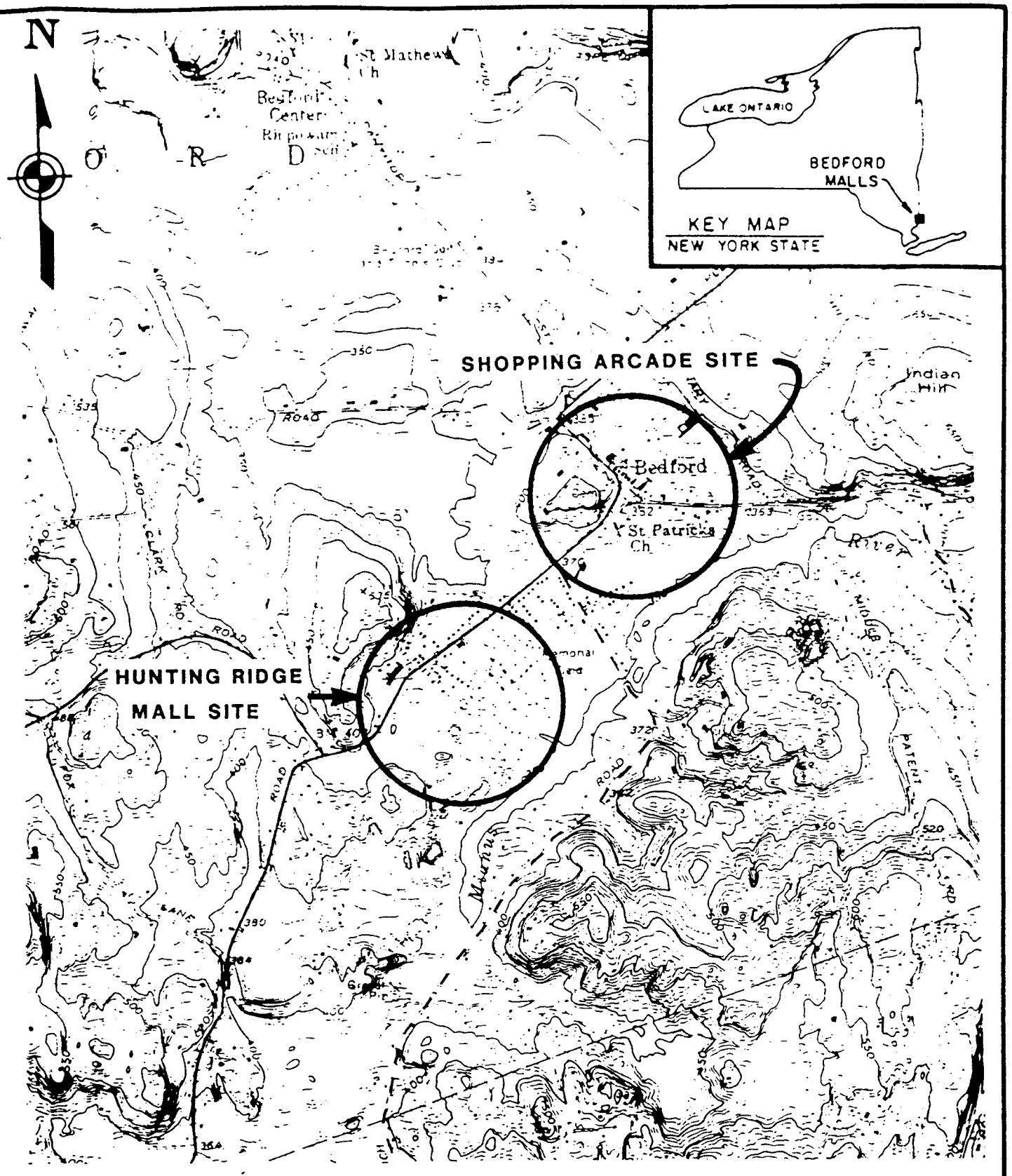
Sample ID	E1	E2	F1	F2	F3	G1	G2	G3	NY State Groundwater Standard
Depth (feet)	48	40	60	50	40	59	50	40	
Date Collected	02/15/01	02/15/01	02/15/01	02/15/01	02/15/01	02/16/01	02/16/01	02/16/01	
COMPOUND NAME	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
1,2-Dichloroethylene	ND	ND	2J	ND	1J	ND	ND	4J	5
Trichloroethylene	ND	ND	ND	ND	ND	ND	ND	1J	5
Tetrachloroethylene	ND	ND	**18**	3J	3J	4J	ND	**7J**	5
Acetone	ND	ND	ND	ND	ND	ND	17	ND	50

NOTES
ND: Not Detected; please see Figure 4 for GeoProbe locations
Concentrations exceeding groundwater standards are in bold typeface.
J: Estimated Value - below detection limit

Table 4
Cost Comparisons for Proposed Changes

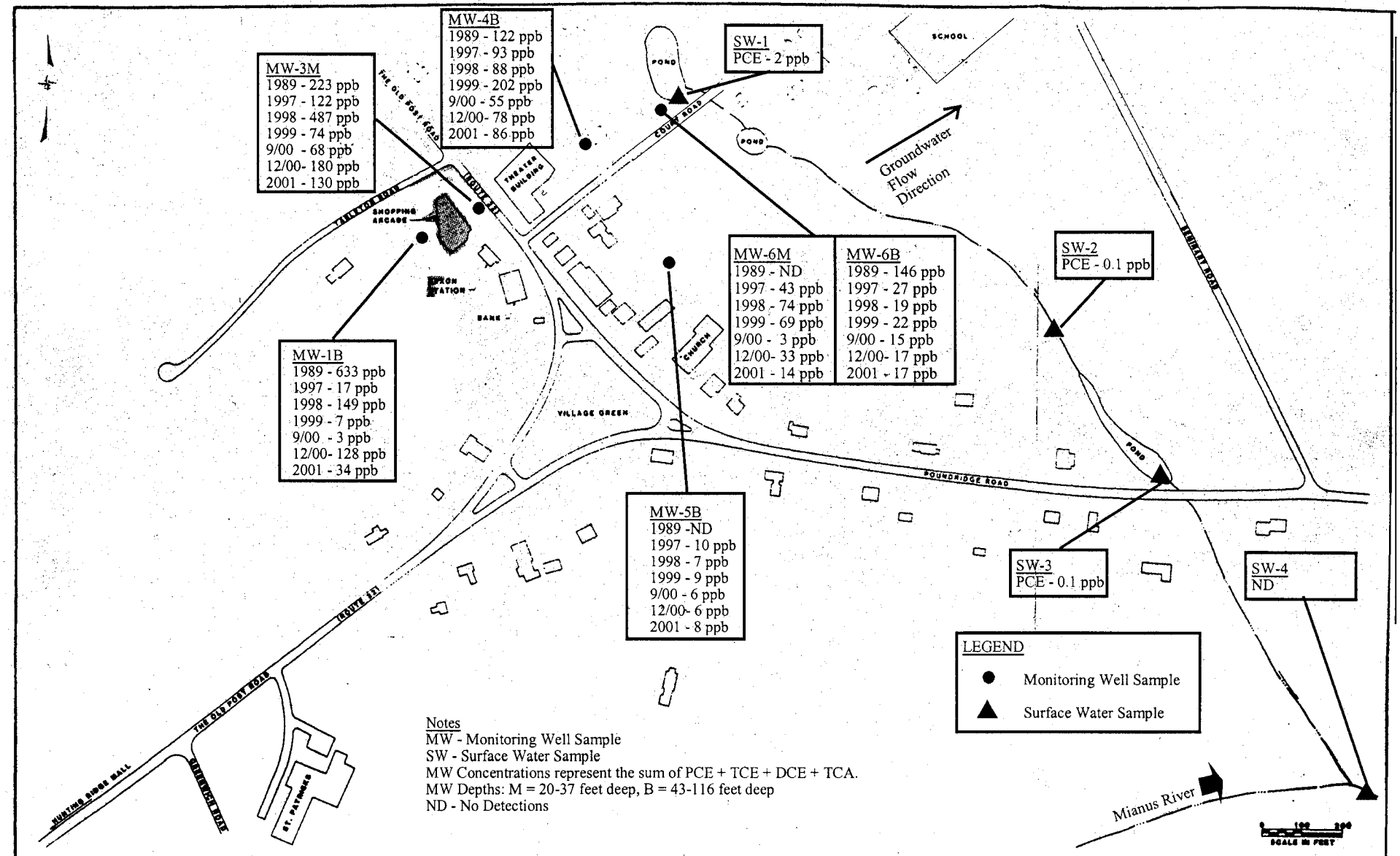
Site Name	Decision Document	Capital Costs	Present Worth Operation and Maintenance Costs	Total Costs
Shopping Arcade	1990 ROD	$872,750	$604,741	$1,477,491
Shopping Arcade	2001 PRAP*	$0	$62,310	$62,310
Shopping Arcade	**Savings**	**$872,750**	**$542,431**	**$1,415,181**
Hunting Ridge Mall	1990 ROD	$688,875	$1,019,125	$1,708,000
Hunting Ridge Mall	2001 PRAP*	$212,200	$25,705	$237,905
Hunting Ridge Mall	**Savings**	**$476,675**	**$993,420**	**$1,470,095**
Total	**Savings**	**$1,349,425**	**$1,535,851**	**$2,885,276**

* PRAP: Proposed ROD Amendment



SOURCE
USGS, MOUNT KISCO, N.Y.-CONN. QUADRANGLE
7.5 MINUTE SERIES, 1971

URS CONSULTANTS, INC.	LOCATION OF HUNTING RIDGE MALL AND SHOPPING ARCADE STUDY AREA	FIGURE 1



Notes
MW - Monitoring Well Sample
SW - Surface Water Sample
MW Concentrations represent the sum of PCE + TCE + DCE + TCA.
MW Depths: M = 20-37 feet deep, B = 43-116 feet deep
ND - No Detections

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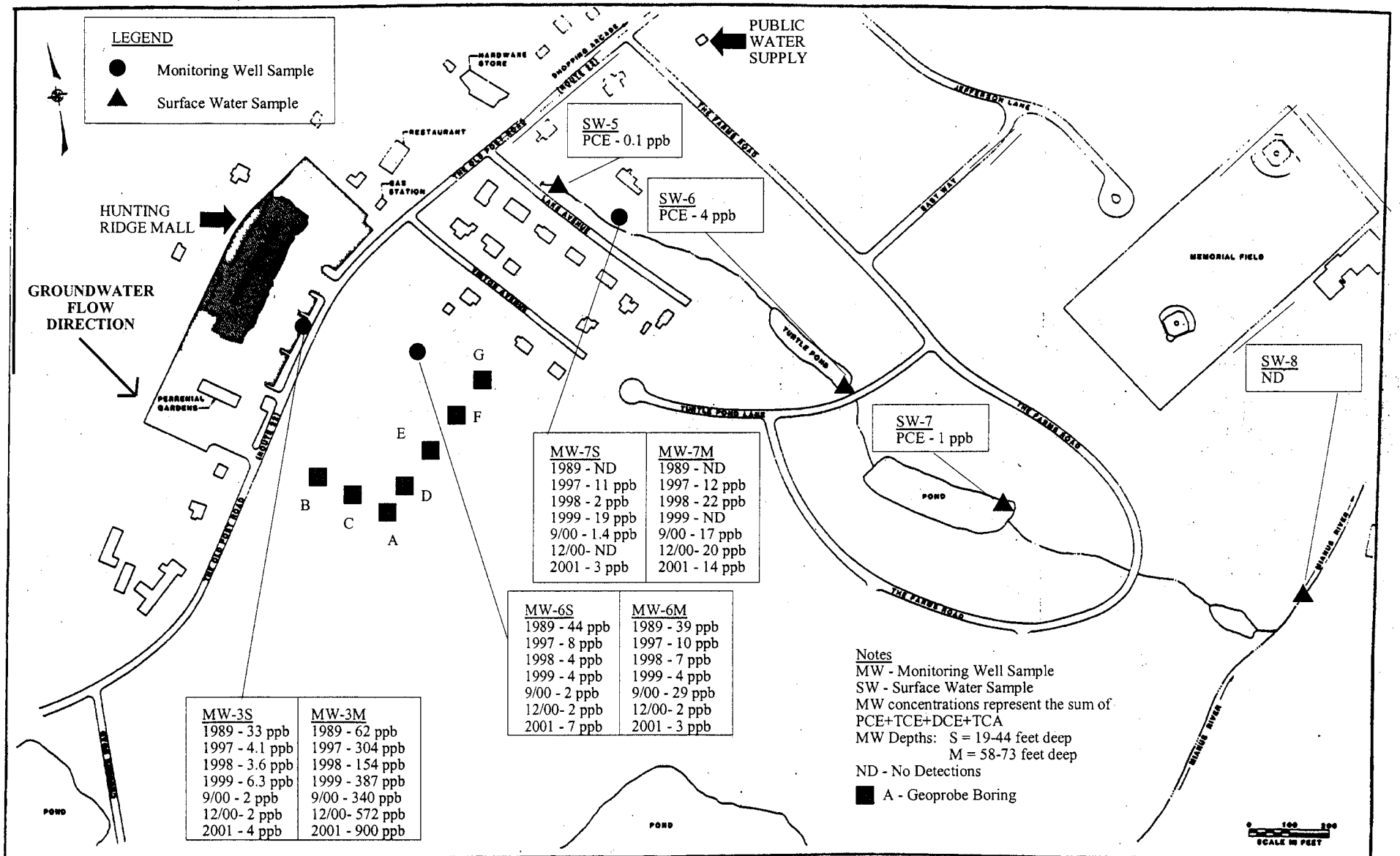

REVISIONS	UNAUTHORIZED ALTERATION OR ADDITION TO THIS DOCUMENT IS A VIOLATION OF SECTION 7209 OF THE NEW YORK STATE EDUCATION LAW.	Dvirka and Bartilucci Consulting Engineers	SEDFORD VILLAGE WELLS REMEDIAL INVESTIGATION & FEASIBILITY STUDY WESTCHESTER COUNTY, NEW YORK HUNTING RIDGE MALL SITE	HUNTING RIDGE MALL SITE AND STUDY AREA PROJECT NO. 842 SCALE AS NOTED FIGURE NO. 3