# RECORD OF DECISION

**Fulton Avenue Superfund Site**

Nassau County, New York

United States Environmental Protection Agency
Region 2
New York, New York

September 2007

## DECLARATION

### SITE NAME AND LOCATION

Fulton Avenue Superfund Site
Nassau County, New York
Superfund Identification Number: NY0000110247

### STATEMENT OF BASIS AND PURPOSE

This decision document presents the Selected Remedy for Operable Unit 1 of the Fulton Avenue Superfund Site (the Site) located in Garden City Park, Nassau County, New York. This remedy was chosen in accordance with the Comprehensive Environmental Response, Compensation, and Liability Act of 1980, as amended (CERCLA), 42 U.S.C. §§ 9601-9675, and to the extent practicable, the National Oil and Hazardous Substances Pollution Contingency Plan (NCP), 40 CFR Part 300. This decision is based on the Administrative Record for this Site. The Administrative Record index is attached (Appendix III).

The State of New York (State) does not concur with the Record of Decision at this time pending review by the State of environmental easement requirements (Appendix IV).

### ASSESSMENT OF THE SITE

The response action selected in this Record of Decision (ROD) is necessary to protect public health or welfare or the environment from actual or threatened releases of hazardous substances from the Site into the environment.

### DESCRIPTION OF THE SELECTED REMEDY

The Selected Remedy is an interim remedy that involves the partial remediation of the groundwater utilizing a groundwater extraction and treatment system in conjunction with a focused application of in-situ chemical oxidation (ISCO) in the vicinity of an original source area. The interim remedy will include the following major components:

- Groundwater modeling will be considered during development of the pre-design investigation to assist in the placement of extraction, injection, monitoring, and observation wells.

- In-situ chemical oxidation technology would be applied as an initial enhancement in the area at and near 150 Fulton Avenue, Garden City Park (Fulton Property). Approximately 10 chemical injection wells will be placed in the high PCE area at and near the Fulton Property and two rounds of chemical injection are planned.

- The tetrachloroethene-(PCE-) dominant portion of the contaminant plume will be extracted, treated, and discharged. The number and location of extraction wells, configuration of each extraction well, pumping rates, and specific groundwater discharge alternatives may be evaluated using a 3-D model as part of the pre-design investigation and remedial design. It is expected that by remediating the high concentrations of PCE located at and near the Fulton Property using in-situ chemical oxidation, the contamination levels that exceed regulatory levels in the groundwater will be reduced more quickly. The groundwater treatment systems will consist of shallow-tray air stripping units, or comparable systems, with carbon adsorption of the contaminated off-gasses. These treatment systems will be maintained, operated and sampled to verify the effectiveness of each treatment process.

- The wellhead treatment system at Garden City Water District wells 13 and 14, which was upgraded in the Spring of 2007 in order to protect these public supply wells from the increasing levels of contamination observed at the MW-21 location (see figure 2), will be evaluated to determine whether this upgrade is fully protective.

- Institutional controls will be relied upon to restrict future use of groundwater at the Site. Specifically, the New York State Department of Health State Sanitary Code regulates installation of private potable water supply wells in Nassau County. The Fulton Property is restricted to commercial industrial use based on its current zoning. If a change in land use is proposed, additional investigation of soils at the Fulton Property would be necessary to support the land use change. Regulatory requirements under the State's Superfund program may result in New York State Department of Environmental Conservation (NYSDEC) seeking to obtain easements/covenants on various properties within the Site.

- A long-term groundwater monitoring program will be instituted to assess migration and attenuation of groundwater contamination in the PCE-dominant part of the plume, as well as the effects the groundwater extraction system will have on the flow dynamics with the local aquifer system. Effluent samples will be collected to verify compliance with the NYSDEC surface water or groundwater discharge requirements and the State Pollution Discharge Elimination System (SPDES) effluent criteria. Results from long-term groundwater monitoring will be used to evaluate system performance and to adjust operating parameters for the pump-and-treat system, as necessary.

- A Site Management Plan would also be developed and would provide for the proper management of all Site remedy components post-construction, such as institutional controls, and will also include: (a) monitoring of Site groundwater to ensure that, following remedy implementation, the groundwater quality improves; (b) conducting an evaluation of the potential for vapor intrusion, and mitigation, if necessary, in the event of future construction at or in the vicinity of the Fulton Property; (c) provision for any operation and maintenance required of the components of the remedy; and (d) periodic certifications by the owner/operator or other person implementing the remedy that any institutional and engineering controls are in place.

- Due to the interim nature of this remedy, Maximum Contaminant Levels (MCLs) may take longer than five years to achieve, a periodic review of site conditions will be conducted no less often than once every five years.

- The vapor intrusion evaluation of structures in the vicinity of the Fulton Property will be continued. EPA will conduct an investigation of vapor intrusion into structures within the vicinity of the Fulton Property that could be potentially affected by the groundwater contamination plume, and would implement an appropriate remedy (such as sub slab ventilation systems) based on the investigation results.

## DECLARATION OF STATUTORY DETERMINATIONS

The selected remedy meets the requirements for remedial actions set forth in Section 121 of CERCLA, 42 U.S.C. § 9621.

**Part 1: Statutory Requirements**

The Selected Remedy is protective of human health and the environment, complies with Federal and State requirements that are applicable or relevant and appropriate to the remedial action, is cost-effective, and utilizes permanent solutions and alternative treatment or resource recovery technologies to the maximum extent practicable.

**Part 2: Statutory Preference for Treatment**

The Selected Remedy satisfies the statutory preference for treatment as a principal element of the remedy.

**Part 3: Five-Year Review Requirements**

Because this remedy will result in hazardous substances remaining on-site above health-based levels, a review will be conducted to ensure that the remedy continues to provide adequate protection of human health and the environment within five years after commencement of the remedial action. Because this is an interim action ROD, review of this site and remedy will be ongoing as EPA continues to develop remedial alternatives for the Fulton Avenue site. The current expectation is that construction will be initiated in 2009 and the first five-year review will be due in 2014.

## ROD DATA CERTIFICATION CHECKLIST

The following information is included in the Decision Summary section of this ROD. Additional information can be found in the Administrative Record file for the Site, the index of which can be found in Appendix III of this document.

- Contaminants of concern and their respective concentrations (See Appendix II Table 1)
- Baseline risk represented by the chemicals of concern (see ROD page 15 and Appendix II Tables 1, 5,and 6)

- Cleanup levels established for chemicals of concern and the basis for these levels (see Appendix II, Table 7)
- A discussion of source materials constituting principal threats may be found in the "Principal Threat Waste" section. (see ROD, page 26)
- Current and reasonably-anticipated future land use assumptions and current and potential future beneficial uses of groundwater used in the baseline risk assessment and ROD (see ROD, page 10)
- Potential land and groundwater use that will be available at the Site as a result of the selected remedy (see ROD, page 10)
- Estimated capital, annual operation and maintenance, and total present-worth costs, discount rate, and the number of years over which the remedy cost estimates are projected (see ROD, page 26)
- Key factors that led to selecting the remedy (i.e., how the Selected Remedy provides the best balance of tradeoffs with respect to the balancing and modifying criteria, emphasizing criteria key to the decision) may be found in the "Comparative Analysis of Alternatives" and "Statutory Determinations" sections. (see ROD, pages 21 and 30)

George Pavlou, Director
Emergency and Remedial Response Division
USEPA Region 2

9/28/07
Date

RECORD OF DECISION FACT SHEET
EPA REGION 2

**Site**

Site name: Fulton Avenue Site, Operable Unit 1

Site location: Garden City Park, Nassau County, New York

Listed on the NPL: March 6, 1998

**Record of Decision**

Date signed: September XXX, 2007

Selected remedy:

Groundwater: Groundwater extraction, treatment and surface water discharge to County recharge basin or comparable groundwater recharge system; limited in-situ oxidation in the vicinity of an original source area located at 150 Fulton Ave.; and institutional controls.

Capital cost: $4,978,102

Operation and Maintenance and Monitoring costs: $5,718,758

Total Present-worth cost: $10,696,860

**Lead**: EPA

Primary Contact: Kevin Willis, Remedial Project Manager, (212) 637-4252

Secondary Contact: Angela Carpenter, Chief, Eastern New York Remediation Section, (212) 637-4263

**Main PRPs**: Genesco, Inc., Gordon Atlantic Corporation, Conair Corporation, John E. Banks, Jack Goodman Corp.

**Waste**

| | |
|---|---|
| Waste type: | Volatile organic compounds |
| Waste origin: | On-Site spills |
| Contaminated media: | Groundwater, Air |

# RECORD OF DECISION

## DECISION SUMMARY

Fulton Avenue Superfund Site

Operable Unit 1

Garden City Park, Nassau County, New York

United States Environmental Protection Agency
Region 2
New York, New York

September 2007

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APPENDICES

## SITE NAME, LOCATION, AND DESCRIPTION

The Fulton Avenue Superfund Site (the Site) includes a 0.8-acre property located at 150 Fulton Avenue, Garden City Park, Nassau County, New York (hereinafter, the Fulton Property), all contamination emanating from the Fulton Property, as well all other contamination impacting the groundwater in the vicinity of the Fulton Property including an overlapping TCE-dominant plume in the Upper Glacial and Magothy aquifers, whose origin is currently unknown, and all sources of this contamination.

The Fulton Property is owned by Gordon Atlantic Corporation. It is located within the Garden City Park Industrial Area (GCPIA), Village of Garden City Park, Town of North Hempstead, Nassau County, New York (see Figure 1). A fabric-cutting mill operated at the Fulton Property from approximately January 1, 1965 through approximately December 31, 1974, and these operations included dry-cleaning of fabric with tetrachloroethylene (PCE). Currently, the Fulton Property is occupied by a business support company.

Approximately 208,000 people live within three miles of the Fulton Property. There are about 20,000 people living within a mile of the Fulton Property. Residents within the area obtain their drinking water from public supply wells. The vicinity of the Fulton Property is industrial but residential areas are immediately adjacent to the industrial area.

The Site is situated in the outwash plain on Long Island, New York. Approximately 500 feet of interbedded sands and limited clay lenses overlay Precambrian bedrock. There are three aquifers that exist beneath the Site, two of which are affected. The Upper Glacial aquifer is the surficial unit which overlies the Magothy aquifer. The Magothy is the primary source for public water in the area. No impeding clays were observed between the Upper Glacial and Magothy aquifers within the study area (the entire area investigated during the Operable Unit 1(OU-1) Remedial Investigation (RI)), as described below.

## SITE HISTORY AND ENFORCEMENT ACTIVITIES

Beginning in 1986, numerous investigations were conducted by the Nassau County Departments of Health (NCDH) and Public Works (NCDPW) to identify the source(s) of chlorinated volatile

organic compounds (VOCs) impacting numerous public supply wells located downgradient of the GCPIA. Based on the results of these investigations, the New York State Department of Environmental Conservation (NYSDEC) placed the Fulton Property on the Registry of Inactive Hazardous Waste Disposal Sites in New York State and conducted an investigation of the GCPIA which was finalized in late 1996.

On March 6, 1998, EPA placed the Site on the National Priorities List (NPL) of hazardous substance sites under CERCLA. Thereafter, NYSDEC, as the lead regulatory agency, oversaw the implementation of a Remedial Investigation and Feasibility Study (RI/FS) and an Interim Remedial Measure (IRM) described below.

In 1999, under an Administrative Order with NYSDEC, a Potentially Responsible Party (PRP), Genesco, Inc., contracted ERM, Northeast (ERM), to conduct an RI/FS of the Site. The purpose of the RI was to define the nature and extent of contamination at the Site. Field work for this effort began with the drilling of vertical profile wells in early 2000.

During the RI, 20 monitoring wells were installed in three separate mobilizations within a study area which extended approximately north to Jericho Turnpike, south to Cambridge Avenue, east to Herricks Road, and west to New Hyde Park Road (hereinafter, the Study Area). Following the first two successive field mobilizations of monitoring well installation and sampling, the first draft RI was submitted to NYSDEC and EPA in August 2002.

Evaluation of the findings contained in the August 2002 Draft RI led to NYSDEC and EPA requiring further work to better delineate the downgradient extent of the contaminant plume. In the Spring of 2003, two eight-zone monitoring wells were installed downgradient of Garden City Water District wells 13 and 14. In August 2005, an updated draft RI was submitted to NYSDEC and EPA. Although the document did not fully define the nature and extent of contamination at the Site, this document was revised and approved by NYSDEC in November 2005 and EPA determined it was sufficient for purposes of the first operable unit.

The PRP also conducted an IRM from August 1998 to December 2001 to remove contaminants from an original dry well on the Fulton Property in order to prevent further contaminant migration into

the aquifer and into the indoor air at the Fulton Property facility. Following the excavation of contaminated soils from the bottom of the drywell, a soil vapor extraction (SVE) system was installed to address residual soil contamination and operated until the soil vapor contaminant concentrations met New York State Department of Health (NYSDOH) guidance values. Over 10,000 pounds of PCE were removed from the source area at the Fulton Property during the operation of the SVE system. Following this action, the PRP installed a sub-slab depressurization system under the building at the Fulton Property to provide additional protection to the occupants from exposure to the contamination. This system remains in operation.

Once adequate data were collected during the RI, the evaluation of remedial alternatives for the FS was begun. A draft FS was received by EPA and NYSDEC in February 2006. A revised second draft of the FS was resubmitted in July 2006. In February of 2007, EPA produced an addendum to the FS to clarify issues in the second draft of the FS. The draft FS and addendum were approved by NYSDEC on February 15, 2007.

NYSDEC and EPA agreed that EPA would be designated as the lead agency for the Fulton Avenue Site at the conclusion of the RI/FS process discussed above.

**COMMUNITY PARTICIPATION**

The Proposed Plan and supporting documentation for the Site were made available to the public on February 23, 2007 at the EPA Region 2 Administrative Record File Room in New York, NY the Garden City Public Library in Garden City; and at the Shelter Rock Public Library in Albertson. EPA issued a public notice in the Garden City News on February 23, 2007 and the Garden City Life on March 1, 2007 which contained information relevant to the duration of the public comment period, the date of the public meeting, and the availability of the Proposed Plan and the Administrative Record. The public comment period was held from February 19, 2007 through March 31, 2007. The original public notice advised the public that the public comment period for the Site would end on March 24, 2007 but since the Administrative Record was not available in the Site Repositories until February 23, 2007, the public comment period was extended to March 31, 2007. This notice was sent to all addresses on the

mailing list on March 23, 2007. In addition, a public meeting was held on March 6, 2007, at the Garden City Village Hall, 351 Stewart Avenue, in Garden City, NY. The purpose of the meeting was to inform interested citizens and local officials about the Superfund process, to discuss the Proposed Plan, to receive comments on the Proposed Plan, and to respond to questions from area residents and other interested parties. Responses to comments and questions received at the public meeting and in writing throughout the public comment period are included in the Responsiveness Summary, which is part of this Record of Decision (Appendix V).

## SCOPE AND ROLE OF RESPONSE ACTION

This Record of Decision (ROD) addresses the remediation of a portion of the contaminated groundwater at the Site as an interim action. Site remediation activities are sometimes segregated into different phases, or operable units, so that remediation of different aspects of a site can proceed separately, resulting in a more expeditious cleanup of the entire site. This ROD describes EPA's preferred interim action to address groundwater at the Site which is primarily contaminated with PCE. EPA has designated this action as the first operable unit (OU1) of Site remediation. The PCE-dominant part of the plume is the subject of OU1.

EPA uses interim actions when site characterization data are not sufficient to determine the likelihood of attaining long-term objectives over all or part of a plume. Since there is trichloroethene-dominant (TCE) contamination in the drinking water aquifer up- and side-gradient to the PCE-dominant contamination that is being addressed as OU1 in this ROD, the OU1 part of the groundwater plume is expected to be fully restored to its beneficial use when the TCE-dominant contamination is addressed as part of a second operable unit (OU2). This interim remedial action will work towards restoration of the drinking water aquifer to its beneficial use. The second operable unit (OU2) will address all contamination remaining at the Site that is not being addressed by the OU1 action. EPA expects that the OU2 remedial investigation will begin in the near future. OU2 will be addressed through a separate Proposed Plan and Record of Decision. Any changes to the OU1 remedy that may be needed as a result of the OU2 investigation would be addressed in those documents.

## SITE CHARACTERISTICS

### Physical Characteristics

*Surface Features*

The Fulton Site is characterized as relatively flat with local relief of approximately 12 feet over a distance of 2,600 feet. Nearer to the Fulton Property, the area is slightly sloping with local relief of approximately 5 feet.

*Soils/Land Use*

The soil in the Study Area is classified as Urban Land. This is defined as areas where at least 88% of the surface is covered with asphalt, concrete, or other perdurable building material.

The land uses within the Site are a mix of residential, commercial, and industrial. The GCPIA is an industrial/ commercial area and the area south of the Long Island Railroad tracks is residential. Soils underlying the Site are classified as a sandy loam. Runoff from the streets goes into storm drains.

The Garden City Country Club lies south of the residential area. Its manicured grassland surrounds a pond which accepts runoff from the golf course.

*Ecology*

The potential risk to ecological receptors was evaluated. For there to be an exposure, there must be a pathway through which a receptor (e.g., person, animal) comes into contact with one or more of the Chemicals of Potential Concern (COPCs). Without a complete pathway or receptor, there is no exposure and hence, no risk.

Based on a review of existing data, there are no potential exposure pathways for ecological receptors at the Site. As noted above, the Fulton Property itself is less than 1 acre in size and is located in the GCPIA within a highly developed area. The entire Fulton Property is paved or covered with buildings. The depth to ground water (the medium of concern) is

approximately 50 feet and is unlikely to affect any surface water bodies.

*Geology*

The Site is located in western Nassau County, Long Island. Long Island is situated within the Atlantic Coastal Plain physiographic province, which is underlain by a wedge of unconsolidated sediments that thickens and dips to the southeast toward the Atlantic Ocean. The unconsolidated deposits, which underlie the Study Area, range in age from late Cretaceous (65 million years ago) to recent.

The geology in the Site area is composed of approximately 500 feet of unconsolidated materials, mostly silicious sands with interbedded limited layers of clay or lignites (fossilized organic material). These unconsolidated materials overlay Precambrian crystallized bedrock.

*Hydrogeology*

Three aquifers are present beneath the Site: the Upper Glacial Aquifer, the Magothy Aquifer and the Lloyd Sand Member Aquifer. These aquifers are designated as Long Island's sole-source aquifer system with NYSDEC Class GA designations for use as a source(s) of potable water supply. For the purpose of this ROD, only the Upper Glacial aquifer and the Magothy aquifer will be discussed because the two aforementioned aquifers are the primary sources of water supply within Nassau County. The depositional environments of this aquifer system created great variations (heterogeneity) in the hydrogeology of the Study Area. These variations in the aquifer matrix would be shown as interbedding of lenses and layers of materials ranging in size from clays to medium sands to gravels (coarser-grained deposits), which cause significant variations in the hydraulic conductivity between strata and create preferential ground water flow pathways within this aquifer system. Hence, the coarser-grained deposits that represent more transmissive strata presumably are responsible for preferential transport of ground water and any dissolved contamination.

*Upper Glacial Aquifer*

The Pleistocene deposits contain the water table aquifer in this region of Long Island, which is referred to as the Upper Glacial aquifer. Within Study Area depth to water ranges between 45 to 60 feet below land surface. Consequently, the saturated thickness of the Upper Glacial aquifer can range anywhere between 40 and 85 feet. Published hydraulic conductivity values for the Upper Glacial aquifer range between 270 to 335 ft/day. Values collected during the RI show that a more accurate horizontal hydraulic conductivity value for the Upper Glacial aquifer in this region of Nassau County is 380 ft/day. The average hydraulic gradient in the Upper Glacial aquifer within this area of Nassau County is 0.0017 ft/ft. The Upper Glacial aquifer is in full hydraulic communication with, and provides ground water recharge to, the underlying Magothy aquifer.

*Magothy Aquifer*

The Magothy formation is fully saturated and, therefore, its entire thickness makes up the Magothy aquifer. The hydraulic conductivity value for the Magothy aquifer in this region of Nassau County is 100 ft/day. The average hydraulic gradient in the Magothy aquifer within this area of Nassau County is 0.0019 ft/ft.

The Magothy aquifer receives ground water recharge from the overlying Upper Glacial aquifer. The Fulton Property and the currently known extent of the groundwater contaminant plume emanating from the Fulton Property are located within an area designated as the deep flow recharge zone of the Magothy aquifer.

*Cultural Resources*

Since this area has been fully developed, a cultural resources survey was not developed.

**Nature and Extent of Contamination**

Beginning in 1999, an RI was conducted by a PRP under State law pursuant to the NYSDEC consent order. During the RI, 22 monitoring wells were installed in the Study Area. A draft RI report was submitted in August 2002; it was determined that

further work was necessary to determine the downgradient extent of the contaminant plume. In August 2005, an updated draft RI was submitted to NYSDEC and EPA. This document was revised and approved by NYSDEC in November 2005.

*Soil*

NYSDEC had identified a dry well immediately adjacent to a building at the Fulton Property as the primary source of the PCE-dominant area of the contaminant plume migrating downgradient from the Fulton Property. This drywell was connected to a pipe which received dry-cleaning waste from inside the building. The primary contaminant identified in dry well sediments, adjacent soil, and shallow ground water beneath the dry well was PCE. TCE was also detected in soils on the Fulton Property at lower levels.

The PRP conducted an IRM from August 1998 to December 2001 to remove contaminants from the original dry well on the Fulton Property in order to prevent further contaminant migration into the aquifer and into the indoor air at the facility. Following the excavation of contaminated soils from the bottom of the drywell, a Soil Vapor Extraction (SVE) system was installed to address residual soil contamination and operated until the soil vapor contaminant concentrations met NYSDOH guidance values. Over 10,000 pounds of PCE were removed from the source area during the operation of the SVE system. Following this action, the PRP installed a sub-slab depressurization system under the building at the Fulton Property to provide additional protection of the occupants from exposure to the contamination. This system remains in operation.

*Groundwater*

The groundwater sampling program included sampling of 20 groundwater monitoring wells located within the Study Area and analysis of these samples for organic and inorganic compounds. These efforts resulted in an RI that was comprised of four separate field mobilizations conducted between 1998 and 2004.

Sampling and analysis during the RI has shown PCE levels in the Study Area to be up to 6,100 parts per billion (ppb) and TCE concentrations up to 416 ppb. Data collected during the investigation have shown a marked increase in PCE levels in

wells MW-21b and MW-21c, which are immediately upgradient of Garden City Water District wells 13 and 14. PCE levels in MW-21b increased sharply from 860 ppb in December 2003 to 2200 ppb in May 2004. PCE levels in subsequent sampling efforts have shown levels of PCE up to 3,600 ppb at this sampling location.

Garden City Water District well 9, which is to the north and west of wells 13 and 14, will be investigated further as part of OU2. The PCE-dominant portion of the plume has not been observed at this supply well to date.

PCE and TCE were found to be the primary dissolved chemical constituents in the vicinity and downgradient of the Fulton Property. The ratio of these compounds found in each sample collected varied with its spatial position. In the saturated portion of the Upper Glacial aquifer, the pattern of dissolved VOCs is more predictable, given the more homogeneous nature of the soils. When the dissolved contaminants migrate into the Magothy aquifer, the presence of layered, laterally discontinuous soils of various grain sizes result in a "fingering" of the dissolved contaminant plume. This "fingering" occurs along avenues of higher permeability (preferential groundwater flow pathways) and spreads throughout a larger portion of the porous media.

The hydraulic influence of three active public supply wells located approximately one-mile downgradient of the Fulton Property was revealed through mapping of the water table in the Upper Glacial aquifer and potentiometric surfaces of discrete elevation intervals within the Magothy. These supply wells, screened at depths ranging from approximately 340 to 460 feet below ground surface, collectively control ground water flow patterns locally, in lateral and vertical directions, and influence the downward flow potential in the area. Consequently, when in operation, the three public supply wells work to "drag" dissolved chemical constituents downward. Once the constituents are dragged to deeper depths within the aquifer, their migration is subsequently accelerated as they move along with the ground water flow toward the hydraulic influence of these wells.

The RI data set generated by the monitoring well network confirms that the PCE-dominant part of the plume is a threat to ground water and the two downgradient GCWD public supply wells,

but based on the data collected, does not appear to extend past the Garden City Water District supply wells.

***Contaminant Fate and Transport***

The greatest potential for transport of VOCs at the Site is via groundwater migration. The PCE-dominant part of the plume was found to extend approximately 6,500 feet downgradient. The average width of the PCE-dominant part of the plume was found to be about 1,000 feet. PCE extends to a depth of approximately 420 feet, exhibiting an average thickness of approximately 250 feet.

## CURRENT AND POTENTIAL FUTURE SITE AND RESOURCE USES

The land uses within the Study Area are a mix of residential, commercial, and industrial. All groundwater in New York State is classified as GA, which is groundwater suitable as a source of drinking water. Groundwater in the immediate vicinity of the Site is currently used as a source of drinking water and there is also a future potential beneficial use of groundwater at the Site as a drinking water source. Public water supply wells of the Nassau County Water Authority are located approximately one mile southwest of the Fulton Property.

## SUMMARY OF SITE RISKS

Based upon the results of the RI, a baseline risk assessment was conducted to estimate the risks associated with current and future OU1 Site conditions. A baseline risk assessment is an analysis of the potential adverse human health and ecological effects caused by hazardous substance releases from a site in the absence of any actions to control or mitigate these under current and anticipated future land use.

The risk assessment documents for the OU1 Site, entitled "Final Baseline Risk Assessment Report" is available in the Administrative Record file.

### Human Health Risk Assessment for OU1

A Superfund baseline human health risk assessment is an analysis of the potential adverse health effects caused by hazardous substance exposure from a site in the absence of any actions to

control or mitigate these under current- and future-land uses. A four-step process is utilized for assessing site-related human health risks for reasonable maximum exposure scenarios.

*Hazard Identification:* In this step the contaminants of concern (COCs) at the site in various media (i.e., soil, groundwater, surface water, and air) are identified based on such factors such as toxicity, frequency of occurrence, and fate and transport of the contaminants in the environment, concentrations of the contaminants in specific media, mobility, persistence, and bioaccumulation.

*Exposure Assessment:* In this step, the different exposure pathways through which people might be exposed to the contaminants identified in the previous step are evaluated. Examples of exposure pathways include incidental ingestion of and dermal contact with contaminated soil. Factors relating to the exposure assessment included, but are not limited to, the concentrations to which people may be exposed and the potential frequency and duration of exposure. Using these factors, a "reasonable maximum exposure" scenario, which portrays the highest level of human exposure that could reasonably be expected to occur, is calculated.

*Toxicity Assessment:* In this step, the types of adverse health effects associated with contaminant exposures and the relationship between magnitude of exposure and severity of adverse health effects are determined. Potential health effects are contaminant-specific and may include risk of developing cancer over a lifetime or other noncancer health effects, such as changes in the normal function of organs within the body (e.g., changes in the effectiveness of the immune system). Some contaminants are capable of causing both cancer and noncancer health effects.

*Risk Characterization:* This step summarizes and combines outputs of the exposure and toxicity assessments to provide a quantitative assessment of site risks. Exposures are evaluated based on the potential risk of developing cancer and the potential for noncancer health hazards. The likelihood of an individual developing cancer is expressed as a probability. For example, a $10^{-4}$ cancer risk means a "one-in-ten-thousand excess cancer risk"; or one additional cancer may be seen in a population of 10,000 people as a result of exposure to site

contaminants under the conditions explained in the Exposure Assessment. Current Superfund guidelines for acceptable exposures are an individual lifetime excess cancer risk in the range of $10^{-4}$ to $10^{-6}$ (corresponding to a one-in-ten-thousand to a one-in-a-million excess cancer risk) with $10^{-6}$ being the point of departure. For noncancer health effects, a hazard index (HI) is calculated. An HI represents the sum of the individual exposure levels compared to their corresponding reference doses. The key concept for a noncancer HI is that a "threshold level" (measured as an HI of less than 1) exists below which noncancer health effects are not expected to occur.

The results of the four-step process identified above for the Site are summarized in the following paragraphs. The human-health estimates are based on current reasonable maximum exposure scenarios and were developed by taking into account various conservative estimates about the frequency and duration of an individual's exposure to the COCs in the various media that would be representative of Site risks, as well as the toxicity of these contaminants. The risk assessment for OU1 for the Site focused on two areas, the Fulton Property and the surrounding residential and commercial/industrial properties.

The Hazard Identification step identified the following COCs, which are summarized in Appendix 1, Table 1. The primary COCs in the groundwater are PCE and TCE.

The Exposure Assessment step evaluated the current and future land use, the potential receptor populations, and the potential route of exposure. These are summarized in Appendix 1, Table 2. The current land use of the Fulton Property is commercial/industrial, and it is not expected that the land use will change in the future. The surrounding properties are also expected to retain their current land use, which is commercial/industrial and residential. The area is served by municipal water and it is not likely that the groundwater underlying the Fulton Property or the surrounding commercial/industrial or residential areas will be used by individuals for potable purposes in the foreseeable future; however, since the regional groundwater is designated as a drinking water source, exposure to groundwater was evaluated. The other media that were evaluated included the potential for vapor intrusion into buildings and the potential for future

contamination in the irrigation holding pond at the nearby golf course.

The results of the Toxicity Assessment step are presented in Appendix 1, Tables 3 and 4. The non-cancer toxicity data and the carcinogenic toxicity data were used in conjunction with the results of the previous two steps to complete the Risk Characterization step. The results of the risk characterization step indicate that there is an unacceptable cancer risk from exposure to groundwater through ingestion, inhalation, and dermal contact (Appendix 1, Table 5). In addition, there is an unacceptable noncancer hazard from exposure to groundwater through ingestion and dermal contact (Appendix 1, Table 6).

*Uncertainties:* The procedures and inputs used to assess risks in this evaluation, as in all such assessments, are subject to a wide variety of uncertainties. In general, the main sources of uncertainty include:

- environmental chemistry sampling and analysis
- environmental parameter measurement
- fate and transport modeling
- exposure parameter estimation
- toxicological data

Uncertainty in environmental sampling arises in part from the potentially uneven distribution of chemicals in the media sampled. Consequently, there is uncertainty as to the actual levels present. Environmental chemistry-analysis error can stem from several sources, including the errors inherent in the analytical methods and characteristics of the matrix being sampled.

Fate and transport modeling is also associated with a certain level of uncertainty. Factors such as the concentrations in the primary medium, rates of transport, ease of transport, and environmental fate all contribute to the inherent uncertainty in fate and transport modeling.

Uncertainties in the exposure assessment are related to estimates of how often an individual would actually come in contact with the chemicals of concern, the period of time over which such exposure would occur, and in the models used to

estimate the concentrations of the chemicals of concern at the point of exposure.

Uncertainties in toxicological data occur in extrapolating both from animals to humans and from high to low doses of exposure, as well as from the difficulties in assessing the toxicity of a mixture of chemicals. These uncertainties are addressed by making conservative assumptions concerning risk and exposure parameters throughout the assessment. As a result, the risk assessment provides upper-bound estimates of the risks to populations near the site, and is highly unlikely to underestimate actual risks related to the Site.

More specific information concerning public health and environmental risks, including a quantitative evaluation of the degree of risk associated with various exposure pathways, is presented in the risk assessment report.

Actual or threatened releases of hazardous substances from this Site, if not addressed by implementing the response action selected in the ROD, may present an imminent and substantial endangerment to the public health, welfare, or the environment.

**Ecological Risk Assessment**

The potential risk to ecological receptors was evaluated. For there to be an exposure, there must be a pathway through which a receptor (e.g. person, animal) comes into contact with one or more of the COPCs. Without a complete pathway or receptor, there is no exposure and hence, no risk.

Based on a review of existing data, there are no potential exposure pathways for ecological receptors at the Site. As noted above, the Fulton Property itself is less than 1 acre in size and is located in the GCPIA within a highly developed area. The entire Fulton Property is paved or covered with buildings. The depth to ground water (the medium of concern) is approximately 50 ft and is unlikely to affect any surface water bodies.

## REMEDIAL ACTION OBJECTIVES

Section 121(d) of CERCLA requires that, at a minimum, any remedial action implemented at a site achieve overall protection of human health and the environment and comply with Applicable or Relevant and Appropriate Requirements (ARARs). ARARs at a site may include other federal and state environmental statutes and regulations. Other federal or state advisories, criteria, or guidance are To-Be-Considered (TBCs). TBCs are not required by the NCP, but may be very useful in determining what is protective of a site or how to carry out certain actions or requirements. Remedial action objectives (RAOs) are specific goals to protect human health and the environment. These objectives are based on available information and standards such as ARARs for drinking water. (See Appendix II, Table 7)

The following RAOs were established for this Site:

- Reduce contaminant levels in the drinking water aquifer to ARARs
- Prevent further migration of contaminated groundwater.

As this is an interim remedial action, EPA is using an "observational" approach to evaluate whether the action will meet the RAOs. The effects of the interim action will be monitored to evaluate additional actions that may be necessary in order to meet the goal of aquifer restoration.

## DESCRIPTION OF ALTERNATIVES

CERCLA § 121(b)(1), 42 U.S.C. § 9621(b)(1), requires that each selected remedy be protective of human health and the environment, be cost-effective, comply with ARARs, and utilize permanent solutions and alternative treatment technologies and resource recovery alternatives to the maximum extent practicable. In addition, the statute includes a preference for the use of treatment as a principal element for the reduction of toxicity, mobility, or volume of the hazardous substances.

The FS report was approved by NYSDEC in February 2007 and evaluated a number of alternatives to address the PCE-dominant groundwater contamination identified in the Study Area. However, as described in the FS Addendum, EPA determined that

two alternatives were not appropriate and should be described, but not evaluated further.

Alternative 1 in the FS report is a "No Action Alternative" which involves taking no actions to address the Site, and includes the removal of the current wellhead treatment from the public water supply wells. This is not appropriate as evaluated because the groundwater in the immediate vicinity of the Site is currently used as a source of drinking water and therefore this treatment must remain on the wells in order to meet drinking water standards, thus removal would not occur. Therefore, this alternative was not carried through into the Proposed Plan for further evaluation.

Alternative 4 in the FS report is an alternative that would consist of the injection of iron particles to form a permeable wall that the PCE-dominant portion of the contaminant plume would migrate through which would break down the organic contaminants into nonhazardous compounds in conjunction with the injection of an oxidant. This permeable wall is not a proven technology for a plume depth beyond 100 feet and therefore its implementability is questionable in this situation. Considering the uncertainties involved with the technology along with the related costs, this alternative was not carried through into the Proposed Plan.

The alternatives described below have been renumbered from the FS report and FS Addendum to facilitate the presentation of the analysis.

***Common Elements for All Alternatives***

Groundwater data collected during the most recent groundwater sampling events immediately upgradient of Garden City potable water supply wells 13 and 14 show an increase in the levels of contamination. All alternatives include upgrading the wellhead treatment at these wells, if necessary, to protect the water supply wells from the increasing levels of the PCE-dominant contamination. This wellhead treatment system will be maintained until it has been determined that these public supply wells are no longer being impacted by the Site-related contaminants above health-based standards.

Each action alternative would include institutional controls that restrict future use of groundwater at the Site. Specifically, the New York State Department of Health State Sanitary Code regulates installation of private potable water supply wells in Nassau County. The Fulton Property also is restricted to commercial industrial use based on its current zoning. If a change in land use were to occur, additional investigation of soils at the Fulton Property would be necessary to support the land use change.

Each action alternative would also include a site management plan (SMP) to be developed and would provide for the proper management of all Site remedy components post-construction, such as institutional controls, and would also include: (a) monitoring of Site groundwater to ensure that, following remedy implementation, the groundwater quality achieves federal maximum contaminant levels (MCLs); (b) conducting an evaluation of the potential for vapor intrusion, and mitigation, if necessary, in the event of future construction at or in the vicinity of the Fulton Property; (c) provision for any operation and maintenance required of the components of the remedy; and (d) periodic certifications by the owner/operator or other person implementing the remedy that any institutional and engineering controls are in place.

The construction time for each alternative reflects only the time required to construct or implement the remedy and not the time required to negotiate with potentially responsible parties, design the remedy, or procure contracts for design and construction.

The timeframe for implementing the OU1 remedy assumes that remediation efforts will begin in 2009. The Remedial Design (RD) will be the first portion of the effort and will take approximately 9-12 months to complete. Once the RD is approved by EPA, the construction will begin. The longest period that construction should last is approximately 18 months.

**GW-1: No Further Action - Limited Action**

The Superfund program requires that a "No Action" alternative be considered as a baseline for comparison with the other alternatives. While such a comparison was made in the FS using Alternative GW-1 in the FS Report, for purposes of the Proposed

Plan and this ROD, we use the following "No Further Action" alternative as a baseline for the reasons described above.

| | |
|---|---|
| Capital Cost | $633,418 |
| O & M Cost | $2,710,431 |
| Present Worth Cost | $3,343,849 |
| Construction Time | N/A |

Under this alternative (alternative GW-2 in the FS), EPA would take no further action at the Site to prevent exposure to groundwater contamination. This limited action alternative has been used as the baseline to compare other alternatives. The costs associated with this alternative assume an upgrade of the well head treatment system, if necessary, and the Garden City Water District's continued operation of the system.

Because this alternative would result in contaminants remaining on-Site above levels that would allow for unlimited use and unrestricted exposure, CERCLA requires that the Site be reviewed at least once every five years.

**GW-2: In-Situ Chemical Oxidation**

| | |
|---|---|
| Capital Cost | $4,994,320 |
| O & M Cost | $2,735,523 |
| Present Worth cost | $7,729,843 |
| Construction Time | 6 months |

This alternative (alternative GW-3 in the FS), would use in-situ chemical oxidation (ISCO) which entails injecting an

oxidant (such as potassium permanganate) directly into the PCE-dominant part of the plume to convert the organic contamination chemically into nonhazardous compounds. Multiple injections over time may be needed for this action to be fully effective. The oxidant would be injected into the areas of the PCE-dominant part of the plume where the contamination is highest.

**GW-3: Groundwater Extraction and Treatment**

| | |
|---|---|
| Capital Cost | $3,203,634 |
| O & M Cost | $5,718,758 |
| Present Worth cost | $8,922,392 |
| Construction Time | 10 months |

Under this alternative (alternative 5 in the FS), three groundwater extraction wells would be installed into the PCE-dominant part of the plume. Locations of these wells would be finalized during the design of the remedy to assure optimum placement. The extracted groundwater would be treated via an air stripping system to be located at the Garden City Bird Sanctuary (GCBS) on Tanners Pond Road. The treated water would be discharged into an existing infiltration basin at GCBS for recharge. If the GCBS were unavailable, a comparable form of groundwater recharge would be utilized.

The groundwater extraction system would be pumped at a rate that would draw back the PCE-dominant part of the plume from the hydraulic influence of Garden City potable water supply wells 13 and 14. In addition, a broader monitoring well network would be necessary in order to monitor the effectiveness of the remediation of the PCE-dominant part of the plume as well as to observe changes to the flow dynamics of the aquifer system.

**GW-4: Groundwater Extraction and Treatment and Focused In Situ Chemical Oxidation at Source Area**

| | |
|---|---|
| Capital Cost | $4,978,102 |
| O & M Cost | $5,718,758 |
| Present Worth Cost | $10,696,860 |
| Construction Time | 10 months |

Alternative GW-4 (found in the FS Addendum as GW-6), would be a combined action which includes the actions presented as Alternative GW-3 herein, along with a modified version (reduced and focused) of Alternative GW-2 herein. As described in Alternative GW-3, groundwater would be extracted and treated for discharge into the existing infiltration basin at GCBS for recharge.

Also, the groundwater extraction system would be pumped and monitored as described in Alternative GW-3. In addition to the groundwater extraction and treatment system this alternative would include a focused effort to inject an oxidant, as described in Alternative GW-2 herein, in the area of the Fulton Property to chemically convert the organic contamination into nonhazardous compounds. This action would be of smaller scale than the previously described action described in Alternative GW-2 herein because its purpose would be to treat the high-concentration source material in the groundwater, not the entire PCE-dominant part of the plume. This action would reduce the amount of time the groundwater extraction system would have to operate to address the PCE-dominant part of the plume by destroying a substantial amount of the residual PCE source contamination. Multiple injections over time might be needed.

For cost estimating purposes, a 30-year time frame was assumed as the duration of this alternative. It is expected however that the actual duration would be less.

## COMPARATIVE ANALYSIS OF ALTERNATIVES

In selecting a remedy for a site, EPA considers the factors set forth in CERCLA § 121, 42 U.S.C. § 9621, by conducting a detailed analysis of the viable remedial alternatives pursuant to the NCP, 40 CFR §300.430(e)(9) and EPA OSWER Directive 9355.3-01. The detailed analysis consists of an assessment of the individual alternatives against each of nine evaluation criteria and a comparative analysis focusing upon the relative performance of each alternative against those criteria.

- Overall protection of human health and the environment addresses whether or not a remedy provides adequate protection and describes how risks posed through each exposure pathway (based on a reasonable maximum exposure scenario) are eliminated, reduced, or controlled through treatment, engineering controls, or institutional controls.

- Compliance with applicable or relevant and appropriate requirements addresses whether or not a remedy would meet all of the applicable or relevant and appropriate requirements of other federal and state environmental statutes and regulations or provide grounds for invoking a waiver. Other federal or state advisories, criteria, or guidance are To-Be-Considered (TBCs). TBCs may be very useful in determining what is protective of a Site or how to carry out certain actions or requirements.

- Long-Term effectiveness and permanence refer to the ability of a remedy to maintain reliable protection of human health and the environment over time, once cleanup goals have been met. It also addresses the magnitude and effectiveness of the measures that may be required to manage the risk posed by treatment residuals and/or untreated wastes.

- Reduction of toxicity, mobility, or volume through treatment is the anticipated performance of the treatment technologies, with respect to these parameters, a remedy may employ.

- Short-Term effectiveness addresses the period of time needed to achieve protection and any adverse impacts on human health and the environment that may be posed during the construction and implementation period until cleanup goals are achieved.

- Implementability is the technical and administrative feasibility of a remedy, including the availability of materials and services needed to implement a particular option.

- Cost includes estimated capital and operation and maintenance costs, and net present-worth costs.

- State acceptance indicates whether, based on its review of the RI/FS reports and the Proposed Plan, the State concurs with, opposes, or has no comment on the preferred remedy at the present time.

- Community acceptance refers to the public's general response to the alternatives described in the Proposed Plan and the RI/FS reports.

A comparative analysis of these alternatives based upon the evaluation criteria noted above, follows.

**1. Overall Protection of Human Health and the Environment**

As this is an interim remedy, all of the action alternatives would contribute to the overall protection of human health and the environment which would be expected to be achieved at the completion of OU2. All alternatives except GW-1 would provide adequate protection of human health and the environment. As noted above in the risk assessment section, there are unacceptable human health cancer risks and noncancer health hazards associated with the contamination identified in the Study Area. The aquifer system is designated a sole-source aquifer and the Site groundwater is being used as a source of drinking water. The future and present use carcinogenic risks at the Site are not within EPA's acceptable risk range.

**2. Compliance with ARARs**

For Alternatives GW-2, GW-3, and GW-4, ARARs for drinking water would be achieved over time in the PCE-dominant part of the plume with respect to PCE. For TCE, all of the alternatives would make significant progress toward achieving ARARs. Compliance with ARARs would be evaluated through an annual monitoring program. Due to the interim nature of the OU1 remedy, ARARs for TCE would be met in conjunction with OU2. ARARs and

other environmental criteria, advisories or guidance for the Site are presented in Appendix II Table 7.

Alternatives GW-3 and GW-4 are expected to more expeditiously meet chemical-specific ARARs (e.g., MCLs) for the groundwater. However, residual groundwater contamination in the vicinity of the Fulton Property which was not removed by the Soil IRM may continue to cause groundwater quality standards to be exceeded. Injecting an oxidant as described in GW-4 should minimize the likelihood of that occurrence.

**3. Long-Term Effectiveness and Permanence**

Because this in an interim action, all alternatives except GW-1 would achieve similar degrees of long-term effectiveness and permanence. Alternatives GW-3 and GW-4 are expected, over time, to provide the same level of long-term effectiveness and permanence as Alternative GW-2. It is expected however, that the time frame for remediation through Alternative GW-4 would be significantly shortened because of the addition of the focused ISCO action.

**4. Reduction in Toxicity, Mobility or Volume**

Alternative GW-1 would provide potable water but would not provide further reduction in toxicity, mobility or volume of contaminants through treatment.

Alternative GW-2 would reduce the volume and toxicity of the contaminants by chemically breaking down the bulk of the dissolved VOC contamination as it migrates through the aquifer. The VOC contaminants would be converted into nonhazardous materials, therefore eliminating the hazardous constituents. The mobility of contaminants in the groundwater, however, would not be affected.

Alternatives GW-3 and GW-4 would both reduce the toxicity, mobility, and volume of the PCE-dominant portion of the contaminated groundwater through removal and treatment.

The addition of the chemical oxidant, as presented as part of Alternative GW-4 would do a better job than GW-3 of reducing the contaminant loading from the source area by destroying the

residual contamination upgradient of the treatment system's extraction wells.

**5. Short-Term Effectiveness**

Alternative GW-1 would present no short-term impacts to human health and the environment since no construction is involved. The construction activities required to implement Alternative GW-2, would potentially pose a risk of worker exposure to the oxidant when injected into the aquifer and would take approximately 4 months to inject the oxidant. The possibility of having to administer additional oxidant in future injections is likely. Alternatives GW-3 and GW-4 would potentially result in greater short-term exposure to contaminants by workers who may come into contact with the contaminated groundwater treatment system. Installation of the extraction wells and associated piping would be completed in approximately 8-12 months. Alternative GW-4 would pose a combined short-term risk of these concerns coupled with those described for GW-2. These impacts would be minimized through the use of appropriate protective equipment and health and safety procedures.

While efforts would be made to minimize the impacts, some disturbances would result from disruption of traffic, excavation activities on public and private land, noise, and fugitive dust emissions for Alternatives GW-2, GW-3, and GW-4. However, proper health and safety precautions and fugitive dust mitigation measures would minimize these impacts.

**6. Implementability**

The technologies presented in Alternatives GW-2, GW-3, and GW-4 have been used at other Superfund sites and have been proven effective.

It is possible that substantially changing the flow within the aquifer under Alternatives GW-3 and GW-4 could redistribute contaminated groundwater within the local aquifer system. Additional monitoring wells would need to be installed to monitor these effects on the flow dynamics in the vicinity, if either of these alternatives were selected.

## 7. Cost

The estimated capital, annual operation and maintenance (O&M) (including monitoring), and present-worth costs for each of the alternatives are presented:

Cost Comparison

| Alternative | Capital Cost | Annual O&M | Present Worth |
|---|---|---|---|
| GW-1 | $633,418 | $2,710,431 | $3,343,849 |
| GW-2 | $4,994,320 | $2,735,523 | $7,729,843 |
| GW-3 | $3,203,634 | $5,718,758 | $8,922,392 |
| GW-4 | $4,978,634 | $5,718,758 | $10,696,860 |

The information in this cost estimate summary is based on the best available information regarding the anticipated scope of GW-4. These are order-of-magnitude engineering cost estimates that are expected to be within +50 to -30 percent of the actual cost of the project. Changes in the cost elements are likely to occur as a result of updated information regarding the anticipated scope of the interim remedial alternative. These elements will be determined during the pre-design investigation and remedial design of the components of this alternative. Major changes may be documented in the form of a memorandum in the Administrative Record file, an Explanation of Significant Difference, or a ROD amendment.

According to the capital cost, O&M cost and present worth cost estimates, Alternative GW-1 has the lowest cost compared to Alternative GW-2, GW-3, and GW-4.

## 8. State Acceptance

The State of New York (State) does not concur with the Record of Decision at this time pending review by the State of environmental easement requirements (Appendix IV).

## 9. Community Acceptance

During the public comment period, the community expressed its support for the remedy proposed by EPA in the Proposed Plan (GW-4). Specifically, the Nassau County Department of Health Services and the Village of Garden City support GW-4. The attached Responsiveness Summary summarizes all of the community comments on the Proposed Plan.

## PRINCIPAL THREAT WASTE

No materials which meet the definition of "principal threat wastes" were identified during the OU1 RI/FS. Nevertheless, the EPA mandate (NCP Section 300.430 (a)(1)(iii)(F)) which requires that a contaminated sole-source drinking water aquifer be restored to beneficial use is met through treatment of the PCE-dominant portion of the plume.

## SELECTED REMEDY

The selected remedy is an interim remedy that involves the remediation of a portion of groundwater utilizing a groundwater extraction and treatment system in conjunction with a focused application of in-situ chemical oxidation (ISCO) in the vicinity of the Fulton Property. Also, the well-head treatment system at Garden City Water District wells 13 and 14, which was upgraded in Spring 2007 in order to protect these public supply wells from the increasing levels of contamination observed at the MW-21 location (see Figure 2), will be evaluated to determine whether this upgrade is fully protective. It is expected that by remediating the high concentrations of PCE contamination located at and near the Fulton Property using ISCO, the contamination levels in the groundwater will be reduced more quickly.

## SUMMARY OF THE RATIONALE FOR THE SELECTED REMEDY

### Description of Selected Remedy

*Groundwater Alternative 4: Groundwater Extraction/Treatment/Chemical Oxidant Enhancement/Surface Recharge*

Alternative GW-4 will include the following major components:

- Groundwater modeling
- Chemical injection well configuration at and near the Fulton Property
- Chemical injection operation and monitoring
- Groundwater extraction, treatment and discharge
- Institutional controls
- Long-term groundwater and surface water monitoring
- Site Management Plan
- Periodic Site reviews
- Continuation of vapor intrusion evaluation of structures in the vicinity of the Fulton Property

*Groundwater Modeling*

Groundwater modeling will be considered during development of the pre-design investigation to assist in the placement of extraction, injection, monitoring, and observation wells.

*Chemical Injection Well Configuration and Operation*

In-situ chemical oxidation technology would be applied as an initial enhancement in the area of the Fulton Property (see Appendix I Figure 2). The soil type at the Site (mainly sand) may have a relatively low soil oxidant demand. Other oxidation and enhancement technologies will also be evaluated during the remedial design stage. A treatability study may be required prior to design and implementation of chemical injection.

Approximately 10 chemical injection wells will be placed in the high PCE area at and near the Fulton Property and two rounds of chemical injection are planned. The first round of injection will destroy any dissolved and easily accessible contaminants. Any residual VOC contamination in the low permeability zones would dissolve during the second round of ISCO application that will be designed to target areas with residual contamination. Results from groundwater samples collected after the first chemical injection event will be used in addition to water quality monitoring parameters to determine the strategy for future injections. The actual number of injections, the chemical usage, and the well spacing may be refined during the remedial design and remedial action.

*Groundwater Extraction and Discharge of Treated Water*

Groundwater extraction and treatment systems will be installed downgradient of the Fulton Property (see Appendix 2, Figure 2) in the "Estate" area in the Village of Garden City (see Appendix 2, Figure 2). It is expected that the groundwater extraction wells will be operated at an adequate rate to pull back the contaminated groundwater from migrating into the influence of Garden City Water District wells 13 and 14. The extracted groundwater will be piped below grade to a nearby County recharge basin for treatment and discharge into the basin.

The number and location of extraction wells, configuration of each extraction well, pumping rates, and specific groundwater discharge alternatives, as well as other design parameters, may be evaluated using a 3-D model as part of the pre-design investigation and remedial design.

*Groundwater Treatment*

The groundwater treatment systems will consist of shallow-tray air stripping units, or comparable systems, with carbon adsorption of the contaminated off-gasses.

Maintenance of the air strippers will be conducted, as required, during the operation of the groundwater extraction and treatment systems. Periodic samples will be collected from various locations along the groundwater treatment train to verify the effectiveness of each treatment process.

*Institutional Controls and Site Management Plan*

This action also includes institutional controls that restrict future use of groundwater at the Site. Specifically, the New York State Department of Health State Sanitary Code regulates installation of private potable water supply wells in Nassau County. The Fulton Property is also restricted to commercial industrial use based on its current zoning. If a change in land use is proposed, additional investigation of soils at the Fulton Property would be necessary to support the land use change.

A site management plan (SMP) will also be developed and will provide for the proper management of all Site remedy components

post-construction, such as institutional controls, and will also include: (a) monitoring of Site groundwater to ensure that, following remedy implementation, the groundwater quality improves; (b) conducting an evaluation of the potential for vapor intrusion, and mitigation, if necessary, in the event of future construction at or in the vicinity of the Fulton Property; (c) provision for any operation and maintenance required of the components of the remedy; and (d) periodic certifications by the owner/operator or other person implementing the remedy that any institutional and engineering controls are in place.

Regulatory requirements under the State's Superfund program may result in NYSDEC seeking to obtain easements/covenants on various properties within the Site.

*Long-term Groundwater and Surface Water Monitoring*

A long-term groundwater monitoring program will be instituted to assess migration and attenuation of groundwater contamination in the PCE-dominant part of the plume, as well as the effects the groundwater extraction system will have on the flow dynamics with the local aquifer system. Effluent samples will be collected to verify compliance with the NYSDEC surface water or groundwater discharge requirements and the State Pollution Discharge Elimination System (SPDES) effluent criteria. Results from long-term groundwater monitoring will be used to evaluate system performance and to adjust operating parameters for the pump-and-treat system, as necessary.

*Periodic Site Reviews*

Due to the interim nature of this remedy, MCLs may take longer than five years to achieve, a review of site conditions will be conducted no less often than once every five years. The first five-year review is due within five years of the date that construction is initiated for the remedial action that allows hazardous substances to remain on site. The current expectation is that construction will be initiated in 2009 and the first five-year review will be due in 2014.

*Vapor Intrusion Evaluation*

EPA will conduct an investigation of vapor intrusion into structures within vicinity of the Fulton Property that could be potentially affected by the groundwater contamination plume, and would implement an appropriate remedy (such as sub slab ventilation systems) based on the investigation results.

## Summary of the Estimated Remedy Costs

The present worth of the Selected Remedy is $10,696,860. Detailed cost estimates for the Selected Remedy can be found in Appendix VI. The information in the cost estimate summary table is based on the best available information regarding the anticipated scope of the remedial alternative. Changes in the cost elements are likely to occur as a result of new information and data collected during the pre-design investigation and engineering design of the remedial alternative. Major changes may be documented in the form of a memorandum in the Administrative Record file, an Explanation of Significant Difference, or a ROD amendment. This is an order-of-magnitude engineering cost estimate that is expected to be within +50% to -30% of the actual project cost.

## Expected Outcomes of the Selected Remedy

The results of the human health risk assessment indicated that there is an unacceptable hazard from exposure to groundwater through ingestion and inhalation.

The Fulton Property is currently within an industrial area and not an ecological habitat. Future use of the Fulton Property is expected to remain unchanged.

All nonsaline groundwater in New York State is classified as GA, which is groundwater suitable as a source of drinking water. There is a future potential beneficial use of groundwater at the Site as a drinking water source.

The selected groundwater remedy will:

- Prevent or minimize potential, current, and future human exposures including inhalation and ingestion of VOC-contaminated groundwater, and
- Make significant progress to restore and/or ultimately restore groundwater to levels which meet NYS Groundwater and Drinking Water Quality Standards.

## STATUTORY DETERMINATIONS

As previously noted, Section 121(b)(1) of CERCLA mandates that a remedial action must be protective of human health and the environment, be cost-effective, and utilize permanent solutions and alternative treatment or resource recovery technologies to the maximum extent practicable. Section 121(b)(1) also establishes a preference for remedial actions which employ treatment to permanently and significantly reduce the volume, toxicity, or mobility of the hazardous substances, pollutants, or contaminants at the Site. Section 121(d) of CERCLA further specifies that a remedial action must attain a degree of cleanup that satisfies ARARs under federal and state laws, unless a waiver can be justified pursuant to section 121(d)(4) of CERCLA. EPA expects that this interim action will address the PCE-dominant part of the groundwater plume which will be fully restored to its beneficial use when the TCE-dominant part of the plume is addressed as part of OU2. As discussed below, EPA has determined that the Selected Remedy meets the requirements of Section 121 of CERCLA.

### Overall Protection of Human Health and the Environment

The Selected Remedy will adequately protect human health and the environment through removal of contaminants from the PCE-dominant part of the groundwater plume via ex-situ and in-situ treatment. EPA expects that the PCE-dominant part of the groundwater plume will be fully restored to its beneficial use when the TCE-dominant part of the plume is addressed.

### Compliance with ARARs

At the completion of the response action, the remedy will have complied with appropriate ARARs, including, but not limited to:

*Chemical-Specific ARARs and TBCs*

Chemical-specific ARARs are defined as those that specify achievement of a particular cleanup level for specific chemicals or classes of chemicals. These standards usually take the form of health- or risk-based numerical limits that restrict concentrations of various chemical substances to a specified level. Because groundwater in the immediate vicinity of the Site is currently used as a source of drinking water, chemical-specific ARARs and TBCs generally address drinking water standards and protection of groundwater quality.

*Location-specific ARARs and TBCs*

Location-specific ARARs are those which are applicable or relevant and appropriate due to the location of the site or area being remediated.

*Action-specific ARARs and TBCs*

Action-specific ARARs are those which are applicable or relevant and appropriate to particular remedial actions, technologies, or process options. These regulations do not define site cleanup levels but do affect the implementation of specific types of remediation. For example, air quality ARARs are listed in Table 7, because some potential remedial actions may result in air emissions of toxic or hazardous substances. These action-specific ARARs were considered in the screening and evaluation of the alternatives.

The primary ARARs for this interim remedy are the Safe Drinking Water Act (SDWA) (42 U.S.C. § 300F, et. seq.) and the National Primary Drinking Water Standards (40 CFR Part 141) for the regulation of contaminants in all surface or groundwater utilized as potable water supplies. The primary standards include federal Maximum Contaminant Levels (MCLs) which are enforceable standards for specific contaminants based on public health factors as well as the technical and economic feasibility of removing the contaminants from the water supply. The MCL for both PCE and TCE is 5 ppb. ARARs and other environmental criteria, advisories or guidance for this interim action are presented in Appendix II Table 7.

**Cost-Effectiveness**

A cost-effective remedy is one whose costs are proportional to its overall effectiveness (NCP Section 300.430(f)(ii)(D)). Overall effectiveness is based on the evaluations of: long-term effectiveness and permanence; reduction of toxicity, mobility, and volume through treatment; and short-term effectiveness. Because this is an interim remedy and based on the comparison of overall effectiveness (discussed above) to cost, the selected remedy is cost-effective in that even though it is not the least-cost action alternative, it will contribute substantially to the achievement of OU1 remediation goals in the short term and will provide significant protection until a final ROD for the Site is signed.

Although more costly than the other groundwater action alternatives, the selected groundwater alternative would likely result in the restoration of the water quality in the aquifer more quickly than the other action alternatives. The time frame for the remediation through Alternative GW-4 would be significantly shortened because of the addition of the focused ISCO action. Therefore, EPA believes that the cost of this alternative is proportional to its overall effectiveness. The estimated present worth of the Selected Remedy is $10,696,860.

**Utilization of Permanent Solutions and Alternative Treatment Technologies to the Maximum Extent Practicable**

The selected remedy utilizes permanent solutions and alternative treatment technologies to the maximum extent practicable.

The Selected Remedy is a permanent remedy that treats the PCE-dominant part of the groundwater plume. The combination of groundwater extraction and treatment and in-situ treatment will permanently reduce the mass of contaminants in the subsurface, thereby reducing the toxicity, mobility, and volume of contamination. This option also holds the advantage of accelerating the cleanup at the Site.

**Preference for Treatment as a Principal Element**

By using a combination groundwater extraction and treatment, which is an ex-situ treatment processes, as well as ISCO, which is an in-situ treatment, the Selected Remedy satisfies the

statutory preference for remedies that employ treatment as a principal element.

**Five-Year Review Requirements**

Due to the interim nature of this remedy, MCLs may take longer than five years to achieve, a review of Site conditions will be conducted no less often than once every five years. The first five-year review is due within five years of the date that construction is initiated for the remedial action that allows hazardous substances to remain on site. The current expectation is that construction will be initiated in the year 2009 and the first five-year review will be due in 2014.

## DOCUMENTATION OF SIGNIFICANT CHANGES

The Proposed Plan for the Fulton Avenue Superfund Site was released for public comment on February 23, 2007 and the public comment period ran from that date through March 31, 2007. The Proposed Plan identified Groundwater Alternative GW-4 as the Preferred Alternative. The Proposed Plan, which was presented at the public meeting on March 6, 2007, stated that one element of the proposed remedy entailed the upgrade of the well-head treatment on Garden City Water District Public Supply Wells 13 and 14 at the earliest opportunity. Since the public meeting, the Garden City Water District has informed EPA that the upgrades to the treatment system on Garden City Water District wells 13 and 14 have already been implemented. This upgrade will be evaluated by EPA to determine whether it is fully protective.

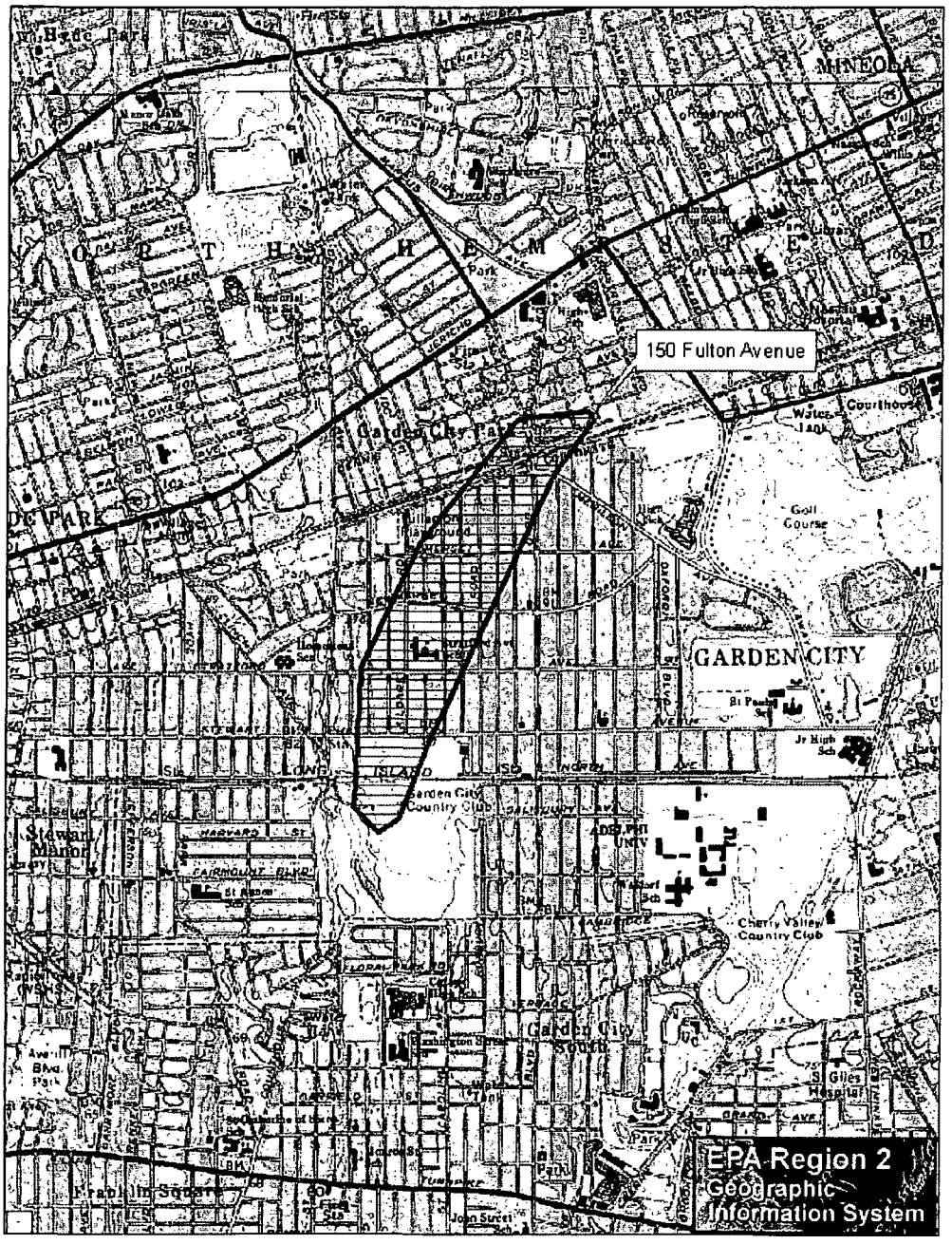
All written and verbal comments submitted during the public comment period were reviewed by EPA. Upon review of these comments, EPA has determined that no other significant changes to the remedy, as it was originally identified in the Proposed Plan, were necessary.

APPENDICES

# Appendix I

## Figures

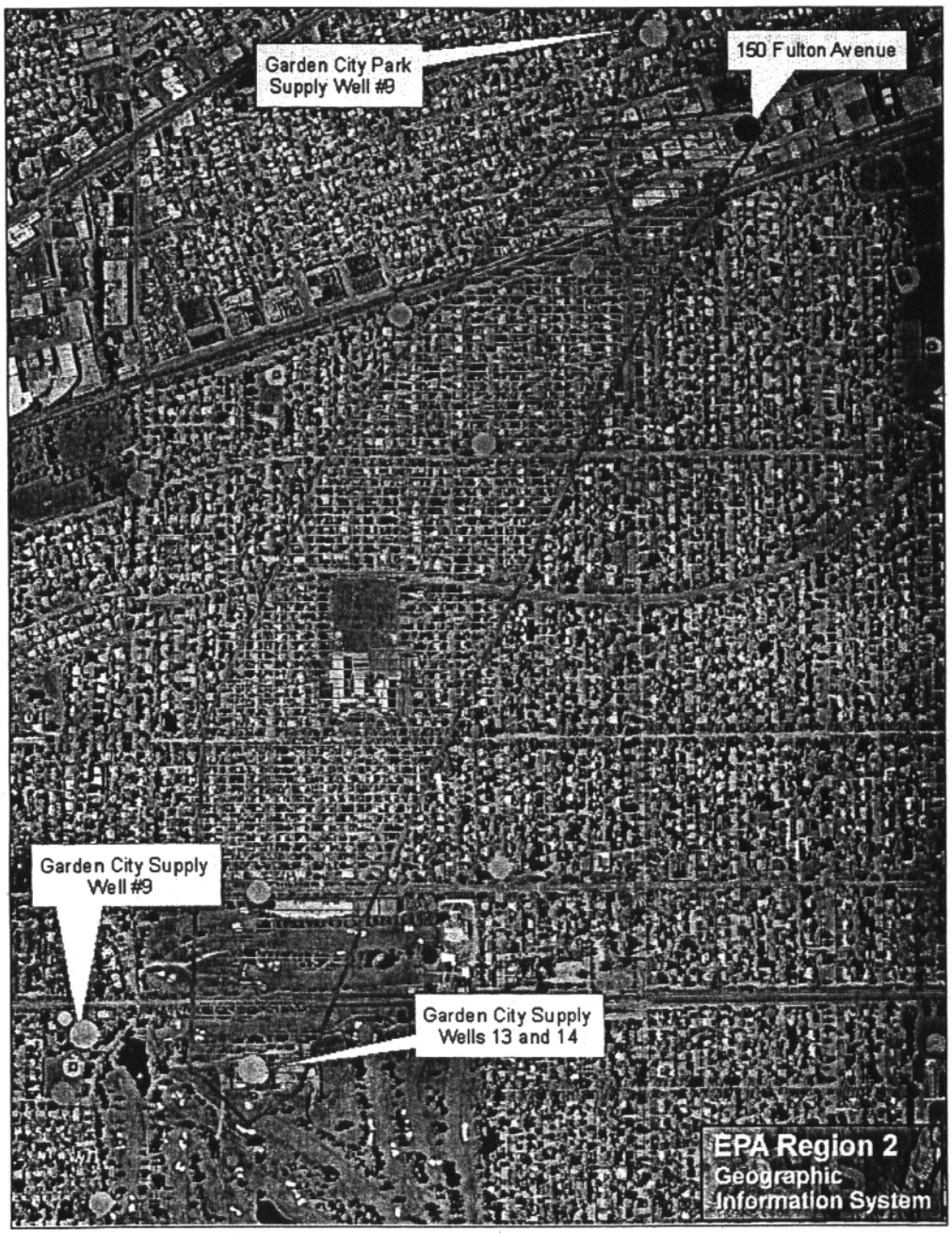
**FULTON AVENUE**
**Site Location**




SITE ID: NY0000110247
SITE NAME: **FULTON AVENUE**
DATE OF MAP: Jun 28, 2007
RPM: WILLIS, KEVIN

0.1
Miles

# FULTON AVENUE




US EPA Region 2
Map Created 12/19/2006

SITE ID: NY0000110247
SITE NAME: **FULTON AVENUE**
DATE OF MAP: Jun 28, 2007
RPM: WILLIS, KEVIN

Monitoring Wells
Public Suppy Wells
PCE-Dominant Plume

N
0.06
Miles

# APPENDIX II

Tables

# TABLE 1

## Summary of Chemicals of Concern and Medium-Specific Exposure Point Concentrations

**Scenario Timeframe:** Current/Future
**Medium:** Groundwater
**Exposure Medium:** Groundwater

| Exposure Point | Chemical of Concern | Concentration Detected | | Concentration Units | Frequency of Detection | Exposure Point Concentration (EPC) | EPC Units | Statistical Measure |
|---|---|---|---|---|---|---|---|---|
| | | Min | Max | | | | | |
| Tap Water and Shower Head | Tetrachloroethene | 6.6 | 360 | µg/l | 19/19 | 360 | µg/l | Max. |
| | Trichloroethene | 37 | 120 | µg/l | 19/19 | 73 | µg/l | 95% UCL-T |

Max = Maximum value detected
95% UCL-T = 95% Upper Confidence Limit - Transformed

## TABLE 2

## Selection of Exposure Pathways

| Scenario | Medium | Exposure Medium | Exposure Point | Receptor Population | Receptor Age | Exposure Route | Onsite/ Offsite | Rationale for Selection/Exclusion of Exposure Pathway |
|---|---|---|---|---|---|---|---|---|
| Current/ Future | Groundwater | Groundwater | Tap Water | Resident | Adult | Ingestion | Onsite | Selected to evaluate real or hypothetical scenario in which a private well is used for potable purposes or a municipal well is used without treatment. |
| | | | | | | Dermal | Onsite | |
| | | | | | Child (0-6 yr) | Ingestion | Onsite | |
| | | | | | | Dermal | Onsite | |
| | | | | Off-Site Commercial Worker | Adult | Ingestion | Off-site | |
| | | | Vapors from Shower Head | Resident | Adult | Inhalation | Onsite | |
| | | | | | Child (0-6 yr) | Inhalation | Onsite | |
| | | | Indoor Air | Resident | Adult | Inhalation | Off-site | Residential areas are located within the area of concern. |
| | | | | | Child | Inhalation | Off-Site | Residential areas are located within the area of concern. |
| | | | | On-Site Commercial Worker | Adult | Inhalation | On-Site | The site is used for commercial purposes. |
| | | | | Off-Site Commercial Worker | Adult | Inhalation | Off-Site | Commercial properties are located within the area of concern. |
| Future | Groundwater | Groundwater | Irrigation Holding Pond | Landscaper, South of RR | Adult | Inhalation | Off-Site | Contaminated groundwater could potentially reach the golf course monitoring well and exposure could occur via volatilization from the water. |

### Summary of Selection of Exposure Pathways

The table describes the exposure pathways associated with the site that were evaluated for the risk assessment, and the rationale for the inclusion of each pathway. Exposure media, exposure points, and receptor populations are included.

# TABLE 3

## Non-Cancer Toxicity Data Summary

**Pathway:** Oral/Dermal

| Chemical of Concern | Chronic/ Subchronic | Oral RfD Value | Oral RfD Units | Absorp. Efficiency (Dermal) | Adjusted RfD ( Dermal) | Adj. Dermal RfD Units | Primary Target Organ | Combined Uncertainty /Modifying Factors | Sources of RfD: Target Organ | Dates of RfD: |
|---|---|---|---|---|---|---|---|---|---|---|
| Tetrachlorethene | Chronic | 1.0E-2 | mg/kg/d | ----- | 1.0E-2 | mg/kg/d | Liver | 1000 | IRIS | 01/27/04 |
| Trichloroethene | Chronic | 3.0E-4 | mg/kg/d | ----- | 3.0E-4 | mg/kg/d | Liver | | NCEA | 01/27/04 |

**Pathway:** Inhalation

| Chemical of Concern | Chronic/ Subchronic | Inhalation RfC | Inhalation RfC Units | Inhalation RfD | Inhalation RfD Units | Primary Target Organ | Combined Uncertainty /Modifying Factors | Sources of RfD: Target Organ | Dates: |
|---|---|---|---|---|---|---|---|---|---|
| Tetrachoroethene | ----- | ----- | ----- | ----- | ----- | ----- | ----- | IRIS | 01/27/04 |
| Trichloroethene | Chronic | ----- | ----- | 1.0E-2 | $mg/m^3$ | Liver | ----- | NCEA | 01/27/43 |

**Key**

IRIS: Integrated Risk Information System, U.S. EPA
NCEA: National Center for Environmental Assessment, U.S. EPA

**Summary of Toxicity Assessment**

This table provides non-carcinogenic risk information which is relevant to the contaminants of concern. When available, the chronic toxicity data have been used to develop oral reference doses (RfDs) and inhalation reference doses (RfDi).

# TABLE 4

## Cancer Toxicity Data Summary

**Pathway:** Oral/Dermal

| Chemical of Concern | Oral Cancer Slope Factor | Units | Adjusted Cancer Slope Factor (for Dermal) | Slope Factor Units | Weight of Evidence/ Cancer Guideline Description | Source | Date |
|---|---|---|---|---|---|---|---|
| Tetrachloroethene | 5.4E-1 | (mg/kg/day)-1 | ----- | ----- | B1 | NCEA | 10/01/04 |
| Trichloroethene | 4.0E-1 | (mg/kg/day)-1 | ----- | ----- | B1 | NCEA | 01/27/04 |

**Pathway:** Inhalation

| Chemical of Concern | Unit Risk | Units | Inhalation Slope Factor | Slope Factor Units | Weight of Evidence/ Cancer Guideline Description | Source | Date |
|---|---|---|---|---|---|---|---|
| Tetrachloroethene | ----- | ----- | 2.0E-2 | (mg/kg/day)-1 | B1 | NCEA | 01/27/04 |
| Trichloroethene | ----- | ----- | 4.0E-1 | (mg/kg-day)-1 | B1 | NCEA | 01/27/04 |

**Key**

NCEA: National Center for Environmental Assessment, U.S. EPA

**EPA Group:**

B1 - Probable human carcinogen - indicates that limited human data are available

**Summary of Toxicity Assessment**

This table provides carcinogenic risk information which is relevant to the contaminants of concern. Toxicity data are provided for both the oral and inhalation routes of exposure.

# TABLE 5
## Risk Characterization Summary - Carcinogens

**Scenario Timeframe:** Current/Future
**Receptor Population:** Residential
**Receptor Age:** Adult

| Medium | Exposure Medium | Exposure Point | Chemical of Concern | Carcinogenic Risk | | | |
|---|---|---|---|---|---|---|---|
| | | | | Ingestion | Inhalation | Dermal | Exposure Routes Total |
| Groundwater | Groundwater | Tap Water and Shower Head | Tetrachloroethene | 1.83E-03 | 1.2E-04 | 1.09E-03 | 3.04E-03 |
| | | | Trichloroethene | 2.70E-04 | 5.0E-04 | ----- | 7.7E-04 |
| | | | | | | **Total Risk =** | 4.0E-03 |

**Scenario Timeframe:** Current/Future
**Receptor Population:** Residential
**Receptor Age:** Child

| Medium | Exposure Medium | Exposure Point | Chemical of Concern | Carcinogenic Risk | | | |
|---|---|---|---|---|---|---|---|
| | | | | Ingestion | Inhalation | Dermal | Exposure Routes Total |
| Groundwater | Groundwater | Tap Water and Shower Head | Tetrachloroethene | 1.1E-03 | 2.0E-04 | 6.1E-04 | 1.91E-03 |
| | | | Trichloroethene | 1.6E-04 | ----- | ----- | 1.6E-04 |
| | | | | | | **Total Risk =** | 2.0E-03 |

**Scenario Timeframe:** Current/Future
**Receptor Population:** Commercial Worker Off-Site (South of RR)
**Receptor Age:** Adult

| Medium | Exposure Medium | Exposure Point | Chemical of Concern | Carcinogenic Risk | | | |
|---|---|---|---|---|---|---|---|
| | | | | Ingestion | Inhalation | Dermal | Exposure Routes Total |
| Groundwater | Groundwater | Tap Water | Tetrachloroethene | 6.8E-04 | ----- | ----- | 7.0E-04 |
| | | | | | | **Total Risk =** | 7.0E-04 |

**Summary of Risk Characterization - Carcinogens**

The table presents cancer risks (CRs) for each route of exposure and for all routes of exposure combined. The Risk Assessment Guidance for Superfund states that, generally, the acceptable cancer risk range is $10^{-4}$ to $10^{-6}$.

## TABLE 6

## Risk Characterization Summary - Noncarcinogens

**Scenario Timeframe:** Current/Future
**Receptor Population:** Residential
**Receptor Age:** Adult

| Medium | Exposure Medium | Exposure Point | Chemical of Concern | Primary Target Organ | Non-Carcinogenic Risk | | | |
|---|---|---|---|---|---|---|---|---|
| | | | | | Ingestion | Inhalation | Dermal | Exposure Routes Total |
| Groundwater | Groundwater | Tap and Shower Head | Trichloroethene | Liver | 7 | ----- | 1 | 8 |
| | | | | | | | Hazard Index Total = | 8 |

**Scenario Timeframe:** Current/Future
**Receptor Population:** Residential
**Receptor Age:** Child

| Medium | Exposure Medium | Exposure Point | Chemical of Concern | Primary Target Organ | Non-Carcinogenic Risk | | | |
|---|---|---|---|---|---|---|---|---|
| | | | | | Ingestion | Inhalation | Dermal | Exposure Routes Total |
| Groundwater | Groundwater | Tap and Shower Head | Tetrachloroethene | Liver | 2.3 | ----- | 1.3 | 3.6 |
| | | | Trichloroethene | Liver | 16 | ----- | 2.6 | 19 |
| | | | | | | | Hazard Index Total = | 12.8 |

**Scenario Timeframe:** Current/Future
**Receptor Population:** Commercial Worker Off-Site (South of RR)
**Receptor Age:** Adult

| Medium | Exposure Medium | Exposure Point | Chemical of Concern | Primary Target Organ | Non-Carcinogenic Risk | | | |
|---|---|---|---|---|---|---|---|---|
| | | | | | Ingestion | Inhalation | Dermal | Exposure Routes Total |
| Groundwater | Groundwater | Tap | Trichloroethene | Liver | 2.4 | ----- | ----- | 2.4 |

| | |
|---|---|
| **Hazard Index Total =** | 2.4 |

The table presents hazard quotients (HQs) for each route of exposure and the hazard index (sum of hazard quotients) for all routes of exposure. The Risk Assessment Guidance for Superfund states that, generally, a hazard index (HI) greater than 1 indicates the potential for adverse non-cancer effects.

**Table 7**
**ARARs, Criteria, and Guidance**
**Fulton Avenue Site**
**Garden City Park, New York**

| Regulatory Level | ARARs, Criteria, and Guidance | Requirement Synopsis | Action to be Taken |
|---|---|---|---|
| Federal | National Primary Drinking Water Standards (40 CFR Part 141) Maximum Contaminant Levels (MCLs) and Maximum Contaminant Level Goals (MCLGs). Safe Drinking Water Act (SDWA) [42 U.S.C.§ 300F et. Seq.) | Establishes health-based standards for public drinking water systems. Also establishes drinking water quality goals set at levels at which no adverse health effects are anticipated, with an adequate margin of safety. | MCLs will be used as the primary cleanup goal for the site. The MCL for tetrachloroethene is 5 ppb, and for trichloroethene is also 5 ppb. |
| Federal | Clean Water Act 33 U.S.C.S. § 1251 et. Seq. Water Quality Criteria (Federal Ambient Water Quality Criteria [FAWQC] and Guidance Values [40 CFR 131.36]) | Establishes criteria for surface water quality based on toxicity to aquatic organisms and human health. | The criteria will be considered in the development of the PRGs if there are no applicable standards. |

**Table 7**
**ARARs, Criteria, and Guidance**
**Fulton Avenue Site**
**Garden City Park, New York**

| Regulatory Level | ARARs, Criteria, and Guidance | Requirement Synopsis | Action to be Taken |
|---|---|---|---|
| State | New York Surface Water and Groundwater Quality Standards and Groundwater Effluent Limitations (6NYCRR Part 703) | Establish numerical standards for groundwater and surface water cleanups. | Project will meet groundwater effluent limitations before discharge. |
| State | New York State Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations (Technical and Operational Guidance Series 1.1.1) | Provides ambient water quality guidance values and groundwater effluent limitations for use where there are no standards. | The guidance values will be considered in the development of the PRGs if there are no applicable standards. |
| State | New York State Department of Health Drinking Water Standards (10NYCRR Part 5) | Sets maximum contaminant levels (MCLs) for public drinking water supplies. | The standards will be considered in the development of the PRGs if there are no applicable standards. |

| Regulatory Level | ARARs, Criteria, and Guidance | Requirement Synopsis | Action to be Taken |
|---|---|---|---|
| Federal | Statement on Procedures on Floodplain Management and Wetlands protection (40 CFR 6 Appendix A) | This Statement of Procedures sets forth Agency policy and guidance for carrying out the provisions of Executive Orders 11988 and 11990. | The selected remedy will take into consideration floodplain management and wetland protection. |
| Federal | Policy on Floodplains and Wetland Assessments for CERCLA Actions (OSWER Directive 9280.0-12, 1985) | Superfund actions must meet the substantive requirements of E.O. 11988, E.O. 11990, and 40 CFR part 6, Appendix A. | The selected remedy will take into consideration floodplain management and wetland protection. |
| Federal | National Environmental Policy Act (NEPA) (42 USC 4321; 40 CFR 1500 to 1508) | This requirement sets forth EPA policy for carrying out the provisions of the Wetlands Executive Order (EO 11990) and Floodplain Executive Order (EO 11988). | This requirement will be considered during the development of the selected remedy s. |
| General | National Historic Preservation Act (40 CFR 6.301) | This requirement establishes procedures to provide for preservation of historical and archeological data that might be destroyed through alteration of terrain as a result of a federal construction project or a federally licensed activity or program. | The effects on historical and archeological data will be evaluated. |
| State | Endangered and Threatened Species of Fish and Wildlife (Part 182) | Standards for the protection of threatened and endangered species | The potential effects of the selected remedy will be evaluated to ensure that any endangered or threatened species and their habitat will not be affected. |

| ARARs, Criteria, and Guidance | Requirement Synopsis | Action to be Taken |
|---|---|---|
| RCRA Identification and Listing of Hazardous Wastes (40 CFR 261) | Describes methods for identifying hazardous wastes and lists known hazardous wastes. | Applicable to the identification of hazardous wastes that are generated, treated, stored, or disposed during remedial activities. |
| RCRA Standards Applicable to Generators of Hazardous Wastes (40 CFR 262) | Describes standards applicable to generators of hazardous wastes. | Standards will be followed if any hazardous wastes are generated onsite. |
| RCRA—Standards for Owners/Operators of Permitted Hazardous Waste Facilities (40 CFR 264.10–164.18) | This regulation lists general facility requirements including general waste analysis, security measures, inspections, and training requirements. | Facility will be designed, constructed, and operated in accordance with this requirement. All workers will be properly trained. |
| RCRA—Preparedness and Prevention (40 CFR 264.30–264.31) | This regulation outlines the requirements for safety equipment and spill control. | Safety and communication equipment will be installed at the site. Local authorities will be familiarized with the site. |
| RCRA—Contingency Plan and Emergency Procedures (40 CFR 264.50–264.56) | This regulation outlines the requirements for emergency procedures to be used following explosions, fires, etc. | Emergency Procedure Plans will be developed and implemented during remedial design. Copies of the plans will be kept on site. |
| New York Hazardous Waste Management System – General (6 NYCRR Part 370) | This regulation provides definition of terms and general standards applicable to hazardous wastes management system. | The regulations will be applied to any hazardous waste operation during remediation of the site. |
| New York Solid Waste Management Regulations (6 NYCRR 360) | Sets standards and criteria for all solid waste management facilities, including design, construction, operation, and closure requirements for the municipal solid waste landfills. | All applicable solid waste management regulation requirements will be considered during design and solid waste generated during remediation will be disposed in regulated municipal solid waste landfills. |
| New York Identification and Listing of Hazardous Waste (6 NYCRR Part 371) | Describes methods for identifying hazardous wastes and lists known hazardous wastes. | Applicable to the identification of hazardous wastes that are generated, treated, stored, or disposed during remedial activities. |
| Department of Transportation (DOT) Rules for Transportation of Hazardous Materials (49 CFR Parts 107, 171, 172, 177 to 179) | This regulation outlines procedures for the packaging, labeling, manifesting, and transporting hazardous materials. | Any company contracted to transport hazardous material from the site will be required to comply with this regulation. |

| ARARs, Criteria, and Guidance | Requirement Synopsis | Action to be Taken |
|---|---|---|
| RCRA Standards Applicable to Transporters of Hazardous Waste (40 CFR 263) | Establishes standards for hazardous waste transporters. | Any company contracted to transport hazardous material from the site will be required to comply with this regulation. |
| New York Hazardous Waste Manifest System and Related Standards for Generators, Transporters and Facilities (6 NYCRR Part 372) | Establishes record keeping requirements and standards related to the manifest system for hazardous wastes. | Any company contracted to transport hazardous material from the site will be required to comply with this regulation. |
| New York Waste Transporter Permit Program (6 NYCRR Part 364) | Establishes permit requirements for transportations of regulated waste. | Must use permitted waste transporters when shipping wastes. |
| RCRA Land Disposal Restrictions (40 CFR 268) | Identifies hazardous wastes restricted from land disposal and provides treatment standards under which an otherwise prohibited waste may be land disposed. | Hazardous wastes will be treated to meet disposal requirements. |
| New York Standards for Universal Waste (6 NYCRR Part 374-3) and Land Disposal Restrictions (6 NYCRR Part 376) | These regulations establish standards for treatment and disposal of hazardous wastes. | Hazardous wastes must comply with the treatment and disposal standards. |
| Clean Water Act (CWA [40 CFR 122, 125) | National Pollutant Discharge Elimination System (NPDES) permit requirements for point source discharges must be met, including the NPDES Best Management Practice Program. These regulations include, but are not limited to, requirements for compliance with water quality standards, a discharge monitoring system, and records maintenance. | Project will meet NYPDES permit requirements for point source discharges. |
| Safe Drinking Water Act – Underground Injection Control Program (40 CFR 144, 146) | Establish performance standards, well requirements, and permitting requirements for groundwater re-injection wells | Project will evaluate the requirement for treated groundwater reinjection and injection of reagent for in situ treatment |

| ARARs, Criteria, and Guidance | Requirement Synopsis | Action to be Taken |
|---|---|---|
| New York Regulations on State Pollution Discharge Elimination System (SPDES) (6 NYCRR parts 750-757) | This permit governs the discharge of any wastes into or adjacent to State waters that may alter the physical, chemical, or biological properties of State waters, except as authorized pursuant to a NPDES or State permit. | Project will meet NPDES permit requirements for surface discharges of any wastes. Monitoring of discharges will be conducted as required. |
| New York Surface Water and Groundwater Quality Standards and Groundwater Effluent Limitations (6NYCRR Part 703) | Establish numerical criteria for groundwater treatment before discharge. | Project will meet groundwater effluent limitations before discharge. |
| New York State Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations (TOGS 1.1.1) | Provides groundwater effluent limitations for use where there are no standards. | The guidance values will be considered for the treated groundwater to be discharge into surface water body. |
| Clean Air Act (CAA)—National Ambient Air Quality Standards (NAAQs) (40 CFR 50) | These provide air quality standards for particulate matter and volatile organic matter. | During excavation, treatment, and/or stabilization, air emissions will be properly controlled and monitored to comply with these standards. |
| Federal Directive – Control of Air Emissions from Superfund Air Strippers (OSWER Directive 9355.0-28) | These provide guidance on the use of controls for superfund site air strippers as well as other vapor extraction techniques in attainment and non-attainment areas for ozone. | Project will consider the requirements in the selected remedy that involve air stripping and vapor extraction process. |
| New York General Prohibitions (6 NYCRR Part 211) | Prohibition applies to any particulate, fume, gas, mist, odor, smoke, vapor, pollen, toxic or deleterious emissions. | Proper dust suppression methods and monitoring will be required when implementing excavation, decontamination, and/or stabilization actions to prevent particulate matter from becoming airborne. |

| ARARs, Criteria, and Guidance | Requirement Synopsis | Action to be Taken |
|---|---|---|
| New York Air Quality Standards (6 NYCRR Part 257) | This regulation requires that maximum 24-hour concentrations for particulate matter not be exceeded more than once per year. Fugitive dust emissions from site excavation activities must be maintained below 250 micrograms per cubic meter ($\mu g/m^3$). | Proper dust suppression methods, such as water spray, will be specified when implementing excavation and/or solidification/stabilization actions. |
| New York Division of Air Resources DAR-1 (Air Guide-1) AGC/SGC Tables | The tables provide guideline concentrations for toxic ambient air contaminants. | Air emission will comply with Air Guide-1. |

# APPENDIX III

# ADMINISTRATIVE RECORD INDEX

**FULTON AVENUE SITE**
**OPERABLE UNIT ONE**
**ADMINISTRATIVE RECORD FILE**
**INDEX OF DOCUMENTS**

## 3.0 REMEDIAL INVESTIGATION

### 3.3 Work Plans

- 300001 - 300267 Report: Remedial Investigation/Feasibility Study Work Plan, 150 Fulton Avenue, Garden City Park, NY, (Garden City Park Industrial Area Site Code #130073), prepared by Environmental Resources Management, prepared for Genesco Inc., June 1998.

### 3.4 Remedial Investigation Reports

P.300268 - 300419 Report: Focused Remedial Investigation Report for the Fulton Avenue (Garden City Park Industrial Area) Site, Garden City Park, Nassau County, New York (Site Registry No. 1-30-073), prepared by Dvirka and Bartilucci Consulting Engineers, prepared for New York State Department of Environmental Conservation, November 1996.

- 300420 - 300480 Report: Engineering Report, Interim Remedial Measure Soil Vapor Extraction and Air Sparging Systems, Fulton Avenue Site (Garden City Park Industrial Area), Town of North Hempstead, Nassau County (Site Registry No. 1-30-073), prepared by Dvirka and Bartilucci Consulting Engineers, prepared for New York State Department of Environmental Conservation, November 1996.

P.300481 - 300696 Report: Final Engineering Report, Air Sparge/Soil Vapor Extraction System, 150 Fulton Avenue, Garden City Park, NY, (Garden City Park Industrial Area Site Code #130073), prepared by Environmental Resources Management, prepared for Genesco Inc., December 1998.

P.300697 - 300774 Report: Draft Exposure Pathway Analysis Report, 150 Fulton Avenue, Garden City Park, NY (Garden City Park Industrial Area) NYSDEC Site Code #130073, prepared by Environmental Resources Management, prepared for Genesco Inc., September 2002.

P.300775 - 300894 Report: Draft Baseline Risk Assessment Report,150 Fulton Avenue Site, Garden City Park, NY, prepared by Environmental Resources Management, prepared for Genesco Inc., December 2004.

P.300895 - 301231 Report: Remedial Investigation Report, 150 Fulton Avenue, Garden City Park, NY, prepared by Environmental Resources Management, prepared for Genesco Inc., August 2005.

## 3.5 Correspondence

P.301232 - 301233 Letter to Mr. John Swartwout, P.E., Division of Environmental Remediation, New York State Department of Environmental Conservation, from Mr. Chris W. Wenczel, Senior Project Manager, Environmental Resources Management, re: Monthly Progress Report, RI/FS and IRM Activities, 150 Fulton Avenue, Garden City Park Industrial Site #130073, May 10, 2002.

P.301234 - 301235 Letter to Mr. John Swartwout, P.E., Division of Environmental Remediation, New York State Department of Environmental Conservation, from Mr. Chris W. Wenczel, Senior Project Manager, Environmental Resources Management, re: Monthly Progress Report, RI/FS and IRM Activities, 150 Fulton Avenue, Garden City Park Industrial Site #130073, August 12, 2002.

P.301236 - 301237 Letter to Mr. John Swartwout, P.E., Division of Environmental Remediation, New York State Department of Environmental Conservation, from Mr. Chris W. Wenczel, Senior Project Manager, Environmental Resources Management, re: Monthly Progress Report, RI/FS and IRM Activities, 150 Fulton Avenue, Garden City Park Industrial Site #130073, September 10, 2002.

P.301238 - 301251 Letter to Mr. John Swartwout, P.E., Division of Environmental Remediation, New York State Department of Environmental Conservation, from Mr. Chris W. Wenczel, Senior Project Manager, Environmental Resources Management, re: Monthly Progress Report, RI/FS and IRM Activities, 150 Fulton Avenue, Garden City Park Industrial Site #130073, July 10, 2003.

P.301252 - 301255 Letter to Mr. John Swartwout, P.E., Division of Environmental Remediation, New York State Department of Environmental Conservation, from Mr. Chris W. Wenczel, Senior Project Manager, Environmental Resources Management, re: Monthly Progress Report, RI/FS and IRM Activities, 150 Fulton Avenue, Garden City Park Industrial Site #130073, August 11, 2003.

P.301256 - 301259 Letter to Mr. John Swartwout, P.E., Division of Environmental Remediation, New York State Department of Environmental Conservation, from Mr. Chris W. Wenczel, Senior Project Manager, Environmental Resources Management, re: Monthly Progress Report, RI/FS and IRM Activities, 150 Fulton Avenue, Garden City Park Industrial Site #130073, September 16, 2003.

P.301260 - 301261 Letter to Mr. Steven Scharf, P.E., Senior Project Engineer, Remedial Action Bureau A, Division of Environmental Remediation, New York State Department of Environmental Conservation, from Mr. Russell Sirabian, P.E., Principal, Environmental Resources Management, re: 150 Fulton Avenue Site, Garden City Park, Nassau County Site No. 1-30-073, September 19, 2003.

P.301262 - 301262 Letter to Mr. Kevin Willis, Project Manager, Eastern NY Remediation Section, USEPA, from Mr. Chris W. Wenczel, Senior Project Manager, Environmental Resources Management, re: Remedial Investigation/Feasibility Study (RI/FS) Activities, 150 Fulton Avenue, Garden City Park Industrial Site NYSDEC #130073, September 19, 2003.

P.301263 - 301275 Letter to Mr. John Swartwout, P.E., Division of Environmental Remediation, New York State Department of Environmental Conservation, from Mr. John Mohlin, P.E., Project Manager - IRM, and Mr. Russell Sirabian, P.E., Senior Project Manager - IRM, Environmental Resources Management, re: Work Plan for Passive Sub-Slab Venting System, 150 Fulton Avenue, Garden City Park Industrial Site No. 130073, October 8, 2003.

P.301276 - 301286 Letter to Mr. John Swartwout, P.E., Division of Environmental Remediation, New York State Department of Environmental Conservation, from Mr. Chris W. Wenczel, Senior Project Manager, Environmental Resources Management, re: Monthly Progress Report, RI/FS and IRM Activities, 150 Fulton Avenue, Garden City Park Industrial Site #130073, October 10, 2003.

P.301287 - 301292 Letter to Mr. Steven M. Scharf, P.E., New York State Department of Environmental Conservation, Division of Environmental Remediation, Remedial Action, Bureau A, from Mr. Chris W. Wenczel, Group Manager/Senior Hydrogeologist, Environmental Resources Management, re: Monthly Progress Report, RI/FS and IRM Activities, 150 Fulton Avenue, Garden City Park Industrial Site #130073, November 10, 2003.

P.301293 - 301295 Letter to Mr. Michael Alarcon, Nassau County Department of Health Services, from Mr. Chris W. Wenczel, Senior Project Manager, Environmental Resources Management, re: 150 Fulton Avenue Site Quarterly Ground Water Sampling, Garden City Park, New York, Remedial Investigation/Feasibility Study, NYSDEC Site Registry #130073, ERM Job #0001133, December 9, 2003.

P.301296 - 301298 Letter to Mr. Steven M. Scharf, P.E., New York State Department of Environmental Conservation, Division of Environmental Remediation, Remedial Action, Bureau A, from Mr. Chris W. Wenczel, Group Manager/Senior Hydrogeologist,

Environmental Resources Management, re: Monthly Progress Report, RI/FS and IRM Activities, 150 Fulton Avenue, Garden City Park Industrial Site #130073, December 10, 2003.

P.301299 - 301343 Letter to Mr. Steven M. Scharf, P.E., New York State Department of Environmental Conservation, Division of Environmental Remediation, Remedial Action, Bureau A, from Mr. Chris W. Wenczel, Group Manager/Senior Hydrogeologist, Environmental Resources Management, re: Monthly Progress Report, RI/FS and IRM Activities, 150 Fulton Avenue, Garden City Park Industrial Site #130073, March 10, 2004.

P.301344 - 301351 Letter to Mr. Steven M. Scharf, P.E., New York State Department of Environmental Conservation, Division of Environmental Remediation, Remedial Action, Bureau A, from Mr. Chris W. Wenczel, Group Manager/Senior Hydrogeologist, Environmental Resources Management, re: Monthly Progress Report, RI/FS and IRM Activities, 150 Fulton Avenue, Garden City Park Industrial Site #130073, April 12, 2004.

P.301352 - 301362 Letter to Mr. Steven M. Scharf, P.E., Division of Environmental Remediation, Remedial Action, Bureau A, New York State Department of Environmental Conservation, from Mr. Chris W. Wenczel, Senior Project Manager, and Mr. James A. Perazzo, Principal, Environmental Resources Management, re: March 11, 2004 Correspondence from H2M to NYSDEC Relating to Water Supply Wells Operated by the Incorporated Village of Garden City, April 23, 2004.

P. 301363 - 301374 Letter to Mr. Steven M. Scharf, P.E., Division of Environmental Remediation, Remedial Action, Bureau A, New York State Department of Environmental Conservation, from Mr. John Mohlin, P.E., Project Manager - IRM, and Mr. James Perazzo, Principal, Environmental Resources Management, re:Installation of the Sub-Slab Venting System, 150 Fulton Avenue, Garden City Park Industrial Site No. 130073, April 27, 2004.

P.301375 - 301378 Letter to Mr. Steven M. Scharf, P.E., New York State Department of Environmental Conservation, Division of Environmental Remediation, Remedial Action, Bureau A, from Mr. Chris W. Wenczel, Senior Project Manager, Environmental Resources Management, re: Monthly Progress Report, RI/FS and IRM Activities, 150 Fulton Avenue, Garden City Park Industrial Site #130073, May 10, 2004.

P.301379 - 301380 Letter to Residents from Mr. Chris W. Wenczel, Senior Project Manager, Environmental Resources Management, re: Remedial Investigation/Feasibility Study, Garden City, New York, May 26, 2004.

P.301381 - 301408 Letter to Mr. Steven M. Scharf, P.E., New York State Department of Environmental Conservation, Division of Environmental Remediation, Remedial Action, Bureau A, from Mr. Chris W. Wenczel, Senior Project Manager, Environmental Resources Management, re: Monthly Progress Report, RI/FS and IRM Activities, 150 Fulton Avenue, Garden City Park Industrial Site #130073, June 10, 2004.

P.301409 - 301412 Letter to Mr. Steven M. Scharf, P.E., New York State Department of Environmental Conservation, Division of Environmental Remediation, Remedial Action, Bureau A, and Mr. Kevin Willis, Eastern NY Remediation Section, USEPA, from Mr. Chris W. Wenczel, Senior Project Manager, Environmental Resources Management, re: 150 Fulton Avenue, Garden City Park Industrial Site #130073, June 18, 2004.

P.301413 - 301419 Letter to Mr. Steven M. Scharf, P.E., New York State Department of Environmental Conservation, Division of Environmental Remediation, Remedial Action, Bureau A, from Mr. Chris W. Wenczel, Senior Project Manager, Environmental Resources Management, re: Monthly Progress Report, RI/FS and IRM Activities, 150 Fulton Avenue, Garden City Park Industrial Site #130073, July 12, 2004.

P.301420 - 301422 Letter to Mr. Steven M. Scharf, P.E., New York State Department of Environmental Conservation, Division of Environmental Remediation, Remedial Action, Bureau A, from Mr. John Mohlin, P.E., Project Manager - IRM, and Mr. James Perazzo, Partner In Charge, Environmental Resources Management, re: 150 Fulton Avenue Site, NYSDEC Site Code #130073, Garden City Park Industrial Area, Garden City Park, New York, August 23, 2004.

P.301423 - 301426 Letter to Mr. Steven M. Scharf, P.E., New York State Department of Environmental Conservation, Division of Environmental Remediation, Remedial Action, Bureau A, from Mr. Chris W. Wenczel, Senior Project Manager, Environmental Resources Management, re: Monthly Progress Report, RI/FS and IRM Activities, 150 Fulton Avenue, Garden City Park Industrial Site #130073, September 10, 2004.

P.301427 - 301429 Letter to Mr. Steven M. Scharf, P.E., New York State Department of Environmental Conservation, Division of Environmental Remediation, Remedial Action, Bureau A, from Mr. Chris W. Wenczel, Senior Project Manager, Environmental Resources Management, re: Monthly Progress Report, RI/FS and IRM Activities, 150 Fulton Avenue, Garden City Park Industrial Site #130073, October 12, 2004.

P.301430 - 301432 Letter to Mr. Steven M. Scharf, P.E., New York State Department of Environmental Conservation, Division of Environmental Remediation, Remedial Action, Bureau A, from Mr. Chris W. Wenczel, Senior Project Manager, Environmental Resources Management, re: Monthly Progress Report, RI/FS and IRM Activities, 150 Fulton Avenue, Garden City Park Industrial Site #130073, March 15, 2005.

P.301433 - 301481 Letter to Mr. Steven M. Scharf, P.E., New York State Department of Environmental Conservation, Division of Environmental Remediation, Remedial Action, Bureau A, from Mr. Chris W. Wenczel, Senior Project Manager, Environmental Resources

Management, re: Monthly Progress Report, RI/FS and IRM Activities, 150 Fulton Avenue, Garden City Park Industrial Site #130073, March 15, 2005.

P.301482 - 301491 Letter to Mr. Kevin Willis, U.S. EPA, Region 2, Emergency and Remedial Response Division, Eastern NY Remediation Section, and Mr. Steven M. Scharf, P.E., New York State Department of Environmental Conservation, Division of Environmental Remediation, Remedial Action, Bureau A, from Mr. Chris W. Wenczel, Senior Project Manager, Environmental Resources Management, re: Remedial Investigation Report, 150 Fulton Avenue, Garden City Park Industrial Site #130073, March 23, 2005.

P.301492 - 301494 Letter to Mr. Steven M. Scharf, P.E., New York State Department of Environmental Conservation, Division of Environmental Remediation, Remedial Action, Bureau A, from Mr. Chris W. Wenczel, Senior Project Manager, Environmental Resources Management, re: Monthly Progress Report, RI/FS and IRM Activities, 150 Fulton Avenue, Garden City Park Industrial Site #130073, April 13, 2005.

## 4.0 FEASIBILITY STUDY

### 4.3 Feasibility Study Reports

P.400001 - 400267 Report: Feasibility Study Report, 150 Fulton Avenue, Garden City Park, Nassau County, New York, prepared by ERM, July 13, 2006.

P.400268 - 400268 Costing of Limited ICSO portion of Alternative 4, undated.

### 4.6 Correspondence

P.400269 - 400273 Letter to Mr. Steven M. Scharf, P.E., New York State Department of Environmental Conservation, Division of Environmental Remediation, Remedial Action, Bureau A, from Mr. Chris W. Wenczel,

Group Manager/Senior Hydrogeologist, Environmental Resources Management, re: Preliminary Screening of Remedial Technologies and Alternatives, 150 Fulton Avenue Feasibility Study, Garden City Park Industrial Site #130073, December 19, 2003.

P.400274 - 400284 Letter to Mr. Chris Wenczel, ERM Inc., from Mr. Steven M. Scharf, P.E., Project Engineer, New York State Department of Environmental Conservation, Division of Environmental Remediation, Bureau of Remedial Action A, Section C, re: Fulton Avenue (Garden City Industrial Area) NPL Site, Operable Unit 1 (OU1), Garden City Park, Nassau County NYSDEC Site No. 1-30-073, February 14, 2006.

P.400285 - 400294 Letter to Mr. Steven M. Scharf, P.E., Remedial Bureau A, Division of Environmental Remediation, New York State Department of Environmental Conservation, from Mr. James Perazzo, Principal; Mr. Chris W. Wenczel, Senior Project Manager, and Ms. Carla Weinpahl, Senior Project Engineer, Environmental Resources Management, re: NYSDEC and USEPA Comments, 14 February 2006, Draft Feasibility Study Report, 16 December 2005, 150 Fulton Avenue Site, Garden City Park Industrial Site #130073, March 20, 2006.

P.400295 - 400297 Letter to Mr. Steven M. Scharf, P.E., New York State Department of Environmental Conservation, Division of Environmental Remediation, Remedial Action, Bureau A, from Mr. Chris W. Wenczel, Senior Project Manager, Environmental Resources Management, re: Monthly Progress Report, RI/FS and IRM Activities, 150 Fulton Avenue, Garden City Park Industrial Site #130073, June 10, 2006.

P.400298 - 400300 Letter to Mr. Steven M. Scharf, P.E., New York State Department of Environmental Conservation, Division of Environmental Remediation, Remedial Action, Bureau A, from Mr. Chris W. Wenczel, Senior Project Manager, Environmental Resources Management, re: Monthly Progress Report, RI/FS and IRM Activities, 150 Fulton Avenue, Garden City Park Industrial Site #130073, July 10, 2006.

P.400301 - 400372 Letter to Mr. Steven M. Scharf, P.E., New York State Department of Environmental Conservation, Division of Environmental Remediation, Remedial Action, Bureau A, from Mr. Chris W. Wenczel, Senior Project Manager, Environmental Resources Management, re: Monthly Progress Report, RI/FS and IRM Activities, 150 Fulton Avenue, Garden City Park Industrial Site #130073, August 10, 2006.

P.400373 - 400374 Letter to Mr. Steven M. Scharf, P.E., New York State Department of Environmental Conservation, Division of Environmental Remediation, Remedial Action, Bureau A, from Mr. Chris W. Wenczel, Senior Project Manager, Environmental Resources Management, re: Monthly Progress Report, RI/FS and IRM Activities, 150 Fulton Avenue, Garden City Park Industrial Site #130073, September 12, 2006.

P.400375 - 400385 Letter to Mr. Christopher Wenczel, ERM Inc., from Mr. Steven M. Scharf, P.E., Senior Project Engineer, Remedial Action Bureau A, Division of Environmental Remediation, New York State Department of Environmental Conservation, re: Fulton Avenue Site (Garden City Park Industrial Area), Nassau County NYSDEC Site No. 1-30-073, February 8, 2007.

P.400386 - 400392 Letter to Mr. Christopher Wenczel, ERM, from Mr. Kevin Willis, Remedial Project Manager, U.S. EPA, Region 2, re: Fulton Avenue Superfund Site, North Hempstead, New York, February 15, 2007.

## 5.0 RECORD OF DECISION

### 5.1 Record of Decision

P.500001 - 500073 Record of Decision, National Heatset Printing Site, Town of Babylon, Suffolk County, Site Number 1-52-140, prepared by New York State Department of Environmental Conservation, June 17, 1999.

P.500074 - 500122 Record of Decision, 100 Oser Avenue Site,Operable Unit 2, Smithtown, Suffolk County, New York, Site Number 1-52-162, prepared by New York State Department of Environmental Conservation, January 17, 2006.

P.500123 - 500189 Record of Decision, Lawrence Aviation Industries, Inc. Superfund Site, Suffolk County, New York, prepared by U.S. EPA, Region 2, September 29, 2006.

## 7.0 ENFORCEMENT

### 7.3 Administrative Orders

P.700001 - 700021 Order on Consent, Index # W1-0707-94-08,Site Code # 130073, State of New York: Department of Environmental Conservation, In the Matter of the Development and Implementation of a Remedial Investigation/Feasibility Study and Interim Remedial Measure Program for an Inactive Hazardous Waste Disposal Site Under Article 27, Title 13 and Article 71, Title 27 of the Environmental Conservation Law of the State of New York by Genesco Inc., Respondent, September 18, 1997.

### 7.7 Notice Letters and Responses - 104e's

Genesco Inc.

P.700022 - 700038 Letter to Mr. Hal N. Pennington, President, Genesco Inc., from Mr. Richard Caspe, Director, Emergency and Remedial Response Division, U.S. EPA, Region 2, re: Fulton Avenue Superfund Site, North Hempstead, Nassau County, NY, Request for Information and Notice of Potential Liability Pursuant to the Comprehensive Environmental Response, Compensation and Liability Act, 42 U.S.C. Section 9601, et seq., April 25, 2002.

P.700039 - 700148 Letter to Ms. Liliana Villatora, Asst. Regional Counsel, New York/Caribbean Superfund Branch, U.S. EPA, Region II, from Ms. April A. Ingram,

Boult, Cummings, Conners & Berry, PLC, re: Fulton Ave. Superfund Site, Request for Information Pursuant to CERCLA Section 104(e), June 7, 2002.

Gordon Atlantic Corporation

P.700149 - 700151 Memorandum to Files from Ms. Sue Mackay and Mr. Michael Giovaniello, Nassau County Department of Health, re: Industrial Solid Waste Survey - Halnit Finishers, 150 Fulton Ave., Garden City Park, June 17, 1975.

P.700152 - 700153 Memorandum to Files from Ms. Sue Mackay and Mr. Michael Giovaniello, Nassau County Department of Health, re: Industrial Solid Waste Survey - Halnit Finishers, 150 Fulton Ave., Garden City Park, June 17, 1975.

P.700154 - 700183 Report: NCDH/NCDPW Cooperative Agreement Project, Garden City Park Groundwater Quality Study, Preliminary Report, prepared by Mr. James Rhodes, Project Manager, Bureau of Water Supply Protection, Nassau County Department of Health and Mr. Brian Schneider, Hydrogeologist, Division of Sanitation and Water Supply, Nassau County Department of Public Works, April 28, 1993.

P.700184 - 700188 Letter to Louis P. Oliva, Esq., New York State Department of Environmental Conservation, Division of Environmental Enforcement, from Mr. Stephen L. Gordon, Beveridge & Diamond, P.C., re: Garden City Park Industrial Area, Site No. 1-30-073, September 30, 1994.

P.700189 - 700196 Letter to Louis P. Oliva, Esq., New York State Department of Environmental Conservation, Division of Environmental Enforcement, from Mr. Stephen L. Gordon, Beveridge & Diamond, P.C., re: Garden City Park Industrial Area, Site No. 1-30-073, October 11, 1994.

P.700197 - 700204 Report: Summary of PID Results, Gordon Atlantic Corporation, 150 Fulton Avenue, Garden City Park, New York, prepared by Groundwater Technology, December 22, 1995.

P.700205 - 700213 Letter to Mr. Laurence Gordon, Gordon Atlantic Corporation, from Mr. Carl Leighton, Legal Intern, and Ms. Samara Swanston, Field Unit Leader, New York State Department of Environmental Conservation, Division of Environmental Enforcement, re: 150 Fulton Avenue, Garden City Park, NY, Site Registry No. 1-30-073, May 31, 1996.

P.700214 - 700214 Letter to Mr. Laurence Gordon, Gordon Broadway Corporation, from Mr. John B. Swartwout, P.E., Chief, Eastern Investigation Section, Bureau of Hazardous Site Control, Division of Environmental Remediation, New York State Department of Environmental Conservation, re: Site Name: Precision Fabricators, ID. No. 130073B, Property Address: 200 Broadway, Garden City Park, NY 11040, Tax Map No.: 33, 166, 340, October 8, 1999.

P.700215 - 700232 Letter to Mr. Laurence Gordon, Gordon Atlantic Corporation, from Mr. George Pavlou, Director, Emergency and Remedial Response Division, U.S. EPA, Region 2, re: Fulton Avenue Superfund Site, North Hempstead, Nassau County, NY, Request for Information and Notice of Potential Liability Pursuant to the Comprehensive Environmental Response, Compensation, and Liability Act, 42 U.S.C. Section 9601, et seq., December 18, 2002.

P.700233 - 700235 Letter to Ms. Cynthia Psoras, U.S. EPA, Region 2, from Mr. Christopher J. McKenzie, Beveridge & Diamond, P.C., re: Gordon Atlantic Corporation, Fulton Avenue Site, February 4, 2003.

P.700236 - 700248 Letter to Ms. Cynthia Psoras, U.S. EPA, Region 2, from Mr. Christopher J. McKenzie, Beveridge & Diamond, P.C., re: Response to CERCLA Section 104 Information Request, Fulton Avenue Site, March 27, 2003.

## 8.0 HEALTH ASSESSMENTS

### 8.1 ATSDR Health Assessments

P.800001 - 800110 Report: Public Health Assessment, 150 Fulton Avenue/Garden City Park Industrial Area, Garden City Park, Nassau County, New York, prepared by New York State Department of Health Center for Environmental Health, prepared under a Cooperative Agreement with U.S. Department of Health & Human Services, Public Health Service, Agency for Toxic Substances and Disease Registry, July 8, 2002.

## 10.0 PUBLIC PARTICIPATION

### 10.6 Fact Sheets and Press Releases

P.10.00001- 10.00007 Fact Sheet, Environmental Investigations inGarden City Park Industrial Area (GCPIA), prepared by New York State Department of Environmental Conservation, January 1999.

### 10.9 Proposed Plan

P.10.00008- 10.00016 Fulton Avenue Superfund Site (OU1), Garden City Park, Nassau County, New York, prepared by U.S. EPA, Region 2, February 2007.

P.10.00017- 10.00017 Letter to Mr. George Pavlou, P.E., Director, Emergency Remedial Response Division, U.S. EPA, Region 2, from Mr. Dale A. Desnoyers, Director, Division of Environmental Remediation, New York State Department of Environmental Conservation, re: Proposed Remedial Action Plan, Operable Unit 1, Fulton Avenue (Garden City Park Industrial Area) Superfund NYSDEC Site No. 130073, Garden City Park, Nassau County, February 12, 2007.

## 11.0 TECHNICAL SOURCES AND GUIDANCE DOCUMENTS

### 11.4 Technical Sources

P.11.00001-11.00019 Report: Safeguarding a Sustainable Water Supply, prepared by Residents for a More Beautiful Port Washington as a reflection of the community water symposium of December 7, 2002, which was hosted by The Port Washington Public Library.

# APPENDIX IV

## STATE CONCURRENCE LETTER

**New York State Department of Environmental Conservation**
**Division of Environmental Remediation, 12th Floor**
625 Broadway, Albany, New York 12233-7011
**Phone:** (518) 402-9706 • **FAX:** (518) 402-9020
**Website:** www.dec.ny.gov

Alexander B. Grannis
Commissioner

September 28, 2007

Mr. George Pavlou, Director
United States Environmental Protection Agency
Emergency & Remedial Response Division
Floor 19-No. E-38
290 Broadway
New York, New York 10007-1866

RE: Fulton Avenue NPL Site Operable Unit 1 (OU1),
Nassau (C) NYSDEC Site No. 130073,
Record of Decision (ROD)

Dear Mr. Pavlou:

The New York State Department of Environmental Conservation (Department) does not concur with the Fulton Avenue site Record of Decision at this time while the Department reviews the environmental easement requirements. This letter supercedes the letter previously transmitted to your attention on this matter.

If you have any questions, please contact Dr. Chittibabu Vasudevan at (518) 402-9625.

Sincerely,

Dale A. Desnoyers
Director
Division of Environmental Remediation

cc: J. LaPadula, USEPA
A. Carpenter, USEPA
K. Willis, USEPA

# APPENDIX V

# RESPONSIVENESS SUMMARY

# RESPONSIVENESS SUMMARY
## Fulton Avenue Superfund Site

On February 23, 2007, the U.S. Environmental Protection Agency (EPA) released for public comment the Proposed Plan for the Fulton Avenue Superfund Site (Site). The public comment period was held from February 19, 2007 through March 31, 2007. The original public notice advised the public that the public comment period for the Site would end on March 24, 2007 but since the Administrative Record was not available in the Site Repositories until February 23, 2007, the public comment period was extended to March 31, 2007. This notice was sent to all addresses on the mailing list on March 23, 2007. During the public comment period, EPA held a public meeting on March 6, 2007 to discuss the Proposed Plan and received comments on it. In addition, EPA received written comments on the Proposed Plan during the public comment period. This document summarizes the comments submitted by the public. EPA's response to each comment follows the comment.

The comments are grouped into the following categories:

- Concerns on Contamination of Garden City Public Supply Wells 13 and 14
- Site Contamination Generally
- Implementation of the Selected Remedy
- Health Concerns
- Other issues

Comments on the Village of Garden City Public Supply Wells 13 and 14

**Comment 1: Are the Garden City public supply wells 13 and 14 affected by the contamination emanating from the 150 Fulton Avenue property?**

Response: Garden City Wells 13 and 14, located at the Garden City Country Club have been impacted by contamination from the 150 Fulton Avenue property, as well as other properties. The Village of Garden City has installed treatment systems to remove volatile organic compounds on these wells to ensure that the public water supply meets Federal and State drinking water standards. This is confirmed through regular testing of the water. Results of these tests are available from the Village of Garden City.

The closest upgradient monitoring wells to these public supply wells have recently shown increasing concentrations of contamination.

**Comment 2: How might Garden City Wells 13 and 14 be affected in the future?**

Response: Data show a rise in the level of contamination in the monitoring wells immediately upgradient of Garden City Wells 13 and 14. Therefore, it is assumed that concentrations could rise in Garden City Wells 13 and 14. These wells have recently undergone upgrades to the treatment systems in order to treat additional contamination. Once the groundwater extraction and treatment system is operational, it is expected that the site-related contaminants will eventually be eliminated or greatly reduced.

**Comment 3: Will these well strippers need to be upgraded again?**

Response: The current upgrade has been designed for the increase in contaminants seen in some of the upgradient monitoring wells. These levels will continue to be monitored to determine if any additional upgrades are required.

**Comment 4: How long will the upgrades to Garden City Wells 13 and 14 be good for?**

Response: These treatment systems are expected to have an approximately 17-year effective lifespan. This lifespan assumes that the system is designed to treat the maximum contaminant levels expected. If the contamination level is exceeded, the system could require upgrading before this 17-year period.

**Comment 5: Do the costs of treatment for the municipal supply wells in your proposed plan include capital costs?**

Response: Yes.

**Comment 6: Will the Federal government pay for the Garden City public supply wells 13 and 14 treatment upgrades or will the Village of Garden City have to sue to recover the costs?**

Response: The preferred alternative indicates that upgrading the wellhead treatment at these wells to protect the water supply wells from any increasing levels of the PCE-dominant contamination from the Site plume may be necessary. Future upgrades to the system that are required because of the contamination from the site may be funded by the potentially responsible parties or the EPA. The Village of Garden City has recently upgraded their wellhead treatment system at these wells. EPA is not authorized to reimburse the Village of Garden City for those upgrades undertaken prior to the issuing of the Record of Decision. If the Village of Garden City seeks reimbursement for this effort, they likely will have to do so through a civil action with the Potentially Responsible Parties.

**Comment 7: Should the Village of Garden City close down these wells?**

Response: The air strippers installed by the Village are highly effective at removing contaminants from the water supply so there is no need to stop using these wells.

**Comment 8: Does anyone else other than EPA look at the data on the ground water contamination to see how it might be impacting drinking water supplies? How does the Water District know that the water is safe to drink?**

Response: The Nassau County Department of Health, the Village of Garden City Public Works Department, the New York State Department of Environmental Conservation and the New York State Department of Health have reviewed the data from the monitoring

wells. The NCDOH and the Village of Garden City Public Works Department routinely monitor the drinking water supply to ensure that it meets Federal and State drinking water standards.

**Comment 9: Should I put a filtration device on my water supply at home?**

Response: The water supplied by the Village of Garden City meets federal and state standards for drinking water. While an additional filter isn't necessary, some people may prefer to install them in their homes. If installed, it is important that they be maintained in accordance with the manufacturer's instructions.

**Comment 10: If I want to put a filter on my home water supply what is the best one to use?**

Response: EPA doesn't make specific recommendations on water filtration units.

**Comment 11: Could you explain the relationship between the contamination in the aquifer and the public supply wells?**

Response: Groundwater in aquifers is found in pore spaces, analogous to the holes in a sponge. When you install a well and pump from it you are attempting to draw out the water in these spaces. Using the sponge analogy, it's as if you put a straw into the sponge and try to suck out the water. The public supply wells act like big straws pulling out the water and any contaminants associated with it.

**Comment 12: Is there any way to tell whether or not my home is supplied with water from Garden City Wells 13 and 14 or from other supply wells?**

Response: Water from all the Garden City supply wells is pumped into storage tanks, blending the water from these wells for distribution. In general, Garden City Wells 13, 14 and 9 provide water for the western and Estate areas of the Village.

**Comment 13: Historically, no one thought that these chemicals were bad for you. Have people using the public water supply been drinking contaminated water?**

Response: The Village of Garden City has been testing for volatile organic compounds in the drinking water supply since the 1970's. Early on, the wells did not show any contamination. Once the contamination was detected in the public supply wells, the Village placed treatment units on the wells.

## Comments on Contamination from the Site

**Comment 14: Which aquifer is contaminated by the site?**

Response: Both the Upper Glacial and the Magothy aquifers have been contaminated. Nearest 150 Fulton Avenue, the contamination

is in the Upper Glacial and migrates downward into the Magothy as it migrates away from the 150 Fulton Avenue property.

**Comment 15: Is the source of the contamination continuing to contaminate the aquifer?**

Response: A major source of the OU1 portion of the contaminant plume was removed through the Interim Remedial Measure performed at the 150 Fulton Avenue property in 2001. Some residual contamination may remain in the area below the disposal area and will be remediated as part of this remedial action. Other sources of the contamination will be further investigated as part of OU2.

**Comment 16: Does this contamination impact the playing fields recently constructed at the Garden City High School?**

Response: There has been no area where Site-related contamination has been detected at the surface. The playing fields are to the southeast of the contaminated plume; the playing fields are not in the migration pathway of the Site contamination. Also, the monitoring wells located between the 150 Fulton Avenue property and these playing fields show no Site-related contamination.

**Comment 17: Did EPA test the area in the vicinity of the High School playing fields?**

Response: Since this area is sidegradient to the contamination, EPA did not believe there was a pathway that would necessitate the sampling of these playing fields.

**Comment 18: Are the contaminants from the ground water beneath my property coming up through the ground into my backyard?**

Response: The contaminated groundwater is not close to the surface in the residential areas. In these areas, the contaminant plume is over 100 feet below the ground surface and a layer of clean groundwater above the contaminated water isolates the contamination from potentially migrating upward towards the homes.

**Comment 19: Could these contaminants be causing a vapor intrusion problem in my basement?**

Response: As noted in Comment 18 above, the groundwater below the residential areas is fairly deep. There is also a clean layer of groundwater between the contaminated water and the residential properties. Near the industrial area the contaminated groundwater is shallower. Potential soil vapor intrusion near the industrial area will be evaluated as part of Operable Unit 2.

**Comment 20: Can this evaluation of soil vapor intrusion differentiate between contaminants?**

Response: Yes, the methods for testing the air that accumulates beneath the slab of a structure can identify individual compounds.

**Comment 21: Can I volunteer my home for testing for vapor intrusion?**

Response: You may volunteer for testing, if the investigation of OU2 determines that homes over the TCE-dominant portion of the plume could be affected. EPA will contact homeowners in the area to see if they are interested in having this testing performed.

**Comment 22: Is EPA recommending that homes in this area not use their basements anymore for rooms such as family rooms or children's play rooms?**

Response: No, the groundwater below the residential areas of OU1 is fairly deep and there is also a clean layer of groundwater between the contaminated water and the residential properties which further limits the potential for vapor intrusion.

**Comment 23: What information will EPA provide if my home is tested for soil vapor intrusion?**

Response: The homeowner would receive a copy of the results from the laboratory analysis along with an explanation of the results and any recommendations for actions which may need to be taken.

**Comment 24: Is there anything that can be done to affect the permeability of the aquifer in order to minimize the impact of the contamination on the Garden City public supply wells?**

Response: EPA and NYSDEC are not aware of any actions that may change the permeability of the aquifer. If a County recharge basin is used for infiltration of the treated water, the basin must be maintained to assure adequate recharge into the aquifer. Once the groundwater extraction and treatment system is operational, and the additional monitoring wells have been installed, EPA will closely monitor the effects of this system operation to minimize impacts on the public supply wells in the area.

**Comment 25: Could you clarify the language on the ecological risk assessment in the proposed plan?**

Response: The 150 Fulton Avenue property has little to no suitable area available as a habitat for ecological receptors. The majority of the property is either paved or contains a large building making it unsuitable habitat for many species. In addition, there is no pathway by which an animal could come into contact with Site-related contamination. Without a completed pathway, there is no exposure to ecological receptors and hence, no risk.

**Implementation of the Selected Remedy**

**Comment 26: What are the impacts to the Garden City Bird Sanctuary from the discharge of treated ground water proposed in Alternatives 3 and 4? To what levels will this water be treated?**

Response: The water that is discharged from the treatment plant will meet drinking water standards. The impacts to the Garden City Bird Sanctuary are expected to be minimal, but they would be fully evaluated during the design. Under the Selected Remedy (alternative 4) the treated water would be discharged into an area that currently accepts storm water runoff from nearby streets.

**Comment 27: Is the air from the treatment process hazardous?**

Response: The contaminated vapor produced by the treatment system will be treated by passing it through activated-carbon

filters to remove the contamination before being released. The carbon filters are then disposed of properly.

**Comment 28: How will trucks and other equipment get in and out of the area during construction activities? What areas of the Garden City Bird Sanctuary would be used?**

Response: Truck and equipment routes are developed and evaluated during the remedial design. One potential design could use a portion of a corner of the Sanctuary near Tanner's Pond Road. Other county recharge basins or injection wells may also be utilized. This will be more fully evaluated in the remedial design.

**Comment 29: Alternative 4 indicates that it will take 30 years to clean up the ground water. Is this correct?**

Response: The time frames to complete remediation in the Feasibility Study, FS Addendum, and Proposed Plan are estimates. The Preferred Alternative uses a combination of chemical oxidation in addition to extraction and treatment of the ground water. It is expected that this approach would shorten the time period to remediate the tetrachloroethlyene-dominant part of the groundwater plume. Full remediation of the aquifer in this area will also need to address the trichloroethylene-dominant part of the plume, which is the subject of Operable Unit 2.

**Comment 30: Would combining all the alternatives shorten the duration of the remedial action? Is there any other way to shorten the duration?**

Response: The Preferred Alternative is a combination of elements from Alternatives 2 and 3, although the degree of injection of chemical oxidant is somewhat reduced from that identified in Alternative 2. As discussed above, the time frames presented are estimates, so the exact duration of the remedy is unknown. EPA believes that the combination of chemical oxidation and extraction and treatment would reduce the overall remedy duration. All ongoing remedies are reassessed periodically, and if new information indicates that there is a need to modify the remedy to shorten the duration, EPA will evaluate how best to proceed.

**Comment 31: Several years ago there was discussion of discharging treated water into the County sump located on Herrick's Road. Is this still being considered? This sump has trouble draining the local area without the additional water that would be generated from the treatment system.**

Response: At this point, EPA is not considering using recharge basins that far to the east. The ability of a recharge basin to accept the treated discharge will be one of EPA's design considerations in the selection of a point of discharge.

**Comment 32: What are the effects of injecting chemical oxidants into the ground water? What are the breakdown products?**

Response: The chemical oxidant breaks down contaminants such as PCE and TCE into harmless compounds. The breakdown products depend on the actual oxidant used. For example, use of potassium permanganate results in a salt and manganese, a naturally occurring element.

**Comment 33: Do you need to be concerned about injecting an oxidant in close proximity to the public supply wells?**

Response: During the remedial design process the exact location for the injection of the oxidant as well as the extraction wells for the ground water extraction and treatment system will be determined. The injection of the oxidant will be done in a controlled manner to avoid impacting Garden City public supply wells 13 and 14. This design will also include determining how to minimize or prevent impacts to the public supply wells.

**Comment 34: Why wouldn't you inject the chemicals farther down the plume?**

Response: The closer the injection points for the oxidant are to the Garden City Wells 13 and 14, the greater the chance is that the oxidant may be drawn into the potable water system. The optimum locations for injection of the oxidant will be determined during the design of this effort.

**Comment 35: Would increasing the pumping rate at the injection wells shorten the time to clean up the aquifer?**

Response: The contaminants in the aquifer are not only in the water but have also adhered to the solid materials which compose

the aquifer (sand grains, etc.). This adhered contamination dissolves back into the water at a very slow rate and pumping the groundwater at a faster rate will not make the adhered contaminants dissolve more quickly.

**Comment 36: Is the remedy reviewed once it's in place?**

Response: Once it has been determined that the remedial system is working properly and has been documented as such, the system is regularly monitored for proper operation. Also, EPA will reevaluate this remedy every five years to assure that it remains effective and protective of human health and the environment.

**Comment37: Why was the Garden City Bird Sanctuary selected for reinjection of the treated groundwater?**

Response: The Garden City Bird Sanctuary occupies the closest available Nassau County recharge basin. Another County recharge basin could also be used if it has been determined that this basin is not appropriate.

**Comment 38: If the Garden City Bird Sanctuary is used as the discharge point for the remediation system, will EPA fund the rerouting of overflow pipes for the basin?**

Response: EPA will design and construct the discharge system with appropriate capacity to handle the remedial system discharge in conjunction with the inflow parameters of the present use of the basin. EPA will work with the appropriate county and state agencies who oversee the management of the storm water recharge, as well as the Bird Sanctuary if warranted.

**Comment 39: If the Garden City Bird Sanctuary is used as the location of the groundwater treatment system, will efforts be made to minimize the aesthetic impacts on the Bird Sanctuary? Also, what security will be provided?**

Response: To the extent practicable, EPA will work with the Garden City Bird Sanctuary to minimize disturbance to the Bird Sanctuary's aesthetics and will repair any effects of the construction of the groundwater treatment facility. Also, EPA will construct the facility taking local building requirements

under consideration. As for security, the treatment system will be within a locked, fenced structure.

**Comment 40: Who will be monitoring the ground water during remediation?**

Response: EPA or potentially responsible parties (PRPs) with EPA oversight. Assuming the PRPs conduct the remediation, the data from this monitoring are provided not only to EPA, but also to state and local agencies for review. As a quality control measure, EPA will sometimes take "split samples" that are literally split with two different laboratories conducting the analysis. The purpose of this type of sampling is to demonstrate that the values being reported are accurate. Sampling data from monitoring can be provided to the public upon request.

**Comment 41: Will the remedy impact the proposed hub development or the construction of a third line for the railroad?**

Response: During remedial design and implementation of the remedial action, EPA will coordinate with the LIRR and local municipalities to ensure that any impacts that might occur are minimized to the extent possible.

**Comment 42: Who will be performing the remedial action? What else can EPA do to ensure that the tax payers don't have to pay for the remedial action?**

Response: Genesco, an identified PRP for the Site, performed a remedial investigation and feasibility study which EPA has designated as Operable Unit 1. EPA will discuss with Genesco and other identified PRPs whether or not they would be willing to perform the remedial design work and the remedial action. Should any party be willing to perform the work, EPA will ask for financial information from these parties to ensure that these entities are financially able to perform the work. In the event that none of the potentially responsible parties are willing to perform the work, EPA can issue a unilateral administrative order compelling them to perform the remedy. If they are still unwilling to perform the work, EPA can either go to court to enforce that order, or can perform the work and recover the costs from the potentially responsible parties in the future.

**Comment 43: Would information gathered from this, or future, investigations be shared with the local water districts?**

Response: The Garden City, Franklin Square, and Garden City Park water districts are provided with all data and reports generated for this Site, and this will continue in the future. Any water districts in the areas of the future Operable Unit 2 investigation of this Site will also be provided with relevant information.

**Comments Related to Health Concerns**

**Comment 44: Have there been any health studies done for people who might be impacted by this plume? If not, have there been studies in other communities with similar contamination?**

Response: The New York State Department of Health (NYS DOH) indicated that while this particular area has not been studied, there have been numerous studies of people exposed to tetrachloroethene (PCE) through ingestion and inhalation. NYS DOH is currently evaluating a community that was exposed to PCE for approximately thirty years. The exposure levels vary between people in this community. Health effects in this community have not been seen. Another study is evaluating children that were exposed to PCE in the 1980's when their daycare facility was impacted by a neighboring dry cleaner. Again, to date no adverse health effects have been noted from this exposure.

When exposure is at much higher levels, such as those found among those who routinely work with PCE, there are health impacts that can be seen. For example, visual acuity (the clearness of vision) diminishes with long-term exposure.

Based on historic groundwater data, there does not appear to be any exposure to the residents in the area from contaminants in the groundwater due to effective treatment by the municipal water company, which provides drinking water that meets state or federal drinking water standards. The remedial action is based upon the potential for future exposures if the groundwater was obtained and used without treatment, which is not likely to happen.

**Comment 45: Does PCE have an affinity for certain organs or does it accumulate in body fat?**

Response: PCE is not stored in the body fat. Your body can get rid of PCE through exhalation or through excretion. Organs that are affected by PCE include those organs that are responsible for metabolizing the PCE such as the liver and the kidneys.

**Comment 46: Should anything be done to my property to protect my children from exposure?**

Response: No, the Human Health Risk Assessment done for this Site determined that there is no current exposure to the residents in the vicinity of the OU1 Study Area.

Based on historic groundwater data, there does not appear to be any exposure to the residents in the area from contaminants in the groundwater due to effective treatment by the municipal water company, which provides drinking water that meets state or federal drinking water standards. The remedial action is based upon the potential for future exposures if the groundwater was obtained and used without treatment, which is not likely to happen.

**Other Issues**

**Comment 47: A newspaper article mentioned that there was work going on at the Clinton site near Roosevelt Field, can you please explain what this entails?**

Response: This article may have been referring to either: the work being performed by EPA at the Old Roosevelt Field Ground Water Contamination Site or, the Clinton Road well fields. EPA has completed a remedial investigation and feasibility study on contamination in the ground water beneath the former Roosevelt Air Field and is finalizing a cleanup decision at that Site. With regard to the well field along Clinton Road, the wells are also fitted with air strippers to remove any potential contamination from the public water supply.

**Comment 48: Will this investigation for Old Roosevelt Field take as long as the one we are discussing tonight?**

Response: EPA is working toward issuing a Record of Decision for the Old Roosevelt Field Ground Water Contamination Site by

the end of this federal fiscal year, which is September 30, 2007.

**Comment 49: Do you know if my bottled water that I purchase is tested? How do I know if the bottle of water I am drinking is approved by New York State?**

Response: Bottled water is regulated under the New York State Department of Health Sanitary Code Chapter 1 Subpart 5-6: Bottled and Bulk Water Standards as well as by the Federal Food and Drug Administration (FDA). These sources should be consulted to determine the extent of testing of bottled water. Each approved bottler is given an assigned certification number. The New York State certification number must be displayed on the label and will read as such:

In-Country Bottlers - NYSHD Cert. #000
Out-of-Country Bottlers - NYSHD Cert. #I-000

**Comment 50: Is there any way to find out how our water rates against other water supplies?**

Response: There is some limited information on the internet about taste tests that are conducted between different states and municipalities. This is only a taste test; it has nothing to do with water quality. As noted, public water supplies comply with federal and state drinking water standards and NYSDOH has data on all public supplies.

**Comment 51: Is there some way for the community to be kept up to date on what is happening with the Site?**

Response: Yes. EPA maintains a Site mailing list and periodically produces fact sheets that are mailed to the community. Also, information is placed in the information repositories periodically.

**Comment 52: Did the DEC and/or the EPA work with the Village of Garden City Environmental Advisory Board?**

Response: DEC and EPA have worked primarily with the Village of Garden City Department of Public Works concerning the impacts that this Site (and others) might have on the public water supply wells in the area. In turn, representatives from the Department of Public Works provided this information to other

Village representatives. Should any group wish additional information on this Site, EPA is willing to participate in meetings or provide fact sheets for distribution.

**Comment 53: Can EPA provide the posters used tonight for use at our next Homeowners Association meeting?**

Response: So that all interested groups can have access to these maps, EPA will leave the maps with the Department of Public Works.

# APPENDIX VI

# COST DETAILS

| Cost Comparison of All Alternatives<br>Fulton Avenue Site, Garden City Park, NY | | | |
|---|---|---|---|
| Alternative | Capitol Cost | Annual O&M | Present Worth |
| GW-1 | $633,418 | $2,710,431 | $3,343,849 |
| GW-2 | $4,994,320 | $2,735,523 | $7,729,843 |
| GW-3 | $3,203,634 | $5,718,758 | $8,922,392 |
| GW-4 | $4,978,634 | $5,718,758 | $10,696,860 |

# Alternative GW4 – Groundwater Extraction and Treatment with Limited In-Situ Chemical Oxidation
## Cost Estimate Summary
## Fulton Avenue OU1 Site
## Garden City Park, New York

### Capital Costs

**Groundwater Extraction and Treatment System**

| | | |
|---|---|---|
| | Recovery Well Installation | $483,750 |
| | Installation of Water Conveyance to Treatment Facility | $417,783 |
| | Groundwater Treatment System Construction | $1,009,421 |
| | Groundwater Recharge System | $80,952 |
| | Site Restoration and Permitting | $51,300 |
| | Sub Total for Remedial System Capital Costs | 2,390,772 |
| | Contingency (15%) | $358,616 |
| | Remedial Design (8%) | $191,262 |
| | Project Management (5%) | $119,539 |
| | Construction Management (6%) | $143,446 |
| | Total for Groundwater and Extraction System | $3,203,634 |

**Limited In-Situ Chemical Oxidation**

| | | |
|---|---|---|
| 1 | Pilot Test for ISCO | $494,086 |
| 2 | In-Situ Chemical Oxidation Injections | $1,035,050 |
| 3 | Additional Well Installation for ISCO Monitoring | $168,856 |
| 4 | Groundwater Monitoring Specifically for ISCO (two years) | $76,476 |
| | Total for ISCO | $1,697,992 |

**Well-Head Treatment at GCWD Wells 13 and 14**

| | | |
|---|---|---|
| | Design and Construction of Air Stripper | $215,356 |
| | Replacement of Air Stripper at Year 11 (Present Worth) | $132,210 |
| | | |
| | Total For Well-Head Treatment | $347,566 |
| | | |
| | | |
| Operations and Maintenance | | |
| | | |
| | Operations and Maintenance of Groundwater System | $3,096,359 |
| | Groundwater Monitoring of PCE-Dominant Plume | $577,954 |
| | Project Management Costs | $387,712 |
| | Contingency for O&M activities (10%) | $484,641 |
| | | |
| | Total O&M Costs | $4,846,405 |
| | | |
| | Total Costs | $10,696,860 |

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

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150 Fulton Avenue Superfund Site,
Garden City Park, New York

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Garden City Village Hall

351 Stewart Avenue
Garden City, New York 11530

Tuesday, March 6, 2007
7:15 p.m.

A P P E A R A N C E S:

U.S. Environmental Protection Agency
Financial Management Branch
290 Broadway, 29th Floor
New York, New York 10007

Cecilia Echols, Community Involvement Coord.

Angela Carpenter, Section Chief Eastern NY

Kevin Willis, Remedial Project Manager

Liliana Villatora, Asst. Regional Counsel

New York City DEC:

John Swartwout, Section Chief Remedial Bureau A

Steve Scharf, Project Engineer

New York State DOH:

Jacqueline Nealon, Public Health Specialist Number Three

Joseph DiFranco, Office of Soil Groundwater Remediation

P R O C E E D I N G S

MS. ECHOLS: Good evening, everyone, we're ready to begin.

Hi, I'm Cecilia Echols. I'm the Community Involvement Coordinator for the U.S. Environmental Protection Agency and I want to welcome all of you are here tonight to discuss the Fulton Avenue Superfund site which is located in Garden City Park.

On our agenda today we also have Angela Carpenter. She is the Section Chief for the Eastern Remedial Program.

MS. CARPENTER: Good evening.

MS. ECHOLS: Kevin Willis, he is the project manager for the Superfund site.

We also have Liliana Villatora, she is the Assistant Regional Counsel, she is right here. Jacqueline Nealon, she is the Public Health Specialist Number Three with the New York State DOH.

P R O C E E D I N G S

John Swartwout, he is the Section Chief of the Remedial Bureau A New York State DEC.

Joe DiFranco, he is from the Office of Soil Groundwater Remediation for the Nassau County Department of Health.

We have Steve Scharf he is the project engineer for the New York State DEC.

The meeting today is to discuss the interim remedy for the groundwater contamination that has been at the site and we are here to look for your comments as part of the community relations portion of the cleanup of the site.

We always look for input from the community as you all best see the site to be cleaned up; however, EPA has some alternatives to address to you to let you know what we see fit to clean up the site, so there is a public comment period, it began on

P R O C E E D I N G S

February 23rd and it ends on March 24th.

You can comment today. We have a stenographer here. We will hold questions until the end of the presentation. Please write your notes down on the side of one of the handouts. This one, this is the slides that will be shown on the wall here. If you have any notes, you can write on the side over here.

I hope everyone received the proposed plan with a map in the back and there was also a press release issued. There are three information repositories where you can go and view any of the documents related to the site; one is the Shelter Rock Public Library, that is in Albertson, New York, the Garden City Public Library, which is here in Garden City, and there is one in our EPA office in Manhattan.

P R O C E E D I N G S

On that note, I will open up to Angela.

MS. CARPENTER: Good evening and thank you all for coming out, I know it's kind of difficult after work to come out on such a chilly night, so we do appreciate your being here.

The program that we operate under in terms of doing the remediation for this site is the Comprehensive Environmental Response and Compensation and Liability Act which is more commonly referred to as Superfund, so you'll hear us say "Superfund". In the office we say CERCLA because we want to be nice and official. But you'll hear in this presentation we'll talk about Superfund.

Superfund was enacted in 1980 by Congress in response to such waste sites such as Love Canal which I think most people are fairly familiar with. It provides EPA with the authority to

use public monies to conduct remediation or clean up. It also gives EPA the authority to acquire those parties we believe are potentially responsible for the contamination to conduct the necessary actions to address the contamination.

We have two types of response mechanisms that we can use in the Superfund program. The two are removal actions, which tend to be done when we consider there to be an emergency that needs to be dealt with.

Within that removal action program, there's three different types of responses; emergency, we have no time for planning, we have to get out there, we have to do it now.

"Time critical" means we have a six month planning period, something could happen and we have some time. "Non-time critical" actions are a little uncommon, which means we have more than a six month period but,

again, these are emergency response actions.

What we are talking about tonight are remedial actions. They tend to be more long term management of the site and they involve more detailed investigations.

There is a process, not just because we're in the government but there is a process that we do follow so each site is investigated in a similar fashion.

The initial step is called a remedial investigation. What we do in this phase and you might have seen it over the last few years in this area because we have several sites we're investigating and we actually go out and collect data. We install groundwater monitoring wells, we collect soil samples, in some cases we collect air samples, sediment samples, surface water body samples; that's where we get our real time data from.

P R O C E E D I N G S

That's analyzed by the laboratory sometimes and we use that data to develop what's called a feasibility study. We're going to be going over quite a bit of this tonight.

The feasibility study lays out the alternatives that we have developed based on the data collected in the R.I. to address the contamination at a given site.

When we have those alternatives put together in the feasibility study in a form, then we can go out to the public and we issue something called the proposed remedial action plan and some of you I know got it in the mail. It is kind of a summary of the feasibility study.

The feasibility study is much more detailed, but this gives you a summary of all of the alternatives that we are evaluating as well as what our recommended alternative for clean up is.

PROCEEDINGS

Once we have gotten your comment back -- and by "your comment" I do mean all of the comments you have on any of the alternatives -- we move forward with something called a record of decision. That is where we specify what the remedy is and what our response to comments are and we include that in the ROD and that document is signed by the director of my division and that is the document we go forward with when it comes to the next stage which is where we actually go about designing the remedy based on the selected remedy and implementing the remedial action.

So there is a process. You are currently at the proposed remedial action plan stage and we will move fairly shortly after we get all of your comments to a record of decision.

I kind of went over all of this, but what was available at the table when you signed in does give a

brief summary of the R.I. findings. Probably the easiest thing to look at is the map on the back where we show our depiction of the contaminants. It does present a comparative analysis; in other words, we look at each of the alternatives against each other and the last page on that you will see what we identified as our preferred response action. I think it might be up in the front.

As Cecilia mentioned there is a public comment period currently opened. We encourage you to read all of the alternatives and make comments on each and every one you feel you need to make a comment on. At the end of the presentation, you will see where you can send those comments to, it's also in the proposed finding and we will evaluate all of those comments and we do take those comments seriously prior to selecting the final remedy of this portion of the site

when we enter the final remedy.

As I previously mentioned, the document that we actually come out with that really lays out what exactly it is we're going to be doing is the record of decision.

After it's signed, anybody who would like to see a copy certainly can in that we, as I mentioned before, we respond to all public comments.

Now, this is where I get to turn it over to Kevin who is the project manager for the site. He is going to go over the findings of the R.I. and our preferred response action and then we will open it up for public comment.

MR. WILLIS: Well, thank you Angela.

I have been working with DEC, the state, for awhile. It's been a long road but we're finally here where we can move to the next step and take care of the problem that we have.

P R O C E E D I N G S

This is a site, everybody has a copy of the map I hope. If not, we have some up here. This is -- I don't think we have any more maps. Basically, we had a situation where a fabric cutting million was operating in Garden City Park from 1965 to 1974 and they had disposed of the dry cleaning fluid into a dry well in the parking lot.

During the operation mostly PCE, which is the dry cleaning fluid, was disposed into the drywell. It wasn't considered an environmental problem at that point because nobody knew of it.

In the mid 1980's, the county Department of Health went out and did a study looking at all of the groundwater in the county and found the areas that were more contaminated than others, where the sources would most likely be and Garden City Park industrial area was noted in that

report as being one of the hot areas.

In May of 1993, the state basically put the Garden City Park industrial area on the -- on their in active hazardous waste disposal site list and went out and conducted a much more detailed investigation throughout the Garden City Park industrial area and the primary findings of that study was that the 150 Fulton Avenue ended up being the primary source of contamination coming out of the industrial park.

In 1997, September, DEC entered into an Order of Consent with Genesco, Inc. who operated the property while the cutting mill was in business. That Order of Consent basically made or said that they would go out and do the remedial investigation and perform IRM's which are an action to take care of a remedial problem.

After that time, EPA put the

site on the National Priorities List in April of 1998 and New York State DEC was designated as the lead agency to take care of all of the problems, so it would work out well because they had the consent. Genesco contracted their consultant ERM Northeast to conduct the RI/FS and to perform a source removal IRM at the site. The investigation began in '91.

Initially, 21 vertical profile boring wells were drilled throughout the area. At that point, everybody knew that there was contamination out here and they knew where it was coming from but we had to map it all out.

Vertical profiles, basically they drilled a big hole in the ground and put soil samples to see what the problem looked like initially.

Following the vertical profile wells 20 monitoring wells were installed in the worst areas where we saw contamination -- the worst

contamination. Those would be -- well, I guess you see the yellow dots and the orange dots were monitoring wells.

Those wells were sampled and the problem was then better defined. Two more wells at the end were put in to make sure that the problem wasn't going any further and those are special wells where they basically are eight wells in one zone so that rounded it up to -- along with those wells that were installed as part of the investigation there were other wells in the area and approximately 30 more monitoring wells were sampled to better find the problem. That is a picture of the wells being drilled. That's what we pull out of the ground when you're taking a foreign sample. That's a sample.

This is -- the sampling is being continued semi-annually for the last seven years. These efforts

resulted in an R.I., remedial investigation report.

Most recent data -- that report was issued in 2004 and the -- we had -- the remedial investigation report basically came up with this map that we see right here that the plume emanated from 150 Fulton Avenue and migrates down with the groundwater and basically ends at the Garden City supply wells. Those wells are currently being well managed by Garden City and providing proper water. They're upgrading the system currently.

It was determined that this plume is a PCE dominant plume and that this plume emanated from 150 Fulton Avenue.

During the investigation we did see other groundwater contamination plumes that were not related to 150 Fulton Avenue. This is primarily trichlorethylene, a

different contaminant somewhat related, but a different contaminant and not at the levels of the tetrachloroethylene.

What this whole meeting is about is operable unit one. This plume is the plume that's emanating from 150 Fulton Avenue and that's what we're addressing the action that we are proposing tonight.

The investigation of the areas outside of that PCE dominant plume is being handled operatively.

This is what we're here to discuss tonight.

SPEAKER: Are those the blue lines?

MR. WILLIS: Yes.

SPEAKER: Because there are some yellow lines there too.

MR. WILLIS: These yellow lines are showing what -- this was the area, this whole area right here was the area that was studied during the

remedial investigation.

We saw that this plume was considerably different than what we saw away from that plume. This area -- since we saw that there was one thing that could be handled related to this site we were -- we're going out and taking care of the worst problem that we see on this area. We also acknowledge that there is all this other problem out there and we are investigating that as a separate action. That is -- we know it's there, we don't know the sources so we're -- we've started the field work, we're starting all of the paperwork part is started to investigate this and that's going to be starting in -- well, the actual field work will start this summer.

MS. CARPENTER: As a point of clarification, there is one -- there is a contaminated plume, the portion of the plume that is dominated by PCE

or perk dry cleaning type fluid is the part of the plume that you see in the blue lines so there is kind of -- it's considered by us to be one -- it's one big contaminated groundwater issue, but there is a portion of it that is distinct from another portion so that's -- the blue lines, the perk, is what we're discussing here today and the stuff in the yellow lines is the subject of the investigation that we're to be starting this summer to get a better handle on it.

SPEAKER: You mentioned something to the right of the blue also something about trichloroethylene?

MS. CARPENTER: That's the yellow line.

MR. WILLIS: That's the yellow line there, there has been some seen over this way.

SPEAKER: Would you say that's the effects of the seepage from the

plume into that area, the yellow area.

MS. CARPENTER: It's a different chemical we're seeing there and the conditions aren't such that we believe the one chemical is degradient to the other, but we will have a better handle on that when we do some further investigations to see if there are any sources, anybody who might have had spills.

We haven't got that kind of information right here now and that's part of what we're to be doing and going out in O.U.2 but we felt it important to address O.U.1 now because we have information to address the plume now before waiting for the entire investigation of that second portion to be done so hopefully I didn't confuse anybody.

MR. WILLIS: So what we're going to be doing out here now is continuing our discussion about what we're proposing to do for OU-1.

P R O C E E D I N G S

Also, during our remedial investigation an IRM was performed, an action to clean out the bulk of the source of the contamination that was at 1250 Fulton Avenue.

This was a state action where they went out, they excavated the soil from the bottom of the dry well and they put in initially a soil vapor extraction system where they drew vapors out of the soil and treated it and during the operation of that they injected air into the groundwater there to better remove the contaminant.

That action pulled out about 10,000 pounds of PCE from that local area right there.

Once the goals of that action were met, a system was placed under the 150 Fulton Avenue building to continually draw out any residual contamination out of that -- out from under the building to protect it.

P R O C E E D I N G S

MR. SWARTWOUT: Let me just throw out briefly that Genesco did all of that work mentioned as part of the work under the state consent order which was done by Genesco which was the company responsible.

SPEAKER: Say that again?

MR. SWARTWOUT: The interim remedial action work just described was done by the responsible party, Genesco, with state approval under the consent work.

MR. WILLIS: While the data was all collected from the remedial investigation, once the ideas were formulated on how to potentially handle the problem that they saw, they started working on a feasibility study.

The feasibility study takes the information from the remedial investigation and goes through a series of criteria to figure out which would be most appropriate to handle

this environmental problem.

The first draft of this report was sent to New York State DEC and EPA in December of 2005. We provided comments year round in January of 2006 and revised that as we have received in July of 2006.

In response to problems that we saw within the feasibility study EPA produced the feasibility study addendum to clarify issues that we had with some factors within the feasibility study to better clarify our position and that is available in public record and as basically what we came up with that -- well, once we completed that document and we, the state, approved the feasibility study, this was switched over to federal. Basically the everybody has that in the feasibility study and the feasibility study amendment and that's all outlined in the draft.

Site risks, we based all of

our remedial action on minimizing threats to human health and the environment and a baseline risk assessment report is also produced during the remedial investigation and that's been developed which provides a point of reference by which all of our decisions are made.

At this site, PCE levels in the aquifer exceeded our maximum contaminant level for PCE and other contaminants. It was determined that there was an unacceptable risk to human health and the environment from these contaminants and the potential risk that additional wells may be impacted above the MCL for PCE as a result of groundwater contaminant plume migration which means that this contamination, if it's not remediated, might get to other people further away from the site.

Now, the feasibility study addendum that we put out addresses

certain outstanding issues and concerns not fully addressed in the feasibility study and provides one more remedial alternative that was not presented in the feasibility study.

The primary regulatory issue in the F.S. addendum clarified that the Superfund requires that a remedial action must restore the groundwater for beneficial use. For this site that means the goal is to restore the local aquifer groundwater in this area to meet acceptable drinking water standards that we have to clean up the aquifer.

Our objectives -- basically this is the official -- basically it says to reduce the contaminant levels in the drinking water aquifer to meet the standards; that's what this action is supposed to. Now, it also is to prevent it from getting to other places where other people can be affected by it.

PROCEEDINGS

The F.S. addendum also explained that EPA had determined that two alternatives were not appropriate and clarified the reasons the alternatives were removed from the comparative analysis.

The first alternative that was in the feasibility study that was explained out by the F.S. addendum was the no action alternative which would, the way it was displayed in the feasibility study was that all controls were removed from the system, that would mean the treatment at the Garden City wells were removed, that wouldn't occur, so we didn't think that was an appropriate thing to consider, I mean, because nobody would do that.

The second alternative removed from full analysis was a permeable wall which was one of the alternatives was to inject an iron wall into the ground three to 400 feet down and that

iron filing wall would reduce the contamination down to an acceptable level. It has been used at other sites but in much shallower situations. It has never been used at that depth and we weren't sure that putting that in there would actually create problems that we didn't, you know, that we couldn't rectify at that point, so that was removed from consideration and it was also very expensive as well.

There were considerations that we felt may make the problem worse than it is now, so that was removed from the consideration at that point as well.

We also had a tremendous amount of discussion between New York State DEC in evaluating the alternatives and determining that there was another alternative that we would like to present. It was a combination of two of the alternatives

that still remain, it included the groundwater extraction from someplace within this plume, that would be drawn out of the ground and pumped out to the Garden City bird sanctuary where it would be treated and the clean water put into the basin of that well.

The other alternative that was considered and made it through the evaluation was injecting oxidant chemicals into the ground that would destroy this contamination in place.

It's been used -- we thought that in conjunction with the groundwater extraction system, we could put in a limited injection up in this area and really knock down whatever is left at the area that may have mixed so that way we were treating it from up here and from the middle and that combined alternative has been used at other sites and we thought that might be another appropriate consideration.

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By adding -- by taking some of them out and adding another one, we've structured this and that's what's presented in the draft that everybody has.

I will explain the operable unit that we know that there's contamination throughout the whole study area but that one part of it we can address right now, we have that well-defined enough to actually go out and perform the remediation. We're not at that point for the rest of this.

We acknowledge that there is a need to define the contamination that we see outside of this plume, so we broke this out so we can handle the part that we know about and continue investigation for the rest of the site, the rest of the area.

This is considered an interim action, this whole problem is not done until we take care of the problem that

we don't know about along with the problem that we do know about so as this is -- the first part of this action, it is an interim action. We're not done until we finish the whole thing, so that's why this is being presented.

Going to the feasibility study, these are the criteria that we use to analyze the alternatives.

The criteria is the overall protection of the human health and environment, compliance with the applicable or relevant and appropriate requirements, ARAR's long term effectiveness and permanence of the remediation, reduction of toxicity, mobility and volume of the contaminants, short term effectiveness, any impacts that we have while we're doing it right now, implementability and we -- can we do it?

Cost, that goes without

saying; whether or not the state accepts what we're proposing and why we're here tonight, whether the community likes the idea as well.

So there are four alternatives for analysis that are left to go through the full analysis.

SPEAKER: Excuse me, on the prior slide you mentioned cost. Just out of curiosity, who's involved with cost? Who is responsible? Who pays?

MR. WILLIS: Do you want me to cover that?

MS. VILLATORA: I will address that.

We usually look to the responsible parties to implement any remedial action.

SPEAKER: Genesco?

MS. VILLATORA: For this particular site, as New York State DEC John Swartwout had mentioned, we have one responsible party for the 150 Fulton Avenue site, for the particular

facility for what happened there; however, we think that there probably are other sources and we usually look to the owner of the property, the operator of the property at the time of the disposal, and, you know, other sites, you know, you would look at generators, transporters.

We are not sure as to the full -- you know, this is a very complex site and as Kevin pointed out before, we have not only the PCE plume -- part of the plume, but also the TCE part of the plume, so we probably have other sources and, you know, as for what Genesco did, they studied part of the problem and O.U.2 will study the rest of the problem and when we find those others sources, those parties will also have to be responsible for the contamination and that will be part of O.U.2.

As part of O.U.2, we will probably finish the investigation of

the 150 Fulton Avenue property, so it's still an ongoing process and, you know, this is just O.U.1. O.U.2 will be probably larger, but we will be looking to those responsible parties to pay for the contamination.

If there are no responsible parties, if they don't have the money to do it, then at that point, EPA steps in and, you know, we use federal funds.

SPEAKER: Thank you. Those other parties are upstream you think?

MS. VILLATORA: They could be, but we're not really sure at this point.

SPEAKER: Most of those other plumes also seem to be upstream from the plume because --

MR. WILLIS: These contaminants flow in the groundwater. The groundwater basically, in this particular zone, is flowing in this direction, so it's basically going

down here.

SPEAKER: The other sources are upstream from 150?

MR. WILLIS: Yes, or to this side.

MS. ECHOLS: Can we hold the questions until after Kevin finishes? He's almost done with his presentation.

MR. WILLIS: Okay.

So we have no further action, the one that I just discussed about taking the accumulative further action, basically one of them was almost negative action, taking plumes out --

SPEAKER: Can we stick with the action you've decided on? I think we have a little bit of time here and we will get more out of not why you didn't choose something, but why you did choose the one we're doing. To go through the three others that are rejected seems to be a waste of our

time.

MS. ECHOLS: For public record, we have to go through all of them.

SPEAKER: Could you speed it up, please?

MS. VILLATORA: Could I chime in here?

SPEAKER: I am asking for the benefit of the group.

MS. VILLATORA: This is actually a presentation of not only what is -- it is a summary of what is in the feasibility study and we are presenting our study, but we have not chosen a remedy and we want to propose everything and if we get public comment that we should go with another alternative, then we review that; that is why we present everything.

MR. WILLIS: So there are four actions that we totally evaluate.

One action was no further action which was leaving the

conditions the way they are right now. The groundwater two was in-situ chemical oxidation which would be injecting contaminants through -- into the plume and that would destroy the contaminants in place. Groundwater three was groundwater extraction and treatment to draw the contamination out of the ground and treat it. Groundwater four --

SPEAKER: G.W.3 is the bird sanctuary?

MR. WILLIS: That is where the groundwater would be extracted out and then piped up to the bird sanctuary to be treated and disposed of.

Groundwater four alternative is similar to groundwater three with the addition to using a limited application of the oxidants directly into the vicinity of the source area, just in the location where the source material went.

The overall protection of the

human health and the environment all of the alternatives with the exception of alternative one no action, no further action would be designed to be fully protective of the human health and the environment.

Compliance with ARAR's, all of the alternatives with the exception of alternative one, would be expected to meet all appropriate standards over time when done in conjunction with the actions which will occur when O.U.2 actions are implemented, so we'll completely meet all standards once we're done with the whole thing.

Long term effectiveness and permanence, all alternatives with the exception of alternative one will be effective in permanently meeting remediation goals and when combined with the remedial actions enacted for O.U.2 of this site, that ultimately our goal is to clean the whole situation up.

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SPEAKER: What is O.U.2?

MR. WILLIS: That is the part that I was talking about when we were going to investigate the stuff that's not in the yellow.

SPEAKER: That is another five to seven years before it gets to this point like this one did?

MR. WILLIS: I hope not.

SPEAKER: This one took five to seven years to get to this point. The 0U.2 will be what, in 2012?

MR. WILLIS: I hope not, but we will have to see.

SPEAKER: Reality check, that's about right.

MS. CARPENTER: I don't think actually O.U.2 will take anywhere near as long because we have some data from O.U.1 that we can use to help us refine. It's a lot less uncertain about where we need to go with O.U.2 than it was when we initially started this, so there is some information we

can work off now.

As you can see, we have some information up on that map so that will help accelerate things like picking well placement points. These wells are very deep and difficult to put in and you want to have some information to assist you in putting them in and we have some degree of information, so unless things go wrong, I'm hoping it will go quicker.

But you are right, this one was I think 1999 was when the R.I. started and then here we are tonight and it's a long time and we'll also be doing a little bit more updating.

We'll tend to have a few more meetings explaining where we are in the process so at least you will have an idea of all of the internal steps that are going on.

MR. SCHARF: There are also a number of legal issues that have to be involved that delayed this meeting by

about 12 to 24 months and that was a problem.

MR. WILLIS: There were lots of issues all during this whole thing.

MR. SCHARF: Which is unfortunate, but that sometimes comes up on these projects.

MS. CARPENTER: Again, if we can try to get through in finishing up the alternatives and the preferred remedies, there is a lot of information we admit that we are giving to you tonight and we apologize, but you need this kind of information to be able to comment on the remedies.

MR. WILLIS: We are trying to squeeze eight years into an hour.

All of the alternatives, except for alternative one, will be effective in permanently meeting regulatory goals when combined with the actions in O.U.2.

Reduction in toxicity,

mobility or volume, all alternatives, with the exception of alternative one, would reduce the toxicity and volume of the contaminants within the PCE portion of the plume.

Alternative two and four would chemically react with the contamination, that's the injection of the oxidants basically reducing the toxicity and volume of contamination and place no effect on mobility. It just turns it into non-hazardous compounds in place.

Alternative three and four would be designed to draw back contamination from the receptors which are Garden City wells 13 and 14, so the idea is to pump from here enough to draw the contamination back so it doesn't affect public water supply.

What else? Short-term effectiveness, alternative one would provide no change since there is no construction. All of the other

alternatives would provide potential impact on the community through construction activities.

With either -- well, putting in the extraction wells we would be probably -- assuming right now we would be putting them in the streets and then paving over the top of them, so all of that and then running the pipes up to Tanner's Pond Road and then up Tanner's Pond Road, that's noisy and we're -- people are going to be somewhat inconvenienced while we're constructing them, so that's what this is addressing and evaluating and we will minimize that as best we can, but construction activities are construction activities.

SPEAKER: Do the storm drains allow you to put any of the well lines within the storm drains and not lay new lines and just lay pipes in pre-existing storm drains?

MR. WILLIS: That's possible.

That would come up during our decision making. Anything we can do to use existing structures or anything we can do to --

MS. CARPENTER: We have to talk to the county and local municipalities about it.

MR. WILLIS: There's issues with that too. If we can minimize the problem, we'll do it. I mean, we don't want to wake up babies and so forth.

Implementability, all alternatives that we have seen here have been used at other sites and have been proven effective.

The groundwater pumping utilized in alternative three may redistribute groundwater contamination which will be studied in O.U.2.

With any of the groundwater extraction systems, we'll be putting in new monitoring wells through the area. We'll have to figure out where

to put those, just make sure we're not going to cause more -- you know, we don't want to redistribute the contamination. We know where it is pretty much now and we don't want it to go someplace where we don't know. We need more monitoring wells to let us know how that is affecting the system.

Costs, this is fairly self explanatory. Capital cost is what it would cost right now to implement that particular remedy, annual O & M, how much it costs per year to run that particular system and take care of that, and all told, that's what the present worth of that remediation would be over the course.

Some of these systems run for 30 years; that's how we look at this, it's costed out for 30. That's the basis of our present worth. It's a 30 year run included for each of these systems.

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SPEAKER: The last cost of present worth --

MR. WILLIS: That's including the O & M.

SPEAKER: That's meaning it's a $50 million project?

MR. WILLIS: Let's say it's a close to $5 million project and it's going to cost close to $3 million a year.

SPEAKER: For 30 years?

MR. WILLIS: In 30 years we would have spent this much or that much would have been spent and ultimately it's close to $8 million.

SPEAKER: The annual O & M at 5 million is not 150 million.

MS. CARPENTER: The slide is a little misleading. It's total O & M and when you combine that with the capital cost, what you have to have up front here now is that amount of money.

SPEAKER: That is in today's

dollars?

MS. CARPENTER: Yes, sir, in today's dollars.

MR. WILLIS: And this is the same basically because the bulk of the O & M is going to be maintenance of the groundwater extraction system.

The injection of the oxidants, the way it's presented in the feasibility study, is a long time deal; you put it in and you watch to see where it goes. The monitoring that would be done here is the same monitoring basically that would be done here.

State acceptance, whether or not the state let's us.

Community acceptance, the preferred remedy will be assessed in the ROD following review of all public comments. This is anything said tonight and transcripted or written comments that we get during the public comment period; all of the comments

have to be considered.

The preferred remedial alternative, based on the alternatives that we've looked at, EPA, DEC and DOH recommend groundwater alternative four; groundwater extraction and treatment with focused ISCO as the preferred alternative.

This alternative would include a modified application of ISCO as presented in alternative two, which would substantially reduce the amount of time the groundwater and extraction and treatment system would need to operate.

We've considered all of this for cost-estimating in a 30 year time frame. It is expected that we're thinking that this groundwater extraction system should remediate the system in about 30 years, it's tough to look that far in advance, but by injecting the oxidant in the source area, that would -- we just have to

clean what's in the groundwater and not anything at that point that's feeding the groundwater, so by injecting the oxidants and treating it at the source area, we're expecting that we don't -- we are not waiting for this contamination to go into the groundwater, we can pull it out, we've already destroyed it.

That's one of the main purposes of doing that in situ and oxidation near the source because -- there was a lot of contamination in the ground. There still is potentially some, but it is outside of our monitoring area.

If we take that out of there, if there's anything down there, it feeds that plume. We will continue to feed that plume as long as it's there, so if we go in and clean that out, there's nothing feeding that plume, then all you have to do is go in and pull that plume out, but that is a

long process.

As part of this preferred action, the well head treatment at Garden City 13 and 14 would be done as soon as possible.

It sounds like Garden City has already got this and if you go through the feasibility study, what it does is replaces this as it wears out and after so many years of whatever is left like every 17 years, it's going to be replaced, we are bringing that up but it looks like they beat us to it.

MS. CARPENTER: Before we start the questions, I have a feeling with speaking to some of you that there are a lot of concerns about the drinking supply in the Garden City area so if you don't mind, I would like to ask Bob Mangan from the Garden City Water Department to give us a little bit of an overview of what is being done on Garden City wells 13 and

14 to protect it.

MR. MANGAN: Bob Mangan, director of the Garden City Water Department.

I would like to point out to the residents of Garden City that the village has been treating both plumes since 1988 when we first installed the air stripping system at the Garden City Country Club for wells 13 and 14.

Since that time, at great expense, the village has upgraded that treatment system four times with a 10-foot spool piece to the top of the tower, spray nozzles, we've added granulated activated carbon filters to the site and we are currently under construction for a second stripping tower in anticipation of higher contaminants.

The Village has continued to provide drinking water that meets state and Federal standards at that site.

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The second well site at number nine, a stripping tower was installed there also and that well is still in operation and continues to meet state and Federal drinking waters standards.

The cost -- the Village has expended millions of dollars for the treatment systems and operation of maintenance costs and it's looking to get reimbursed for those costs that we have expended. Thank you.

MS. CARPENTER: Thank you all for your patience and at this point we would like to start taking public comment.

Now, a lot of you folks are going to want to comment, so if you wouldn't mind coming up to the podium so everybody can hear you and please let us get your name for the record.

MR. BRYGIDER: Brandon Brygider, I am a village resident and I would just ask a couple of questions to see whether there is a plan for the

village to upgrade these systems anticipating the need for upgrades with these wells; how long are upgrades that keep the wells operating, first question, where we are right now is the concentration coming in and if we get a breakthrough, will we go to hundreds per thousands of parts per billion? How long is this anticipated here to last us?

Do we then see a change in required further upgrades or just take these wells out of operation?

MR. MANGAN: Right now we're designing for the anticipated increase in the contaminants and --

MR. BRYGIDER: Through to what point, Bob, thousands?

MR. MANGAN: 2000.

MR. BRYGIDER: That's just a couple of hundred feet north of me. When does breakthrough get to you guys; when do you reach breakthrough?

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I thought that was right at the north -- 500 feet away from here, at what, a foot and a half per day? How long does your design last and when do you then have to upgrade anticipating a breakthrough?

MR. MANGAN: Well, we're doing -- with this design stripping tower, the stripping tower and then to a granulated carbon, it should be good for the next -- for eventually -- until the next design is needed.

MR. BRYGIDER: So that could be six months?

MS. CARPENTER: Keep in mind we have those monitoring wells and your water supply does drop from a much larger area, but that's not to say that additional upgrades to that system will not be necessary.

MR. BRYGIDER: Capital numbers could be double, triple depending upon the source of the issues as an example.

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Has that not been looked into as part of the number four analysis; in other words, you have a plan?

MS. CARPENTER: We assume a certain amount of upgrades and capital expense in those.

MR. BRYGIDER: Thank you.

MR. WILLIS: The information -- the monitoring wells about there with that six and eight parts per million, not billion, that's in a well that's been around without pumping; that we know is what's in that aquifer right there.

Typically when you're -- when I'm pumping that well, other than just taking that sample out, we pump it very gently so we know what's in the aquifer at that point.

Now, these wells down here are pumping out what is -- would you say a couple of thousand --

MR. BRYGIDER: 1200 gallons a minute and they're drawing from

360 degrees and our contamination is right here. It's also coming in with the clean water as well.

MS. CARPENTER: But, nonetheless, your point is it needs to continue to be monitored and upgraded if it becomes apparent --

MR. BRYGIDER: It may fail in the first operating year if you have the magnitude of a foot or two a day; for instance, if you can give us a number here to work on and we have a distance of 500 feet to travel for breakthrough of a slug, you are getting little dribbles now and then, you go up by, what, two or three orders of magnitude, that seems to exceed the magnitude.

I will stop grandslamming because the plan here already it seemingly has some issues.

MS. CARPENTER: We will be looking at the work that the Garden City folks are planning to do and the

data that we have and if additional work is necessary for well water protection, you saw that that is our first element in our response.

MR. BRYGIDER: And EPA budget has some sort of a front end anticipating how much more money we can expect from the federal government rather than waiting to sue and get people to fund these capital expenses, we villagers would be paying in the interim until collection.

MS. CARPENTER: There are a number of enforcement mechanisms that we can use to get work done.

MR. BRYGIDER: Thank you.

MR. SCHARF: Keep in mind this is not a new county for water suppliers in Nassau and Suffolk County and typically, as Kevin had said, when we see these concentrations of plumes generally at the municipal well, we never see elevations come in that high when we're pumping at that rate.

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MR. BRYGIDER: Would it make any economic sense to operate the point or -- the well at that point?

MR. SCHARF: Exactly. The Village has hired an engineer that has a lot of expertise in this field to design these systems to appropriately treat the water to non detect.

Based upon prior history, it does prove that out, that over the course of time that these systems work and especially in this case they're combining with activated carbon and so it's a double protection and the state Health Department and county Health Department has to review all of this and they look at all of this data and they know generally what works and generally these systems, 99 percent of the time, work and when it doesn't, the systems have to be modified, but they plan accordingly.

MR. BRYGIDER: Thank you.

MR. YUTER: Mort Yuter, I live

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in Garden City just south of the source, I'm just near the railroad tracks.

Number one is the source continuing or is it stopped?

MR. WILLIS: We think that most of everything was taken out, but there is the possibility that there's still some down there and that's why we're proposing to do the in situ chemical oxidation in that area.

We think most of it's gone, but the monitoring wells in this area have shown a decline since the IRM when they did the treatment right there, but we don't have full confidence that it's completely gone so that's why we're proposing putting that in there.

MR. YUTER: Just immediately south of the railroad tracks?

MR. WILLIS: Right.

MR. YUTER: How deep is the contamination, it's in the glacial?

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MR. WILLIS: It's upper glacial and it dips down pretty quickly right about down by the railroad tracks. We have the profiles, but not here, it's in our remedial investigation report that's in the library.

MR. SCHARF: We have some extra copies.

MR. WILLIS: Are the vertical profiles there? That's the monthly progress report.

MR. YUTER: What I'm concerned about is the south areas and if it's like 50 feet or something like that, that impacts the sump and the Garden City High School just took one of those sumps and made a playing field out of it.

Now, is that in the affected area or just to the east of it?

MR. WILLIS: That's east of that. That would be about here.

MR. YUTER: Where is the test

well for that?

MR. WILLIS: Maybe the other well will show it better.

MR. WILLIS: The fields are right there. The groundwater is flowing from the source out this way and flowing from here, so that's -- those fields are east of this contamination.

MR. YUTER: So it's not a factor? You have a test well in that area?

MR. WILLIS: We have monitoring wells over this way. These are very low levels, another monitoring well here, so this is showing that it's away from contamination, the source, there was a dry well so it wasn't spread all over and groundwater is going to pick that up and carry it along, so this all makes good sense basically.

It doesn't migrate sideways. I'm not saying that there isn't a

chance that some of this may be contaminated.

MR. YUTER: But we tested that area?

MR. WILLIS: We tested between there and there, yes. We didn't test that specific place.

MR. YUTER: Alternative four makes use of the bird sanctuary?

MR. WILLIS: Actually, three and four.

MR. YUTER: I'm sorry, what effect will it have in that area? You're pumping water there, you're going to clean it up by aerating that, I believe?

MR. WILLIS: Yes. We run it through airstrippers, yes.

MR. YUTER: Then you are going to pump the water back into --

MR. WILLIS: The water which now would be at drinking water standards would be put into where the storm water goes into the sanctuary.

Storm water goes into that sanctuary off the street so we would be putting ultimately clean water into that zone, into the zone area.

MR. YUTER: That water would be lost then, any public use would be wasted into the storm system?

MR. WILLIS: The storm sewers soaks that into the ground, yes. We would be putting clean water into the sump and --

MR. YUTER: The air, when this chemical goes into the air, is that dangerous?

MR. WILLIS: It would be if we allow that.

When we do these -- when we do our -- this type of system, basically the water goes through and air is pushed up through it and contaminants come off.

Now that air is trapped, it flows through the carbon and the contaminants are trapped in the carbon

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and then the carbon, once it reaches -- when it's spent, it's taken out before it's completely spent and then sent off for treatment someplace else so that's -- it doesn't go off into the air, we make sure of that, we take care of that problem.

MR. YUTER: So the roads in that area, methods of getting a truck in and out --

MR. WILLIS: Well, it depends on what we have designed.

MR. YUTER: On the northern part of it?

MR. WILLIS: The way I had it pictured in my head which, I don't know, it would be in the corner along Tanner's Pond Road, I think it's a big field right there, so we would take a section of that for our treatment and then that water would be placed over -- from there over to the sump.

MR. YUTER: So the proposed

location would be the northeast portion of that sump area.

MR. WILLIS: I guess it would be -- let's see now, Tanner's Pond is going north and south. It would be the southeastern corner, but that's closest to Tanner's Pond Road, but --

MR. YUTER: Tanner's Ponds Road runs north and south.

MR. WILLIS: Tanner's Pond Road is north and south and let's say this is the bird sanctuary, I was saying right there at the corner of the bird sanctuary.

MR. YUTER: Just trying to understand the concept.

MR. PINOU: My name is Tom Pinou, I'm also the treasurer. Thank you for your presentation here tonight. I think we're all quite a bit concerned.

Towards slide 42 it talks about using alternative four, okay, and do I understand this correctly

that if you're using just one alternative, alternative four, it would take 30 years to clean up this entire Superfund? I guess that is my first question.

MS. CARPENTER: It would -- there's an estimate for 30 years for this portion of the plume. There is a larger -- as we pointed out there is more to this plume than this one portion.

The hope is by adding the chemical oxidants it will shorten the time, but it's very difficult to predict exactly how long we're going to be there.

If you looked at all of the alternatives, they all have fairly extensive durations in the proposed plan, how many years we would be out doing something and that's been borne out by practice. It takes a long time.

MR. PINOU: That leads me into

the second question of wouldn't if you're using all three approaches, two, three and four on an aggressive scale, wouldn't that shorten the time frame if you're doing -- am I wrong in thinking about it in that respect?

MR. WILLIS: It's possible, but right now we don't have a number of how short a period of time it would be if we did -- how much shorter the pump and treat system will run with the limited oxidant injection.

If we did the pump and treat with a limited and the full oxidant injection, I still couldn't come up with a number right now, how much less time.

MR. SWARTWOUT: There's also limitations on how close to the public supply wells you can get with the oxidants you put in. You don't want to put oxidants in the ground very close to it because those materials will end up in your public supply

well, so there's some limitations there as to how close you can get.

MR. PINOU: To me it sounds like this is an escalated problem and wouldn't you use an aggressive approach to treat this and not lag it for 30 years?

MS. CARPENTER: This is a fairly aggressive approach.

Traditionally EPA intended to do something called pump and treat, that is just that one component, extract the groundwater, put it back to drinking water standards and put it back in the ground and try to flush things through.

Now we have broadened to the idea of adding chemical oxidants to destroy the high concentration areas, but just broad application of an oxidant won't necessarily break down anything in the groundwater because it's going to interact with the intervening layers between the

injection point.

So there's all kinds of technical considerations that go into how much oxidant can you put into a system given you have groundwater withdrawals for drinking water treatment and we may put this oxidant in and we will be monitoring what the impacts are and, you know, if it turns out to be the magic bullet, we may be out here telling you folks we're doing an amendment to the remedy because we found that this one thing is working so well that we're going to do something else, but none of this can be predicted.

I mean, we have ways to analyze it, but there's no guarantee about how things are going to behave three or 400 feet down.

MR. PINOU: I guess --

MS. CARPENTER: This is a very fairly aggressive approach.

MR. PINOU: Okay. I think

from my perspective, how do I know that what I'm drinking now I'm comfortable with, right, I know Mr. Mangan in his department is pumping out and filtering as much as they can, but I'm seeing, you know, maximum levels that you're presenting on this slide, I mean, is there a contradiction here?

Where are those maximum levels to address what that first spokesman was saying?

MR. DIFRANCO: Joe DiFranco. The Nassau Department of Health also insures the data they're getting is corroborated, so we look very closely at the water district's monitoring to insure that we are receiving excellent quality of drinking water.

MR. PINOU: To -- I guess this leads me to my last question of really it seems like there's nothing we can do in the interim except buy the best filter out there and if it filters PCP

in and tetras, we're hopeful it's not.

MR. DIFRANCO: We are against that because your water district provides good quality drinking water and if you put a filter on your system you're actually, I think, potentially causing the problem.

You could build up contaminants in that filter and then they can slough off into your drinking water if you don't maintain that filter properly, so we recommend against the filter.

MR. PINOU: But I don't trust it. I put in a filter into my air conditioning system because I don't trust what's being filtered into my house. I still buy a high quality filter to protect myself and my children. Wouldn't that make sense?

I don't even like that statement and I apologize for saying that to you.

MR. DIFRANCO: Your water

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quality is excellent. You don't need to filter your water. That's what I'm saying.

MR. PINOU: We are dealing with a plume under us.

MR. DIFRANCO: We've checked it.

MS. CARPENTER: Everybody is entitled to look at the water samples that are done. We mail it out to you and Nassau County -- what you choose to do in your home as a matter of personal preference is, of course, up to you and what that level of comfort provides for you.

I think what Mr. DiFranco was saying is we found in this business that people put these things under the sink and then tend to forget they have them there, so if you are going to install that kind of filter, there is maintenance for that.

MR. PINOU: But you have to buy a good quality of a higher

caliber.

MR. WILLIS: Just to let you know, we have those in my house. My -- you know, I look at it and I say, well, this is all -- this water is all very acceptable, I drink it right out of the tap. My wife won't drink it out of the tap.

I say, "Well, here is all of the information, it's perfectly safe. I don't care".

MS. CARPENTER: Again, this is going to be a matter of personal choice.

MR. PINOU: What kind of filter do you have in? What is the best. I want to write it down because I don't care what you say, I've already read about cancer and stuff, so can you tell me the best?

MS. CARPENTER: We really can't. EPA cannot recommend a particular brand of anything, it just doesn't work that way.

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MR. WILLIS: But the system on my faucet that was probably purchased at a local drugstore, it has a little indicator that turns red after about two gallons go through that thing, so I have to keep buying filters for it.

Maintenance is staring you in the face when you get one of those and it gives a high degree of comfort in our house.

MR. PINOU: How often do you change it?

MR. WILLIS: It lasts a couple of weeks.

SPEAKER: There was an idea of pumping water into the sump which is a big county sump that is 100 percent out of the plan I understand?

MR. WILLIS: I'm not personally familiar with that.

MR. SCHARF: The way the current plan is set up, the remedial design will evaluate what the best place to recharge the water back into

the ground is.

SPEAKER: I'm hearing it into Tanner's Pond because the Herrick's Road sump has big problems on just draining the normal area.

MR. SCHARF: Because the 150 Fulton Avenue building is in Garden City Park where you live, where the pump and treat system is going to be located the EPA is going to be down much further.

SPEAKER: You are not planning on pumping the water back into that sump on Herricks, that was originally years ago --

MR. SWARTWOUT: That was originally years ago something that was being looked at and immediately the first issue they came up with was the capacity of that sump to accept the water so it didn't -- it was not a practical thing to do at that time.

SPEAKER: So that sump is out of the plan at this point?

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MR. SWARTWOUT: Yes.

SPEAKER: Perfect, thank you.

MS. CARPENTER: Would you like to have any questions that we can address for you?

MS. ECHOLS: State your name, please.

MS. DONOHUE: My name is Joan Donohue, I live at 188 Whitehall because you get this in the mail and it's very upsetting and you look up on the Internet and you see PCE causes cancer and I'm asking about this carbon filter. Nobody is recommending a filter.

You're saying the drinking water is fine. It's been so long since anything has been done about this, so what I'm asking is just, you know, just a regular person what can I do even to my ground around my house, is there something I can do to prevent, you know, this PCE or TCE from, you know, getting into my blood

or my child's and for me, one way could be this carbon filter which you're saying we don't need, but, again, it's an added protection to me and also I want to say should we do something to our grass because I'm so close to this?

MS. CARPENTER: You are not asking silly questions. You are a concerned parent and you have every right to be.

The groundwater that's contaminated is fairly deep below the ground. It's not, you know, at the level where your grass roots are taking it up and incorporating it into grass. So there's nothing that you need to do to your grass or to your pavement in front of the house.

That's one of the things that we do look at at EPA is what is the potential for not so much just the water, but vapors that might come out of that water to migrate up and

collect underneath the house and possibly get in, but in this site the groundwater is so deep and the layer of water kind of on the surface closest to the homes is not contaminated, so that gives us an added level of protection.

With regards to a charcoal filter or some kind of filter on your house, if that's what it's going to take to make you comfortable that you and your family are drinking water that is, you know, better than what is coming out of the public water supply, all we're saying is those systems have to be maintained. That's the only thing.

MS. DONOHUE: Who do I -- I don't know anything about these systems. All I'm asking is should I be asking the Water Works people what they recommend?

MS. CARPENTER: I mean, we can -- I know between us and the

Health Department, we can talk to you about what the pros and cons of these systems are that would help you interpret the information on the Internet as to what the best sort of thing is so --

MS. DONOHUE: So right now you are not recommending a system?

MR. BRYGIDER: I grant you it's hundreds of feet below, but inhalation is considered one of the means of risks so are we at a level of which you're going to recommend total VOC counters in people's basements, keep people out of the basements at Stratford School, any of these other measures that are protective and at some point have we done the air sampling in basements in the area beyond the water sampling to say -- or in the utility lines -- to say where are the concentrations of airborne exposure occurring?

MS. CARPENTER: Part of the

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O.U.2 investigation is to look at a little more of the vapor intrusion issue mostly where the groundwater is shallower. It does not keep migrating up from very deep depths especially where you have clean water in between, but we are going to be taking a look at where that groundwater is not so deep and seeing and doing sub slab measurements of the soil, grass and it -- if it does show anything, we tend to go indoors.

MR. BRYGIDER: You can differentiate constituents?

MS. CARPENTER: We test using a fairly sophisticated method. It's more information than you guys need, but we can test levels of perk.

There's something like 53 chemicals we can detect using this method.

MS. CARPENTER: We will be looking at site related contaminants. Chuck Nace over here in the corner can

tell you how we evaluate that a little more, but we can be looking at -- for this site we know there's perk in the groundwater, TCE in the groundwater and there will be whatever breakdown products from those chemicals.

MR. PINOU: The other site ran under the local school, so that's the same concern here for the kids especially who have that sort of building and this sort of exposure, maybe the idling of the buses is more of a risk really when we're talking about what's in the air and is it really coming up and out of the ground, okay, I hear what you're saying, you need more study.

Can I volunteer to have my house be a point of study, for instance, since I spend a lot of time below grade? Would you then get into recommending that we may want to not have family rooms in the basement anymore in this area of the plume?

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MS. CARPENTER: If we determine that a home is impacted, we would deal with that home by putting a remediation on the home. They are extremely effective and we have installed a number of them.

EPA's own buildings in Edison, our laboratory buildings in Jersey, were impacted by a TCE plume and we have to put in a fairly large system in that building, so there are ways of dealing with it that do not require you forego the use of your basement.

If that situation was to occur, we would certainly address it. We're not going to tell you you can't use the lower levels of your house, your resale value has just gone down if we tell you that, but these systems have been put in place before.

We have a number of large sites; the State of New York has one and we have another one up in New York where we've done a lot of this kind of

work, so we will continue to take a look at that.

You will be amazed I can't get people to volunteer to test their homes, so I will keep you in mind.

MR. NACE: You were saying it's total VOC's that are health impacted and we do look at -- what we generally do is we get data on individual chemicals from both the groundwater and the air or soil whenever we do the testing.

We have toxicity values and formulas that allow us to determine what the potential risks are and what your exposure may be to each individual chemical and then we add those together to kind of get a sum, your total risk from exposure to all of the chemicals.

So we don't just kind of add all of the chemicals together and say this is what it is, but we do them individually and add them afterwards.

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SPEAKER: Based on partial pressures and you go through standard formulations? Is that what you find on the web site?

MS. CARPENTER: What you will get from us if we have to test your house is you get the actual laboratory analytical data associated with your property, not everybody else's property, but just yours.

You will look at that lab, at that data. We do not hold anything back from you and we have been very up front in telling people, sometimes we have put systems on as preventive measures, you don't have a problem indoors but you have some high concentrations underneath your home and we don't know when they might come in, so we put systems on as preventive measures.

SPEAKER: During the '63 drought, for instance, the water table was significantly lower and that

overlying clean layer is going to be less significant to the extent that you are going to be pumping wells of 13 and 14 and cause a general draw down. It might be advantageous to shut them down and let the aquifers respond to the area and have more of a separation between me and the deeper seat of the plume.

I'm not saying how to manage the well, but there might be other measures to be looked at.

MS. CARPENTER: Yes, ma'am?

MS. FAYE: Have there been any health studies done on these plumes or other studies like it to avoid another Love Canal?

MS. ECHOLS: Would you state your name please.

MS. FAYE: June Faye.

MS. ECHOLS: I'm going to ask Jacqueline Nealon to speak about that.

MS. NEALON: To the best of my knowledge, I think your specific

question is has anything been studied in this particular area?

MS. FAYE: Or other areas like that.

MS. NEALON: There have been lots of studies done in lots of areas. In this particular area, no.

When we are looking at PCE, there have been lots of places that have been exposed to it, whether they've been exposed through consuming it, drinking it, through the drinking water.

One other concern is inhalation because of vapor intrusion to homes. We have studied different areas. There's not a lot, unfortunately, of information that we know about it. It's happening accidentally and we are finding out about it as a result of doing studies.

One of the places that we have done was a place where people had been consuming it for 30 years, they did

not know. They found out really accidentally and we've been looking at these people as a result of that to see what's happened to them because of this, essentially, 30 years of exposure.

Some people have lower levels than others. We have not seen right now any real effect in terms of their health that's been caused because of this exposure. I'm not saying there may not be something later down the line, but we haven't seen anything at this particular time.

There have been places that have had exposure through inhalation, breathing it in, one actually happened to be a daycare, they were located right next to a dry cleaner.

There were very large numbers. These are children that were exposed to fairly high levels of tetrachloroethylene or the perk.

We had been studying them for

many years. I believe the initial exposure was back in the late '80s and we've been watching these children. We have not seen anything yet that, again, is causing any kind of health effect or health problems in terms of cancer.

The one thing we do recognize in terms of PCE exposure is usually going to be with individuals who are working with the solvent in terms of more or less of the employment where they're working; usually the dry cleaners are the ones who have the largest amount of regular exposure to tetrachloroethylene as they're dry cleaning the clothes or whatever.

One of the things we notice almost immediately is a drop in visual acuity meaning their ability to look at some of the different types of tests and to be able to distinguish very fine differences in pictures.

Sometimes their fine motor

skills can be diminished, but this is over a long period of time.

We have noticed, again, with the children who were exposed to, again, the inhalation, we have not seen anything that has shown any kind of diminishment of that type of acuity, but we have to see what's going to happen over a long period of time.

In this particular area, there has not been a specific health study that's been done, but we can look at other areas where there have been exposures to tetrachloroethylene and make some different assumptions, but right now we're not believing anybody has been exposed to the tetrachloroethylene through the drinking water because, again, we do have the public water supply that's tested on a regular basis.

We don't know, at this particular time, whether or not people

have been exposed to any kind of inhalation for most of the areas, especially where the very large plume is, it's moving downgradient and very high concentrations, it's very deep so, again, because there was a clean layer of water that's over that contaminated water, we're not expecting vapors to get up into that area that would be causing inhalation problems closer to the site, however, and that's going to be in the industrial area.

There may be something different, you may actually have some vapors and that needs to be investigated further.

MS. GAMBARDELLA: Earlier you said we have to be careful because we don't want it to infiltrate wells 13 and 14.

Could you explain the relationship between these aquifers and those wells in terms of how one

gets to the other?

My name is Linda Gambardella.

MR. WILLIS: Basically, the aquifer, everything below us, there are aquifers down there, it's a big sponge. We live on top of the sponge. Water flows through the sponge. When you put in a well to draw it out to give it to all of the people that are living on top of the sponge, you put a straw down and you cut a little hole and you stick the straw down there and you suck the water out of the ground and here you take that water out of the straw and you run it through a treatment system to make sure it's meeting all of the standards and then you drink it.

The monitoring well, the public supply well which is down here, basically, there's your straw into the great big sponge. The water is going through the sponge kind of draining off downhill down this way and it's

picking up contaminants as it went through there.

That well right there is drawing that water out which is picked up, these contaminants, as it's going from up here this way off to the ocean.

MS. GAMBARDELLA: It's all the same water?

MR. WILLIS: Yes.

MS. GAMBARDELLA: How are the ground chemicals that you are putting in -- what's the concern then?

MR. WILLIS: By putting in these chemicals, basically, the idea is to put it through this particular area because these contaminants, these oxidants are very strong. Basically, the stuff that we would use is, you know, in a laboratory used to clean all of the glassware and things like that, okay, it takes everything out and it's very strong, you need to use gloves, it will burn your skin.

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So now we take that and we stick it in the ground and what that does is react with all the carbon based compounds.

Now, tetrachloroethylene, trichloroethylene, they're all based on carbon and it destroys the whole molecule.

MS. GAMBARDELLA: What's the byproduct of that?

MR. WILLIS: You would have to look, it's non toxic.

MR. SCHARF: Usually they use potassium magnese. Magnese is naturally occurring in the groundwater, but potassium ends up like a salt and the levels dilute down; that's the concern at the source.

You have to remember the top of the plume where the source is in Garden City Park is about 6,000 some odd feet over a mile from the Village of Garden City 13 and 14 wells and

that's a huge area, that's a lot of water in between, billions of gallons.

MS. CARPENTER: I think the question also is -- and if I'm wrong I apologize -- because why wouldn't we put the oxidant in? We already said we wouldn't want to put it too close to the wells and the question is why not?

MS. GAMBARDELLA: Because the concentration would be too strong; is that what you are saying?

MR. WILLIS: I was getting to that.

Basically, you put it in there and you have to put in enough that you know you are going to get the contaminant that we're worried about.

There are other things in the ground, so you have to put more than what you would need just to get rid of the contaminant because you have to get rid of all the other carbon at the same time.

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Now, we have too much of that and this stuff which you probably don't want to drink directly, you want it to react with all that carbon and go out of the system, so you put it in at such a rate and then you see how well it is reacted with everything.

The first time you got most of it, but then you have to put some more and you try to be very careful.

Sometimes when they first started using this in this type of situation they said, well, okay, this whole -- we have this much carbon in this system, so we are going to put so much in here that we are going to get rid of all of that carbon.

Well, this is not really a sponge. It's going a little faster through here than it is over here and things like that, so you put it in and it kind of hits this little fast track and it comes down here and Bob gets a call from somebody saying my water is

a little purple, what's this?

So you have to try to make sure that doesn't happen, so you don't want people drinking that.

You have to put it in carefully and gently and see how it reacts with the system because this is -- it's not a laboratory, it's what's in the ground and we don't know how it's necessarily going to react completely.

MS. GAMBARDELLA: Thank you.

MR. YUTER: I followed the gentleman's concerns about the time frame and, of course, the question is if you double the number of wells, the pumping rates and all the other variables, do we then get it cleaned up in 15 years and if we tripled it, would you get to go down to ten years rather than the 30 and since the big number was O & M, seemingly you could somehow do more at the front end and I certainly hope put the chemical in

tomorrow, since it was due ten years ago and get started on this and it sounds great what you are doing, but do more wells and pumping rates increase double or it doesn't work quite so easily?

MR. WILLIS: It doesn't work quite that easily.

Once a contaminant is in the system, part of it kind of sticks to the aquifer system through the same drains it's flowing through. It's like getting something on your hand. Like all of the glue that I glued these things on here, it went on real easy but it came off really hard.

The stuff that's in there, we've got to get it out. If way back early in the years of Superfund everybody said, well, if we pump out this area three times over, we'll have it all cleaned up and they calculated out how much they had to pump out and in that period of time, let's say it

would have taken 12 years to pump out from here three times that and they thought, okay, it's all going to go. Well, they're sitting there and it's 15 years later and they haven't done all that much. Well, why?

MR. PINOU: Because it's pumping at different wells and you'll be able to shake it up, okay, so you can do that sort of management, too, of that sort?

MS. CARPENTER: All of our remedies are evaluated on an ongoing basis and at least every five years, we put a public report out that says this is what we're doing.

In that interim, if something is not working optimally, we look at ways such as is there something else we can do? Do we need to add more oxidant? Do we need to increase the pumping rate at this well or increase it at that well?

So we try not to just flip the

switch and walk away because we found that Mother Nature has tricks up her sleeve and we are never without keeping a close eye on things. We're not going to be able to clean it up, so you're right, there are things to do to optimize the system and sometimes you have to do all of them.

MR. BRYGIDER: Why is there a preference here? I grant you that you're coming in at this angle and you follow the trajectory of the area due to the influence of the pumping, but certainly it means to me Tanner's Pond there probably has more gravels in it and just in terms of better permeability, do you see those issues being out there and can perhaps any changes or additives in the aquifer cause changes that would be advantageous to permeability in the aquifer?

MR. WILLIS: We have to see once we get out there.

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Basically everything that we've seen is following the flow of groundwater. Depending on what we have there will affect it very locally but, by and large, this is just standard downward flow.

MS. CARPENTER: At this point here, the young lady probably needs a break, so we're going to stay until everybody's questions are answered, but if you could just give her like five minutes to maybe stretch out her fingers a little bit so that all of your comments are accurately reported into the record, I will appreciate that.

(Whereupon, at 9:08 p.m. a recess was taken until 9:15 p.m.)

(The hearing resumed with all parties present.)

MS. ECHOLS: Every one, we're ready to resume.

MS. CARPENTER: Thank you all for staying and being so patient.

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SPEAKER: My name is Jim Ekelman. I've lived here for about almost about 41 years.

I guess I have two questions; one is was there a consideration to actually turning these wells off so my whole life I haven't been drinking this stuff? A consideration of maybe shutting 13 and 14 down and is there a map distribution to say whether my house is getting which water from which well? Which pipes are feeding my house? That's one question.

Do we specifically know this well feeds this house and did you decide 13 and 14 would you say they're safe in these conditions? Was there ever a consideration to actually shutting them down before this problem got out of hand?

The second question is I know you're all the good guys and we appreciate everything you're doing for us, really, this is my tax money out

there trying to help us to clean up from somebody else who decided at that time they were going to save a few bucks and pour it down the sink. What's going on with that company?

They're going to fund approximately how much? Are they going to say, "We're broke, the government will pick up the rest."

Are we going to go after them? We all kind of want revenge at this point; like what's going on here?

MS. CARPENTER: The second part of your questions of the enforcement and the options, I'm going to turn that over to Liliana Villatora who is one of our attorneys and she can explain a little bit about the process about how we go after the people and it's a fair question.

MS. VILLATORA: Okay. I think, at this time, I would like to address a little bit about how we're looking at this.

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The O.U.1 remedy is going to be -- you know, it really has to do with the PCE contamination that emanates from 150 Fulton Avenue and we think we have a good handle on it, but some of that will also be studied as part of O.U.2.

There was a company there at one point and they're called Genesco and they bid the remedial investigation and feasibility study for the site, so we expect that they will also be implementing a remedy. We will be asking them to do the work.

Now, as you can probably tell from everything you've heard here tonight, there are other sources and we have also looked to other places within this area for other responsible parties, you know, the potential responsible party or P.R.P. as we call them.

Genesco has told us that there are other sources, obviously, out

there and we have identified at least a couple of other places where we know we found PCE in soils and we are also looking to those parties to help implement the remedy.

Genesco is a large corporation and they have done the work with New York State DEC and now they have been, you know, open to discussions with EPA and we expect that they will be at the table once we do issue a record of decision and decide which is the best alternative for this action.

We are asking them, as well as the owner of the property, which is Gordon Partners, the 150 Fulton property.

There are a couple of other properties at 142 Fulton and 134 Fulton Avenue and 246 Broadway where we have also seen some contamination, the levels are lower. However, under Superfund, liability is strict and several which means that any one party

is not liable for the whole thing and what we do is we ask everyone to come together and pay for the remedy.

We also have to be realistic that sometimes P.R.P.'s do not have the money to implement the remedy and that's one of the decisions we make down the line. We ask them, the P.R.P.'s to give us financial information about their corporations or about themselves, if it's an individual, and then, you know, we talk to them and decide whether they can actually implement the remedy or not.

If they decide they don't want to do it, we do have an option of ordering them to do the work, it's called a unilateral administrative order that we issue and we tell them you, P.R.P., you have to do this and if you don't, then we can, one, either enforce that order in court or, two, we can go in and we do the work and

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then we cost the cover in the future.

So right now we have a set of P.R.P.'s that we will be sitting down at a table with later and asking them to do the work and then later on with O.U.2 we expect that we will find other sources and then that will probably get larger. We don't know exactly what the level of contamination from 150 Fulton Avenue is as far as O.U.2, whether they will be part of it or not, that's something that's still remaining to be seen.

As far as the investigation is concerned, we are also going to be requesting that the responsible parties or potentially responsible parties do the investigation for the O.U.2, so if you have any other questions?

MS. CARPENTER: That was the second part of the question.

The first part of the question was was there ever any consideration

to turning off the two affected wells and is there any way of knowing which home is supplied by which well?

MR. MANGAN: The first part of that is the Village has nine wells, six of them are under treatment.

The science is very good with the treatment system and air stripping and granulated filters, it takes the water down so it's the same as the nobody treated well.

The Village never considered taking them out of service because the treatment systems are still there. If we ever get to a point where the treatment system cannot provide good clean water, we will take those wells out of service and I would say all of the wells blend into the system.

They all -- most of them go into storage tanks, the storage tanks then go into the system with booster pumps. The wells at 13 and 14 and well 9 provide wells mostly for the

west and the estates and then the other wells, but it's all blended together so you get some water from everything.

MS. CARPENTER: Yes, ma'am.

MS. ORROW: Kathleen Orrow.

On the literature you sent to us in the mail, on page four right-hand column it says, "Ecological Risk Assessment", that first paragraph would you translate that so I can understand what it means? Maybe I just had a senile moment when I was reading it.

MS. CARPENTER: I probably had a senior moment when I put it in there.

Basically, what we're saying is in certain areas when we look at sites we have, for example, an on-site pond, maybe it's a nesting area, if you're along the shore maybe it's a sensitive habitat or that one facility out here, the endangered tiger

salamander, but if you kind of drive by the 150 Fulton Avenue property, you might notice most of it is concreted over or asphalted and there's a very large building and, as such, there's really no habitat for non-human receptors.

That's what we're looking at here, not people,but are there squirrels? Are there birds that are nesting, fish? In some sites, you know, there are people fishing in the rivers or ponds, so we have to be concerned about what the fish are taking up and are there any endangered habitants or sensitive wetlands at the 150 Fulton property?

It's industrialized now and whatever habitat was there is long gone, so there are no receptors living there, meaning you might have rats and cockroaches and they are remarkably resistant, but, in general, in these industrial areas, this is an uncommon

determination except in certain rare circumstances, there aren't habitants or wildlife.

That one was and is a little bit less than English friendly; it's not a senior moment there.

MS. GAMBARDELLA: In the newspaper when they were talking about this meeting tonight, there was also a mention made of a Clinton site that is to be evaluated soon near Roosevelt Field. I don't know if you are familiar with that?

MS. CARPENTER: We have a Superfund site called Old Roosevelt Field. That is an ongoing groundwater investigation. You might have seen our drill rigs actually out at the mall over Christmas taking up precious parking places. It didn't make us very popular with the mall folks, but we've gotten some of that RI data in and drafted a remedial investigation for that that we provided to the State

of New York and Department of Health.

The DEC and DOH folks, we have gotten their comments back. We've drafted up what we call a scoping document, you know, in other words laying out what alternatives we might look at for that site and we've shared that with our state partners, so we are hoping to be able to come out to the public sometime in the summer with that one about what's going on, but that is -- and I'm trying to go by memory here -- so that one is mostly a TCE trichloroethylene contamination in a localized area.

MR. MANGAN: Garden City also has the well field area on Clinton and there's two stripping towers there that we have been treating since 1988 there and it has both contaminants we get at that well site.

MS. CARPENTER: It's a similar situation where the wells have been drawing the contaminated waters down,

but there's been steps taken to insure that the public water supply remains protected.

MS. GAMBARDELLA: It's not expected that that would undergo a similar time test as this project, is it?

MS. CARPENTER: No. No. We're planning on or hoping that we can issue what's called a record of decision on that site by the end of our fiscal year which is around September 30th, but I think this year it's like September 28th or something like that, so that one it's not like a multi year process, we're much closer to that one.

We're just working on what do we do, you know, that's kind of what we're looking at now with the data: What do we need to do?

MS. DONOHUE: Mary Ellen Donohue, I'm at 40 Yale Street in Garden City.

P R O C E E D I N G S

I have a question. If you were to get a Poland Spring cooler in your house, do they test bottled water as much as they test the groundwater?

MS. CARPENTER: I am going to let DOH talk about that.

MS. NEALON: New York State Department of Health is responsible for public water supply wells and also bottled water.

Most of the bottled water that is distributed within New York State is tested, there are some that are not. I won't get into that.

Things that are going to be sold within the grocery stores are checked on a regular basis to make sure that they are also meeting the drinking water standards. Usually we're looking for bacteria contents and things like that.

They should not have anything like the different types of volatile organic compounds that we're finding

as a problem within the public water supply wells. These are all things that are going to be checked before they can be distributed by the City of New York, so they do have to go through a rigorous test as well.

Oftentimes -- this is something people don't always think about, but very few bottled waters are now in glass, they're usually in plastic. Plastic is reactive, meaning because it is plastic, there can be some parts of the plastic are thalites that can now start to commingle with the water.

A lot of times people think they're getting better water because it's bottled and that is not always the case. Just because it may be coming from another good place, but now there may be thalites in the water coming from the bottle itself.

There is a glue in the cap that has a little plastic thing,

sometimes those glues can be detected within the bottled water because there are styles we have to take them off the shelf because there's too much glue or things like that.

These are all things we're checking within the bottled water. One of the reasons we usually suggest people drink the water from the public water supply is it's checked on a regular basis for all of these same things and it's making sure it's meeting those standards for people.

If people want to drink bottled water, that's their preference, you can do that, it's not a bad thing for you, but I think there's a false sense of security that it's better because it's bottled.

If it's coming in glass, it's less reactive to the bottle or the container that it's in.

MS. DONOHUE: Is there a web site that rates the local water like

if New York City comes from the reservoirs not like upstate?

MS. CARPENTER: Yes.

MS. DONOHUE: Is there someplace you can see like how our water rates against that water?

MS. NEALON: That I don't know. I'm sure there's some web site that has some sort of comparative states, but I don't know exactly where that would be, that web site.

There is a state contest. Again, I don't know exactly what, that's just a taste contest, nothing to do with the quality.

MR. DIANTONIO: Angel DiAntonio, I live in Garden City in the Mott section.

On your analysis of alternatives, you talk about the pumping and the alternatives three and four that you mentioned possibly redistributing the contaminant plumes which would be studied in O.U.2 and

then you mentioned a more extensive monitoring well would be necessary.

Considering this is a long term project, who will be responsible for monitoring those wells, would it be the EPA people or DEC people or the Village? How do we make sure they're being monitored?

MS. CARPENTER: That's a fair question.

Whoever is going to be doing the remedy, whether it's the potentially responsible party who will be installing this, the monitoring well network, regardless of who puts it in, that data will come to EPA.

We frequently will go out, for example, it will come to DEC, we provide that to the Department of Health, but if EPA is not doing the work ourselves, we will often go out and take what's called a split sample with the party that's doing the testing so we can send it to our own

laboratory and find out what we got and what they got and make a comparison as a double check to make sure what they're recording is, in fact, what we believe to be the conditions so that data is shared with a lot of people, we can make it available to anybody who kind of wants to know.

What EPA tries to do is we try to put out fact sheets periodically to let you know where we are and it will say things like, you know, a sampling round was conducted in, say, December of 2007 and the results have shown, you know, contaminant ranges from this to this and there's always a couple of different contact numbers on there.

If you wanted to get specific information, you certainly could and in some communities they've asked that we put it in the library and if the library has shelf space, they're usually more than willing, but shelf

space is actually a problem in most public libraries, but electronically we can put it on and you can sit at a computer and read the disks.

MR. DIANTONIO: Does that information automatically go to the Village of Garden City Water Department because we need to have the Village do an extra check to make sure we're watching and they're watching?

MS. CARPENTER: Automatic printouts would come out to EPA and we distribute it and we certainly would be more than willing to share it with the Village.

MR. MANGAN: We do monitor all of the results.

MS. CARPENTER: We would be happy to share that with you.

MS. HEPERNAN: Caroline Hepernan.

When you were talking about these chemicals at first we didn't know how bad it was way back when.

P R O C E E D I N G S

I'm curious about the nine years when it got dumped and showing up in '86 when the testing of some of these chemicals were first tested or was that when it finally reached a well where it's been shown up, how long it -- did it take the plume to get to the wells?

I'm basically coming along and asking have people been drinking this and not knowing it for the nine years?

MS. CARPENTER: Keep in mind the drinking water supply has to be tested.

MS. HEPERNAN: And these chemicals have been tested before?

MS. CARPENTER: Since the Drinking Water Act was enacted.

MR. MANGAN: The Village has been testing the volatile organics since the late 1970's and early on those wells were clean, okay, and when we first detected there was any contamination, that's when we put our

first treatment in.

The Village has been monitoring this plume or contamination for 20 years and we can't or could not wait for them to start cleaning up the aquifer. We had to put treatment on the wells immediately and, actually, we have upgraded the treatment system.

We are already into our fourth upgrade. Actually, the wells are off line right now for the fourth upgrade and they haven't been used in the last six weeks I guess and they should be back online by summertime.

MS. HEPERNAN: It would be nice when we get our report to keep people apprised of what's going on.

MS. CARPENTER: We can work with the Village to get mailing lists to make sure the fact sheets go out. I mean, this first mailing we kind of targeted a very large area and we got probably more people than we needed in some areas and maybe not the right

people in other areas, so we're very interested in trying to get the information out because it serves a very big purpose for us; you're better informed, you know what's going on and we get feedback that we need to make these remedies work.

MR. WILLIS: We try to get the fact sheets out on a fairly regular basis.

You'll know whether or not there's a lot of work going to happen from that point on and not only O.U. 1, but O.U.2, so we want to keep everybody apprised and they are sent out probably every six months or so.

MS. HEPERNAN: One quick thing.

With this chemical, you just mentioned visual acuity. I'm just wondering in the body, does it have an affinity for certain organs or does it just get stored in your body fat?

MS. CARPENTER: When it comes

to tetrachloroethylene, that's one of the chemicals that will go through the body, it's not stored in the body like PCB's would be stored in the fat.

PCE will go through the body, it will be expired. You breathe it out almost like vapors through your breath or it will be excreted when you go to the bathroom.

Once your exposure to tetrachloroethylene stops, within I think it's a couple of months or whatever, it may have gone into the body and will be expelled through the body.

The concern is what happens to the organs while it's in the body. Typically it's going to be affecting, if anything, the kidneys, liver, those are the things usually going to be metabolizing the chemical itself.

When we're looking at the types of exposure people have had, again, very large exposures, the

biggest individual group that we see are going to be, again, the individuals who work within dry cleaners, they're handling the solvent itself. They are constantly breathing in the vapors because of clothes and everything else.

We're not seeing anything in terms of specific cancers, different things like that.

I know, again, theirs was considered an occupational exposure, much higher than the average person would be getting even if you are going to be consuming this in contaminated groundwater or something like that.

With those people, again, we're not seeing any dramatic kinds of health problems with them over a long period of time, however, we are seeing some visual acuity; they're having diminished vision, that's understandable.

I think, again, there's

dexterity problems and, again, this is over a long period of time with what are considered occupational exposures.

The problem is what happens when you have, over a long period of time, lower exposure? That, we don't know.

That's why when we are doing some of the different studies that we do have because of different places where people have been exposed, I think I have been explaining some of the other ones to you, we watch what happens to those people and some of the places, again, we've been looking for a short period of time, maybe five years, maybe as long as ten or 15 years, we're not seeing anything that we can include in that at this particular time.

Some kids who are really young, we're watching them grow up. Some people may have been older like our age and then they were exposed.

P R O C E E D I N G S

Part of what we do is, again, monitoring what happens with those people; are we seeing a trend? Are we seeing people who are consuming low levels of tetrachloroethylene and in four years they suddenly get lung cancer or something like that? That's what we're trying to see.

Right now we can't come to a conclusion. This is what happens when you have these kinds of exposures, but that's what we want to be able to do is seeing and watching these people.

MR. MILLER: Bob Miller, Russell Road, Garden City resident.

I learned of the meeting as a result of a newspaper article in the Garden City News and one of the things they mentioned was the Garden City Environmental Advisory Board and I am just curious since the article said that that was established in 1992 to essentially address environmental concerns, did anybody, in fact, work

with your organization or DEC or the Health Department with regards to that?

MS. CARPENTER: I would ask the DEC because they had the lead?

MR. SCHARF: The only folks from Garden City here today is the Public Works group; is that correct?

MR. MANGAN: We have a few trustees, at least three trustees here. Also a member of the Environmental Advisory Board and we have members that we were active with monitoring the different Superfund sites.

I reported at every meeting on Superfund sites.

MR. MILLER: Because the article, as you know, pointed out that there were no meetings for this group, et cetera, et cetera, it sort of sounds like they were a non-existing, non-operational unit and I was trying to find out whether, in fact, they are

involved, other than just yourself as part of the Public Works?

MR. MANGAN: Originally there were three members that resigned and we are waiting for new members to be on. Currently there are four members out of six.

MS. CARPENTER: At any point if any group in the area wants us to do a presentation, maybe not this long, but what we found at any of the Superfund sites, we're more than willing to come out and share that information with them; that extends to Homeowners Associations. I've done meetings for parents at schools. These are your tax dollars and we are happy to come out and talk to you guys.

MR. MILLER: I have a question about the proposed hub developments and the railroad and talking about putting in a third line.

Now, this Superfund area

that's in the middle of our town, would that prevent or hold up the operation of anything that would have anything to do with the hub or railroad while this gets remediated?

MR. WILLIS: I can't see how.

MS. CARPENTER: I don't see how.

What we do is coordinate with the municipality when we talk about design; where we are going to be running lines and wells and that sort of thing, so if there is a specific circumstance we need to be aware of and they bring it to our attention, we can either change a little bit the design, but given what we need to do and we're sort of sub surface and the railroad is going to need more surface, I don't see that would be an issue, but we take everything into consideration as we go along.

MR. MILLER: The maps that you have, do you leave them here?

P R O C E E D I N G S

MS. CARPENTER: Do you know what we went through to get these? We actually put this stuff on our web site, at least that map and the proposed plan, and if you really, really, really need them, we can leave them.

I'm just kind of whimpering because it took a lot of work to get these out of our computer graphics people, but, yes, we can.

MR. MILLER: We have a meeting next Wednesday and we're intimately involved in that whole plume.

MR. SWARTWOUT: Maybe they can borrow them for a couple of weeks.

MR. WILLIS: Bob, can we leave them with you?

MR. MANGAN: Sure.

MS. CARPENTER: I sort of envision us being out here more frequently and it ain't easy sometimes in the federal government to get simple things done and I apologize for

that, but, yes, by all means, use them for your Homeowners Association meeting.

Are there any other questions because we can take one or two more because then we have to kind of let some of these folks go.

Thank you all very much for coming out. I know it's kind of an uncomfortable night to be out of doors and we look forward to getting your comments on the proposed plan.

MR. WILLIS: You can send any written comments or e-mailed comments to me. However you want to send them is fine.

Whereupon, at 9:46 p.m. the hearing adjourned.

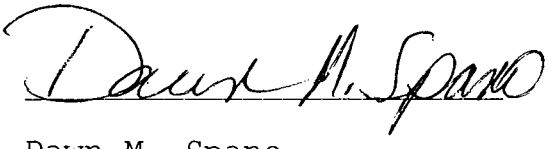
C E R T I F I C A T E

STATE OF NEW YORK )
) ss.
COUNTY OF NEW YORK )

I, Dawn M. Spano, a Registered Professional Shorthand (Stenotype) Reporter and Notary Public of the State of New York, do hereby certify that the foregoing Hearing taken at the time and place aforesaid, is a true and correct transcription of my shorthand notes.

I further certify that I am neither counsel for nor related to any party to said action, nor in any wise interested in the result or outcome thereof.

IN WITNESS WHEREOF, I have hereunto set my hand this 22nd day of March, 2007.



Dawn M. Spano