Department of Environmental Conservation

Division of Hazardous Waste Remediation

Record of Decision

for Operable Unit No. 2
Westinghouse Electric Corporation Site
Town of Cheektowaga, Erie County
Site Number 9-15-066

December 1995

New York State Department of Environmental Conservation
GEORGE E. PATAKI, *Governor* MICHAEL D. ZAGATA, *Commissioner*

DECLARATION STATEMENT - RECORD OF DECISION

Westinghouse Electric Corporation Inactive Hazardous Waste Site
Operable Unit No. 2 - Groundwater and Surface Water Contamination
Cheektowaga (T), Erie County, New York
Site No. 9-15-066

Statement of Purpose and Basis

The Record of Decision (ROD) presents the selected remedial action for Operable Unit No. 2 at the Westinghouse Electric Corporation Inactive Hazardous Waste Disposal Site which was chosen in accordance with the New York State Environmental Conservation Law (ECL). The remedial program selected is not inconsistent with the National Oil and Hazardous Substances Pollution Contingency Plan of March 8, 1990 (40CFR300).

This decision is based upon the Administrative Record of the New York State Department of Environmental Conservation (NYSDEC) for the Westinghouse Electric Corporation Inactive Hazardous Waste Site and upon public input to the Proposed Remedial Action Plan (PRAP) presented by the NYSDEC. A bibliography of the documents included as a part of the Administrative Record is included in Appendix B of the ROD.

Assessment of the Site

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

Description of Selected Remedy

Based upon the results of the Remedial Investigation/Feasibility Study (RI/FS) for the Westinghouse Electric Corporation site and the criteria identified for evaluation of alternatives, the NYSDEC has selected a combination of Hydraulic Gradient Control via Augmentation of the Existing Storm Sewer System for Areas A and E of the site, and Source Removal to address groundwater contamination in Areas P and Q. The components of the remedy are as follows:

- A remedial design program to provide the details necessary for the construction, operation and monitoring of the remedial program. This will include additional sampling to better

delineate areas of concern, as necessary, and to resolve uncertainties identified during the RI/FS.

- Termination of all underground utility lines (i.e. gas, electric, sanitary sewer) at the building perimeter to prevent horizontal migration of contaminants through these lines or associated bedding material.

- Augmentation and utilization of the existing storm sewer system beneath the main plant building for hydraulic gradient control and collection of contaminated groundwater. The existing system will be augmented by drilling holes in the trunk lines to allow for greater groundwater infiltration and collection.

- Installation of a sump pump and associated distribution lines in both the Fan Room Tunnel (Area A) and the Underground Mixing Room Tunnel (Area M). The surface water/groundwater collected from these areas will be pumped to and discharged into the closest trunk or lateral line of the storm sewer system. All flow from outside catch basins, roof drains, etc. will be diverted to an alternate storm water management system to avoid unnecessary treatment costs.

- Treatment of the collected groundwater from the storm sewer outfalls will be performed by either the use of an on-site water treatment system or by connection to the local POTW. On-site treatment consisting of an air stripper, will likely result in discharge into the U-Crest ditch.

- Excavation of contaminated soil from Areas P and Q (estimated volume 2,600 cubic yards) with transportation of the material to the dedicated on-site staging area. Approximate areas to be addressed are identified on Figure 3. Final volumes and area will be defined by compliance with the remedial objectives listed on Table 3.

- Dewatering of the soil as necessary, with temporary storage or on-site treatment of the accumulated water.

- Treatment of the soil by the on-site low temperature thermal treatment unit required to implement the remedy selected for Operable Unit No. 1 by the March 1995 ROD. The off-gas from the process will be treated by carbon adsorption or other appropriate control technology prior to discharge.

- The treated soils will be disposed within a designated area of the site.

- Site restoration will include: demobilization of equipment; site grading and establishment of vegetative cover and/or pavement repair; site cleanup; and implementation of a groundwater monitoring program.

New York State Department of Health Acceptance

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

Declaration

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

12/21/95
Date

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

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SECTION 1: SITE DESCRIPTION

The Westinghouse Electric Corporation site is located in Erie County, New York, at 4454 Genesee Street in the Town of Cheektowaga (refer to Figure 1). The site is bordered to the north and west by the Greater Buffalo International Airport, to the east by Holtz Drive and to the south by Genesee Street. The site setting is urban/industrial.

The site is approximately 130 acres in size. A large plant building structure, approximately 2.5 million square feet in size, and several smaller buildings occupy a significant portion of the site (30 acres). The remaining portion of the site consists of paved areas, roadways, railroads, and open grass/vegetated areas (refer to Figure 2).

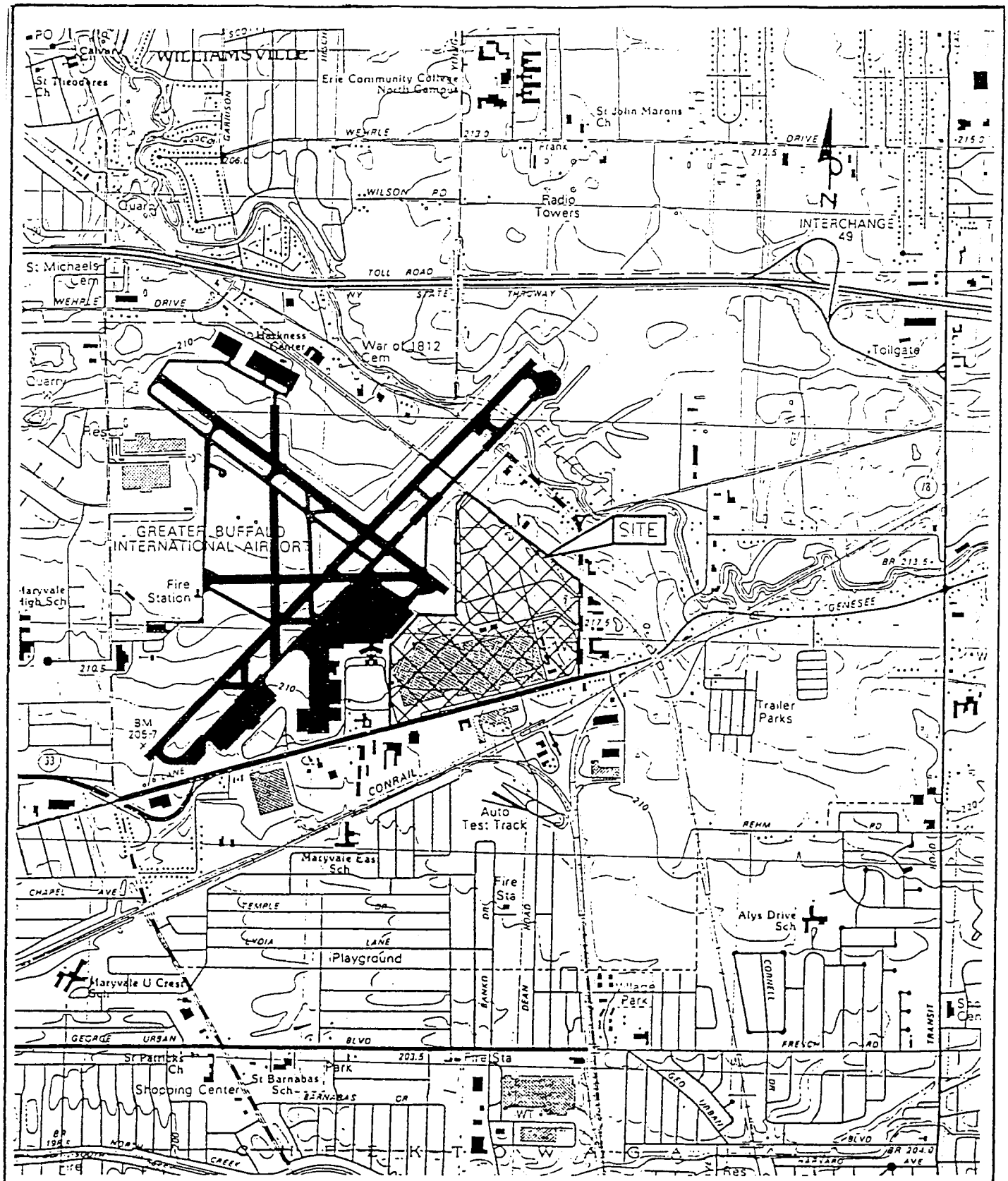
The site is presently inactive with the exception of the Flying Tigers Restaurant, situated on the northern extreme of the site.

Due to the size and complexity of the site and based on the findings of the RI, the site was divided into two Operable Units. An Operable Unit represents a discrete portion of the remedy for a site which for technical or administrative reasons can be addressed separately to eliminate or mitigate a release, threat of release or exposure pathway resulting from the contamination present at a site. Operable Unit No. 1, which was the subject of a March 1995 Record of Decision, addressed hot spot soil areas as well as sediment contamination in the U-Crest ditch. The U-Crest ditch, which is situated south of the site, receives storm water discharge from the southern portion of the site. Operable Unit No. 2, which is the subject of this Record of Decision (ROD), addresses the groundwater contamination identified at the site.

SECTION 2: SITE HISTORY

2.1: Operational/Disposal History

1940: The existing facility was constructed and was operated by the Curtis-Wright Corporation for aircraft production.



DUNN ENGINEERING COMPANY
495 Commerce Drive
Amherst, NY 14228

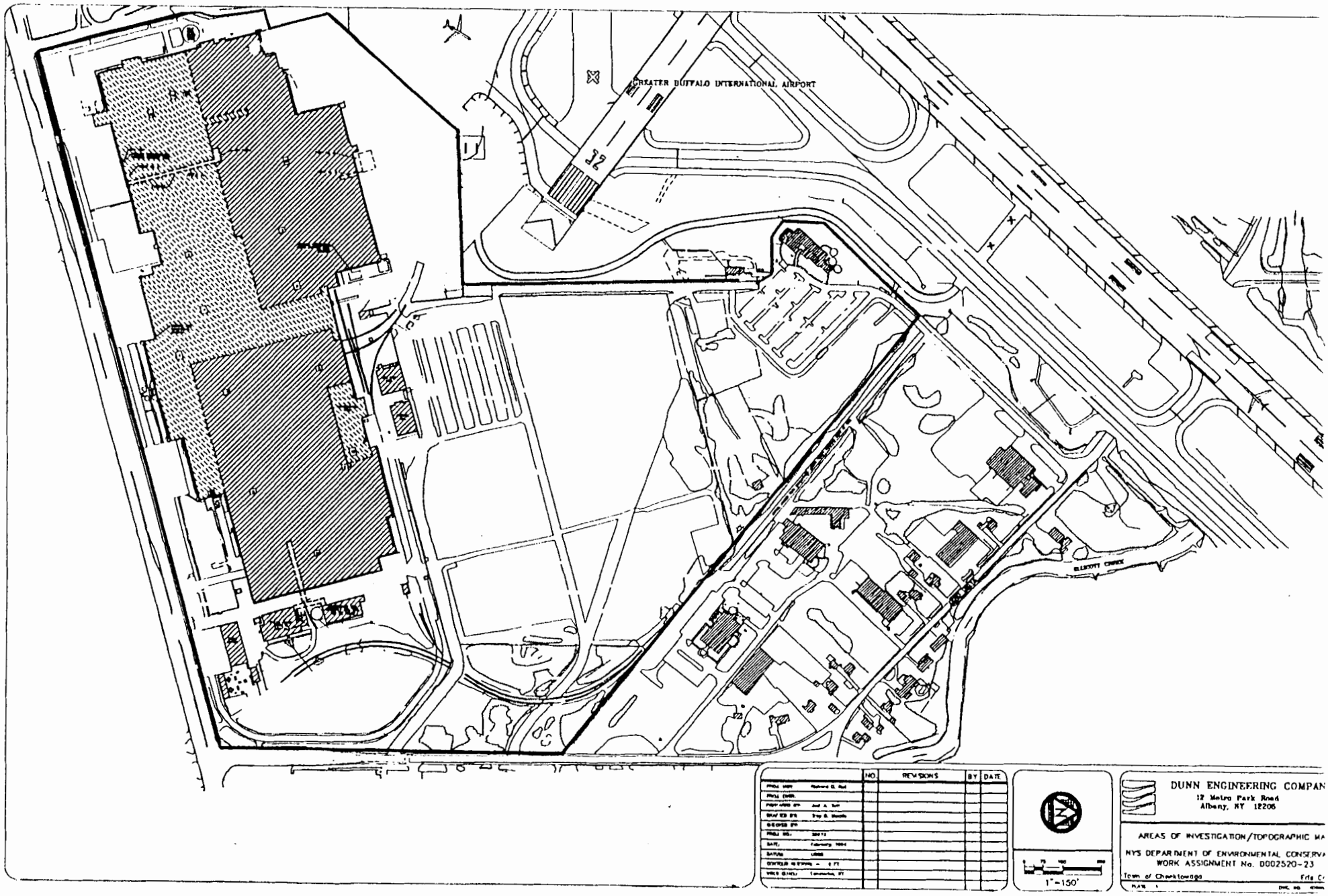
NYS DEPT. OF ENVIRONMENTAL CONSERVATION
WORK ASSIGNMENT No. D002520-23

SITE LOCATION MAP

WESTINGHOUSE REMIDIAL INVESTIGATION

PROJECT NO. 35673	DATE Mar., 1994	DWG. NO. 4A0087SD	SCALE 1"=2000'	FIGURE NO. 1

FIGURE 2


GREATER BUFFALO INTERNATIONAL AIRPORT
ELLICOTT CREEK
NO. REVISIONS BY DATE
1"=150'
DUNN ENGINEERING COMPAN
12 Metro Park Road
Albany, NY 12205
AREAS OF INVESTIGATION/TOPOGRAPHIC MA
NYS DEPARTMENT OF ENVIRONMENTAL CONSERVA
WORK ASSIGNMENT No. D002520-23
Town of Cheektowaga

1946: The site is sold to the Westinghouse Electric Corporation.

1946-84: Westinghouse Electric Corporation operated the facility to manufacture a variety of products including motors, generators, motor controls and gears. Principal manufacturing processes included wire production; copper and aluminum casting; metal machining, fabrication, plating and finishing.

1984: Westinghouse Electric Corporation sold 11.4 acres on the northern portion of the property to the Niagara Frontier Transportation Authority (NFTA) and entered into an agreement to sell the remaining portion of the property to a private investor.

1985: The Erie County Industrial Development Agency (ECIDA) accepted all rights and interest in the facility from the owner. The Buffalo Airport Center Associates (BACA) subsequently entered an agreement (lease with an option to buy) with the ECIDA.

1985-91: The BACA subleased portions of the building for warehousing, general office, and distribution operations.

1991: All tenancies were discontinued.

2.2: Remedial History

1985-86: NYSDEC Phase I Investigation conducted. The Phase I concluded that further investigation was warranted.

1990-91: NYSDEC Preliminary Site Assessment (PSA) conducted. Based on the findings of the PSA, a Class 2 designation was assigned to the Westinghouse site, signifying that the site posed a significant threat to human health and/or the environment.

1992: After negotiations with Westinghouse Electric Corporation were unsuccessful, the site was referred for action under the State Superfund Program, funded by the 1986 Environmental Quality Bond Act.

1993-94: NYSDEC Remedial Investigation (RI) conducted. The RI recommended the site be divided into two Operable Units to address the (1) soil and sediment contamination and (2) the groundwater/surface water contamination.

September 1994: NYSDEC Feasibility Study (FS) for Operable Unit No. 1, Soil and Sediments was completed and presented to the public.

September 1994: At the request of the NYSDEC, the BACA implemented a voluntary removal of all polychlorinated biphenyl (PCB) transformers at the site. A total of 24 transformers were removed from 15 subsurface vaults within the facility.

March 1995: In a Record of Decision, the State selected On-Site Low Temperature Thermal Desorption as the remedy to address Operable Unit No.1, the soil and sediment contamination, related to Areas I, J, K, M and the U-Crest ditch (ref. Figure 3).

June 1995: NYSDEC Feasibility Study (FS) for Operable Unit No. 2, Contaminated Surface Water and Groundwater was completed.

SECTION 3: CURRENT STATUS

In response to a determination that the presence of hazardous waste at the Site presents a significant threat to human health and/or the environment, the State has recently completed a Remedial Investigation/Feasibility Study (RI/FS).

3.1: Summary of the Remedial Investigation

The purpose of the RI was to define the nature and extent of any contamination resulting from previous activities at the site. The RI was conducted in two phases. The first phase was conducted in the summer of 1993 and the second phase was conducted in early 1994. A report entitled "Remedial Investigation/Feasibility Study Report, Westinghouse Electric Corporation Site", dated September 1994, has been prepared describing the field activities and findings of the RI in detail.

The RI activities consisted of the following:

- Soil Gas Investigation - A soil gas survey was conducted on selected portions of the site to help pinpoint areas of concern and select optimum locations for borings and monitoring wells. Grids were established and soil gas probes were installed at depths ranging from two to four feet. Soil gas/headspace analysis was conducted using an on-site gas chromatograph (GC), targeting eleven volatile parameters previously identified at the site. The GC was also used to analyze test pit soil samples and soil boring samples.

- Environmental Sampling - Samples were collected from storm sewers, sanitary sewers, outfalls, streams, ditches sumps, tunnels, vaults, surface soils, surface water and sediments.

- Test Pit Excavation - A total of one hundred test pits were excavated in eleven principal areas of investigation to assess the physical and chemical characteristics of subsurface soils and fill materials.

- Boring/ Monitoring Well Installation - Soil borings and groundwater monitoring wells were installed for analysis of soils and groundwater as well as to determine the physical properties of the soil and the hydrogeologic conditions.

To determine which media (soil, groundwater, etc.) contain contamination at levels of concern, the data obtained from the RI was compared to environmental Standards, Criteria, and Guidance (SCGs). Groundwater, drinking water and surface water SCGs identified for the Westinghouse site were based on NYSDEC Ambient Water Quality Standards and Guidance Values and Part V of NYS Sanitary Code. For the evaluation and interpretation of soil and sediment analytical results, NYSDEC soil cleanup guidelines for the protection of groundwater, background conditions, and risk-based remediation criteria were used to develop remediation goals.

Based upon the results of the remedial investigation in comparison to the SCGs and potential public health and environmental exposure rates, certain areas and media of the site require remediation. These are summarized below. More complete information can be found in the RI Report.

The RI focused on a number of areas identified by the NYSDEC PSA, which were considered to represent potential environmental concerns. These Areas of Investigation are illustrated on Figure 3. The RI revealed the presence of several distinct areas of significant soil contamination (i.e. hot spot areas) at this site. These areas (Areas I, J, K and M), which are in the immediate vicinity to the main plant building, were formerly used for manufacturing operations and/or tank storage. These hot spot areas are the subject of Operable Unit No. 1 (OU-1). The RI also focused on identified groundwater contamination and surface water contamination. The RI involved installation of additional monitoring wells and piezometers to better assess groundwater quality and to delineate the extent of the groundwater contamination. The groundwater and surface water contamination are the subject of Operable Unit No. 2 (OU-2).

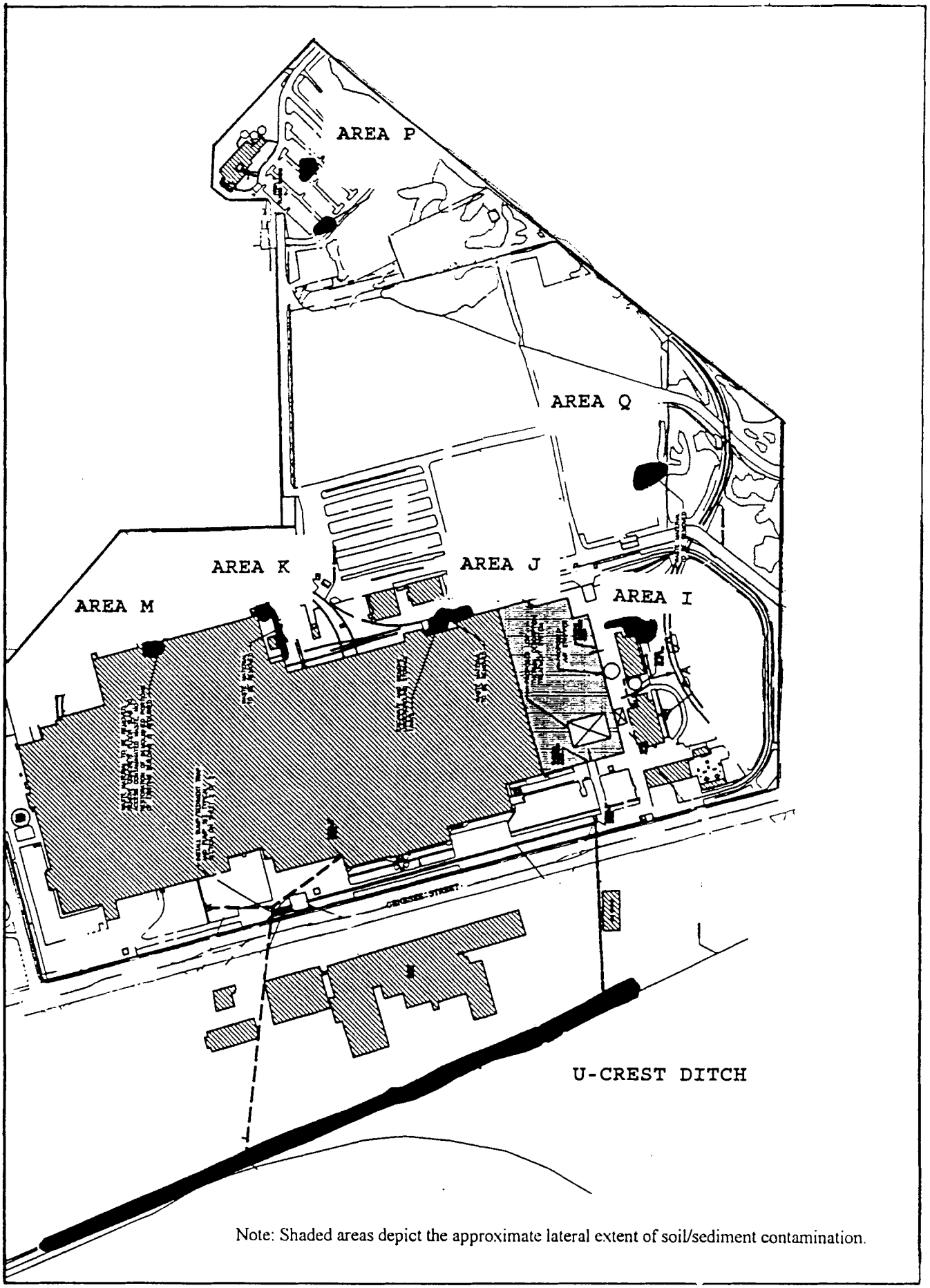
The RI revealed the presence of significant groundwater contamination and surface water contamination associated with distinct areas of the site. Elevated levels of contaminants, primarily volatile organic compounds, were detected in groundwater in the vicinity of the hot spot areas. It is believed that these areas are acting as a continuing source of the contamination observed in the groundwater. Groundwater contamination was also observed beneath the main plant building. Elevated levels of volatile organic compounds and PCBs were detected in water samples collected from flooded subsurface structures including the Fan Room tunnel, the Mixing Room Service tunnel and transformer vaults. The surface water contamination, which was observed in the sewer system, at the outfalls and in the U-Crest ditch, is attributed to contaminated groundwater which has infiltrated the storm sewer lines.

The Fan Room tunnel and the Mixing Room Service tunnel comprise Area A. These tunnels are flooded with contaminated groundwater which infiltrated these subsurface structures subsequent to the termination of the building's sump pump system. During the RI, the volume of water observed in the tunnels was estimated at 72,000 gallons and 13,000 gallons, respectively. Area E is comprised of the storm and sanitary sewer systems located beneath the main plant building (ref. Figure 4). The storm sewer system is an extensive network of sewer laterals which ultimately discharge to three primary trunk lines. Analytical data from these lines (001, 002 and 003) is included on Figure 4. Like the tunnels, contaminated groundwater is infiltrating the sewer system due to its position relative to the water table. The migration of contaminated groundwater into these areas has resulted in the discharge of contaminated surface water, via the storm sewer system, to the U-Crest ditch. The water quality in Areas A and E is viewed as generally indicative of the groundwater quality beneath the main plant building, It should be noted, however, that the roof drains discharge into the storm sewer network and this additional water would have the effect of diluting the levels of contamination detected during the outfall monitoring. The results of an Interim Remedial Measure (IRM) program conducted during the RI (ref. Section 3.2) revealed that Areas I, J, K and M are acting as a continuing source to the groundwater contamination beneath the building. The findings of the IRM, however, also support the existence of numerous smaller contaminant source areas beneath the plant building. These source areas are attributed to the past heavy industrial use of the facility and the numerous manufacturing process-related features (e.g. catch basins, oil/grease pits, collection sumps, etc.) within and beneath the 30-acre main plant building structure.

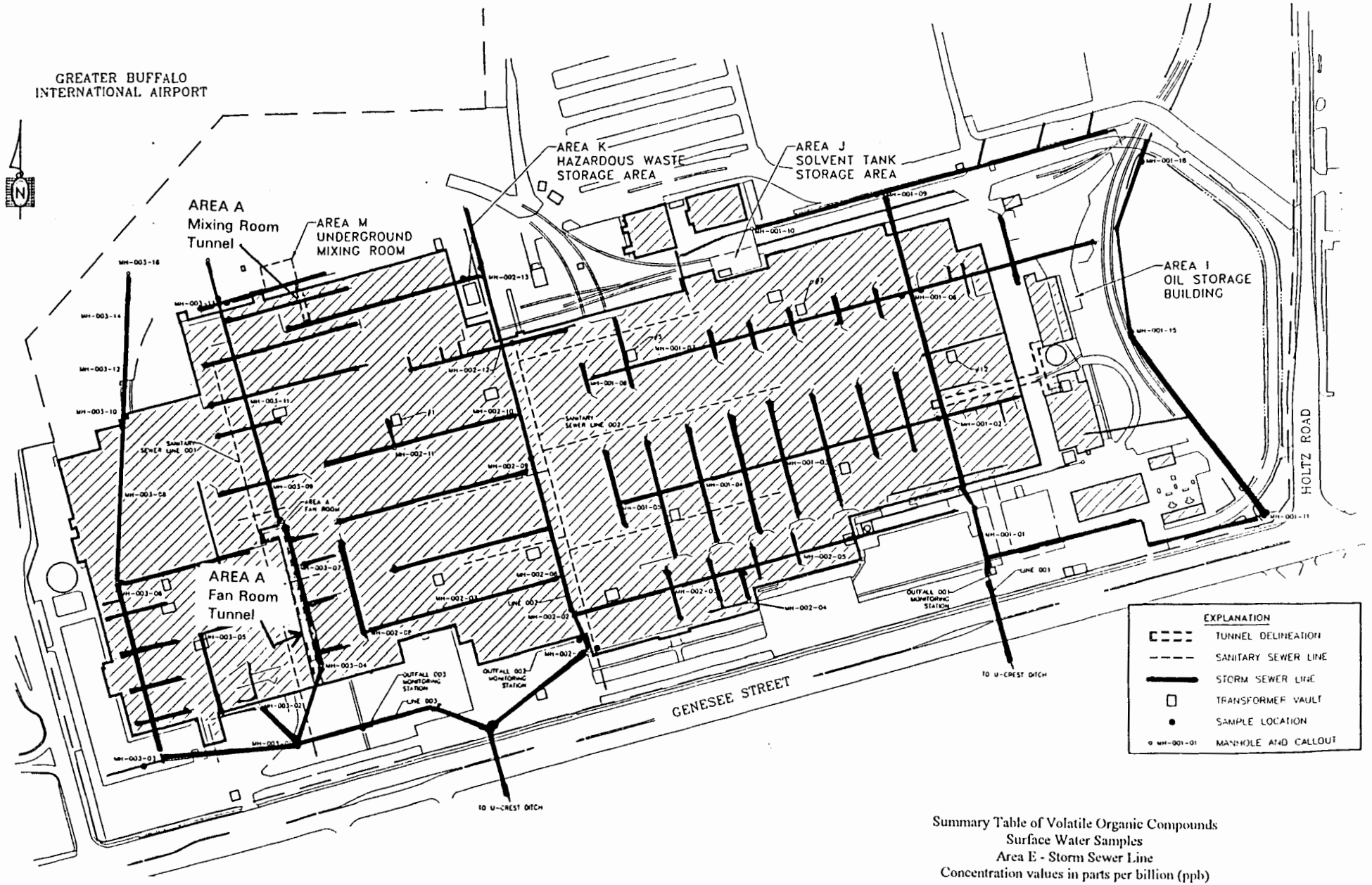
Groundwater contamination was also observed in the northern portion of the site in Areas P and Q. Area P is located on the NFTA-owned parcel. Area Q is situated east of the parking lot area on the BACA property. Areas P and Q were the focus of the soil gas investigation, which was one of the first tasks implemented as part of the RI. The soil gas investigation was used to help pinpoint source areas within P and Q. Soil gas probes were installed at depths of two to four feet below the ground surface. The soil gas survey revealed the presence of elevated levels of total volatiles in these areas, as high as 33,000 parts per billion (ppb) beneath the Flying Tigers Restaurant parking lot and 14,000 ppb in Area Q. Groundwater sampling confirmed the soil gas results. Groundwater data revealed significantly elevated levels of volatile organic compounds in Area P (e.g. vinyl chloride at 12,000 ppb, dichloroethene at 22,000 ppb) as well as in Area Q (e.g. trichloroethene at 30,000 ppb). The contamination in these Areas is distinct/isolated and is believed to have resulted from random dumping. The soil gas/air pathway represents an additional concern to the threat of contaminant migration through groundwater.

The RI included a comprehensive evaluation of the hydrogeology at the site. The RI revealed the existence of a prominent overburden groundwater divide at this site. The divide extends from northwest to southeast and bisects the north-central portion of the site. This divide represents a

FIGURE 3



Note: Shaded areas depict the approximate lateral extent of soil/sediment contamination.



Summary Table of Volatile Organic Compounds
Surface Water Samples
Area E - Storm Sewer Line
Concentration values in parts per billion (ppb)

	June 93	Dec. 93	Apr. 94	June 94	July 94	Aug. 94	Sept. 94	Oct. 94
Outfall Monitoring Station 001								
Total Volatiles	32	26	62	59	37	41	49	17
Outfall Monitoring Station 002								
Total Volatiles	33	25	46	20	25	202	49	83
Outfall Monitoring Station 003								
Total Volatiles	159	301	188	179	328	191	245	259

hydraulic barrier to groundwater flow such that groundwater north of the divide generally flows toward Ellicott Creek and groundwater south of the divide generally flows southwest, toward Genesee Street. Soil at the site was shown to have low hydraulic conductivity. Groundwater flow velocity in the northern portion of the site is estimated at 0.29 ft/yr and 0.46 ft/yr (max.) in the southern portion of the site. The existence of this divide supports that the contamination detected in Areas A and E has the potential to migrate southward toward the U-Crest ditch, whereas the contamination detected in Areas P and Q has the potential to migrate toward Ellicott Creek.

During the course of the RI, significant concerns were raised by the Town regarding the contamination in the U-Crest ditch and the potential for future migration by the contamination identified at the site. Concerns were also voiced by representatives of the Federal Aviation Administration (FAA) and the Air Traffic Controllers Association (ATCA). Offices for the FAA and the ATCA are situated northeast of the site, in proximity to Areas P and Q. FAA and ATCA representatives expressed concerns associated with the possible presence of contaminated groundwater and/or vapors beneath their offices.

While the potential exists for off-site migration, analytical data suggests that to date, the groundwater contamination has been confined to the site. Monitoring of perimeter wells has shown that in general, groundwater at the periphery of the site is not contaminated. This is attributed in part to the low hydraulic conductivity of the overburden soil. The primary reason for the lack of off-site migration of contaminated groundwater in the southern portion of the site (Areas A and E), however, is believed to be the influence of the storm sewer system. The sewer system is acting as a groundwater interceptor, receiving groundwater via infiltration due to its position relative to the water table. The sewer system is capturing and controlling the contaminated groundwater before it migrates off-site. The result, however, has been the direct discharge of this contamination to the U-Crest ditch. The potential also exists for downward migration of contamination to the bedrock aquifer. Data suggests that to date, this has not occurred to an appreciable extent.

The remedial objectives for Operable Unit No. 2 are listed on Table 1. The values listed in Table 1 represent the groundwater cleanup objectives for the contaminants which best characterize the overall groundwater contamination at the site.

3.2 Interim Remedial Measures:

Interim Remedial Measures (IRMs) are conducted at sites when a source of contamination or exposure pathway can be effectively addressed before completion of the RI/FS.

Several IRMs were implemented during the RI field program at the direction of the NYSDEC. IRMs were undertaken at three areas on the project site, which were identified during the PSA, to prevent or reduce the spread of contaminants or limit the need for more complex and costly future remedial actions. These IRMs included: removal of the underground varnish tank located

south of the Heat Treatment/Plating Area (Area C); removal of the septic tank in the Gunnery Range (Area O); and pumping out of the Sump No. 4 located adjacent to the Underground Mixing Room (Area M). The work was performed on June 30 and July 1, 1993 (refer to Figure 2 for locations).

Based on the findings of the RI, an additional IRM was undertaken in April 1994. The RI revealed elevated levels of contaminants, including volatile compounds, in the storm sewer system within the main plant building. Similar contaminants were also detected outside the building in the immediate proximity of former tank storage areas (Areas I, J, and K) and the underground mixing room (Area M). Using mechanical plugs, storm sewer laterals which pass near these areas were plugged as an IRM to preclude the flow of contaminated groundwater into storm sewers from these areas. The storm sewer outfalls were monitored monthly subsequent to the installation of the plugs to gauge the effectiveness of the IRM. The monitoring revealed that the IRM did have a limited impact on the contaminant loading from Areas I, J and M. The monitoring program also revealed the direct relationship between groundwater table fluctuation, infiltration rate and contaminant loading on the storm water system. The data obtained from the IRM program supports that additional contaminant source areas are present beneath the main plant building, which are adversely impacting the storm sewer system. The Feasibility Study Report details the findings of the IRM/monitoring program.

Another IRM was conducted at the site in response to the identified presence of PCBs in the U-Crest ditch sediments. The PCBs were attributed, at least in part, to the presence of PCB transformers in the main plant building. The RI identified the existence of subsurface transformer vaults within the main plant building. A total of 24 inactive transformers were identified within 15 subsurface vaults at the site. Like the tunnel areas, five of these vaults were observed to be flooded, submerging the transformers. Testing revealed the presence of PCBs in the water within the vaults. Low levels of PCBs were also detected in the storm sewer sediments and the U-Crest ditch. In response to this information, at the request of the NYSDEC, the current site owner (BACA) implemented a transformer removal program in the Fall of 1994. The contaminated water within the vaults was pumped out and treated, the vault walls and floors decontaminated, the 24 transformers were decommissioned and properly disposed and a total volume of 6,033 gallons of PCB oil was removed for proper disposal.

Table 1

Westinghouse Electric Corporation Site
Operable Unit No. 2
Remedial Objectives for Groundwater
All units in parts per billion (ppb)

Contaminant	Remedial Objectives
1,2-Dichloroethene (total)	5
1,1,1-Trichloroethane	5
Trichloroethene	5
Vinyl Chloride	2
Toluene	5
Cadmium	5
Lead	25

3.3 Summary of Human Exposure Pathways:

This section describes the types of human exposures that may present added health risks to persons at or around the site. A more detailed discussion of the health risks can be found in Section 6 of the RI Report.

An exposure pathway is the mechanism by which an individual comes into contact with a contaminant. The five elements of an exposure pathway are 1) the source of contamination (e.g. soil, groundwater); 2) the environmental media and transport mechanisms; 3) the point of exposure; 4) the route of exposure (e.g. ingestion, inhalation); and 5) the receptor population. These elements of an exposure pathway may be based on past, present, or future events.

An evaluation of the RI and exposure assessment data indicated that the significant potential routes of exposure at the site would be: 1) future direct contact with subsurface soil by site trespassers and future on-site workers; 2) direct contact with water and sediments from the U-Crest ditch by nearby residents; 3) direct contact with surface water and sediments in the electric manhole 5A (Area C), the flooded areas, the storm water sewer system and sanitary sewer systems within the main building, by site trespassers and future on-site workers.

It should be noted that the air pathway is not expected to result in significant human exposures or resultant health risks, due to the fact that the majority of the site is covered with buildings, pavement or vegetation. However, elevated levels of volatile organics in soil gas were detected beneath the parking lot of the Flying Tigers Restaurant (Area P). While exposure to

contamination via inhalation has a limited potential currently as it is below the pavement, the usage of this parcel supports the need for remedial activity.

3.4 Summary of Environmental Exposure Pathways:

This section summarizes the types of environmental exposures which may be presented by the site. The Habitat Based Assessment included in the RI (Section 5) presents a more detailed discussion of the potential impacts from the site to fish and wildlife resources.

The Fish and Wildlife Impact Analysis (FWIA) determined that there are two habitats which could potentially be impacted by site related contaminants: Ellicott Creek and the U-crest ditch. Ellicott Creek is a high quality aquatic habitat whereas the U-crest ditch represents a low quality habitat. Due to the industrial nature of the site, however, impacts to the terrestrial environment are anticipated to be minimal.

Evaluation of analytical results from Ellicott Creek relative to applicable criteria revealed no evidence that storm water discharge from the northern storm sewer system has adversely impacted Ellicott Creek. Data indicates that no further investigation or any remedial efforts are necessary in Ellicott Creek.

Surface water samples collected from the U-Crest ditch indicated that surface water quality in the vicinity of the discharge points to the ditch is impacted by site related contaminants. However, the contaminant levels detected in a sample collected approximately 800 feet downstream of the 002/003 storm sewer discharge point generally exhibited lower concentration. Sediment samples from the U-crest ditch have been impacted by site related contaminants. Although the U-Crest ditch is not a high quality aquatic habitat, excavation of the sediments in the ditch has been recommended.

SECTION 4: ENFORCEMENT STATUS

Potentially Responsible Parties (PRPs) are those who may be legally liable for contamination at a site. This may include past or present owners and operators, waste generators, and haulers.

The PRPs for the site, documented to date, include the Westinghouse Electric Corp., the Niagara Frontier Transportation Authority and the Buffalo Airport Center Associates.

The PRPs failed to implement the RI/FS at the site when requested by the NYSDEC. After the remedy is selected, the PRPs will again be contacted to assume responsibility for the remedial program. If an agreement cannot be reached with the PRPs, the NYSDEC will evaluate the site for further action under the State Superfund. The PRPs are subject to legal actions by the State for recovery of all response costs the State has incurred.

SECTION 5: SUMMARY OF THE REMEDIATION GOALS

Goals for the remedial program have been established through the remedy selection process stated in 6 NYCRR Part 375-1.10. These goals are established under the overall goal of meeting all standards, criteria, and guidance (SCGs) and protecting human health and the environment. At a minimum, the remedy selected should eliminate or mitigate all significant threats to the public health and to the environment presented by the hazardous waste disposed at the site through the proper application of scientific and engineering principles.

The goals selected for this site are:

- Prevent the further migration of contaminated groundwater/surface water from the site.
- Prevent and/or minimize direct contact and/or ingestion (drinking) of contaminated groundwater at levels that exceed NYSDEC groundwater quality standards.
- Remediate the contaminated groundwater/surface water in such a manner that minimizes any possible direct human or environmental contact; and treat the contaminants to levels which can meet groundwater/surface water effluent and/or cleanup objectives.

SECTION 6: SUMMARY OF THE EVALUATION OF ALTERNATIVES

Potential remedial alternatives for Operable Unit No. 2 at the Westinghouse site were identified, screened and evaluated in a Feasibility Study. This evaluation is presented in the report entitled *"Remedial Investigation/Feasibility Study Report, Westinghouse Electric Corporation, Volume 4: Feasibility Study for Operable Unit No. 2"*, dated June, 1995. A summary of the detailed analysis follows.

6.1: Description of Alternatives

The potential remedies are intended to address contamination associated with two distinct areas of the site. First, the contaminated groundwater beneath the main plant building, which is also impacting surface water in the U-Crest Ditch, and second, the identified groundwater contamination in the northern portion of the site. Potential remedial alternatives were selected which would satisfy the general criteria specified in 6 NYCRR Part 375 (ref. Section 6.2). The selection process also gave preference to technologies which could readily function in the complex site environment. That is, the site-specific features (physical conditions, geological/hydrogeological setting, proposed future usage, etc.), limit the technologies considered viable at this site. The potential remedies are discussed below.

In light of the distinct nature of the areas of contamination, for purposes of alternative screening and evaluation, two series of alternatives are presented below. The first series will address Areas A and E and the second series will address Areas P and Q. This will allow greater ease in comparison and selection of the most feasible alternative or combination of alternatives to address OU-2.

Areas A and E

Alternative No. 1 - No Action

The "No Action" Alternative is evaluated as a procedural requirement and as a basis for comparison. It would require continued assessment only, allowing these areas of the site to remain in an unremediated state. Under this alternative these areas (Areas A and E) would remain in their present condition and human health and the environment would not be provided any additional protection. There would be no cost associated with this alternative.

Alternative 2 - Limited Action

Present Worth:	$ 435,000
Capital Cost:	$ 89,000
Annual O&M:	$ 16,000
Time to Implement:	6 months - 1 year

The Limited Action Alternative would be comprised of the following seven components:

- Increase public awareness of the contamination problems at the site and the risks associated with the contamination.
- Improve and maintain the existing fence around the perimeter of the site and increase security to deter trespassing inside the building structure(s).
- Prior to the planned demolition of the various building structures, decommission and terminate the existing storm sewer system within the confines of the site boundaries to permanently discontinue discharge into the U-Crest ditch.
- Termination of all sanitary sewer lines at the building perimeter.
- Installation of additional perimeter monitoring wells to augment the existing monitoring system.
- Implementation of a long term groundwater and surface water monitoring program.

- Allow for the natural attenuation of organic compounds detected in groundwater.

The components of this Alternative are assumed to be continued for a duration of 30 years. The status of the nature and extent of the contamination would be assessed based on the results of the monitoring program.

Alternative 3 - Groundwater Hydraulic Gradient Control/Collection Via the Existing Storm Sewer System, Treatment, Disposal and Environmental Monitoring

Present Worth:	$ 605,000
Capital Cost:	$ 57,000
Annual O&M:	$ 25,000
Time to Implement:	6 months - 1 year

Hydraulic gradient controls would be used to limit the migration of contamination by altering groundwater flow patterns. This would be accomplished by pumping from groundwater wells or sump structures, creating a cone of depression thus altering the natural hydrogeologic equilibrium. This process can be used to modify groundwater levels and/or flow direction and prevent the potential for further migration of groundwater contamination. Data supports that the existing sewer system at the site historically has been functioning as a hydraulic gradient control. The storm sewer system has been receiving contaminated groundwater via infiltration, due to its position relative to the groundwater table. The result, however, has been the discharge of contaminated groundwater/surface water to the U-Crest ditch. This Alternative would involve maintaining and utilizing the existing sewer system as a hydraulic gradient control, with water treatment prior to discharge. Demolition of the main plant building and other structures as planned would not impact utilization of the sewer system, but would have to be accomplished so as to minimize disruption to the existing system. This would require that the main plant slab remain in place as a component of the remedy or that some alternative control(s) be employed to insure that the system's ability to function is not hindered. This Alternative would include the following actions:

- Termination of all underground utility lines (i.e. gas, electric, sanitary sewer) at the building perimeter to prevent horizontal migration of contaminants through these lines or associated bedding material.

- Utilization of the existing storm sewer system beneath the main plant building for hydraulic gradient control and collection of contaminated groundwater. All flow from outside catch basins, roof drains, etc. would be diverted to an alternate storm water management system to avoid unnecessary treatment costs.

- Treatment of the collected groundwater from the storm sewer outfalls would be performed by either the use of an on-site water treatment system or by connection to the local

Publicly Owned Treatment Works (POTW). On-site treatment would be provided by an air stripper with appropriate air controls, should levels exceed the 0.3-0.5 lb/hr range. Treated water would likely be discharged into the U-Crest ditch.

- Implementation of a long term monitoring program.

The components of this alternative are assumed to be continued for a duration of 30 years. The status of the nature and extent of the contamination would be assessed yearly based on the results of the monitoring program.

Alternative 4 - Groundwater Hydraulic Gradient Control/Collection Via Augmentation to the Existing Storm Sewer System, Treatment, Disposal and Environmental Monitoring

Present Worth:	$ 671,000
Capital Cost:	$ 112,000
Annual O&M:	$ 25,000
Time to Implement:	

The concept of this Alternative is consistent with that discussed in Alternative 3; however, the sewer system would be enhanced to improve the system effectiveness by allowing higher infiltration rates. Further, the system would be augmented to allow pumping from the existing subsurface tunnels (Fan Room and Underground Mixing Room Tunnel) to improve system efficiency. This Alternative would consist of the actions discussed in Alternative 3, with the following additional elements:

- Utilization of the existing storm sewer system beneath the main plant building for hydraulic gradient control and collection of contaminated groundwater, which would be augmented by drilling holes in the trunk lines to allow for greater groundwater infiltration/collection. Additionally, a sump pump and associated distribution lines would be installed in both the Fan Room Tunnel (Area A) and the Underground Mixing Room Tunnel (Area M). The surface water/groundwater collected from these areas would be pumped to and discharged into the closest trunk or lateral line of the storm sewer system. All flow from outside catch basins, roof drains, etc. would be diverted to an alternate storm water management system to avoid unnecessary treatment costs.

The components of this alternative are assumed to be continued for a duration of 30 years. The status of the nature and extent of the contamination would be assessed yearly based on the results of the monitoring program.

Alternative 5 - Groundwater Hydraulic Gradient Control/Collection Via Extraction Wells, Treatment, Disposal and Environmental Monitoring

Present Worth:	$ 798,000
Capital Cost:	$ 187,000
Annual O&M:	$ 25,000
Time to Implement:	6 months - 1 year

The concept of this Alternative is consistent with that discussed in Alternative 3, however, extraction wells would be used in lieu of the existing sewer system to accomplish the hydraulic gradient control. This Alternative would be comprised of the following components:

- Termination of all underground utility lines (i.e. gas, electric, sanitary sewer) at the building perimeter to prevent horizontal migration of contaminants through these lines or associated bedding material.

- Prior to the planned demolition of the various building structures, decommission and terminate the existing storm sewer system within the confines of the site boundaries to permanently discontinue discharge into the U-Crest ditch.

- Installation of extraction wells within the building perimeter for collection of groundwater. It is estimated as many as 20 wells may be necessary to accomplish this task.

- Treatment of the collected groundwater from the extraction wells would be performed by either the use of an on-site water treatment system or by connection to the local POTW. On-site treatment would be provided by an air stripper with appropriate air controls, should levels exceed the 0.3-0.5 lb/hr range. Treated water would likely be discharged into the U-Crest ditch.

- Implementation of a long term monitoring program.

The components of this alternative are assumed to be continued for a duration of 30 years. The status of the nature and extent of the contamination would be assessed based on the results of the monitoring program.

Areas P and Q

Alternative No. 1A - No Action

The "No Action" Alternative is evaluated as a procedural requirement and as a basis for comparison. It would require continued assessment only, allowing these areas of the site to remain in an unremediated state. Under this alternative these areas (Areas P and Q) would remain

in their present condition and human health and the environment would not be provided any additional protection. There would be no cost associated with this alternative.

Alternative 2A - Groundwater Collection and Treatment

Present Worth:	$ 1,388,000
Capital Cost:	$ 474,000
Annual O&M:	$ 38,000
Time to Implement:	6 months - 1 year

This alternative would utilize pump and treat technology and include the following actions:

- Installation of extraction wells within the impacted aquifer for collection of contaminated groundwater. Approximately six wells are anticipated to be required to accomplish this task.

- Groundwater would be collected by the use of dedicated submersible pumps, installed in each of the extraction wells. The extracted groundwater would be pumped via a below-ground double walled piping network to an on-site treatment system, situated approximately halfway between Areas P and Q. The findings of the RI support that a catalytic oxidization unit would likely be required to provide additional air treatment to address the identified presence of vinyl chloride at elevated levels.

- Discharge of the treated groundwater would be either to the north storm sewer system, ultimately discharging to Ellicott Creek, or into the sanitary sewer system.

- Installation of additional perimeter monitoring wells to augment the existing monitoring system.

- Implementation of a long term monitoring program.

The components of this alternative are assumed to be continued for a duration of 30 years. The status of the nature and extent of the contamination would be assessed based on the results of the monitoring program.

Alternative 3A - Source Removal

Present Worth:	$ 683,000
Capital Cost:	$ 665,000
Annual O&M:	$ 4,000
Time to Implement:	6 months - 1 year

This Alternative would involve the excavation of contaminated "source area" soils with treatment of the soil by Low Temperature Thermal Desorption (LTTD), as part of the Operable Unit No. 1 remedy. The LTTD unit would be situated on-site and could readily accept the contaminated media from Areas P and Q. This Alternative would consist of the following actions:

- As a component of the design program, additional sampling would be conducted to accurately delineate the source areas. The estimated total volume of soil to be removed is 2,600 cubic yards. The remedial objectives utilized for the soil removal would be those listed on Table 3.

- Contaminated subsurface soils from Areas P and Q would be excavated using a backhoe or crane. Shoring of excavation walls may be required during excavation activities to prevent collapsing. Dewatering activities would also likely be required. Tanker trucks would be used to temporarily store water from the excavations.

- The excavated soils would be transported by truck to the on-site staging area associated with the OU-1 Low Temperature Thermal Desorption Unit.

- The stockpiled soil would be treated using the on-site treatment unit. The off-gas from the process would be treated, most likely by carbon absorption.

- The treated soil would be disposed within a designated area of the site.

- Areas P and Q would be restored to their original grades and condition.

6.2 Evaluation of Remedial Alternatives

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

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

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

Areas A and E

Alternatives 1 and 2 would not meet and/or comply with the chemical-specific SCGs or the remediation goals established for OU-2. Alternatives 3, 4 and 5 would each meet and/or comply with the chemical-specific SCGs by treating the groundwater to the target levels required under the NYSDEC groundwater quality standards.

Areas P and Q

Alternatives 1A would not meet and/or comply with the chemical-specific SCGs or the remediation goals established for OU-2. Alternative 2A would meet and/or complies with the chemical-specific SCGs by treating the groundwater to the target levels required under the NYSDEC groundwater quality standards. Alternative 3A would achieve remediation goals established for both OU-1 and OU-2.

2. Protection of Human Health and the Environment. This criterion is an overall evaluation of the health and environmental impacts to assess whether each alternative is protective.

Areas A and E

Alternative 1 would not provide adequate protection of human health and/or the environment. Specifically, the risks posed by the contaminated groundwater would persist. Alternative 2 would provide only limited protection to human health and the environment. Specifically, the potential risks posed by direct contact with contaminated water in the flooded portions of the building and the sanitary/storm sewer systems would remain under Alternative 2. The risks would be somewhat minimized by the installation of additional fencing, an increase of internal security for the vacant building structure(s), and the implementation of a sampling program. Alternatives 3 and 5 each would provide an equal level of protection to human health and the environment by collecting and treating the groundwater to levels required under the NYSDEC groundwater quality standards. Alternative 4 would provide an additional level of protection to human health (on-site workers and potential trespassers), in comparison with Alternatives 3 and 5, through the elimination of contaminated standing water in the tunnel areas. Additional protection to human health would be provided by Alternatives 3, 4 or 5 by the implementation of the long-term monitoring program. The long-term sampling program would be used to monitor the groundwater contamination at the site and verify the effectiveness of the collection and treatment systems.

Areas P and Q

Alternative 1A would not provide adequate protection of human health and/or the environment. Specifically, the future risks posed by the contaminated groundwater would persist. Alternatives 2A and 3A each would provide an equal level of protection to human health and the environment. Alternative 2A would significantly reduce future risks by collecting and treating the groundwater

to target levels required under the NYSDEC groundwater quality standards. Additional protection of human health would be provided through the implementation of a long-term monitoring program. Alternative 3A would significantly reduce future risks through the excavation and treatment of contaminated subsurface source areas.

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

3. Short-term Effectiveness. The potential short-term adverse impacts of the remedial action upon the community, the workers, and the environment during the construction and implementation are evaluated. The length of time needed to achieve the remedial objectives is also estimated and compared with the other alternatives.

Areas A and E

This criterion would not be applicable to Alternative 1, since the "No Action" Alternative has no active remedial components. No significant short-term risks would be posed to on-site workers or the community by the implementation of any of the remaining four alternatives. The implementation of Alternative 4 would provide additional short-term protection to on-site workers and the community through the removal and treatment of standing contaminated water in the flooded tunnel portions of the building. The estimated time to implement the construction-oriented alternatives (Alternatives 3, 4 and 5), in each case is six months to one year.

Areas P and Q

This criterion would not be applicable to Alternative 1A, since the "No Action" Alternative has no active remedial components and therefore no significant short-term risks would be posed to on-site workers or the community. Similarly, no significant short-term risks would be posed to on-site workers or to the community during implementation of either Alternative 2A or 3A, beyond those associated with worker safety, dust suppression and other general protective measures. Appropriate personal protective equipment would be required for on-site workers throughout implementation of each remedial action. Appropriate engineering controls would be employed, as necessary, to address construction-related impacts (dust, emissions, etc.). The estimated time to implement the construction-oriented alternatives (Alternatives 2A and 3A), in each case is six months to one year.

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

Areas A and E

Alternatives 1 and 2 would not be effective on a long-term basis. In addition, Alternatives 1 and 2 would not meet NYSDEC preference for a permanent remedy. Alternatives 3, 4 and 5 would be considered effective in the long-term and would satisfy regulatory preference for a permanent remedy, with the contaminated media being treated. The alternatives are considered effective and permanent because the three alternatives rely on the use of collection and treatment technologies. Alternatives 3, 4 and 5 would reduce potential risks by preventing and/or controlling the migration of contaminated groundwater. Alternatives 3 and 4 are considered to be slightly more effective than Alternative 5, due to uncertainties associated with the construction and operation of the extraction well system (low hydraulic conductivity of soil, etc.).

Areas P and Q

Alternative 1A would not be effective on a long-term basis and does not meet the NYSDEC preference for a permanent remedy. Alternative 2A would be considered somewhat effective in the long-term and would satisfy regulatory preference for permanent remedy. Alternative 2A would also reduce potential risks by controlling migration of contaminated groundwater. Alternative 3A would be considered to be the most effective in the long-term and would satisfy regulatory preference for a permanent remedy. Alternative 3A would reduce potential risks by elimination of contaminated subsurface source areas and would also significantly prevent or reduce groundwater degradation.

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

Areas A and E

Alternatives 1 and 2 would not directly reduce the toxicity, mobility, or volume of contaminated groundwater. Alternatives 3, 4 and 5 would reduce the toxicity, mobility, or volume of contaminated groundwater through the collection and treatment processes. The migration potential of the contaminated groundwater away from the building source areas would be prevented by the use of hydraulic gradient control measures. If the existing hydraulic gradient controls were eliminated (i.e. the elimination of infiltration into the storm sewer system and subsequent discharge from storm sewer system), the potential for additional flooding of the lower portions of the building and the migration of contaminants away from the building would be significantly increased. If the on-site water treatment system option were selected, Alternatives 3, 4 and 5 may generate residual waste streams (i.e. contaminated air/vapor from the air stripper unit) that could require additional treatment.

Areas P and Q

Alternatives 1A would not directly reduce the toxicity, mobility, or volume of contaminated groundwater. Alternative 2A would reduce the toxicity, mobility, or volume of contaminated groundwater through the collection and treatment processes. Alternative 2A would minimize the migration potential of the contaminated groundwater away from the source areas by the use of extraction wells. If the on-site water treatment system option is selected, Alternative 2A would likely generated residual waste streams (i.e. contaminated air/vapor from the air stripper unit) that require some type of additional treatment. Alternative 3A would reduce the toxicity, mobility, and volume of contaminated subsurface soil source areas and impacted groundwater. The treatment processes would significantly reduce the toxicity of the contaminated subsurface soils excavated as part of Alternative 3A.

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

Areas A and E

Alternative 1 contains no technical components and, accordingly, would be easy to implement. Likewise, Alternative 2 would be relatively easy to implement. Alternatives 3, 4 and 5 would each be technically and administratively feasible and relatively easy to implement. These three alternatives could each be completed using standard construction techniques, albeit with varying degrees of effort and time, with Alternative 5 requiring more effort than Alternatives 3 and 4.

Areas P and Q

Alternative 1A would have no technical components and, accordingly, be easy to implement. Alternatives 2A and 3A would each be technically and administratively feasible and would be relatively easy to implement. These two alternatives could each be completed using standard construction techniques. The proposed remedial components for Alternative 3A would be designed and implemented in conjunction with Operable Unit No. 1.

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

Areas A and E

Estimated costs for the five remedial alternatives for Areas A and E have been summarized in Table 2. Alternative 1-No Action and Alternative 2-Limited Action would be the least expensive of the alternatives considered. The cost for Alternative 1 was determined to be negligible, while the cost for Alternative 2 was estimated to be approximately $435,000. The most expensive of the alternatives considered was Alternative 5, which had an estimated 30-year present worth cost of $798,000.

Areas P and Q

Estimated costs for the three remedial alternatives for Areas P and Q have also been summarized in Table 2. Alternative 1A-No Action was the least expensive of the alternatives considered. The cost for Alternative 1A was determined to be negligible. The most expensive of the alternatives considered was Alternative 2A-Groundwater Collection and Treatment, which had an estimated 30-year present worth cost of $1,388,000.

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

8. Community Acceptance - Concerns of the community regarding the RI/FS reports and the Proposed Remedial Action Plan have been evaluated. The "Responsiveness Summary", included as Appendix A, presents the public comments received and the Department's response to the concerns raised. In general, the public comments received were supportive of the selected remedy. No significant changes from the PRAP were required to address the public concerns.

SECTION 7: SUMMARY OF THE SELECTED REMEDY

Based upon the results of the RI/FS, and the evaluation presented in Section 6, the NYSDEC has selected a combination of **Alternative No. 4, Hydraulic Gradient Control via Augmentation of the Existing Storm Sewer System for Areas A and E, and Alternative No. 3A, Source Removal for Areas P and Q**, as the remedy for this operable unit of the site.

The selected remedy will: comply with the SCGs; be protective of human health and the environment; be effective in the long-term and permanent; and, relative to other potentially effective alternatives, can be more easily implemented. Minimum uncertainties or expected technical delays are anticipated with the proposed remedy, relative to the other technologies evaluated. Further, the proposed remedy will meet the remediation goals for this site and is consistent with the preference for remedies which permanently reduce toxicity, volume, or mobility.

Table 2

Westinghouse Electric Corporation
Operable Unit No. 2

Remedial Alternatives	Capital Cost	Annual O&M	Total Present Worth
Areas A and E			
No Action	$0	$0	$0
Limited Action	$89,000	$16,000	$435,000
Gradient Control via Existing Storm Sewers	$57,000	$25,000	$605,000
Gradient Control via Storm Sewer Augmentation	$112,000	$25,000	$671,000
Gradient Control via Extraction Wells	$187,000	$25,000	$798,000
Areas P and Q			
No Action	$0	$0	$0
Groundwater Collection and Treatment	$474,000	$38,000	$1,388,000
Source Removal	$665,000	$4000	$683,000

The estimated present worth cost to implement the remedy is $1,354,000. The cost to construct the remedy is estimated at $777,000 and the estimated average annual operation and maintenance cost for 30 years is $29,000.

The elements of the proposed remedy are as follows:

1. A remedial design program to provide the details necessary for the construction, operation and monitoring of the remedial program. This will include additional sampling to better delineate areas of concern, as necessary, and to resolve uncertainties identified during the RI/FS.

2. Termination of all underground utility lines (i.e. gas, electric, sanitary sewer) at the building perimeter to prevent horizontal migration of contaminants through these lines or associated bedding material.

3. Augmentation and utilization of the existing storm sewer system beneath the main plant building for hydraulic gradient control and collection of contaminated groundwater. The existing system will be augmented by drilling holes in the trunk lines to allow for greater groundwater infiltration and collection.

4. Installation of a sump pump and associated distribution lines in both the Fan Room Tunnel (Area A) and the Underground Mixing Room Tunnel (Area M). The surface water/groundwater collected from these areas will be pumped to and discharged into the closest trunk or lateral line of the storm sewer system. All flow from outside catch basins, roof drains, etc. will be diverted to an alternate storm water management system to avoid unnecessary treatment costs.

5. Treatment of the collected groundwater from the storm sewer outfalls will be performed by either the use of an on-site water treatment system or by connection to the local POTW. On-site treatment consisting of an air stripper, will likely result in discharge into the U-Crest ditch.

6. Excavation of contaminated soil from Areas P and Q (estimated volume 2,600 cy) with transportation of the material to the dedicated on-site staging area. Approximate areas to be addressed are identified on Figure 3. Final volumes and area will be defined by compliance with the remedial objectives listed on Table 3.

7. Dewatering of the soil as necessary, with temporary storage or on-site treatment of the accumulated water.

8. Treatment of the soil by the on-site low temperature thermal treatment unit required to implement the remedy selected for Operable Unit No. 1 by the March 1995 ROD. The off-gas from the process will be treated by carbon adsorption or other appropriate control technology prior to discharge.

9. The treated soils will be disposed within a designated area of the site.

10. Site restoration will include: demobilization of equipment; site grading and establishment of vegetative cover and/or pavement repair; site cleanup; and implementation of a groundwater monitoring program.

TABLE 3

Westinghouse Electric Corporation Site
Remedial Objectives for Soil
All units are in parts per million (ppm)

CONTAMINANT	CLEANUP OBJECTIVE (ppm)
VOLATILES	
Vinyl Chloride	0.20
1,1,1-Trichloroethane	1.14
Trichloroethene	1.05
Toluene	2.25
Ethylbenzene	8.25
Total Xylenes	1.8
SEMI-VOLATILES	
4-Methylphenol	1.35
PCBs	
Aroclor-1254	10(1.0-Sediment)
Aroclor-1260	10(1.0-Sediment)
METALS	
Arsenic	10 or SB
Chromium	50 or SB
Lead	500

SECTION 8: HIGHLIGHTS OF COMMUNITY PARTICIPATION

As part of the remedial investigation process, a number of Citizen Participation (CP) activities were undertaken in an effort to inform and educate the public about the conditions at the site and the potential remedial alternatives. The following public participation activities were conducted for the site:

- A repository for documents pertaining to the site was established.

- A site mailing list was established which included nearby property owners, local political officials, local media and other interested parties.

- In July of 1993 a Fact Sheet was sent to the site's mailing list discussing the Remedial Investigation/Feasibility Study process. Included was a post card inquiry to gauge public interest in the site. Follow-up letters were sent to all respondents.

- In March of 1994 a notice was sent to the site's mailing list announcing an upcoming Public Meeting.

- In March of 1994 a Public Meeting was held to discuss the findings of the Remedial Investigation.

- In April of 1994 a Fact Sheet was sent to the residents in the vicinity of the U-Crest Ditch to discuss the PCB concentrations in the ditch sediments.

- In April of 1994 a Draft Protocol was developed at the request of the Town to provide a mechanism for communication between the Town, the NYSDEC and the NYSDOH, regarding anticipated work activities in the vicinity of the site.

- In September of 1994 a notice was sent to the site's mailing list announcing an upcoming Public Meeting.

- In October of 1994 a Public Meeting was held to discuss the Feasibility Study and the Proposed Remedial Action Plan (PRAP) for Operable Unit No. 1. The purpose of the meeting was to present findings, answer questions and accept comments.

- In March of 1995 a Responsiveness Summary was prepared and made available to the public, to address the comments received during the public comment period for the PRAP.

- In March of 1995 a notice was sent to the site's mailing list announcing the NYSDEC's issuance of the ROD for Operable Unit No. 1.

- In August of 1995 a notice was sent to the site's mailing list announcing an upcoming Public Meeting regarding Operable Unit No. 2.

- In September of 1995 a Public Meeting was held to discuss the Feasibility Study and the Proposed Remedial Action Plan (PRAP) for Operable Unit No. 2. The purpose of the meeting was to present findings, answer questions and accept comments.

- In December of 1995 a Responsiveness Summary was prepared and made available to the public, to address the comments received during the public comment period for the PRAP.

APPENDIX A

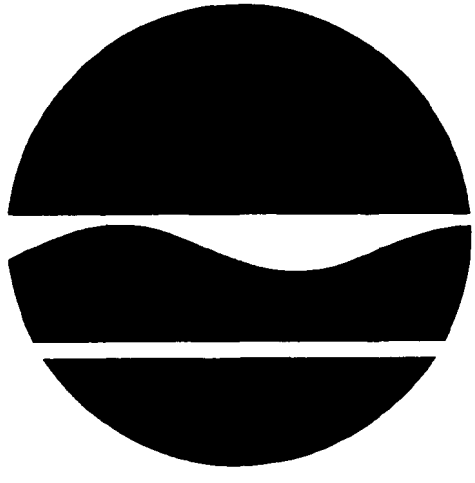
Westinghouse Electric Corporation
Inactive Hazardous Waste Site

Erie County, New York
Site No. 9-15-066

RESPONSIVENESS SUMMARY

Operable Unit No. 2

December 1995



Prepared by:

New York State Department of Environmental Conservation
Division of Hazardous Waste Remediation

RESPONSIVENESS SUMMARY

Westinghouse Electric Corporation Inactive Hazardous Waste Site
Operable Unit No. 2 - Groundwater and Surface Water Contamination
Proposed Remedial Action Plan
Cheektowaga (T), Erie County
Site No. 9-15-066

The Proposed Remedial Action Plan (PRAP) for the Westinghouse Electric Corporation Site, Operable Unit No. 2, was prepared by the New York State Department of Environmental Conservation (NYSDEC) and issued to the local document repository on August 21, 1995. This Plan outlined the preferred remedial measure proposed for the remediation of the contaminated groundwater and surface water at the Westinghouse Electric Corporation site. The preferred remedy is a combination of Hydraulic Gradient Control and Source Removal.

The release of the PRAP was announced via a notice to the mailing list, informing the public of the PRAP's availability.

A public meeting was held on September 13, 1995 which included a presentation of the Remedial Investigation (RI) and the Feasibility Study (FS) as well as a discussion of the proposed remedy. The meeting provided an opportunity for citizens to discuss their concerns, ask questions and comment on the proposed remedy. These comments have become part of the Administrative Record for this site. Written comments were received from the Westinghouse Electric Corporation and State Senator William T. Stachowski.

The public comment period for the PRAP was to have ended on September 22, 1995. In a September 5, 1995 letter, the Westinghouse Corporation requested an extension to the comment period. Based on review of this request, the NYSDEC extended the comment period by thirty days. The comment period officially closed on October 23, 1995.

This Responsiveness Summary responds to all questions and comments raised at the September 13, 1995 public meeting and to the written comments received.

The following are the comments received at the public meeting, with the NYSDEC's responses:

Commentor: Councilman Tom Johnson:

> **COMMENT 1:** We are hoping that you will remove the hot spots around the perimeter of the building, so that you are not augmenting the contamination of materials that are entering the foundation that you will be treating for the discharge. What is important to the Town, initially, is that you clean-up that entire stretch of ditch from the Radisson Hotel backward so that we have no sediment contaminants remaining

...We would like that to be the absolute first action by the remediation program ...We want the public waterway cleaned up.

RESPONSE 1: The soil and sediment contamination referenced was the subject of Operable Unit No. 1. The Record of Decision (ROD) for Operable Unit No. 1 was issued in March of 1995. The remedy selected, On-Site Thermal Desorption, will address the Areas of Contamination (AOCs) or "hot spot" areas adjacent to the main plant building. The remedy will also address the sediment contamination identified in the U-Crest ditch. As the ditch receives discharge from the site, it would not be practical to remediate the ditch until upgradient source areas are remediated/controlled, to insure the migration of contaminants to the ditch has been discontinued. Otherwise, re-contaminating the ditch is a distinct possibility. Therefore, while the remediation of the ditch will be conducted as soon as practicable, it will not be the first action of the remedial program as it must follow the elimination of contaminated discharge.

COMMENT 2: We want to reiterate what we said at the last hearing, that is, we would like the heavy metal-contaminated soils to be hauled away rather than left on site and mixed with other soils.

RESPONSE 2: The ROD for Operable Unit No. 1 was modified, based on the comments received, to incorporate the provision for either solidification/stabilization or off-site disposal of metals-containing soil, if necessary. The U-Crest ditch sediments were shown to contain elevated levels of metals. This material will be segregated and analyzed for TCLP. If the material fails TCLP analysis, indicating it is a characteristic hazardous waste, it will be disposed off-site at a permitted hazardous waste disposal facility. If the material passes TCLP analysis but exceeds the remedial objectives for metals, it will be subject to solidification/stabilization after thermal treatment to address other contaminants, then disposed on-site with other treated materials.

COMMENT 3: We are assuming that you are going to clean out all the storm sewer lines which leave the site ...We would like the peripheral concentrations removed. We would like anything that is within the foundation, such as remaining transformer units, etc. removed ...We would like all this removed and treated.

RESPONSE 3: The sediment in the storm sewer lines downstream of the outfall stations, will be removed as a component of the remedy. The sediment in the sewer lines beneath the building, upstream of the treatment system, will be left in place. As an IRM, a total of 24 inactive transformers, containing over 6000 gallons of PCB oil were removed in 1994. However, given the past heavy industrial use of the facility and the numerous manufacturing process-related features (e.g. catch basins, oil/grease pits, collection sumps, etc.) it would difficult and costly to identify and remediate every potential source area within and beneath the foundation. It was for this reason that the area beneath the main plant building was considered to represent one large multi-source

area during the Feasibility Study. The Operable Unit No. 2 remedy was selected as it best addresses the contamination present, including that observed beneath the main plant building.

COMMENT 4: The Town would like the data coming out of that treatment plant.

RESPONSE 4: The data from the operation and maintenance of the on-site water treatment facility will be on file at the NYSDEC and would be available for public review.

COMMENT 5: I don't know how the NFTA will utilize the site if it is going to be a long term active treatment plant, so it will be interesting. If you level the building and just leave the underground collection system, treat on-site and allow for the clear zone over of some area, fine. However, it is somewhat in conflict with what we thought the site could be used for initially.

RESPONSE 5: The NYSDEC was made aware and kept apprised of pertinent airport project details since the start of the RI/FS by the NFTA. The NYSDEC believes that the proposed remedy satisfies the goals of being protective of human health and the environment, but also can accommodate the NFTA's plans for expansion. The remedy includes specific provisions to account for future development considerations. The NYSDEC has expressed a willingness to work with the NFTA regarding any planned activities (intrusive or other) on the Westinghouse site.

COMMENT 6: The Town, along with the county, has actually waived for another year its lawsuit to recover monies, because the NFTA has not yet purchased the property because of your project ...We were hoping for a much more accelerated and final solution in terms of remediation so that the site could be used potentially for storm water retention and that the NFTA would in fact be able to use it.

RESPONSE 6: The NYSDEC is aware of the NFTA's future plans for the site and the tentative project schedule. It is difficult to estimate the time frame to implement the remedial program at this time, however, as it is unclear whether the project will be PRP-funded or State-funded. Before State Superfund monies can be committed to the remediation of a site, the State must make "all reasonable efforts" to get the PRPs to implement the ROD. This process can be expedited to the extent that cooperation by a PRP can accelerate negotiations and/or remediation.

Utilization of the foundation as a storm retention basin risks the possibility of contamination of the storm water by the contaminated groundwater. Further, infiltration of retained storm water and collection by the underlying sewer system could also result in unnecessary treatment costs, therefore, such a usage would not be appropriate.

COMMENT 7: We are concerned about the other end of the site, Section P. There we have the Flying Tigers Restaurant and nearby a new development has been proposed. I believe it's called "Husky" Injection Systems. A warehouse, office complex, trucks and parking for trucks, etc. They'll use the same sanitary sewer line as the Flying Tigers and we have asked them to conduct an environmental review, some soil testing and water quality testing. We would certainly like to know whether you reviewed Husky and their proposal and whether you feel that proposal can go ahead.

RESPONSE 7: The findings of the investigations conducted to date do not support contamination or disposal relating to the site, beyond the site boundaries. Representatives of the NYSDEC met with representatives from the NFTA and the FAA in June 1994 to discuss similar concerns, primarily associated with the proximity of the Westinghouse site to the new airport tower. Like the tower, the "Husky" property is located north of the site. The NYSDEC Division of Hazardous Waste Remediation has not seen any proposals regarding the property in question, but would be willing to evaluate any environmental quality data collected if the Town so desires.

COMMENT 8: We would like to know what you feel about NFTA taking the property and being able to utilize it. We would like to know whether or not this a very long-term treatment facility that you are proposing. We would like you to clean this all up as quickly as possible.

RESPONSE 8: The Department is supportive of and encourages the appropriate beneficial reuse of remediated sites. The current proposal by the NFTA appears to be such a beneficial use, since it will restrict access to large portions of the impacted areas of the site and provide controlled non-residential development elsewhere.

COMMENT 9: At times of high precipitation, could there be a mechanism by which there will be no treated discharge waters to U-Crest ditch until storm period ceased?

RESPONSE 9: The need for such a mechanism is not envisioned as the origin of the discharge will be groundwater, not surface runoff since the storm connections will be eliminated with the demolition of the building. Therefore, at times of high precipitation, an immediate impact on the system (and correspondingly the ditch) would not be anticipated.

COMMENT 10: We asked you previously that there be warning signs posted along the U-Crest ditch. We are concerned about children playing in the ditch. We are also concerned about the town drainage maintenance, that is, working in the ditch, reshaping the embankments from time to time, the way we do throughout Town. We want to know that in some point in the future we are able to do that without any hazards to our personnel and would like to make sure that the children are kept out of the

embankments/sediments until they can be cleaned up.

RESPONSE 10: Posting warning signs along the affected section of the U-Crest Ditch was an issue previously raised by the Town of Cheektowaga at the public meeting in March 1994. The NYSDOH evaluated the situation and deemed a mailing to residents in the vicinity of the ditch as an appropriate action. As stated in the April 1994 mailing, the NYSDOH recommends residents avoid any unnecessary activities in the ditch. The NYSDOH indicated at that time and continues to maintain that they do not consider the levels (of PCBs) in the ditch a health concern, barring direct contact or ingestion, and that posting warning signs is not necessary. NYSDOH plans to reissue a letter to residents in the area, reemphasizing that residents avoid any unnecessary activities in the ditch. The proposed remedy calls for excavation and treatment of the sediments with disposal either on the Westinghouse site or an off-site disposal facility.

COMMENT 11: We had asked that you check further downstream.

RESPONSE 11: Additional sampling of the U-Crest ditch was conducted at downstream locations. Further, samples were collected from the ditch bank at a number of downstream locations where ditch work seemed apparent. The additional data collected supports that to date, the contamination detected in the ditch is limited to the area between the easternmost discharge point and the area behind the Radisson Hotel. Additional sampling will be conducted during the remedial program to insure all the contaminated sediment is removed.

COMMENT 12: We would hope that you would consider initiating action with Superfund monies and collecting thereafter from the PRPs.

RESPONSE 12: Environmental Conservation Law and specifically 6 NYCRR Part 375-3.1, require that the State must first make "all reasonable efforts to secure voluntary agreement" with a PRP before utilizing the State Superfund to implement the remedial program. Subsequent to issuance of the ROD, all documented PRPs will be contacted for this purpose. If an agreement cannot be reached with the PRPs, the NYSDEC will evaluate the site for further action under the State Superfund. The PRPs are subject to legal actions by the State for recovery of all costs the State has incurred.

Commentor: Joe Funk:

COMMENT 13: I am interested in that sign on the ditch - I live about 300 yards from that ditch and I never been given or sent any kind of information about that ditch. I am aware of it, but I have not received anything from this particular group.

RESPONSE 13: Recognizing that it has been over one year since the last notice, the

NYSDOH plans to reissue their advisory which was sent to over 300 residents in the vicinity of the Area of Concern in the ditch previously.

COMMENT 14: What about arsenic - is there arsenic in that ditch?

RESPONSE 14: Arsenic was evaluated in both surface water and sediment in the sewer line and the U-Crest Ditch. Arsenic was detected at elevated levels in the storm sewer sediments and to a lesser extent in the U-Crest ditch. Confirmatory sampling during the remedial program will include analysis for all contaminants of concern including metals (arsenic, chromium, lead), volatiles, semi-volatiles, and PCBs. Material which exceeds the remedial objectives for any of these compounds will be excavated, treated and/or properly disposed.

COMMENT 15: Who is going to pay for the cost and what is the time frame?

RESPONSE 15: It is difficult to estimate the time frame to implement the remedial program at this time, as it is unclear whether the project will be PRP-funded or State-funded. Before State Superfund monies can be committed to the remediation of a site, the State must make "all reasonable efforts" to get the PRPs to implement the ROD.

Commentor: David Hossenlopp:

COMMENT 16: Being a resident right on the perimeter of this site, and close to the Pfohl Brothers site, I was wondering if you had any suggestions as to how the residents in the area could recoup some of their losses on their property values?

RESPONSE 16: Concerns regarding property value are frequently voiced by property owners in the vicinity of sites listed on the New York State Registry of Inactive Hazardous Waste Disposal Sites. There is little the NYSDEC can do, however, beyond working toward the remediation of those sites. This is an issue best raised with your attorney.

As discussed in Response No. 12, upon issuance of the ROD for Operable Unit No. 2 at the Westinghouse site, the PRPs will be contacted an afforded the opportunity to implement the remedial program.

At this time, the Pfohl Brothers Landfill site remedial design is nearing completion. Construction could begin as early as the Spring of 1996. The Pfohl Brothers remediation will be PRP-funded. With the completion of the negotiations and start of remediation at the Pfohl site, the status of both sites should lessen any perceived impacts to the area.

Commentor: Dan Pyanowski:

COMMENT 17: At the last hearing we had suggested that the metals in the ditch be taken off site because of the elevated levels.

RESPONSE 17: Please refer to Response No. 2.

COMMENT 18: How does the demolition of building affect your proposal for collecting the water - say you go in there before the building is down then you have that extra surface runoff in the system.

RESPONSE 18: The remedy for Operable Unit No. 2 is intended to be implemented absent the building structure, in light of the planned demolition. If, however, the building is not demolished, a contingency plan exists whereby roof drains and other surface runoff will be diverted around the treatment system to avoid unnecessary treatment cost. The contingency plan has a considerable capital cost, therefore, the preference is that the building be demolished prior to implementing the provisions of the ROD.

COMMENT 19: And what would this ground look like when you are done, some sort of Part 360 cap?

RESPONSE 19: The demolition plan prepared by the NFTA should require that the ground surface be graded with clean fill at the completion of the demolition to promote proper runoff and avoid unnecessary discharges to the treatment system. The building slab should also remain in place to insure the collection system's integrity. A low permeability (Part 360) cap is not a component of the remedy.

The following are written comments received during the PRAP comment period. Copies of the letters are included in the Administrative Record.

The following comments were provided in a letter dated September 14, 1995, from William T. Stachowski, State Senator, 58th District.

COMMENT 20: As the State Senator representing the area in which this site is located, I feel it is imperative that the DEC make the cleanup of the U-Crest ditch area a high priority. Since this tainted site is physically open to the general public, and children have been seen playing at this spot, this phase of the remediation should be dealt with first and not last.

Granted the waste located within the boundaries of the Westinghouse Corporation plant

should not be taken lightly. However, given the projected 1997 start-up date for this project, any delay in the remediation of the sediment which was discharged into the U-Crest ditch is unacceptable. I strongly urge the DEC to rethink its time-frame as it applies to this particular stage of the cleanup.

RESPONSE 20: Please refer to Response No. 1.

COMMENT 21: Finally, I want to echo the sentiments of local officials who are looking for a quick resolution of this problem. While I am fully aware of the DEC's success in bringing PRPs forward to pay for remediation, I would hope that the Westinghouse Corporation's willingness to cooperate with the cleanup will also allow State Superfund dollars to be allocated for the portion of the project not covered by Westinghouse.

RESPONSE 21: Please refer to Response No. 12.

The following comments were provided in a letter dated October 20, 1995, from Timothy R. Basilone, of the Westinghouse Electric Corporation.

The Basilone letter transmits comments on the PRAP for Operable Unit No. 2 but also includes as an Appendix, previously submitted comments for Operable Unit No. 1. As the comments for Operable Unit No. 1 were addressed in a March 1995 Responsiveness Summary, those comments are not addressed in this Responsiveness Summary. Further, a number of the comments expressed by Westinghouse which pertain to Operable Unit No. 2, are repeated/reiterated throughout the letter. For this reason, text representative of the specific comment was selected for response.

The following comments were included in the section of the letter entitled "The Management of Migration Remedy Proposed in the Operable Unit No. 2 PRAP is Fundamentally Flawed and is Inconsistent with the NCP and NYCRR Part 375":

COMMENT 22: NYSDEC's management of migration remedy is based on the unfounded conclusion that the storm sewer system is controlling groundwater and serving to prevent off-site migration of hazardous substances detected in soil and groundwater at the site. This assumption is apparently based on the following: (1) The groundwater table may be above the storm sewer elevations at some locations at the site; (2) Certain pits and sumps in the plant building at the site are full of water; and (3) The constituents found in the water in the pits and sumps, in some cases, compare with those found in groundwater. This conclusion has not been verified through groundwater flow analysis or any other necessary scientific data evaluation steps.

RESPONSE 22: The storm sewer system does not "serve to prevent off-site migration" of contamination as stated by Westinghouse. On the contrary, while the system may serve to control the spread of contaminated groundwater, the system also currently provides a direct pathway/conduit for off-site migration to surface water in the U-Crest ditch and eventually Scajaquada Creek. It is this site specific feature which supports the gradient control alternative as the most practical. It is the NYSDEC's position that the presence of this system has provided a "path of least resistance" to the contamination. Though Westinghouse claims this conclusion is unfounded, Westinghouse acknowledges that the storm sewer system is below the water table (reference Comment No. 25) and the sewer system was constructed to facilitate infiltration of groundwater (reference Comment No. 23). As evidence by the flooded basement areas and confirmed by the site survey, the groundwater table is in fact above the storm sewer system (reference Feasibility Study/Operable Unit No. 2, Table 18-6). The consistency between the water quality in the groundwater and the sewer system further supports the controlling influence of the sewer system. Therefore, there is both physical and chemical data which support the connection between site hydrology and the storm sewer system.

COMMENT 23: Based on review of storm sewer discharge data and analytical data from the PSA and RI, the storm sewer system appears to have very limited impact on, or connection with, overburden groundwater flow at the site. Groundwater infiltration to the gravity-flow storm sewer lines is minimal to non-existent. The very limited flow primarily results from the low permeability of overburden materials and the elevation of the storm sewers in relation to the groundwater table rather than the condition of the pipes in allowing infiltration. Many of the storm sewers were built with open joints to facilitate infiltration.

RESPONSE 23: The presence of contamination in the sewer system and the types of contaminants present in both the water and sediment, support that there is a direct relationship with site groundwater. If Westinghouse's claims were correct, the flow in the system would be predominantly roof runoff and other surface drainage and the discharge would seemingly be contaminant-free. Historic data and the more recent PSA and RI data indicate otherwise, revealing the routine presence of a variety of contaminants in discharge waters. In contrast to Westinghouse's comment, storm sewer discharge data and analytical data from the PSA and the RI strongly support that a connection exists between the sewer system and the overburden groundwater (see Response No. 22 for additional discussion).

COMMENT 24: Outfalls 001 and 003 typically have negligible flow, except during and immediately after rainfall events or during periods of snowmelt. At Outfall 002, there appears to be a base flow of about 3 gallons per minute (GPM). In contrast to NYSDEC's assumption that this base flow is from the overburden till zone, a more plausible explanation is that the permeable fill materials located around the plant building foundation walls and immediately below the concrete floor slab of the building allow

surface water infiltration to reach the highly permeable bedding material surrounding the storm sewer trunk lines. Based on its very low permeability, it is unlikely that the till zone is contributing a flow of 3 gpm to Outfall 002.

RESPONSE 24: Westinghouse's explanation is not plausible as the majority of the site is paved and graded to control surface runoff. Therefore there is very limited infiltration (of precipitation) around the building and negligible infiltration within the 30-acre footprint of the building. Westinghouse indicates that a "highly permeable bedding material" aids in the infiltration of surface water to the storm sewer trunk lines. As a component of the RI eleven test borings and nine test pits were installed adjacent to line 003 specifically to examine the bedding material. It was concluded, based on this evaluation, that no "classic" sand and gravel bedding material was used during the sewer line construction and that the trenches were simply backfilled with native material. Westinghouse seemingly disregards similar findings and conclusions from their own 1991 report entitled "Summary Report: Site Characterization and Recommended Remedial Measure Outfalls 001, 002 and 003 - Former Westinghouse Facility, 4454 Genesee Street, Cheektowaga, Erie County, NY". The boring and test pits logs from the investigation of the 003 line consistently revealed the presence of clay and silt adjacent to the line, but little or no bedding material was encountered. Westinghouse also implies that a sustained flow of only 3 gpm could be expected if the roof drains and exterior sewers are diverted. This contrasts with the NYSDEC's estimate of 20-25 gpm and again with Westinghouse's own estimate of 20 gpm as a sustained "low" flow, calculated based on existing data in the 1991 report.

COMMENT 25: The VOCs in the groundwater that the PRAP is attempting to address are primarily chlorinated solvents, such as trichloroethylene (TCE); 1,2-dichloroethylene (DCE); and vinyl chloride. These chlorinated VOCs are heavier than water, so that concentrations generally tend to increase with depth. At this site, the storm sewers are typically at or slightly below the groundwater table, however, so that these sewers do not receive inflow from the deeper portions of the water-bearing zone. In this situation, the storm sewers would be a very ineffective means of recovering groundwater containing higher concentrations of dense chlorinated VOCs.

RESPONSE 25: While TCE and DCE have densities slightly higher than water, vinyl chloride and other VOCs detected in groundwater (benzene, toluene, xylene) do not. Hydrogeologic information collected during the RI indicates that the overburden (till) groundwater recharges the bedrock aquifer. Though a generally unconfined situation exists at the site, an appreciable impact on the bedrock groundwater quality was not observed (see Response 26). This is likely due to the infiltration of overburden groundwater into the sewer, thereby lessening downward hydraulic influences. The quality of the bedrock groundwater supports that the storm sewer system is in fact an effective means of collecting the contaminated groundwater. As a component of the remedy, continued monitoring is required, to insure bedrock water quality is protected.

If required based on monitoring results, the system could be augmented with extraction wells to address any deeper contamination detected.

COMMENT 26: Westinghouse believes that the only potential groundwater issue at the site is the presence of chlorinated VOCs detected in the bedrock water-bearing zone within Area I near the northeast corner of the plant building (i.e., in Well MW-23D). In developing the PRAP for Operable Unit No. 2, however, NYSDEC has chosen to ignore the presence of VOCs in bedrock groundwater. Westinghouse believes the presence of these VOCs in deep groundwater in Area I may be the direct result of the installation of piezometer P-6 (boring I-6) by NYSDEC and its contractor during the site RI.

RESPONSE 26: The NYSDEC addressed this issue in the Operable Unit No. 1 Responsiveness Summary. Westinghouse previously claimed the contamination observed in MW-23D was attributable to the installation of piezometer P-6 and an associated "sand filled conduit to bedrock". The NYSDEC explained in the Operable Unit No. 1 Responsiveness Summary (ref. Response No. 82) that the depth of P-6 is 24.5 feet whereas the depth of bedrock at this location is 29.5 feet. The NYSDEC shares Westinghouse's concern with the observed contamination in MW-23D, but disputes the origin of that contamination. The source of the contamination in MW-23D is the past storage and/or disposal in Area I. This source will be addressed as a component of the Operable Unit No. 1 remedy. Downgradient groundwater sampling supports that migration of the contamination in the bedrock aquifer has been minimal. Given the limited impact on the bedrock aquifer observed to date, source removal and continued monitoring is anticipated for Area I.

COMMENT 27: NYSDEC has apparently based its Operable Unit No. 2 management of migration remedy on the mistaken belief that, without the storm sewer system in place to control groundwater, hazardous substances associated with site soils and overburden groundwater would quickly migrate off site in a southwesterly direction. This conclusion is not based on any data or scientific evidence and is simply not true. Based on information collected during the RI and PSA, it is anticipated that, if the storm sewer system were abandoned, there would be no increased on-site or off-site migration of hazardous substances through groundwater or surface water. Under natural conditions, at the maximum seepage velocity, it would take groundwater more than 1,700 years to travel the 800 feet between Area I and the site property line to the southwest along Genesee Street. The travel times for the chlorinated solvents detected at the site are very long, over which time even the most refractory chlorinated VOCs would chemically and/or and biologically decompose. The very ineffective lateral transport of VOCs is evidenced by the fact that constituents released to groundwater more than 50 years ago continue to be localized, and off-site groundwater impacts are not evident.

RESPONSE 27: The findings of the RI support that if the storm sewer system is

sealed off, the groundwater contamination observed on-site will eventually migrate off-site. The duration associated with such a circumstance would be difficult at best to estimate, given the commercial/industrial setting (prior disturbance, numerous underground utilities and other subsurface structures, etc.). The NYSDEC has developed a remedy which will effectively treat the contamination and eliminate the possibility of such an occurrence. The NYSDEC believes that, at a minimum, the Westinghouse proposal would result in a more widespread problem and ultimately, a far more costly remediation. Response No. 39 addresses the Westinghouse proposal in greater detail.

COMMENT 28: The discharges from the three outfalls at the site are in compliance with the current New York State Pollutant Discharge Elimination System ("SPDES") with respect to VOCs. Since 1991, when Westinghouse remediated the storm sewer trunk lines, TCE and trans-1,2-DCE concentrations have been consistently below their respective action levels specified in the SPDES permit. In RI sampling, the VOCs detected in surface water in the U-Crest Ditch were 1,2-DCE (6μg/ℓ) and TCE (13 μg/ℓ); these levels of 1,2-DCE and TCE are marginally above Class GA groundwater standards. On three occasions since 1991, monthly sampling has shown the 1,1,1-trichloroethane (TCA) concentration at Outfall 003 to be above the action level requiring additional sampling, but in RI sampling, no TCA was detected in surface water in U-Crest Ditch.

NYSDEC has, in the past, expressed concern regarding the levels of cadmium in the discharge from Outfall 001 at the site. RI sampling showed cadmium concentrations in the U-Crest Ditch sediment samples ranged from 29.4 to 133 milligrams per kilogram, but the highest cadmium concentration in sediment was detected upstream of any Westinghouse outfalls to the ditch. Although the Operable Unit No. 1 *Responsiveness Summary* states that upstream cadmium levels are a result of reworking stream sediments, NYSDEC has no basis for such speculation. Another possibility is that one or more upstream sources contribute cadmium to U-Crest Ditch.

RESPONSE 28: The NYSDEC Division of Water (DOW) administers the SPDES program and deferred their ongoing enforcement proceedings only after it appeared this site would be addressed under the umbrella of the Inactive Hazardous Waste Remedial program. The DOW is aware of the violations to the permit and contamination by non-permitted compounds. It should be noted that the existence of a SPDES permit does not relinquish the permit holder or any other party from the responsibility associated with an inactive hazardous waste disposal site. Further, it should also be noted that the results of the outfall monitoring are a measurement of the quality of water leaving the site, not a representation of the groundwater quality beneath the site. Outfall monitoring demonstrates the quality of the combined volume of infiltrated groundwater, surface runoff and runoff from the 30-acre roof. It is safe to assume that the data from this monitoring could provide an indication of the contamination present in groundwater, but likely does not provide an accurate representation of the levels of those contaminants,

given the dilution taking place.

In the Operable Unit No. 1 Responsiveness Summary, the NYSDEC addressed Westinghouse's position regarding sediment sample WEC SED-E21, which was collected 10 feet upstream of the 001 discharge point. In this sample 133 milligrams per kilogram of cadmium were detected. Because the Town has indicated that they routinely rework the ditch to insure proper drainage and because the Westinghouse easternmost discharge point is the apparent origin of the U-Crest ditch (that is there are no upstream sources), and because the Westinghouse facility has a history of SPDES violations for cadmium, the likely source of this "hit" is the Westinghouse site. The presence and a likely source of cadmium near the 001 discharge point was previously identified by the 1991 Westinghouse Report (see Response No. 24) which states "As expected, Outfall 001 tends to have a higher concentration of cadmium than the other two outfalls...The higher concentrations in Outfall 001 are likely the result of the former cadmium exhaust system at the former Annex building. This building was connected to the storm sewer system associated with Outfall 001."

COMMENT 29: If the NYSDEC's hypothesis were valid, the specific VOCs detected in the groundwater at Areas J and K would be the same compounds as those detected at the surface water outfalls, and plugging the storm sewer system inlets in Areas J and K, implemented as an Interim Remedial Measure (IRM) by NYSDEC in April 1994, would have resulted in a significant reduction in the concentrations at the outfalls. Site data, however, indicate little correlation between the VOCs detected in groundwater in Areas J and K and the VOCs detected at the storm sewer outfalls. The VOCs detected at the highest concentrations in Areas J and K, located adjacent to the north wall of the plant building, were vinyl chloride; 1,1-dichloroethane (1,1-DCA); and 1,2-DCE. Vinyl chloride and 1,1-DCA were not detected in any of the outfalls or in U-Crest Ditch surface water samples during the RI, and 1,2-DCE concentrations have been consistently below the SPDES action level in monthly discharge sampling over the last four years. Furthermore, there have been no significant differences between the pre- and post-IRM surface water concentrations; plugging the sewer lines in areas of reported groundwater contamination had little or no effect on surface water quality at the outfalls.

RESPONSE 29: The IRM was implemented because the identified "hot spots", in particular Areas I, J, K and M, were considered to be contributing to the observed contamination in the sewer system. The consistency between the contamination in these areas and the contamination in the sewer system (primarily VOCs) was the basis of this decision. The contamination detected in the soil and groundwater in Area J correlates directly with the contamination detected in the 001 line and the U-Crest ditch. In Area J vinyl chloride, DCE, PCE and TCE were the VOCs detected at highest concentrations. Analysis of samples in the 001 line and the U-Crest ditch, downstream of the 001 discharge, has revealed elevated concentrations of TCA, PCE and TCE in surface water and vinyl chloride, DCA, PCE and TCE in sediment. Similarly, the contamination in

soil and groundwater in Area K correlates with the contamination detected in the 002 line and the U-Crest ditch. In Area K vinyl chloride, DCE, DCA PCE and TCA were the VOCs detected at highest concentrations. Analysis of samples in the 002 line and in the U-Crest ditch, downstream of the 002/003 discharge point, has revealed elevated levels of TCE in surface water and PCE in sediment.

It is important to note that chlorinated volatile aliphatic compounds discussed herein are interrelated. The transformation reaction or breakdown process of TCA, for instance, results in DCE and ultimately vinyl chloride. Similarly, PCE degrades to TCE, DCE and then vinyl chloride, Therefore the absence of vinyl chloride at an outfall location is not necessary indicative of the lack of a connection/correlation with an upstream source area. Particularly when parent compounds such as TCA, PCE and DCE are present at the outfall. Furthermore, volatilization would be prone to occur in the sewer system and could be responsible for the absence of certain compounds, particularly vinyl chloride, an extremely volatile compound, at outfall locations.

It should be further noted that the IRM program involved an evaluation of the storm sewer flow verses the levels of contamination detected and an evaluation of the water quality upstream of the plugs versus downstream of the plugs. These activities were conducted to determine the relative contributions of the source areas and the effectiveness of the plugs. The IRM report indicates that the plug downstream of Area K did not appear to be retaining water and it is was postulated that the water from this area had diffused around the plug. The findings from the plugging of the 001 and 003 lines, however, had a demonstrated effectiveness. The findings support that there was a reduction in the contaminant load to the sewer system. The IRM revealed that the "hot spots", while acting as a continuing source to the groundwater contamination beneath the building, were not the only source of contamination. The findings of the IRM support that numerous smaller contaminant source areas exist beneath the building. These are attributed to the past heavy industrial use of the facility and the numerous manufacturing process-related features. The findings of the IRM support the need for the remedial program.

COMMENT 30: The majority of the storm sewer system at the site has not been cleaned and may hold sediments that contain chlorinated VOCs. A much more reasonable explanation for the source of the VOCs detected at the storm sewer outfalls is that the storm sewer system provides a pathway for contaminated sediments in the unremediated sumps, catch basins, and pipe laterals to exit the site. During storm events and periods of snowmelt, the storm sewer system may also provide a migration pathway for contaminants in the soil immediately adjacent to the storm sewer lines and contaminants absorbed into the concrete floors and pipe walls to leach into the water flow. Because the source of the VOCs detected at the outfalls appears to be related to the sediments and residual concentrations already contained within the storm sewer system, the so-called management of migration remedy presented in the Operable Unit

No. 2 PRAP is essentially an "end-of-pipe" treatment program to clean the plant storm sewer system. Such an approach is a very ineffective and expensive method for remediating a sewer system.

RESPONSE 30: Contrary to this comment, sediments and residual concentrations already contained in the storm sewer system do not appear to be the exclusive source or even a primary contributor to the observed contamination. In fact significant quantities of sewer sediment were not apparent in the sewer system during the RI. At more than half of the intended sediment sample points identified for sampling in the RI work plan, sediment was not present in the storm sewer. The NYSDEC believes that numerous catch basins, grease pits, collection sumps and other process-related features in and beneath the plant building are contributing to the contamination present. In light of the difficulty in identifying each of these smaller source areas within the 30-acre plant building, delineating the contamination associated with each of these features and remediating each individual source area, "end-of-pipe" treatment has been deemed the most feasible approach to address the contamination present. As evidenced by the levels of contamination observed within the sewer system and at the outfalls, the sewer network is presently functioning as a very effective collection system. Note this approach is not intended to clean the storm sewer network, but to utilize the network to intercept groundwater contaminated by the remaining source areas associated with the slab.

COMMENT 31: NYSDEC's proposed management of migration remedy under Operable Unit No. 2 will inevitably result in releases of hazardous substances to U-Crest Ditch, unless treated waters are directly discharged to the publicly owned treatment works ("POTW"). NYSDEC's plan is to enhance the flow in the storm sewers by drilling holes in the sewer pipes and increasing groundwater infiltration. To the extent such a scheme is effective, the increased flow in the sewers will like cause additional transport of the sediments already held in these pipes and, to some degree, flush the highly permeable bedding below the pipes. To the extent cadmium or other substances not amendable to NYSDEC's proposed air stripping treatment are present in pipe sediments or pipe bedding material, the increased flow would increase such hazardous substance discharges. Due to the cracks, joints, and drilled holes in the storm sewer pipes, the system, especially at increased flow, may facilitate the spread and release of upstream contaminants to downstream locations within the pipe bedding.

RESPONSE 31: The remedy includes the provision for discharge to the POTW, if accepted, in lieu of on-site treatment. This is actually the NYSDEC's preferred method, however, on-site treatment was costed out as the worst case. Continued releases of hazardous substances to the U-Crest ditch following the start of treatment would not be occur, contrary to Westinghouse's comment. The conceptual design involves the collection and transport of all contaminated groundwater to a central treatment facility. The only flow which will be discharged without treatment is surface flow, which will be diverted around the treatment system, to avoid unnecessary treatment and the associated

treatment cost. The conceptual design (reference RI/FS Section 15.2) discusses and illustrates the planned treatment system. Sediments traps will be installed in newly constructed sump structures to prevent the transport of sediment beyond the outfall stations. The conceptual design also details the treatment system which includes a solid phase extraction unit to address the metals present, followed by an air stripper to address the volatile contamination present. The system will be subject to routine monitoring to insure discharge criteria are met.

Westinghouse is concerned that efforts to increase infiltration may result in the transport of highly permeable bedding material (around the pipes) and sediment within the pipes. During the PSA and RI no highly permeable bedding material was encountered (see Response No. 24) and little sediment was observed (see Response No. 30). Nevertheless, any flushing action which removes contaminated sediments from the pipes would only serve to expedite the remedial process, as seemingly pointed out by Westinghouse in Comment No. 30 and as proposed by their alternative remedy.

COMMENT 32: NYSDEC's proposed treatment system is not designed to remove metals, SVOCs, or polychlorinated biphenyls ("PCB") from the storm sewer discharges. To the extent such constituents are present within surface water discharges, releases of these substances to U-Crest Ditch will continue at equal or greater loadings after NYSDEC's management of migration plan is in place.

RESPONSE 32: Based on the relative frequency of detection of contaminants above groundwater criteria, the following contaminants were determined to best characterize the overall groundwater contamination at the site: 1,2-Dichloroethene, 1,1,1-Trichloroethene, Vinyl Chloride, Toluene, Cadmium and Lead. PCBs were not considered to be representative of the overall groundwater conditions, despite the relatively high frequency of detection above groundwater criteria. The PCBs were detected predominantly within the flooded transformer vaults, which have since been decontaminated, and in the sanitary sewer line. The SVOCs detected during the RI were not considered to be a widespread concern with regard to groundwater contamination. The water treatment system selected will address the metals contamination in groundwater. As discussed in Response No. 31, the system involves solid phase extraction in advance of air stripping. The solid phase extraction system is an ion exchange system which will address the cadmium and lead present in the groundwater. The treated discharge will be routinely monitored to insure the discharge criteria are met.

COMMENT 33: If left open, the storm sewer system could also provide a conduit for significant releases to U-Crest Ditch in the event of an accidental spill or releases from the future Airport Expansion (e.g., deicer fluids, aviation fuel). A spill or other release at the jet taxi-way proposed in the area where NYSDEC proposes to leave the storm sewer in place would quickly travel to U-Crest Ditch, contaminating both surface waters and sediments. The only way to prevent releases to U-Crest Ditch is to close the

storm sewer system during plant demolition. In contrast to the decades or centuries required for groundwater to migrate off site under natural conditions, the storm sewer system transmits waters from the center of the site to the outfalls in a matter of minutes. NYSDEC's plan to leave the storm sewer system open with air stripping treatment of the system discharges would result in greater human health risks and adverse environmental impacts than simply closing the storm sewer system and doing nothing about the presence of hazardous substances in site groundwater.

RESPONSE 33: The Airport is not currently connected to the storm sewer system nor would it be expected to since this excess volume of clean surface runoff would then be subject to treatment. Unnecessary treatment costs will be avoided by precluding discharge or infiltration of clean water into the system. Accordingly, it is intended that the site be graded to promote optimum surface drainage with diversion of surface runoff by a separate system of ditches and/or piping not connected to the water treatment system. Therefore, the introduction of spills or releases from the Airport into the existing storm sewer system, which collects contaminated groundwater, would not be anticipated. In the unlikely event a spill was to penetrate the sewer system, the treatment system could easily be shut down temporarily, thus capturing and containing the spill. Therefore, the treatment system could actually function as a safety feature.

COMMENT 34: Page 118 of the RI states "the groundwater pathway is considered to be an incomplete exposure pathway." NYSDEC appears to have disregarded its own findings in establishing cleanup levels for groundwater based on class GA groundwater standards. These standards are not applicable at a site where there is no completed exposure pathway for consumption of groundwater. The groundwater cleanup levels being applied by NYSDEC are without any technical, scientific, or regulatory basis for this site. Groundwater protection standards and drinking water maximum contaminant levels ("MCLs") are not ARARs or standards, criteria, and guidance (SCGs) for this site. CERCLA § 121(d)(2)(A) provides, with respect to any hazardous substance which will remain on site at the completion of a remedial action, the cleanup must comply with standards, requirements, criteria, etc., that are "legally applicable to the hazardous substances... or relevant and appropriate under the circumstances of the release or threatened release of such hazardous substances..." (emphasis added). At this site, where NYSDEC has recognized that consumption of groundwater is not a completed exposure pathway which could pose risks to human health or the environment, groundwater protection standards based on drinking water use and MCLs clearly are not ARARs or SCGs. EPA has specifically stated that "MCLs are generally not appropriate for site-specific circumstance where a well would never be placed and groundwater would thus never be consumed".

RESPONSE 34: Contrary to Westinghouse's comment, 6 NYCRR Part 703, the "Groundwater Classifications, Quality Standards and Effluent Standards and/or Limitations", is an SCG. These groundwater standards are consistently applied in New

York State for the protection of groundwater. By definition, these standards are applied "to prevent pollution of groundwaters and to protect the groundwaters for use as potable water". Groundwater is used as a potable source within one half mile of the site. Though the groundwater pathway is incomplete presently, as no private of public water supply has been documented as contaminated by the site to date, it is not acceptable to contaminate groundwater or to disregard known contamination of groundwater, regardless of its present or contemplated use. The Part 703 standards are therefore applicable with respect to the cleanup of this site. Note SCGs are the State equivalent of the Federal term ARAR.

COMMENT 35: Even if the 6 NYCRR Part 703 groundwater standards were considered ARARs or SCGs at this site, site conditions indicate that a waiver of these requirements, as defined in Part 375-1.10(c)(1), would be appropriate.

RESPONSE 35: 6 NYCRR Part 703 is an SCG. Part 375 indicates that if implementation of an alternative which conforms to SCGs will result in greater risk to public health or to the environment, than that alternative should be dispensed with. Implementation of the preferred alternative, like any construction project, could result in potential risk(s) to site workers. However, dispensing with the remedial program entirely would result in continued risk to the community and the environment. The threat posed by the existing contamination problem warrants a remedial program. A health and safety plan will be developed in advance of the remedial program to mitigate risk(s) to onsite workers and the community resulting from construction of the remedy. The argument presented is inconsistent with the intent of the sub-part and does not support that a waiver would be appropriate.

COMMENT 36: The RI and Operable Unit No. 2 PRAP describe NYSDEC's Fish and Wildlife Impact Analysis which identified Ellicott Creek and U-Crest Ditch as the two habitats that could potentially be impacted by site-related activities. NYSDEC determined that, based on the developed surface water and sediment data, Ellicott Creek has not been affected by site activities, and no further investigation or remediation of Ellicott Creek is needed. NYSDEC also concluded that U-Crest Ditch is a "poor quality aquatic habitat" because this waterway is an intermittent stream (i.e., it cannot support a perennial aquatic community) and because of the many industrial and commercial sources that discharge to U-Crest Ditch, including the discharge from Calspan Corporation ("Calspan") and airport runoff. As explained above, the site data do not support NYSDEC's theory that site groundwater is affecting surface water or sediments in U-Crest Ditch. Management of migration control is not needed to protect any environmental habitat or avert environmental risk.

RESPONSE 36: The contamination detected in the surface water and sediment of the U-Crest ditch is consistent with the contamination detected in the groundwater, surface water and sediment at the Westinghouse site. The contamination in the ditch,

therefore, is directly attributable to the site. As noted, the NYSDEC acknowledges that the U-Crest ditch is a poor quality aquatic habitat, however, the NYSDEC has evaluated the levels of contamination present in consultation with the NYSDOH. Based on that evaluation, it has been determined that the extent of ditch which has been adversely affected, particularly by PCBs and metals contamination, warrants remediation. The combination of remedies for Operable Unit Nos. 1 and 2 will effectively remediate the contamination present.

COMMENT 37: NYSDEC's plan to "enhance" infiltration appears ill-conceived. NYSDEC has not evaluated where access may (or may not) be available within pipe runs and does not explain what technology is available for drilling holes in situ in the walls of the sewer pipes. Many of the storm sewer pipes at the site already have open joints, and it is unclear how drilling holes in the pipes will enhance infiltration.

RESPONSE 37: Holes drilled in the pipes would serve to function much the same as open pipe joints. As acknowledged by Westinghouse, many of the storm sewers were built with open joints specifically to facilitate infiltration. The locations for such enhancement have not been selected but would be as a component of the remedial design. Those areas where low flow was encountered would be given preference over those areas where a high rate of infiltration is apparent. Access to the pipeline is easily accomplished through existing manholes and standard masonry drilling equipment would be utilized. It is not the intent of this remedy to require extensive efforts to gain access but to enhance the system, as necessary, where reasonable access exists.

COMMENT 38: NYSDEC's proposed plan conflicts with local interests by unnecessarily delaying cleanup of the sediments in U-Crest Ditch. While Westinghouse does not believe the concentrations of hazardous substances present in the sediments in U-Crest Ditch represent a significant current human health or environmental risk and recognizes that NYSDEC's proposed water management of migration remedy will have no beneficial effect on U-Crest Ditch, it is nonetheless inappropriate for NYSDEC to ignore local interests and unnecessarily delay this portion of the cleanup.

RESPONSE 38: Response No. 1 addresses this issue. It should be noted that local interests also include addressing the groundwater problem present. The NYSDEC's remedy addresses both of these concerns by the most effective and practical means possible.

The following comments were included in the section of the letter entitled "Alternative Remedy for Management of Migration Control":

COMMENT 39: Westinghouse believes that the FS and resultant PRAP failed to properly identify and evaluate "feasible" remedial action alternatives. Part 375-1.10(c)(6)

defines a feasible remedy as one that is "suitable to site conditions, capable of being carried out with available technology, and that considers, at a minimum, implementability and cost effectiveness" (emphasis added). The primary deficiencies of the FS in identifying and evaluating management of migration remedial action alternatives were: (1) it was based on improper remedial action objectives resulting from the misunderstanding of site conditions and the use of inappropriate cleanup levels and (2) it did not consider the full range of cost-effective remedial alternatives.

Westinghouse believes that a more appropriate remedy would involve the following actions taken in conjunction with demolition of the plant building and NFTA site development for Airport Expansion: (1) Pump out and treat, as necessary, accumulated water in sumps, vaults, and tunnels. Discharge treated water to the POTW, upon approval of the Buffalo Sewer Authority ("BSA"); (2) Video survey of otherwise inspect, as practicable, storm sewer pipes, sumps, and pits to evaluate the presence of sediments. As feasible and necessary, remove sediment from pipes or fill pipes with grout to contain potentially contaminated sediments; (3) Disconnect or plug storm/surface water inflows to the sewer system prefatory to and during building demolition; and (4) Plug storm sewers at multiple junctions throughout plant and at the outfalls.

RESPONSE 39: The FS and the PRAP for Operable Unit No. 2 identify the most cost effective and implementable remedy to address the groundwater contamination at the Westinghouse site. Considerable cost savings is realized as the groundwater collection system is already in place and functioning effectively. Westinghouse is proposing a remedy that would allow the contamination problem to persist; would not be protective of public health or the environment; and would result in little cost savings relative to the NYSDEC's preferred remedy. Westinghouse's proposal to pump and treat accumulated water in sumps, vaults and tunnels would have little benefit as these subsurface structures would simply refill with contaminated groundwater once pumping was discontinued. Westinghouse's proposal to video survey and remove sediment from the sewer lines would also have limited impact. Little sediment was encountered during the RI and sewer cleaning, which was conducted by Westinghouse on at least three previous occasions in the 003 line (1981, 1985 and 1991), has had little impact. The 003 line continues to discharge the highest concentration of contaminants of the three main lines. The disconnection of storm/surface water inflows, as proposed by Westinghouse, is already a component of the NYSDEC's remedy. All surface water inflow will be diverted to avoid unnecessary treatment cost. Finally, the plugging of the storm sewers, as proposed by Westinghouse, will prevent direct discharge of contamination to the U-Crest ditch, but would result in accumulation of contaminated groundwater on-site and the migration of contamination downgradient and eventually off-site, through groundwater. Westinghouse's proposed remedy is similar to the limited action alternative which was evaluated in detail in the FS for Operable Unit No. 2. Like the Limited Action alternative, Westinghouse proposed remedy is unacceptable because it does not comply with SCGs or the remedial action objectives; it would not be protective of human

health or the environment; it would not be effective in the long term or permanent; and would not reduce the toxicity, mobility or volume of the contamination present.

COMMENT 40: Based on the risk assessment results presented in Section III of the Westinghouse Operable Unit No. 1 comments, the site in its current condition does not pose a human health risk above the acceptable risk range as defined in the NCP (10^{-4} to 10^{-6}) and poses no significant environmental threat. To the extent that site-related constituents pose a risk above the lower end of this acceptable risk range (10^{-6}), the hazardous substances of interest are arsenic at one location on the site and SVOCs, PCBs, and arsenic in sediment from U-Crest Ditch. All of these risks can be addressed by source control actions under Operable Unit No. 1, as addressed in the Westinghouse Operable Unit No. 1 Comments, and the management of migration remedy under Operable Unit No. 2 will do nothing to reduce identified risks exceeding the 10^{-6} point of departure. Management of migration under Operable Unit No. 2 is not needed to address potential site-related risk ...To the extent potential human health or environmental risks are affected by management of migration controls, Westinghouse believes the Operable Unit No. 2 PRAP could increase such risks by enhancing discharges of hazardous substances not amendable to air stripping treatment to U-Crest Ditch. Westinghouse's proposed remedy for management of migration under Operable Unit No. 2 is more protective of human health and the environment because it will eliminate potential releases to U-Crest Ditch as a result of site-related constituents or accidental releases from the airport.

RESPONSE 40: As a component of the RI, a qualitative risk assessment was conducted by the NYSDEC contractor. The purpose of the Human Health Evaluation (HHE) was to identify potential transport pathways, assess exposure routes and discuss toxicological properties of chemicals identified. Sufficient evidence was gathered during the HHE to identify the existence of significant potential exposure routes, substantiating the need for remediation at this site, including remediation of groundwater. Westinghouse's independent analysis was not conducted in consultation with the NYSDEC or the NYSDOH and reaches conclusions which are inconsistent with the HHE. As discussed in Response Nos. 32 and 33, the treatment system will not enhance discharge of hazardous substances to the U-Crest ditch and could in fact help prevent accidental releases from the airport.

COMMENT 41: Both the PRAP and the Westinghouse alternative remedy would be designed and operated to comply with action-specific and location-specific ARARs and SCGs for groundwater and surface water. For the reasons discussed above, MCLs and Class GA groundwater standards are not ARARs or SCGs at this site.

RESPONSE 41: 6 NYCRR Part 703, the NYSDEC standards for the protection of groundwater, and 10 NYCRR Part 5, the NYSDOH drinking water supply standards, are considered SCGs by New York State.

COMMENT 42: This evaluation criterion is not relevant because, under the NCP, reduction of toxicity, mobility or volume (TMV) through treatment refers to source control not management of migration control. The "end-of-pipe" treatment proposed in the PRAP contradicts the approach set forth in the NCP in that the PRAP approach ignores the most likely source of the VOCs in the storm sewer discharges. The Westinghouse alternative remedy to remove or immobilize potentially affected sediments is more consistent with TMV reduction concepts in addressing the source of the VOCs.

RESPONSE 42: Westinghouse contends that the storm sewer sediments are the source of the contamination present, yet on three separate occasions attempts at removal of these sediments has failed to eliminate the contamination discharging from the 003 line. The NYSDEC's position, that numerous source areas within and beneath the building are responsible for the contamination (due to the numerous manufacturing-process related features within the 30-acre facility), is far more plausible. Removing or immobilizing the sediment would not appreciably reduce the TMV of the contamination present. As detailed in the FS, the proposed remedy would effectively reduce the TMV by collecting and treating the contaminated groundwater thus reducing the potential for migration of contamination. Accordingly, this approach is consistent with that set forth in the NCP, which does not specify the point of treatment but merely states a preference for treatment.

COMMENT 43: Based on its evaluation of site data, Westinghouse does not believe the PRAP approach will be effective in achieving its professed purpose of controlling groundwater at the site. The Westinghouse remedy provides a permanent solution to the only realistic concern for potential off-site groundwater and surface water migration (i.e., discharges via plant storm sewers).

RESPONSE 43: Please refer to Response No. 22.

COMMENT 44: NYSDEC's presented cost estimate is significantly in error if cadmium removal or other treatment of the storm sewer discharges is required in addition to the air stripper treatment identified in the PRAP. On a preliminary basis, Westinghouse estimates that cadmium treatment would add on the order of $250,000 of capital cost and $100,000 of operating costs. For a 30-year operating life and a 5-percent discount rate, the added present worth cost of cadmium treatment would be in excess of $1.4 million.

RESPONSE 44: The remedial cost estimate of $1,354,000 already incorporates the cost for cadmium removal and 30 year operation and maintenance cost. The solid phase extraction unit has a purchase cost of approximately $125,000. This cost was incorporated in the capital cost estimate. Note the purchase price for this unit as well as the air stripper purchase cost, are actually included in the Operable Unit No. 1 estimate. The annual O&M cost associated with this unit, per the vendor, is estimated

at a maximum of $6,000, with lower cost likely given the low concentrations and flow anticipated.

The following comments were included in the section of the letter entitled "NYSDEC's Proposed Source Control Remedy for Areas P and Q under the Operable Unit No. 2 PRAP is Fundamentally Flawed and is Inconsistent with the NCP and NYCRR Part 375":

COMMENT 45: As discussed in the Westinghouse Operable Unit No. 1 Comments, Westinghouse believe NYSDEC's proposed source control remedy for Areas P and Q is unnecessary and applies inappropriate remedial technology. All of Westinghouse's comments with respect to NYSDEC's selection of soil cleanup criteria, lack of definitive and defensible data by which to delineate affected soils, and alternatives evaluation apply to the Operable Unit No. 2 PRAP with respect to the source control proposed for Areas P and Q.

RESPONSE 45: Westinghouse's comments pertaining to the soil cleanup criteria, analytical data and alternative evaluation were addressed in the Operable Unit No. 1 Responsiveness Summary. This comment in noted for the record.

COMMENT 46: The concentrations of hazardous substances detected in the soil samples collected from Area P do not confirm allegations of "waste disposal activities" in this location. Although apparent filling activities took place in this area of the site, the time frame or party responsible for this filling are difficult to determine (ownership of portions of this area of the site has transferred since 1964). The compounds detected in the samples from this area appear to be petroleum based (e.g., gasoline, jet fuel, fuel oil).

RESPONSE 46: The groundwater samples collected from Area P revealed the presence of vinyl chloride, DCE, TCE, toluene and methylphenol. These compounds were also detected consistently on the southern portion of the site. Given this consistency and the past disposal practices as reported by former Westinghouse employees, the source of the contamination in Area P is more likely former plant operations than the Airport, as implied by the comment.

The following comments were included in the section of the letter entitled "NYSDEC has Exceeded Its Authority at the Site":

COMMENT 47: As described in the Westinghouse Operable Unit No. 1 Comments, NYSDEC has proceeded with the RI/FS and other response actions at this site without legal authority or foundation. All costs and expenses of the NYSDEC related to these activities are unauthorized expenditures of state monies, and inconsistent with and

unauthorized under the ECL, Part 375, State Finance Law Section 97-b, CERCLA, and other applicable law. Should NYSDEC continue to implement RI/FS activities and future remediation-related activities at the site, it will have no basis under the ECL, CERCLA, or other applicable law to seek reimbursement or recovery of those costs or expenses associated with such activities from alleged PRPs, "persons responsible" or owners of the site.

RESPONSE 47: The Department is authorized to undertake a remedial program where those found responsible will not do so. The responsible parties at the site were notified of their potential liability by letter dated August 5, 1991. Each of the PRPs initially expressed its willingness to fund an RI/FS. Protracted negotiations failed to produce an agreement amongst the PRPs, and none of them committed to investigate and remediate the site in the absence of such an agreement. The Department's lengthy and time-consuming efforts to negotiate and agreement with the PRPs (August 1991 - October 1992) were determined to have satisfied the requirements of State Finance Law 97-b.4 and 6 NYCRR 375-3.1(a)(1)(iv) thus authorizing full state funding pursuant to § 97-b.3(a).

An RI/FS was required at the site in order to define the necessary remedial program. These activities are consistent with the Department's obligations under ECL 27-1309. State Finance Law § 97-b.3(a) authorizes funds to meet these obligations.

Subsequent to the issuance of the ROD, the PRPs will again be contacted to assume responsibility for the remedial program. If an agreement cannot be reached with the PRPs, the Department will evaluate the site for future action under the State Superfund.

COMMENT 48: Any NYSDEC authority relative to the development of remedial action at any inactive hazardous waste disposal site is premised on a requirement that "hazardous waste disposal" is to have occurred at the site, and that such disposal constitutes a significant threat to the environment. ECL § 27-1313(3)(a). "Hazardous waste" is defined at ECL Section 27-1301(1). As described in the Westinghouse Operable Unit No. 1 Comment (Section VI.B), NYSDEC has made no demonstration in the administrative record or, to Westinghouse's knowledge, elsewhere, that there has ever been disposal of "hazardous waste" at the site.

RESPONSE 48: As explained in response to Westinghouse Operable Unit No. 1 comment, numerous samples revealed the presence of a variety of contaminants in the immediate vicinity and downgradient from underground storage tank areas. The tanks are known to have contained "hazardous waste" as defined in 6 NYCRR Part 371. Groundwater quality data has revealed the presence of many of these compounds at levels which contravene standards. Additionally, beneath the plant building contamination has been observed which directly correlates to past site operations. In light of the former manufacturing operations at this site, the chemicals used in support of these operations,

and the direct correlation between these operations and the contamination detected, sufficient evidence exists to support that the contamination present is the result of "hazardous waste" disposal. This view is reinforced by statements by former employees regarding past operations and disposal practices.

COMMENT 49: The former Westinghouse facility, now owned and operated by others, has historically had New York SPDES permits for wastewater discharges. Until 1988, SPDES permits were in the name of Westinghouse. With the purchase by Barry M. Weinstein and/or the Buffalo Airport Center Associates ("BACA") of the Westinghouse facility in 1984, a SPDES permit for BACA's operations was obtained by BACA in 1988 and renewed in 1993. These SPDES permits established effluent limitations for various organic and inorganic compounds. To the extent that NYSDEC has identified the former Westinghouse activities at its former facility as a potential source of contamination, it should be noted that purported releases from that plant fall within the federal permitted release exception under Sections 101(10) and 107(j) of CERCLA, 42 U.S.C. § 9601(10), 9607(j). The presence of organics and inorganics in Westinghouse's permitted wastewater discharge was identified, reviewed, and made part of the permit record with respect to the permits issued to Westinghouse or BACA. Under Section 107(j) of the CERCLA, 42 U.S.C. § 9607(j), NYSDEC cannot hold Westinghouse liable or otherwise responsible for those releases. Indeed, Section 107(j) of CERCLA indicates that if these releases are to be remediated, remediation should be under pre-existing law, not CERCLA.

State-permitted water releases would account for a substantial portion of all of the substances released from the site during its operations. Moreover, as described above, other sources and parties are substantially responsible for any contamination of the U-Crest Ditch. Discharges by these other sources or parties may also be federal or state-permitted releases within the meaning of Section 101(10) and 107(j) of CERCLA, 42 U.S.C. § 9601(10) and 9607(10). Cadmium and other constituents attributed by NYSDEC to site discharges were, in fact, found upstream of the site outfalls.

Accordingly, Westinghouse may not be compelled to remediate any such permitted releases under ECL or CERCLA, or be responsible for any costs incurred by the NYSDEC or other governmental entities or parties with respect to the RI/FS or other remedial program activities at the site.

RESPONSE 49: As explained in Response No. 28, the NYSDEC Division of Water administers the SPDES program and had deferred ongoing enforcement proceedings only after it appeared this site would be addressed under the umbrella of the Inactive Hazardous Waste Site Remedial program. While violations to the permit have been documented and contamination by non-permitted compounds (such as PCBs) has been documented, contrary to that implied, the existence of a SPDES permit does not relinquish the permit holder or any other party from the responsibility associated with an

inactive hazardous waste disposal site. Furthermore, whether Westinghouse is compelled to remediate areas contaminated by discharge waters is irrelevant from a technical standpoint. In light of the history of permit violations and the presence of non-permitted compounds in downstream areas, remediation is necessary.

The following comments were included in the section of the letter entitled "NYSDEC Must Notice All of the PRPs":

COMMENT 50: NYSDEC has expressed its desire to reach agreement for PRPs to undertake remedial design/remedial action, but has failed to notice all of the major PRPs at the site. Despite this clear evidence that the U.S. Government is a PRP, NYSDEC has to date failed to notice the U.S. Government as a PRP. NYSDEC regulations require that it provide notice to the U.S. Government and reopen the public participation process to enable the U.S. Government to comment on the PRAP. If NYSDEC fails to remand the Operable Unit No. 2 PRAP and public participation process for further development after the U.S. Government is notified, the ROD process for this site will be flawed, and inconsistent with the requirements of the ECL, CERCLA, and due process.

RESPONSE 50: Westinghouse has previously expressed concerns that the U.S. Government is a PRP at the Westinghouse site. Westinghouse representatives have indicated that they possess information in support of this argument and have indicated verbally, that information could be made available to the NYSDEC. In a November 6, 1995 letter, the NYSDEC notified Westinghouse, the NFTA, the BACA and Curtiss-Wright that this information had not been received to date. In a November 10, 1995 letter from Curtiss-Wright, the NYSDEC was advised that a record search was underway and that these records, when compiled, would be forwarded. Upon receipt of this information, the NYSDEC will evaluate and assess the past involvement, if any, of the U.S. Government at this site.

COMMENT 51: The ECL and CERCLA require that NYSDEC publish a notice and analysis of the PRAP which include sufficient information as may be necessary to provide a reasonable explanation of the PRAP and alternative proposals considered. NYSDEC's notice and analysis of the PRAP do not include such information. NYSDEC has failed to provide sufficient information pertaining to the cost effectiveness of the proposed remedies; how the proposed remedy satisfies the nine criteria for selecting remedies under the NCP and the factors to be considered under 6 NYCRR Part 375; and how the future construction activities and future use relating to the Airport Expansion project relate to clean-up standards and remedial activities which are necessary and appropriate for the site. NYSDEC's notice and analysis provide insufficient information necessary to provide the public with a reasonable explanation of the PRAP and alternative proposals for remediation. As a result, NYSDEC has not complied with the requirements under ECL Section 27-1313 and section 117(a) of CERCLA relative to

public participation responsibilities, and Westinghouse has been prejudiced thereby.

RESPONSE 51: The PRAP is meant to be a summary document. Page 1 of the PRAP states that it is a "summary of the information that can be found in greater detail in the RI/FS reports on file at the document repositories" and that "the public is encouraged to review the documents on file at the repositories to gain a more comprehensive understanding of the site and the investigations there". Page 1 also lists the locations of the document repositories. If any member of the public was of the opinion that the PRAP was of insufficient detail, they were strongly encouraged by the PRAP to review other site-related information.

APPENDIX B

ADMINISTRATIVE RECORD

The following documents, which have been available at the document repositories, constitute the Administrative Record for the Westinghouse Electric Corporation Site, Remedial Investigation/ Feasibility Study.

SEPTEMBER 1991:	Preliminary Site Assessment
SEPTEMBER 1994:	Remedial Investigation
SEPTEMBER 1994:	Feasibility Study, Operable Unit No. 1
SEPTEMBER 1994:	Proposed Remedial Action Plan, Operable Unit No. 1
MARCH 1995:	Responsiveness Summary, Operable Unit No. 1
MARCH 1995:	Record of Decision, Operable Unit No. 1
JUNE 1995:	Feasibility Study, Operable Unit No. 2
AUGUST 1995:	Proposed Remedial Action Plan, Operable Unit No. 2
DECEMBER 1995:	Responsiveness Summary, Operable Unit No. 2
DECEMBER 1995:	Record of Decision, Operable Unit No. 2