Department of Environmental Conservation

Division of Hazardous Waste Remediation

Baldwin Place Shopping Center Site

Site Number 3-60-023

Town of Somers

Westchester County, New York

Record of Decision

November 1995

New York State Department of Environmental Conservation

GEORGE E. PATAKI, *Governor* MICHAEL D. ZAGATA, *Commissioner*

DECLARATION STATEMENT - RECORD OF DECISION

BALDWIN PLACE SHOPPING CENTER
INACTIVE HAZARDOUS WASTE DISPOSAL SITE NO. 360023
WESTCHESTER COUNTY

Statement of Purpose and Basis

The Record of Decision (ROD) presents the selected remedial action for the Baldwin Place Shopping Center (BPSC), an inactive hazardous waste disposal site in the Town of Somers, Westchester County. The remedy was selected in accordance with the New York State Conservation Law (ECL). The remedy selected is not inconsistent with National Oil and Hazardous Substances Pollution Contingency Plan of March 1990 (40CFR300).

The decision is based upon the Administrative Record of the New York State Department of Environmental Conservation (NYSDEC) for the Baldwin Place Shopping Center and upon public input to the Proposed Remedial Action Plan presented by the NYSDEC. A bibliography of the documents which form the Administrative Record is included in Appendix A of the ROD.

Assessment of the Site

Actual or threatened release of hazardous waste constituents from this site, if not addressed by implementing the response action selected in this ROD, presents a current or potential threat to public health and the environment.

Description of Selected Remedy

Based upon the Feasibility Study for the site and the criteria identified for evaluation of alternatives the NYSDEC has selected a remedy with the following principal elements:

- Source Removal: An estimated 135 yd^3 of highly contaminated soil behind the old dry cleaners at the BPSC will be excavated to reduce the residual tetrachloroethylene concentration in the soil to 10 parts per million (ppm).

- Supply of Potable Water: Big V, the potentially responsible party (PRP) has two options for providing potable water to the impacted homes along Meadow Park Road (MPR). In the first option Big V will install a water supply distribution system, and fund and create a new water district incorporating the existing shopping center's production wells. The new water district will include homes along MPR. The granular activated carbon (GAC) filter systems, now in use on twelve private wells on MPR, will be maintained until the impacted homes are connected to the new system. In the second option, Big V could continue to maintain the GAC filters at MPR until the regional water supply system is commissioned. Big V would reimburse the Town of Somers for the cost of design and construction of the

distribution sysytem. Under both the options, Big V will continue to maintain the GAC filter systems at the two commercial wells along Route 6.

- Connection to Alternate Water Supply: The distribution system and certain appurtenances will be designed to be an integral part of the Town's proposed regional water supply system. The PRP will obtain approval of its plans, specifications and construction from the Town Engineer and the Westchester County Health Department.

- Groundwater Treatment: Two source area wells, one shallow and one deeper well to the top of the competent bedrock, will be installed to collect and treat groundwater at the source. The water from these wells will be treated separately from the water pumped by the BPSC production wells, and the effluent will be discharged to a nearby stream.

- Contingency Plan: Numerical groundwater quality goals will be established during the remedial design to evaluate, on a yearly basis, the effectiveness of the remedy. Additional remedial actions will be taken if results fall significantly short of the goal.

New York State Department of Health Acceptance

The New York State Department of Health concurs with the remedy selected for this site as being protective of human health.

Declaration

The selected remedy is protective of human health and the environment, complies with State and Federal requirements that are legally applicable or relevant and appropriate to the remedial action the extent practicable, and is cost effective. The remedy utilizes permanent solutions and alternative treatment or resource recovery technologies to the maximum extent practicable, and satisfies preference for remedies that reduce toxicity, mobility, or volume as a principal element.

11/9/95
Date

Michael O'Toole Jr., Director
Division of Hazardous Waste Remediation

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RECORD OF DECISION

BALDWIN PLACE SHOPPING CENTER
Somers, Westchester County, New York
Site No. 360023
October 1995

SECTION 1: PURPOSE OF THE SELECTED ACTION

The New York State Department of Environmental Conservation (NYSDEC) in consultation with the New York State Department of Health (NYSDOH) has selected a remedial action for the Baldwin Place Shopping Center (BPSC).

The plan will consist of removal of soil contaminated with perchloroethylene (PCE) above 10 parts per million (ppm), groundwater treatment to address residual contamination at the source, and supply of treated water from the BPSC supply wells to affected homeowners. The effectiveness of the remedy will be evaluated against numerical criteria that will be established during the design stage. Additional remedial work will be required if results fall significantly short of the criteria.

This Record of Decision (ROD) identifies the selected remedy, summarizes the other alternatives considered, and discusses the rationale for this preference. The ROD is a summary of the information that can be found in greater detail in the Proposed Remedial Action Plan (PRAP) and other documents placed in the repositories listed on this page. The details of the PRAP were presented at a public meeting held on September 13, 1995 at the Town of Somers Hall.

NYSDEC selected this action after careful consideration of all comments submitted during the public comment period which began on August 18, 1995 and ended on September 27, 1995. Appendix B contains a responsiveness summary of the public questions regarding the PRAP.

This ROD is issued by NYSDEC as an integral component of the citizen participation provisions of the New York State Environmental Conservation Law (ECL), 6NYCRR 375 and the Federal Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) as amended by the Superfund Amendments and Reauthorization Act (SARA) of 1986.

The public was provided the opportunity to review the documents at the repositories listed below to gain a more comprehensive understanding of the site and the investigations conducted to date.

Repositories

Somers Public Library
Route 139, Reis Park
Somers, NY 10589
Contact: Ms. Sirchia
914-232-5717

NYSDEC, Region 3
21 South Putt Corners Road
New PALTZ, NY 12561
Contact: Ms. Erin O'Dell-Keller
914-256-3154

SECTION 2: SITE LOCATION AND DESCRIPTION

The BPSC is a 28 acre, old, mostly vacant shopping center located in a residential/commercial area in the Town of Somers, New York. The site is bounded by U.S. Route 6 on the northwest; an undeveloped property on the south and west; an abandoned railroad embankment on the east; and a east-west oriented section of Route 118 on the north (Fig. 1).

Located in a relatively high topography, the drainage from the site is to the northwest and southeast. The eastern portion drains to a north to south flowing stream that lies between the site and the Meadow Park Road community, and is a tributary to the Muscoot River. The western portion of the site also drains to the Muscoot River, but through a south to north flowing stream that empties into a steep ravine, flows through two ponds and Lake Baldwin prior to its confluence with the Muscoot River.

The site is underlain by glacial till, weathered bedrock, and bedrock. The till comprises the uppermost geologic and water bearing unit. The till is thin near the western/ north-western site boundaries and thickens to the south/ south-east. Below the glacial till is approximately 20 ft of weathered bedrock. The depth to competent bedrock ranges from 22 ft below ground surface in the western part to about 100 ft in the east/ south-east.

There is a naturally occurring groundwater divide in the vicinity of the main mall building which is oriented in a southwest to northwest direction. The resulting bi-directional flow of groundwater in both the shallow and deeper bedrock systems is to the southeast and west/northwest.

SECTION 3: SITE HISTORY

3.1: Operational/Disposal History

Prior to 1965, the site was an orchard. The BPSC was built in 1965. BPSC has two wells : one 260 ft deep and the other 400 ft deep for a total capacity of 115 gallons per minute (gpm). A dry cleaner is known to have operated on the premises since 1967. The on-site dry cleaner came under scrutiny in 1979 as a result of county-wide investigation of sites vulnerable to dry-cleaning chemical (perchloroethylene [PCE]) contamination. In the process Westchester County Health Department (WCHD) discovered PCE in BPSC wells, but no evidence of disposal was found. Subsequent sampling in 1984 confirmed earlier results (less than 50 parts per billion [ppb] the State drinking water guidance value at the time). Big V Supermarkets acquired the shopping center in 1986.

An environmental assessment by LBG , Inc. in 1988 on behalf of the owners confirmed earlier WCHD sampling results. Effective January 1989 the drinking water standard for PCE was changed to 5 ppb. At this time PCE was also detected in the on-site McDonald well at 21 ppb. LBG concluded there was insufficient information to identify the source of the PCE contamination.

To confirm LBG findings, the NYSDEC and the WCHD re-sampled the mall supply well and the McDonald's well in late 1988 and found the gasoline additive methyl tert-butyl ether (MTBE) in McDonald's well at 320 ppb. The WCHD directed McDonalds to shut down the well and procure water from an alternate source. The NYSDEC's Spills Prevention Unit conducted the MTBE investigation and ordered the adjoining service stations to implement a pump and treat remedy. The McDonalds well resumed operation

in 1993 after being equipped with a granular activated carbon (GAC) filter system by the Mobil Oil Corporation. An extensive sampling effort by the WCHD from 11/88 through 1/89, detected PCE in several homeowner wells on Meadow Park Road and in four commercial wells along Route 6 (Fig. 2).

In April 1989, Big V supermarkets installed a GAC system on BPSC's two water supply wells.

Based upon review of WCHD's sampling data, the NYSDEC concluded that the dry cleaner was the most likely source of the PCE contamination in the area, and in October 1989 placed BPSC as a Class 2 site on the State's Registry of Inactive Hazardous Waste Sites. The presence of PCE in the soil was later confirmed by a limited soil gas investigation in June 1991.

SECTION 4: CURRENT STATUS

Pursuant to an Order On Consent entered into on August 4, 1992, Big V Supermarkets conducted a Remedial Investigation (RI) under the supervision of and in accordance with a work plan approved by the NYSDEC. The fieldwork for the RI was performed from July 1992 through December 1993. The RI Report was finalized in August 1994 and presented to the public at a meeting in Somers Town Hall on August 30, 1994. A final Feasibility Study (FS) report was submitted in June 1995. A public meeitng was held on September 13, 1995 in Somers Town Hall to present the PRAP.

An Interim Remedial Measure (IRM) was conducted at the site before the RI commenced. An IRM is implemented when a source of contamination or exposure pathway can be effectively addressed before completion of the RI/FS. Under an Order on Consent, dated September 12, 1991, Big V Supermarkets initially installed four individual point-of-use (POU) Granular Activated Carbon (GAC) filters and assumed maintenance of a fifth GAC filter on affected private wells where the drinking water quality exceeded the State standard of 5 ppb. Big V also commenced quarterly monitoring at all 19 Meadow Park Homes (MPR) homes. Four additional filters were installed on the basis of the quarterly monitoring results. In September 1994, at the request of the Town of Somers, Big V installed filters at three additional homes where PCE was detected at less than the 5 ppb standard. A total of 12 GAC filters have been installed.

SECTION 5: ENFORCEMENT STATUS

The Potential Responsible Party (PRP) for the site is Big V supermarkets, Inc. , Florida, New York. The PRP has entered into an Order on Consent with the NYSDEC to implement, operate, maintain, and monitor the remedy in accordance with the ROD.

SECTION 6: SUMMARY OF THE REMEDIATION GOALS

Goals for the remedial program have been established through the remedy selection process stated in 6NYCRR 375-1.10. These goals are established under the guideline of meeting all standards, criteria, and guidance (SCGs) and protecting human health and the environment.

At a minimum, the remedy selected should eliminate all significant threats to the public health and to the environment presented by the hazardous waste disposed at the site through the proper application of scientific and engineering principles.

The goals selected for this site are:

- Prevent exposure (inhalation, ingestion, and dermal) to soils containing unacceptable levels of PCE and its break down products.

- Prevent continued degradation of groundwater quality through migration of PCE and its break down products from soils to groundwater.

- Prevent exposure (inhalation, ingestion, and dermal) to groundwater contaminated at unacceptable levels with PCE and its break down products.

- Restore groundwater quality (impacted by PCE and its break down products) to acceptable levels within a reasonable time frame.

- Prevent migration and discharge of site contaminants in groundwater to adjacent surface water bodies.

SECTION 7: SUMMARY OF THE EVALUATION OF ALTERNATIVES

Five potential remedial alternatives for the BPSC site were identified and screened by Big V in its report entitled **Feasibility Study, Baldwin Place Mall, Somers, New York dated June 1995.** Of the five, Alternative No. 2 was eliminated from further evaluation. A summary of the detailed analysis of the remaining four alternatives follows.

7.1: Description of Alternatives

The potential remedies are intended to address the contaminated soils and groundwater at the site.

Alternative No. 1 (No Further Action):

The no further action alternative is evaluated as a requirement and as a basis for comparison. This alternative recognizes the IRM that had already taken place at the site. It requires continued monitoring only, to evaluate the effectiveness of the IRM.

No Further Action, in this case, would mean continuing with pumping of the BPSC production well at its current low pumping rate of 3.8 gallons per minute (gpm) to meet the water supply needs for the mostly vacant shopping center. It would also mean continuing with the Point of Use GAC filters at the affected homeowners/ commercial wells.

Alternative 1 probably would be protective of human health through institutional measures (deed and development restrictions) to prevent direct contact with the contaminants that remain at site; however, the potential for human exposure remains. Also, the contaminants would continue to leach further into groundwater and migrate off site. For these reasons, the No Further Action Alternative is not acceptable.

Present Worth:	$2, 075, 000
Capital Cost:	$ *none*
Annual O&M:	$ 135,000

(The above is based on operating and maintaining individual POU GAC filters and conducting groundwater monitoring for 30 years. The discount rate used for the present worth calculation is 5% per year).

Alternative No. 3: Source Area Excavation

This alternative consists of excavation of 95 yd^3 of contaminated soils at the source area to achieve 1.4 ppm cleanup level for TCE in the unsaturated soils in accordance with TAGM No.4046, and 50 ppm in the saturated soils; increased recovery (20 gpm) of groundwater from the BPSC production wells with on-site treatment; and, installation of a distribution system to provide on-site treated water to the homes on Meadow Park Road. The sustained pumping of the BPM production wells at rates higher than the current usage, as proposed in the remedy, would result in a substantial elimination

of the groundwater divide at the site. As a result, the groundwater flow in the bedrock aquifer would increase toward the BPM production wells and the off-site migration of contamination would be reduced. This alternative would be protective of human health and the environment.

Present Worth:	$1, 820,000
Capital Cost:	$ 828,000
Annual O&M:	
first year	$ 170,000
years 2 through 5	$ 93,000
years 6 through 20	$ 47,000
years 21 through 30	$ 46,000

The monitoring program included under both Alternatives 3 and 4 (below) would consist of quarterly sampling of select on-site monitoring wells for the first five years and annual sampling of these wells for an additional 25 years. The sampling of individual homes would cease after the water supply distribution system starts functioning, which is expected to take place one year after implementation of the source area remedy. The BPSC's two production wells would be tested in accordance with the requirements of 10 NYCRR Chapter 1, Part 5 for the duration of their use as a drinking water supply after which they would be included in the monitoring program.

Alternative No. 4: Source Area Excavation with Source Area Recovery Wells

This alternative consists of two low gpm recovery wells in addition to the remedy described in Alternative No. 3 above. The groundwater model estimates indicates that the source area recovery wells would remediate the groundwater in the source area in 10 to 15 years as compared to 25 to 30 years under Alternative 3.

This alternative would be protective of human health and the environment.

Present Worth:	$2,130,000
Capital Cost:	$ 940,000
Annual O&M:	
first year	$ 189,000
years 2 through 5	$ 112,000
years 6 through 15	$ 66,000
years 16 through 20	$ 47,000
years 21 through 30	$ 46,000

The technologies included in Alternative 4 would not pose any problems in implementation. Disposal of excavated soils and the water pumped and collected during excavation would require acceptance from a permitted treatment and disposal facility. The supply of treated water to Meadow Park Road may impact the implementability of this Alternative since a new water district would have to be created and approved by the NYSDOH, the WCHD, and the Town of Somers.

Alternative No. 5: Source Area Excavation with Source Area Recovery Wells, Western Site Recovery Well and Southeastern Site Recovery Wells

This alternative provides for a continuation of the point of use filters and includes two additional recovery wells compared to Alternative 4. The southeastern well would operate at 15 gpm and the western well at 20 gpm. The pumping rate for the BPSC wells is 15 gpm as opposed to 20 gpm in either Alternative 3 or 4. Unlike Alternatives 3 and 4, the monitoring and maintenance program for Alternative 5 would provide for a quarterly sampling of homeowner wells for the first 20 years and annually thereafter.

Present Worth	$2,669,000
Capital Costs	$ 768,000
Annual O&M	

years 1 through 5	$ 179,000
years 6 through 15	$ 133,000
years 16 through 20	$ 100,000
years 21 through 30	$ 39,000

The groundwater model shows that the deployment of the southeastern and western recovery wells would not substantially expedite groundwater cleanup.

7.2 Evaluation of Remedial Alternatives

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

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

1. Compliance with New York State Standards, Criteria, and Guidance (SCGs). Compliance with SCGs addresses whether or not a remedy would meet applicable environmental laws, regulations, standards, and guidance.

Alternative No. 1 (no further action) would not meet this criterion as the chemical specific ARARs for the site (Class GA groundwater standards and the federal and State MCLs for drinking water) would not be achieved within the 30-year time frame considered for evaluation of Alternatives.

Excavation of 95 yd^3 of contaminated soil from unsaturated and saturated zones in the source area under Alternatives 3, 4, and 5 would satisfy this criterion. The unsaturated soils would be cleaned to NYSDEC's objective of 1.4 ppm. A similar objective for saturated soils has not been established. Below the water table, the intent of the cleanup objective is to protect the groundwater quality. This intent would be substantially satisfied by the removal of 95 yd^3 of the contaminated soil.

The class GA groundwater standards and NY State MCLs for PCE and its degradation products would be achieved by any of Alternatives 3, 4, or 5 in varying time frames.

There are no promulgated ambient air quality standards for the contaminants of concern at this site under federal or State regulations. OSHA standards would be followed during excavation.

Both Alternatives 3 and 4 would meet the requirements of 10 NYCRR Sub-Part 5-1 and the Ten State Standards for the design, maintenance, and monitoring of a public water distribution system. Alternative 5 does not include a water distribution system.

The construction of the water distribution system across the eastern stream would cause some disturbance to the wetlands, but measures would be taken to minimize the disturbance and restore the wetlands.

The excavated soils and the water pumped and collected during excavation (under Alternative 3, 4 or 5) would be treated and disposed off site.

2. 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.

Alternative No. 1 would not satisfy this criterion since contamination would continue to

leach into the groundwater and migrate off site. Alternative No. 1 is therefore dropped from further consideration.

All three Alternatives 3, 4 and 5 would be protective of human health and the environment through excavation of the source area and removal of contaminants from groundwater by increased pumping and ongoing monitoring. Water, which meets State drinking water standards, would be provided to affected homes under Alternatives 3 and 4 by transporting on-site treated water, and under Alternative 5 by the continuation of point-of-use (POU) filters.

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 the construction and implementation are evaluated. The length of time needed to achieve the remedial objectives is also estimated and compared among alternatives.

Excavation of PCE contaminated soils would pose some potential short term (two weeks) risks to remediation workers. This risk would be the same under Alternatives 3, 4 or 5. Engineering controls, air monitoring and use of personal protective equipment during construction would keep this risk to a minimum.

The installation of a water distribution system, and recovery wells under Alternatives 3 and 4 would take approximately 12 weeks, and would have minimal on or off site construction related impacts. The construction of recovery wells under Alternative 5 would take approximately 10 weeks.

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.

All three Alternatives (3,4 and 5) would permanently remove contaminated soils to an off-site facility. The three alternatives differ in their expected remediation time frames. These are as follows:

Plume Location	Time (years) under Alternatives No.3	No.4.	No.5
Source Area	25-30	10-15	10-15
BPSC wells	17-18	15-17	15-17
Meadow Park	20	20	15-20
Western Site	NS	NS*	21-22

* NS= Not simulated

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.

All three Alternatives (3,4 and 5) would remove contaminated soils from the source area in the same manner. Soils from the source would be treated by either incineration or thermal desorption at an off-site permitted treatment facility.

Extracted groundwater would be treated using GAC filters, thereby reducing the volume of contaminated media. Periodic removal of spent carbon would ultimately reduce the toxicity of the remaining contaminants.

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 personal and material is evaluated along with potential difficulties in obtaining specific operating approvals, access for construction, etc.

The technologies inherent in all three Alternatives are readily implementable. The supply of treated water from the site to Meadow Park Road under Alternatives 3 and 4, however, requires compliance with additional administrative procedures which may delay implementation of the water supply option. The use of POU GAC filters and their essential monitoring and maintenance would continue until a new water supply is available.

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 costs for each alternative are presented in Table 1.

This final criterion is considered a modifying criterion and is taken into account after evaluating those above. It is focused upon after public comments on the Proposed Remedial Action Plan have been received.

8. Community Acceptance - Concerns of the community regarding the RI/FS reports and the Proposed Remedial Action Plan were evaluated. A "Responsiveness Summary" has been prepared (Appendix B) that describes all the public comments received and how the Department addressed or intends to address the concerns raised.

SECTION 8: SUMMARY OF THE SELECTED REMEDY

Based upon the results of the RI/FS, and the evaluation presented in Section 7, the NYSDEC is proposing Alternative No. 4, with the following modifications, as the remedy for this site:

- An estimated quantity of 135 yd^3 of contaminated soil in the source area will be excavated instead of the 95 yd^3 proposed in Alternatives 3, 4 or 5 (Fig. 3). This is based on a cleanup goal of 10 ppm in the saturated soil as opposed to 50 ppm. The clean-up goal of 10 ppm is proposed because it provides an optimal marginal benefit (Fig. 4). The lower cleanup level will also provide a greater measure of confidence than will a cleanup level of 50 ppm in view of possible gaps in the soil contamination data.

Post-excavation samples will be collected at the bottom of the excavation for evaluation of further remedial action as necessary.

- Contingency plans will be put in place to evaluate the need for southeastern and western recovery wells. The wells will be installed and commissioned if the implemented remedy substantially fails to achieve projected contamination reductions based on a set of criteria to be developed by Big V and approved by NYSDEC during the remedial design phase.

The NYSDEC's selected remedy, therefore, consists of the following elements:

1. A remedial design program 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. Numerical groundwater quality goals will be established during the remedial design to evaluate the effectiveness of the remediation on a yearly basis.

2. Source Removal: All contaminated soil in the saturated zone will be excavated to a cleanup level of 10 ppm. An estimated 135 yd^3 of soil will be excavated. The depth of excavation will be 15 ft. Post excavation samples will be collected to determine the need for further remediation. The excavated soil and the water pumped and collected during excavation will be treated off site by incineration or thermal desorption.

3. Supply of Potable Water: The PRP will have one of the following two options: 1) Install a distribution system (Fig. 5), and fund and create a new water district incorporating the BPSC production wells. The new water district will have to meet all requirements of 10NYCRR, Chapter I, Part 5. The PRP will supply the on-site treated water to all 19 MPR residential properties; **or** 2) Continue with individual POU GAC filters at residential properties until the Town of Somers provides an alternate source of water supply. The cost of the design and construction of the distribution system to the MPR properties will then be reimbursed by Big V to the Town of Somers.

Under both options the PRP will continue to maintain the GAC filter systems at affected commercial properties along Route 6 until the groundwater quality is restored to drinking water standards or an alternate source of water supply is available in the area. Any additional wells along Route 6 that also contain levels of PCE above drinking water standards and determined to be from the BPSC will be provided with GAC filters.

4. Connection to Alternate Water Supply: A Regional Water Supply system planned by the WCHD and the Town of Somers is expected to be available for connection to affected homes in the Meadow Park Road Area in two to five years. The PRP and the NYSDEC agree that connection to a permanent Regional Water Supply System (when available) will be the selected water supply option in the long term. The distribution system and certain appurtenances will be designed to be an integral part of the Town's proposed regional water supply system. The PRP will obtain approval of its plans, specifications and construction from the Town Engineer and the Westchester County Health Department.

5. Groundwater Treatment: Two source area wells, one shallow and one deeper well to the top of the competent bedrock, will be installed to capture vertical leakage as well as lateral flow passing under the source area. The water from these wells will be treated separately from the water pumped by the BPM production wells, and the effluent will be discharged to a nearby stream.

The two wells may be combined into one continuously screened well if, during the design, it is proven that the capture of the contamination plume is thereby improved.

Year-by-year numerical groundwater quality goals will be established during the design phase of the remediation to evaluate the effectiveness of the groundwater remedial program. The recovery rates of the BPSC and the source area wells required to optimally capture the on-site plume will be determined by pump tests. The location(s) of the source area well(s) will be based on soil and groundwater analysis, and the characteristics of the bedrock. The design of the source well/s will require NYSDEC approval.

The BPM wells are expected to pump at 20 gpm during remediation, but fine tuning of the

source and BPM wells will be likely once the system is running.

6. Contingency Plan: If the implemented remedy, and any subsequent adjustments to the workings of the BPSC and source area wells fail to substantially accomplish the numerical groundwater quality goals approved by NYSDEC during the design phase, installation of additional pumping well(s) or other enhancements to the remedial system will be considered. Big V will implement such enhancements as are considered appropriate by NYSDEC.

The NYSDEC believes the above remedy meets the selection criteria and is in the best interest of the public and the environment.

The projected costs of the selected remedy are as follows:

Construction Cost:	$1,074,000
O&M costs per year are as follows:	
First year only:	$ 189,000
Years 2 through 5:	$ 112,000
Years 6 through 15:	$ 66,000
Years 16 through 20:	$ 47,000
Years 21 through 30:	$ 46,000

Present Worth: $2,264,000
Based on a 30 year life
and a 5% interest rate.

The above cost estimates are based on supply of on-site treated water to Meadow Park Road homes, incorporating BPSC wells into a new water district to be created by the PRP under the requirements of 10NYCRR, Part 5. The distribution system installed by the PRP will be connected to the Regional Water District (when implementable) for permanent long term supply of potable water to the affected homes.

After the impacted properties are connected to Regional Water District, the BPSC wells will continue to pump and treat groundwater. Big V may chose to use some or all of the treated water for the BPSC. Any surplus treated water will be discharged to a nearby stream.

A long term monitoring program will be instituted to monitor the effectiveness of the selected remedy. This long term monitoring program will be a component of the operations and maintenance for the site and will be developed as part of the remedial design.

Lawler, Matusky & Skelly Engineers
One Blue Hill Plaza • Pearl River, New York 10965
ENVIRONMENTAL SCIENCE & ENGINEERING CONSULTANTS

Location Map

BALDWIN PLACE MALL

FIGURE
1-1

FIG. 1

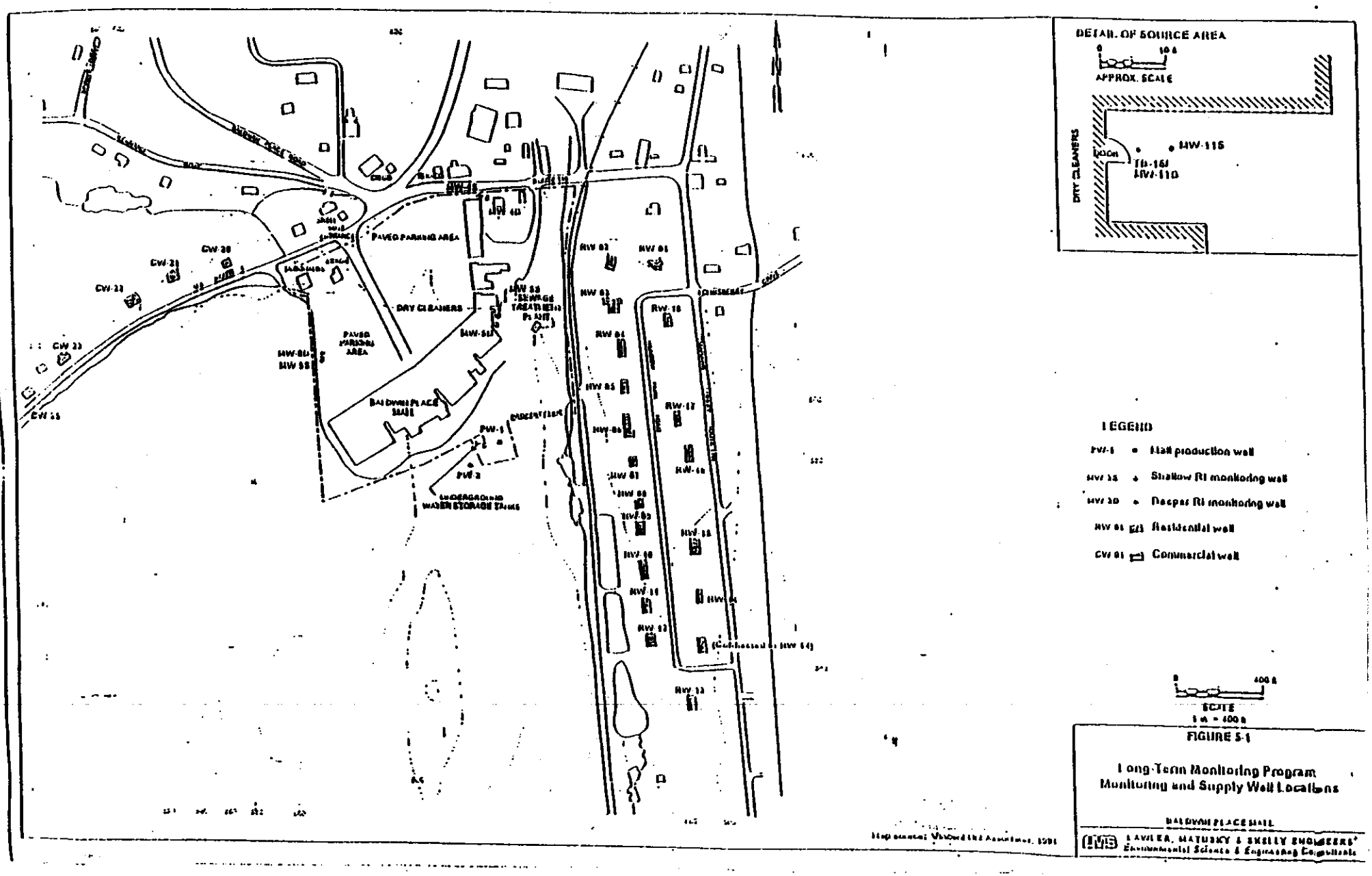
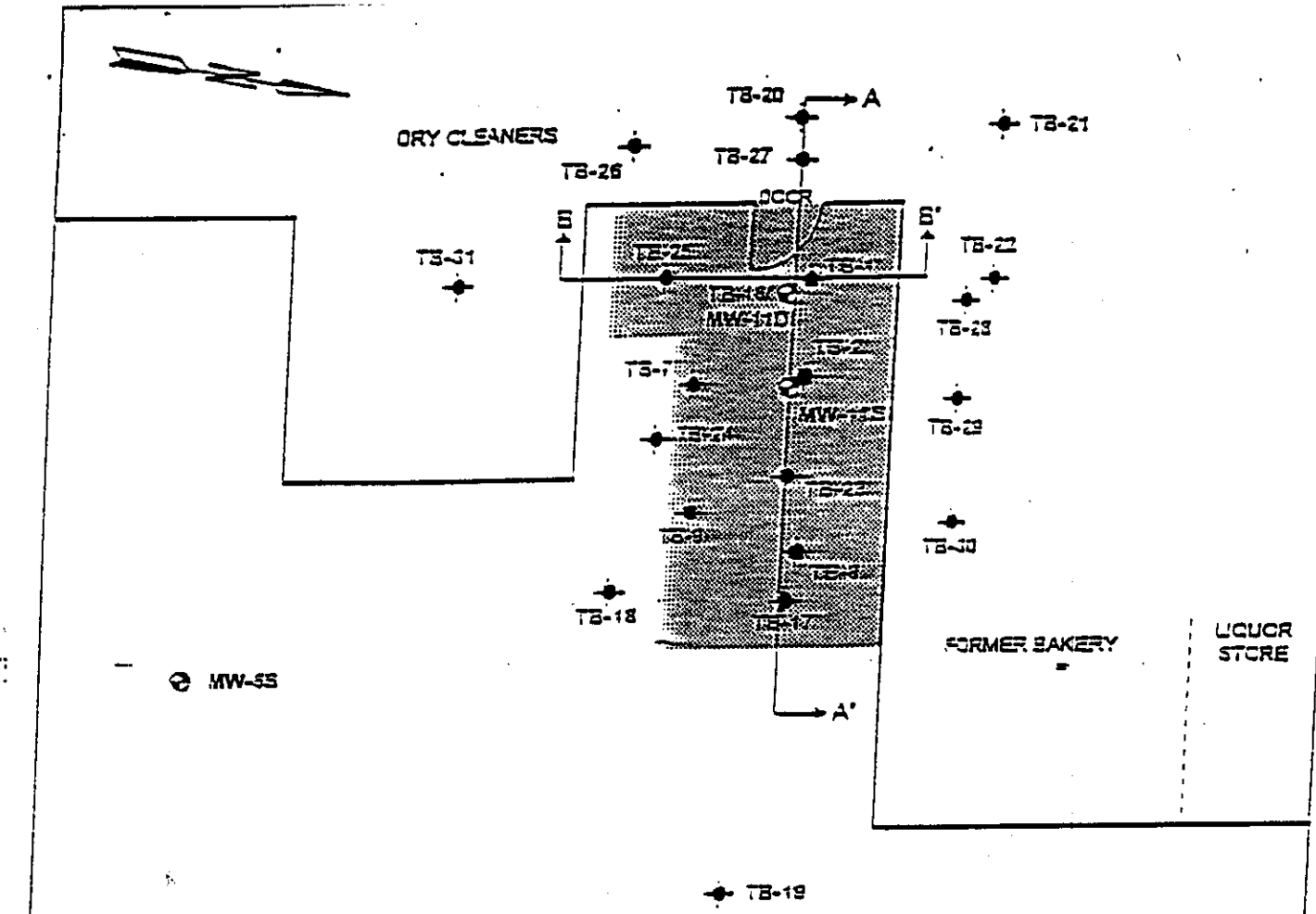

DETAIL OF SOURCE AREA
APPROX. SCALE
DRY CLEANERS
MW-11S
TB-16J
MW-11D
PAVED PARKING AREA
DRY CLEANERS
PAVED PARKING AREA
BALDWIN PLACE MALL
PW-1
PW-2
LEGEND
PW-1 Mall production well
MW 1S Shallow RI monitoring well
MW 3D Deeper RI monitoring well
RW 01 Residential well
CW 01 Commercial well
SCALE
1 in = 400 ft
FIGURE 5-1
Long-Term Monitoring Program
Monitoring and Supply Well Locations
BALDWIN PLACE MALL
LAWLER, MATUSKY & SKELLY ENGINEERS
Environmental Science & Engineering Consultants

FIG. 2



LEGEND

- Monitoring well location
- Test boring location
- Area of soils exceeding cleanup objective of 10 mg/kg PCE
- A A' Cross-section location

0 10 ft

APPROXIMATE SCALE
1 in = 10 ft

Map source: Vincent Ulli Associates

Lawler, Matusky & Skelly Engineers
One Blue Hill Plaza • Pearl River, New York 10965
ENVIRONMENTAL SCIENCE & ENGINEERING CONSULTANTS

Excavation of Soils Exceeding 10 mg/kg PCE
BALDWIN PLACE MALL

Figure 4

FIG. 3

BALDWIN PLACE SHOPPING CENTER

MARGINAL BENEFIT ANALYSIS – SOIL CLEANUP

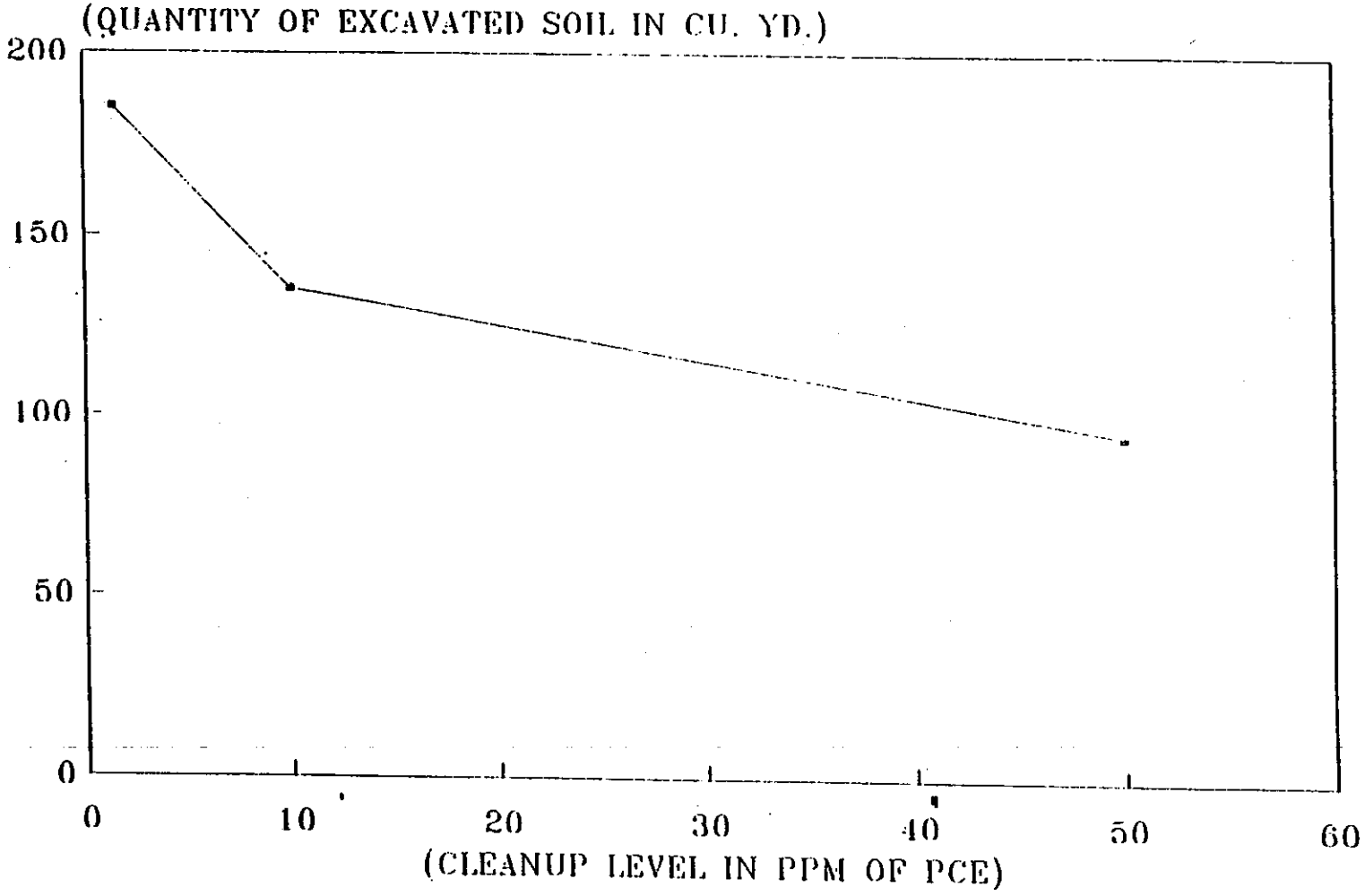


FIG. 4

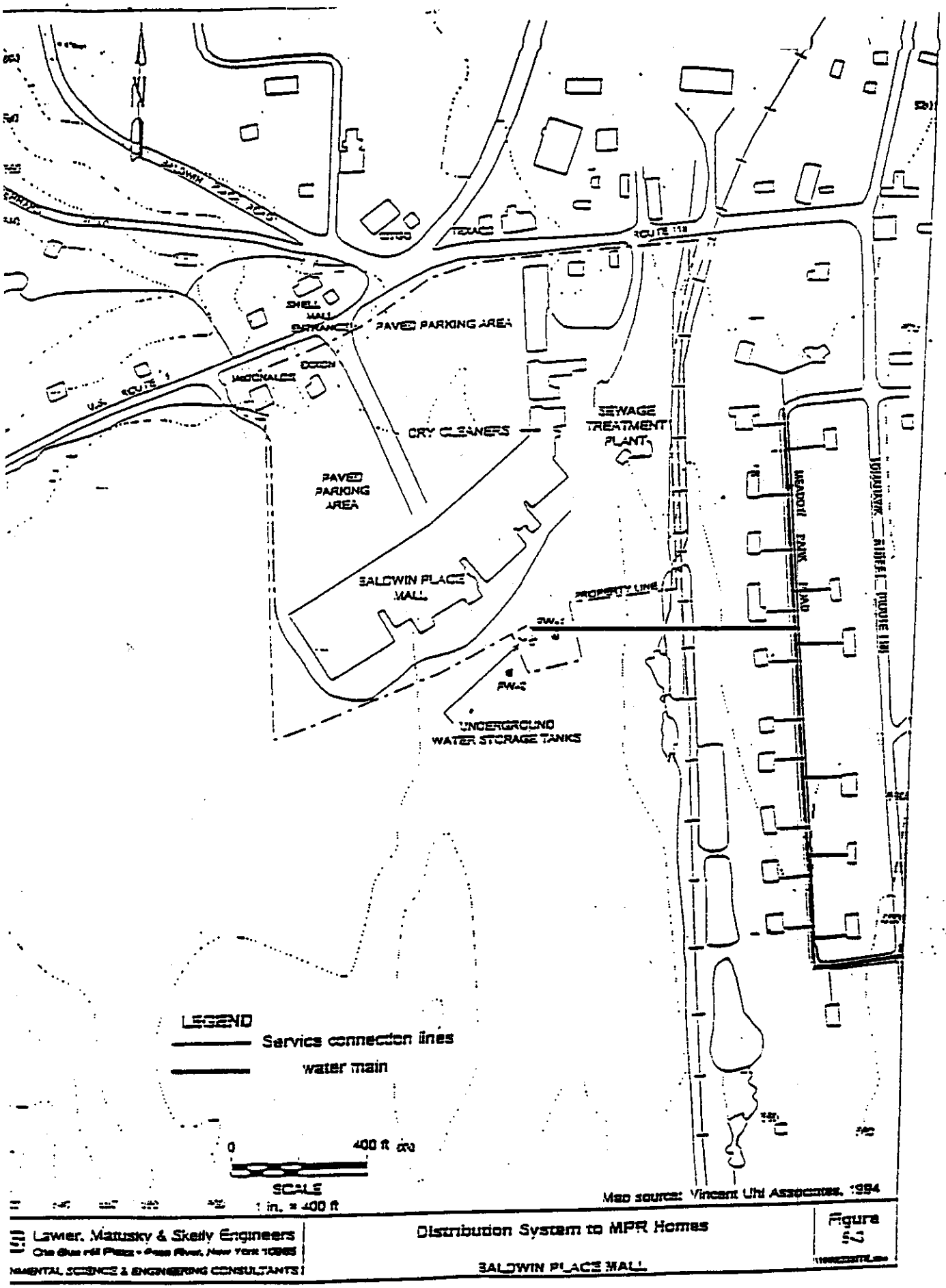

N
TEXACO
ROUTE 110
SHELL
PAVED PARKING AREA
MCDONALDS
DOCK
U.S. ROUTE 1
DRY CLEANERS
SEWAGE TREATMENT PLANT
PAVED PARKING AREA
MEADOW PARK ROAD
BALDWIN PLACE MALL
PROPERTY LINE
PW-1
PW-2
UNDERGROUND WATER STORAGE TANKS
LEGEND
Service connection lines
water main
0
400 ft
SCALE
1 in. = 400 ft
Map source: Vincent Uhl Associates, 1994
Lawler, Matusky & Skelly Engineers
Distribution System to MPR Homes
Figure
BALDWIN PLACE MALL

FIG. 5

SUMMARY OF SIGNIFICANT PCE CONCENTRATIONS

IN SOIL

LOCATION	DEPTH (FT.)	CONC. OF PCE (ppm)
TB-1	2-4	1,200
TB-1	6-8	4,500
TB-2	2-4	660
TB-8	6-6.5	410
TB-16	6-8	130
TB-16	10-10.7	500
TB-16	12-13	270
TB-16	14-15	1,300
TB-17	8-10	43

TABLE 1

MONITORING WELLS

WITH

SIGNIFICANT PCE CONCENTRATION

WELL #	CONCENTATION OF PCE (ppb)	DATE ANALYZED
MW-3S	7	5/18/93
MW-5S	300	5/18/93
MW-5D	910	5/18/93
MW-7S	30	5/20/93
MW-9S	850	5/19/93
MW-9D	300	5/20/93
MW-10D	37	5/20/93
MW-11S	24,000	12/22/93
MW-11D	3,200	12/22/93

TABLE 2

RESIDENTIAL & COMMERCIAL WELLS

WITH

SIGNIFICANT PRE-FILTER PCE CONCENTRATIONS

WELL #	CONCENTRATIONS OF PCE (ppb)
RW-05	42
RW-07	26
RW-08	30
RW-09	53
RW-10	17
RW-11	9
RW-15	13
RW-16	17
RW-17	16
CW-20	98
BPM-PW1	66
BPM-PW2	66

NOTE: Information extracted from May 1995 analytical results

TABLE 3

APPENDIX A

BIBLIOGRAPHY OF ADMINISTRATIVE RECORDS

BALDWIN PALCE SHOPPING CENTER

	Description of Report	Date	Prepared by:
•	Ground Water Investigation	May 1989	J. Robert Folchetti
•	Water Supply & Treatment Alternatives	Oct 1989	Malcolm Pirnie
•	Hazardous Waste Site Classification	Mar 1990	Malcolm Pirnie
•	Interim Site Characterization	Dec 1992	Vincent Uhl & Assoc.
•	Remedial Investigation (Vols. I to IV)	Aug 1994	Vincent Uhl & Assoc.
•	Source Area Delineation Program	Nov 1994	Vincent Uhl & Assoc.
•	Feasibility Study	Jun 1995	Lawler, Matusky & Skelly

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APPENDIX B

Responsiveness Summary

The New York State Department of Environmental Conservation (NYSDEC) held a public meeting on September 13, 1995 at the Somers Town Hall to discuss the Proposed Remedial Action Plan (PRAP) and to receive public comments. The meeting was held during the comment period, which began on August 18, 1995 and ended on September 27, 1995.

Present at the meeting were representatives from NYSDEC, the New York State Department of Health (NYSDOH), the Town of Somer's Supervisor, and the consultants to Big V Supermarkets, Lawler, Matusky and Skelly.

NYSDEC's responses to the questions raised at the meeting or received in writing are listed below. For clarity the questions and responses are grouped under topical headings, and may not be *ad verbatim* quotes.

Questions Regarding the Technical Aspects of the PRAP

Question #1: I am concerned that there is another source of contamination. Auto body shops use chemicals that are almost identical to those used by dry cleaners. Were soil samples taken from the north side of Route 118 near the auto body shop, or from the catch basin, or the drainage pipe leading onto the Big V site?

Response: The bulk of the soil sampling was done behind the dry cleaners. However, there were about six or seven soil borings done near Route 118 and others in front of the mall parking lot. There were some catch basin samples taken during the Remedial Investigation. The NYSDEC is, however, going to inspect the site with the questioner to determine the need for investigating other possible sources of the contamination.

Question #2: Do we have an estimate of when the contamination was first released into the soil? If you do not have an estimate, how can you project the time period needed to remedy the site?

Response: We do not have any record of when or over what period of time the contamination was actually released into the ground. However, it is not essential to know the timeframe of the contamination release to estimate the length of time required for cleanup. The time estimated to cleanup the site is based on factors such as the current distribution of contamination, groundwater usage in the area, flow of groundwater, and soil and bedrock characteristics.

Question #3: The treated water from the on-site contamination source recovery wells is to be discharged into the unnamed stream. Does this stream drain into Lake Shenorock?

Response: Yes

Question #4: What is the frequency of monitoring the discharge?

Response: The specifics of the discharge monitoring program, such as sampling frequency and effluent qualtiy will be decided during the design of the remedial action and will be based upon the provisions

governing the State Pollution Discharge Elimination Systems (SPDES).

Question #5: Since the unnamed stream flows into the Amawalk Reservoir, a New York City water supply source, will the city be notified?

Response: Yes

Question #6: Will the BPSC supply wells be treating the same contaminated groundwater that is now being treated by the individual point-of-use (POU) filters at the impacted homes?

Response: Yes.

Question #7: If the contamination plume were to spread to other homeowners' wells in the future, would the water distribution system be extended to these homes?

Response: Big V would be required to provide either a POU filter or extend the distribution system to the affected homes. The choice would largely depend on the location of the newly contaminated wells in relation to the distribution system and the associated cost of extending the distribution system or providing POU filters.

Question #8: After the remedy is implemented, will the bedrock aquifer remain polluted?

Response: The increased pumping rate at the BPSC wells and the operation of the deeper well at the source will remove a substantial mass of contamination in the bedrock. There will, however, be some contamination in the bedrock that will be out of reach of the remedial system. Once the source of contamination is removed, the concentration of contamination in groundwater is expected to decrease with time over the total area of the plume.

Question #9: Will the contamination continue to flow further to the south?

Response: Groundwater that is outside the influence of the BPSC supply wells and the source recovery wells will continue to follow its natural flow direction. This implies that a certain portion of the plume will continue to flow away from the site. The concentration, of contaminants is expected to decrease once the remedial system starts operating.

Question #10: What reason do you have to believe that it will decrease?

Response: It must be remembered that a considerable reduction in the mass of contamination will have already taken place because of removal of the contaminated soil, thus preventing further releases of contaminants. In the zone of influence of the remedial system, the source recovery and supply wells will draw in contaminated water for treatment. Over a period of time the mass of contamination will be reduced and, therefore, its concentration in the groundwater will be reduced as well.

The plume outside the zone of influence of the remedial system has a relatively smaller mass of contamination. The natural recharge and movement of the groundwater will reduce the concentration over a period of time.

Question #11: If the cleanup does not substantially meet the goal established during the design stage, will the DEC modify the remedial system?

Response: Yes

Question #12: Once Big V forms the water district that will be served from the Baldwin Place Mall (BPSC) wells, will the Town take over and run the system?

Response: That decision has not been made. The possibility of incorporating the BPSC wells into the Shenorock Water District, and using its personnel to operate the BPSC wells is being considered by the Town.

Questions regarding costs of the remedial system

Question #13: How much of the cost of the remedial system and its operation will have to be borne by the public?

Response: The public will not bear any of the costs associated with the remedial action. The costs of design and construction of the distribution system, its connection to the homes on MPR, the operation and maintenance of the BPSC wells and the two commercial filters along Route 118 will all be borne by Big V.

Question #14: If the BPSC wells are incorporated into the Shenorock Water District, will the impacted homeowners have to pay the water bills?

Response: No. The incorporation would be for the purpose of using the Shenorock Water wells personnel to operate the BPSC wells. Big V would continue to bear the costs of operation and maintenance.

Questions Regarding the Construction of the Town's Regional Water Supply System and the Redevelopment of the Mall

These topics are outside the purview of the remedial action. Questions raised on these topics at the meeting, and the responses provided to them by the Town's Supervisor and the NYSDEC are recorded here as information incidental to the ROD process

Question #15: How long will it take for the Water District #2 to be extended to Meadow Park Road (MPR)?

Response: The approval process can take one year to eighteen months, and the construction between six months to a year.

Question #16: Doesn't the State have the authority to order, as part of the PRAP, Big V Supermarket to connect the Town to this water system now?

Response: Extension of the Water District No.2 is planned to serve a larger area than is necessary for the remediation of the site and supply of potable water to the impacted homes. As such it is not a cost-effective remedy.

Question #17: Can the long term plans to extend a regional water district be sped up to accommodate the people in the area?

Response: The plans to expand Water District No.2 are being processed as fast as possible.

Question #18: If the State were to order the construction necessary to extend the regional water district on a permanent basis i.e. extend the Water District No. 2, would it expedite the process?

Response: No. State involvement would not make the process any quicker. Unfortunately setting up a water district extension is a lengthy process that requires numerous approvals. When you lay out the approvals from the State Comptroller and the County Board of Legislators, securing design and construction bonding, approvals of design by various authorities, and actual construction and hookup on a time line, you will note that two years is not a long time.

Question #19: Who pays for the extension of Water District No.2?

Response: All those who will be served by it. The Town will levy a tax on each homeowner in proportion to the homeowner's property value. It is the Town's concept that Big V will pay the share of cost that would otherwise have been levied on the MPR residents.

Question #20: Who will pay the water bill once Water District No.2 is extended and the impacted homes are hooked upto it?

Response: At the September 13, 1995 public meeting, the Town Supervisor stated that it is the Town's position that the residents of Meadow Park Road will not have to pay for their water. The Town and Big V will have to settle the responsibility of paying water usage costs between themselves.

Question #21: Has anybody researched bringing in the water line from Yorktown?

Response: Yes. The reason why the decision was made to bring water from County District No.2 was because several other areas between Amawalk and Baldwin Place also require service. Bringing in waterline from Yorktown would not have been the most cost-effective solution.

Question #22: When is the mall going to be redeveloped? Is the State involved in this decision?

Response : The Town has decided that approval of the development of the Mall would be contingent upon the signing of the Record of Decision by the NYSDEC. The State has a minor role in the overall approval of the plans to develop the Mall, except to ensure that the development is scheduled and designed so as not to adversely affect the remedial action.