

United States Environmental Protection Agency
Region II
New York, New York
March 28, 2002

RECORD OF DECISION
DECISION SUMMARY

LIBERTY INDUSTRIAL FINISHING SUPERFUND SITE

FARMINGDALE, NASSAU COUNTY, NEW YORK

TABLE OF CONTENTS

	<u>Page</u>
SITE NAME, LOCATION AND DESCRIPTION	1
SITE HISTORY AND ENFORCEMENT ACTIVITIES	2
HIGHLIGHTS OF COMMUNITY PARTICIPATION	7
SCOPE AND ROLE OF OPERABLE UNIT	9
SUMMARY OF SITE CHARACTERISTICS	10
SUMMARY OF SITE RISKS	25
REMEDIAL ACTION OBJECTIVES	38
DESCRIPTION OF REMEDIAL ALTERNATIVES	40
SUMMARY OF COMPARATIVE ANALYSIS OF ALTERNATIVES	52
PRINCIPAL THREAT WASTES	63
SELECTED REMEDY	64
STATUTORY DETERMINATIONS	70
DOCUMENTATION OF SIGNIFICANT CHANGES	75

ATTACHMENTS

- APPENDIX I. MARCH 25, 2002 LIBERTY INDUSTRIAL FINISHING SITE
HUMAN HEALTH RISK ASSESSMENT ADDENDUM - WESTERN
PARCEL
- APPENDIX II. FIGURES
- APPENDIX III. TABLES
- APPENDIX IV. ADMINISTRATIVE RECORD INDEX
- APPENDIX V. STATE LETTER OF CONCURRENCE
- APPENDIX VI. LIST OF POTENTIALLY RESPONSIBLE PARTIES
- APPENDIX VII. RESPONSIVENESS SUMMARY

SITE NAME, LOCATION AND DESCRIPTION

The Liberty Industrial Finishing site (the Site) is located approximately one mile south of Bethpage State Park in the Town of Oyster Bay, Village of Farmingdale, Nassau County, New York (see Figure 1). The Site includes approximately 30 acres of property known as 55 Motor Avenue and is designated on the Nassau County Tax Map as Lots 327, 328 and 329 of Block 518, Section 48. The property is bordered by the Long Island Railroad to the north, Motor Avenue to the south, Main Street to the east and a small county park, Ellsworth Allen Park, to the west. The northwest corner of the Site abuts property owned by the South Farmingdale Water District which operates two deep public water supply wells at this location which is sidegradient of the Site. The surrounding area is primarily residential with several commercial establishments on the major roads. Approximately ten schools, both primary and secondary, are located within 1.5 miles of the Site. Figure 2, which was developed based on historical records, depicts former process facilities as well as potential contaminant source areas at the Site.

Currently, approximately half the Site property (the western portion, Lot 327) consists of primarily vacant land that abuts the park. The other half of the Site (the eastern portion, Lots 328 and 329) contains approximately ten buildings which are leased to a variety of tenants engaged in light industrial activities, such as trucking, warehousing, automobile parts salvaging operations, and product distribution.

The Site terrain is generally flat with numerous areas of standing water after heavy rainfall. There are no streams or drainage ditches on the Site property; however, there are private storm drains located throughout the property. Nassau County storm drains are located along Motor Avenue and Roberts Street, which ultimately drain into the headwaters of Massapequa Creek. This creek passes through the Massapequa Preserve and ultimately discharges into South Oyster Bay on the southern coast of Long Island.

The Site is situated on the glacial outwash plain of Long Island. The uppermost aquifer, the Upper Glacial, is estimated to be 85 feet thick beneath the Site. The depth to the water table is generally approximately 21 feet below ground surface (bgs), although the Site groundwater table fluctuates between 15 and 21 feet bgs. The saturated portion of the Upper Glacial aquifer, with a thickness of 64 feet, begins at the water table and extends down to 85 feet bgs. The Upper Glacial aquifer is underlain by the Magothy aquifer which is approximately 700 feet thick in the vicinity of the Site. Groundwater aquifers underlying the Site are classified as Class GA pursuant to 6 New York Codes, Rules and Regulations Parts 700-705 (6 NYCRR Parts 700-705, effective

September 1991). The Class GA standards apply to any groundwater, surface water body, aquifer or water course from which water is regularly taken for drink or which has been classified for present or future public beneficial use or source for domestic purposes. Similarly, the groundwater aquifers are classified as Class IIA by the U.S. Environmental Protection Agency (EPA) in that the aquifers are current or potential sources of drinking water.

SITE HISTORY AND ENFORCEMENT ACTIVITIES

The Site is a former aircraft parts manufacturing and metal finishing facility that began its operation in the late 1930's. Kirkham Engineering and Manufacturing Company purchased a portion of the Site property in 1937. In 1940, Kirkham changed its name to Liberty Aircraft Products Corp. and purchased the remainder of the 30-acre parcel. From 1940 to 1944, the federal government utilized the Site as a defense plant to develop and maintain production of materials needed for World War II. Materials used in Site operations included volatile organic compounds (VOCs) such as cis-1,2-dichloroethene (cis-1,2-DCE), trichloroethene (TCE), and tetrachloroethene (PCE); inorganic compounds containing cadmium, chromium, and cyanide; as well as other materials such as caustics and acids. Throughout most of the period of industrial operation, wastes containing these materials were discharged untreated into below-grade sumps, underground leaching chambers, and unlined, in-ground wastewater disposal basins.

Ownership of and operations at the Liberty site changed numerous times from 1957 until 1986.

In 1957, the Site was sold by Liberty Aircraft and was converted into an industrial park subject to a 25-year lease of the Site to the successor of Liberty Aircraft. Aircraft parts manufacturing was discontinued and a variety of other operations were conducted by tenants at the Site over the years, including metal plating and finishing operations, fiberglass product manufacturing, furniture manufacturing, and warehousing. Metal-plating operations were discontinued at the Site in 1978.

In 1978, the New York State Department of Environmental Conservation (NYSDEC) instituted an enforcement action under State law against Liberty Industrial Finishing Corporation, the last company to conduct plating operations at the Site. Liberty Industrial Finishing Corporation entered into an agreement with NYSDEC for cleanup of the Site. Limited cleanup activities were

conducted which consisted of the partial removal of soils from two Former Wastewater Disposal Basins.

In April 1984, the then owner of the Site, Four J's Company, among others, were brought into the State enforcement proceedings by Liberty Industrial Finishing and entered into an Order on Consent with NYSDEC to conduct a remedial investigation and feasibility study (RI/FS) under State law. An RI report was submitted to NYSDEC in November 1985; however, this report was not approved by NYSDEC. In March 1987, NYSDEC entered into a second Order on Consent with 55 Motor Avenue Company, who had assumed Four J's obligations under the first NYSDEC order, for an interim action involving the removal of contaminated soils from the Former Wastewater Disposal Basins. In July/August 1987, approximately 4,000 tons of metals-contaminated soils from the Sludge Drying Bed and Former Wastewater Disposal Basins were excavated and disposed of off-Site.

On June 10, 1986, the Liberty site was placed on the National Priorities List of federal hazardous substance sites. In May 1990, EPA assumed the role of lead agency for the Site from NYSDEC.

In September 1990, EPA utilized its contractor, Roy F. Weston, Inc. to conduct the RI/FS at the Liberty site. Field work was conducted from November 1991 to July 1992 and included various contaminant source and contaminant migration investigations and an ecological investigation. The initial RI report was completed in January 1994. This initial RI report defined much of the contamination at the Site, such as in soils on the western portion of the property, and in the Upper Glacial (shallow) aquifer. However, because the Magothy (lower) aquifer, the Massapequa Creek, and the majority of the soils and subsurface features consisting of vaults, drains, pipes, underground leaching chambers, underground storage tanks, and the northern and eastern sanitary leaching fields on the eastern portion of the property were not fully characterized during the initial RI, EPA determined the need to conduct a supplemental RI/FS for these areas.

Due to repeated instances of excavation and other disturbances, in March 1992, EPA issued an Administrative Order to the current Site owners under Sections 104(e) and 106(a) of CERCLA. Under this order, the property owners were required to refrain from excavating, disposing of, moving, or constructing upon soils at the Site and to refrain from taking any other actions, including disposal activities, that might interfere with EPA's investigation or remediation of the Site.

Based on the results of the initial RI report, EPA conducted a Removal Site Evaluation at the Liberty Site during late 1993 and early 1994, and subsequently determined that several localized areas of the Site posed an immediate risk to trespassers who may come in contact with these areas. These included electrical transformer areas contaminated with polychlorinated biphenyls (PCBs), wastes contained in underground storage tanks, and drums located at the Site. On August 30, 1994, EPA entered into an administrative order on consent (Removal AOC) to nine potentially responsible parties (PRPs) for performance of a time-critical removal action to remove immediate hazards posed primarily by PCBs and transport them to appropriate facilities for treatment and disposal. On August 30, 1994, EPA also issued a unilateral administrative order to six other PRPs directing them to coordinate with the Removal AOC respondents and to participate in the performance of the work required by the administrative order on consent or, in lieu thereof, to pay for their share of that work. Pursuant to the Removal AOC, the removal action began in late 1994 and all field work was completed in the Fall of 1995. This action eliminated the current-use risks associated with the Site. EPA also took steps to restrict access to areas of concern by installing fencing, repairing existing fencing, and posting warning signs.

After EPA released the initial RI report, the Agency had extensive discussions with the community, local officials, and PRPs on future land use and preliminary remedial alternatives for the western Site soils. A stakeholders group representing these parties was established and a mediator was brought in to facilitate the discussions. The mediation process officially began in October 1995 and initially consisted of private meetings and telephone conversations with various stakeholders, which were followed by seven joint sessions among all the stakeholders (the first session occurred on November 21, 1995). However, a consensus about the future land use could not be reached by the community, local officials and the PRPs. EPA ultimately decided, in April 1996, that for the purposes of identifying appropriate remedial alternatives, the reasonably anticipated future land use would be commercial/industrial primarily because the Site was zoned for industrial use from the 1920's until the mid-1980's and has been used for light industrial activities since that time.

In October 1996, EPA completed and released to the public a draft initial FS report which evaluated cleanup alternatives for addressing the contaminated soils on the western portion of the Liberty site. In accordance with the Agency's decision and

rationale regarding the reasonably anticipated future land use provided above, remedial alternatives presented in this draft initial FS report were developed for future commercial/industrial land use. Based on a supplemental soil sampling investigation that was conducted in January 1997, EPA revised the draft initial FS report.

In July 1997, EPA released an initial FS report and Proposed Plan for the remediation of the contaminated soils on the western portion of the Site to the public for comment. A public meeting and a public availability session were held in August 1997 and September 1997, respectively. Many commentors objected to EPA's commercial/industrial land use determination and also expressed concern about the lack of progress in addressing contaminated groundwater. In October 1997, after evaluation of the public comments received on the July 1997 Proposed Plan, EPA announced its decision to postpone the selection of a remedy for the soils on the western portion of the Liberty site to allow time for the Agency to assess further the impact of the soil remedy on the scope and duration of the future groundwater remedy.

On January 24, 1997, EPA issued an administrative order on consent to five PRPs for performance of the supplemental RI/FS (RI/FS AOC), to further characterize Site soils, Site groundwater and Massapequa Creek. Field work for the supplemental RI/FS was conducted from May 1997 to January 2000.

At the September 1997 public availability session, EPA also announced that it would move forward with an action to prevent the significantly contaminated portion of the groundwater contaminant plume (containing both VOCs and metals) from continuing to migrate from the Site until the future long-term comprehensive groundwater remedy was implemented. On March 31, 1998, the EPA selected an interim groundwater action to be performed as a non-time-critical removal action under CERCLA. On August 3, 1998, EPA issued a unilateral administrative order (Removal UAO) to all of the PRPs other than the two federal PRPs directing them to implement the interim groundwater action. The interim groundwater action, which addresses the groundwater plume known to originate at the Site, is being implemented by Coltec Industries with the cooperation of the two federal agency PRPs. Pilot testing of various innovative technologies for the interim groundwater action (similar to those of EPA's selected groundwater remedial alternative, discussed herein) began in December 1998 and was completed in May 1999. Construction of the full-scale interim groundwater treatment system began in November 1999. Treatment for VOCs was initiated in

January 2000, while treatment for metals was initiated in August 2000. However, various operational problems of significant nature that persisted for close to two years prevented the interim groundwater treatment system from continuous operation and effective treatment of groundwater contamination. As a result, in January 2002, EPA directed the PRPs to begin the process of converting the on-Site system into a conventional pump and treat system.

Additional information subsequently became available to EPA regarding the future use of the Site. On June 10, 1999, the Town of Oyster Bay released a study entitled "Preliminary Assessment of Utilizing the Western Portions of the Liberty Industrial Finishing Site for Parkland (May 7, 1998)" which indicated a potential recreational use for the far western portion of the property. And, as discussed below, between July 2001 and March 2002, the Town took significant steps to acquire title to all or most of the western portion of the Site property for the purpose of expanding the adjacent Ellsworth Allen park and utilizing the property for recreational purposes. In December 2000, EPA was advised by the Town of Oyster Bay and by the owners of the Liberty site property, that the property owners had made application to the Town of Oyster Bay for a "special use permit" to permit the redevelopment of the easternmost ten acres of the Liberty site. The proposed project includes a supermarket and fueling facility/convenience store, uses that would be consistent with the anticipated commercial/industrial land use for the Site.

On March 27, 2002, EPA issued an administrative order on consent (Index number CERCLA-02-2002-2013) (the Features AOC) to four respondents who currently own and operate the real property included within the Site. The Features AOC requires those respondents to, among other things, i) investigate and remediate below-grade sumps, vaults, drains, pipes, underground leaching chambers, underground storage tanks and other features located on the eastern portion of the Site, as well as to investigate and, if necessary, to remediate the northern and eastern sanitary leaching fields which are also located on the eastern portion of the Site and to the extent that those features or leaching fields lie within the approximately ten acres that are planned by the Site owners for demolition in preparation of the Supermarket/fueling facility development; and ii) remediate by excavation and off-Site disposal an approximately 500 cubic yard mound of contaminated soils and other materials currently located on the western parcel of the Site near to the eastern parcel boundary. This ROD also selects all of

the work required by the Features AOC, but subject to its satisfactory completion pursuant to the Features AOC.

HIGHLIGHTS OF COMMUNITY PARTICIPATION

As documented in the previous section, EPA had significant interaction with the community to discuss various reports proposed, proposed remedial efforts, and land use issues. The significant level of community input continued during the public comment period for the comprehensive remedy.

Upon completion of the supplemental investigations, EPA released supplemental RI/FS reports and the Proposed Plan to the public on April 10, 2001 and July 23, 2001, respectively. The July 2001 Proposed Plan, the supplemental RI/FS reports, and all other documents and information upon which the selected remedy is based were made available to the public in the administrative record file at the EPA Records Center in Region II, located at 290 Broadway, 20th Floor, New York, and also at the information repository established and maintained at the Farmingdale Public Library, located at 116 Merritt Road, Farmingdale, New York. The notice of the public meeting and availability of the above-referenced documents appeared in two newspapers, Newsday and the Farmingdale Observer on July 23, 2001 and July 27, 2001, respectively. These notices also announced a public comment period on the July 2001 Proposed Plan and supporting documentation from July 23, 2001 through August 22, 2001. The notice, as well as the July 2001 Proposed Plan, were also mailed to close to 700 interested parties on the Site mailing list. A press release announcing the public meeting and comment period was issued on August 1, 2001. On August 9, 2001, EPA held a public meeting at the Farmingdale Public Library to discuss remedial alternatives, to present EPA's preferred remedial alternatives, and to provide an opportunity for the interested parties to present comments and questions to EPA.

Per the public's request at the August 9, 2001 public meeting, EPA extended the public comment period by 30 additional days to September 21, 2001 and scheduled a separate public availability session for September 13, 2001. The notice of the public availability session and extension of the public comment period to September 21, 2001 appeared in the Farmingdale Observer and Massapequa Observer on August 24, 2001, August 31, 2001, and September 7, 2001, and in Newsday on August 28, 2001. The notice was also mailed to all interested parties on the Site mailing list. A press release announcing the same was issued on August 22, 2001.

However, because EPA's Region II office was closed due to the terrorist attacks on the World Trade Center (WTC), the September 13, 2001 public availability session was postponed. Also, because some public comments sent by regular mail were likely not received due to the closing of the postal facility in lower Manhattan, EPA further extended the public comment period to January 25, 2002 and rescheduled the public availability session for January 9, 2002. The notice of the public availability session and the public comment period extension appeared in the Farmingdale Observer and Massapequa Observer on December 14, 2001, December 21, 2001, and January 4, 2002, and in Newsday on December 12, 2001. The notice was also mailed to parties on the Site mailing list. EPA held the public availability session at the Farmingdale Public Library, to provide additional information and another opportunity to respond to comments and questions community members had regarding the proposed remedial alternatives.

Numerous comments were received on the supplemental RI/FS reports and the July 2001 Proposed Plan at the public meeting and the public availability session and throughout the public comment period. Comments and concerns raised by interested parties including members of the public relate to the use of innovative technologies for the comprehensive groundwater remedy; the discharge of treated groundwater; the extent of the Massapequa Creek remedy; human health and risk assessment issues; enforcement-related issues; however, the majority of comments received related to the preferred soil remedy. While there was a general sentiment among the commentators at the public meeting and the public availability session that EPA's preferred remedy was much improved relative to the preferred remedy described in the 1997 Proposed Plan, there was extreme dissatisfaction with preferred soil remedy, particularly with the component of the preferred remedy that would leave nearly 50,000 cubic yards of contaminated soils at the Site covered by an impermeable cap.

EPA received more than 400 letters, electronically and in writing, as well as verbal comments requesting that EPA change the proposed alternative for soil remediation from Alternative SL-2 (which would involve excavation and off-Site disposal of approximately 25,600 cubic yards of contaminated soils and capping of other lesser contaminated soils) to SL-3 (which would involve excavation and off-Site disposal of all contaminated soils that could potentially impact groundwater). Concerns were expressed over the long-term effectiveness of the 8.75-acre capping component of Alternative SL-2, with commentators asserting that the proposed cap would ultimately fail because effective cap maintenance, required to ensure the

integrity of the cap and remedy, could not be guaranteed. The commentors insisted that Alternative SL-3 should be selected because it is a permanent remedy that minimizes the potential threat to the sole source aquifer underlying the Site which serves as the drinking water supply for 44,000 people, and because it is more reliable than Alternative SL-2 in protecting human health and the environment. EPA also received oral and written comments from the elected representatives of the community unanimously requesting that EPA select Alternative SL-3 for many of the same reasons cited by the community members. During the comment period. EPA also became aware that the Town of Oyster Bay (Town) had taken significant steps towards formalizing plans to acquire nearly all of the western portion of the Site, including the area that would be capped under Alternative SL-2, for the purposes of expanding Ellsworth Allen Park. The Town also requested that EPA select Alternative SL-3, because they felt Alternative SL-2 would be incompatible with the recreational uses planned for the property proposed for acquisition. Further discussions and written information provided by the Town resulted in EPA's determination that SL-2 would interfere with the Town's ability to use the park over the short and long term. This information caused EPA to re-evaluate Alternatives SL-2 and SL-3 against the criteria listed in the NCP which EPA uses to evaluate remedies including: permanence and long-term effectiveness. Based upon this re-evaluation and the evaluation criterion of "community acceptance," EPA determined that Alternative SL-3 should be the selected remedy contingent upon the Town's acquisition of the property for recreational use. Alternative SL-3 would allow the Town to use the publicly owned property as a park without limitation. However, if the Town does not complete the acquisition process within a time frame of approximately 6 to 8 months, or satisfactorily demonstrate to EPA that they will acquire the property for such purposes within a reasonable time frame, then EPA will implement Alternative SL-2 as a contingency remedy. In the event that Alternative SL-2 becomes the selected remedy, EPA will provide written notice to all stakeholders on the EPA mailing list for the Site.

Responses to the comments received at the public meeting and during the public comment period are included in the Responsiveness Summary (see Appendix V).

SCOPE AND ROLE OF OPERABLE UNIT

The remedy selected in this ROD represents a long-term comprehensive remedy to address the on-Site soil contamination, the

on-Site and off-Site groundwater contamination, and localized contamination in pond sediments in Massapequa Creek downstream of the Site. The primary objective of the selected remedy is to reduce contaminant levels in affected media, including soils, groundwater, and pond sediments, to levels that are protective of human health and the environment.

The selected remedy will complement cleanup actions that have been and continue to be conducted under the removal program (described above): the 1994-95 time-critical PCB removal action that eliminated the current-use risks associated with the Site; the ongoing non-time-critical removal action (interim groundwater treatment system) that is treating the contaminated groundwater underlying the Site property; and the non-time-critical removal action to address the contaminated features, the 500 cubic yard mound of contaminated soils and the sanitary leaching fields.

SUMMARY OF SITE CHARACTERISTICS

The objective of the supplemental RI was to augment the initial RI data in order to more completely delineate the nature and extent of contamination at and emanating from the Site. In addition, an evaluation was also performed which established Site-specific cleanup concentrations in soils that would be protective of groundwater and would also be protective of human health for the most reasonably anticipated future uses of the Site property (commercial/industrial for the eastern portion and commercial/industrial or recreational for the western portion). Field work for the supplemental RI/FS was conducted by five of the Site PRPs pursuant to the RI/FS AOC, under EPA oversight, from May 1997 to January 2000. The supplemental RI/FS reports were issued in April 2001.

The results of the supplemental RI are summarized below by contaminated media, namely, soil, groundwater, and Massapequa Creek sediments. To assess the significance of the detected contaminants, a comparison was made in the supplemental RI report to applicable or relevant and appropriate federal and State environmental and public health requirements, and Site background conditions.

On-Site Soil Contamination

The initial RI and the supplemental RI confirmed several significant on-property source areas including the former

Wastewater Disposal Basins, the former Building B Basement area, the former Building B Ramp Pile, and the Northwest Disposal Area (see Figure 2).

The supplemental RI on-Site source investigation included the following field and analytical activities:

- geophysical investigation,
- soil gas survey,
- subsurface feature inspection and sampling,
- underground storage tank (UST) investigation,
- county storm drain sampling,
- soil screening and sampling conducted as part of a groundwater screening program, and
- comprehensive soil sampling program.

Geophysical Investigation

A geophysical investigation, using ground-penetrating radar (GPR) methods, was conducted at twelve (12) areas across the Site (see Figure 3). The objective of the GPR investigation was to further define and delineate suspected structures associated with leaching fields in specific portions of the Site, to identify the location of a possible basement structure beneath the floor slab of former Building D, and to verify the existence of suspected USTs at five on-Site locations. The results of the GPR surveys were used to locate soil and groundwater screening borings to further investigate these features.

Soil Gas Survey

A soil gas survey was conducted at the eastern paved portion (approximately 4 acres) of the Liberty property and along the south side of Motor Avenue to evaluate potential source areas for VOCs in subsurface soils or shallow groundwater (see Figure 4). The soil gas results from the eastern portion of the Site were used to optimize the location of soil and groundwater screening boring locations. The objective of collecting soil gas samples from the south side of Motor Avenue was to evaluate the presence of VOCs in shallow soils downgradient and off-property from the former

Wastewater Disposal Basins. A total of 78 soil gas samples were collected from the 42 borings and field-screened for total VOCs. Twenty-one percent of the screening samples were selected for off-property confirmatory laboratory analyses. Overall, the distribution of soil gas concentrations did not infer the presence of any significant VOC concentrations in soil and groundwater beneath the easternmost 4-acre portion of the Site.

Subsurface Feature Inspection and Sampling

A subsurface feature investigation and sampling program was undertaken in order to identify, describe, and determine the content of various sumps, vaults, drains, or other on-Site subsurface containment features that were located on the eastern portion but not sampled during the initial RI field program. In addition, the purpose of the sampling program was to provide an indication as to whether any of these features represents continuing sources to on-Site soil or groundwater contamination. Table 1 and Figures 5 and 6 summarize the locations of the 56 features that were considered during the CRI activities.

Of the 56 suspected or existing subsurface features (28 exterior and 28 interior) that were investigated, four subsurface features (SF-29, SF-44, SF-51, and SF-56) could not be located, but the remaining 52 subsurface features were inspected, described, accessed, and/or sampled. Of the 52 subsurface features, 30 were sampled for solids, aqueous material, or both. Of the 16 features that were found to contain aqueous material, 15 were sampled for aqueous analysis. Of the 33 features that were found to contain solids, 26 were sampled for solid analysis. The 15 aqueous samples and 26 solid samples were analyzed for VOCs, semivolatile volatile organic compounds (SVOCs), pesticides and PCBs, metals, and cyanide. In addition, 13 solid samples were analyzed to determine whether they are hazardous waste per the Toxicity Leachate Characteristics Procedure (TCLP), as regulated by the Resource Conservation and Recovery Act (RCRA). Sampling results indicated that the features do not represent significant sources of contamination (e.g., VOCs and metals) to on-Site soils or groundwater. However, the results did identify two SVOCs, namely, benzo[a]pyrene and dibenzo[a,h]anthracene, in concentrations as high as 0.041 milligrams/liter (mg/l) and 0.007 mg/l, respectively, in several of the subsurface features. These SVOCs do not present a potential threat to groundwater due to their limited mobility and low concentrations within the concrete subsurface features but would present a risk to future Site construction workers who may come in contact with these substances

(as further discussed in detail in **Human Health Risk Assessment section**, below). TCLP analytical results indicate that none of the samples tested were RCRA hazardous by characteristic.

The volumes of the accumulated soil and aqueous materials (which is believed to be primarily derived from surface drainage) within the inspected subsurface features were estimated as follows: roughly half of the features did not contain any significant materials, and the average size of each feature is on the order of two feet in diameter, with solids having accumulated to an average thickness of two feet and aqueous having accumulated to an average thickness of half a foot. Therefore, a conservative estimate of solid and aqueous materials present would amount to about 6 cubic yards and 40 cubic feet, respectively.

With the exception of the subsurface features in Buildings H and W, the identified features do not appear to be connected to one another over large distances. In addition, the features are not being actively used for any recognizable or intentional purpose by the current tenants. In general, the majority of the inspected subsurface features are self-contained sumps, chambers, or small holes in the ground, some of which have accumulated mud, leaves and surface runoff through time. Many of the pipes that were occasionally observed in these features are now blocked by debris. The few features that are connected (e.g., in Building H), appear to be linked by 8-inch to 12-inch diameter pipes with an estimated total length of 2,000 feet. Assuming that all the pipes are clogged with solids, the resulting additional volume in the pipes would amount to about 18.5 cubic yards.

As discussed above in **SITE HISTORY AND ENFORCEMENT ACTIVITIES** Section, EPA previously issued the Features AOC to four respondents who currently own and operate the Site which requires that they investigate and, as necessary remediate, the subsurface features on the approximately ten-acre portion of the eastern part of the Site property which will be the subject of demolition activities in preparation for commercial redevelopment of the Site. This ROD addresses the investigation and remediation of all of the Features. However, selection of the remediation of the features is subject to prior performance pursuant to the Features AOC.

Underground Storage Tank (UST) Investigation

An UST investigation was conducted to evaluate the suspected locations of five tanks (See **Figures 5 and 6**), which were inferred by Roy F. Weston, Inc. during the initial RI to potentially exist

based on their appearance on a fire insurance map, to determine if the tanks also received Site-related liquids such as waste solvents or PCB-bearing waste oils. Of the five suspected locations, four were investigated during the geophysical ground-penetrating radar (GPR) survey which indicated the presence of tank structures at three of the four investigated locations, north of Building C, between Buildings H and U, and north of Building A; the GPR survey did not indicate any evidence of a buried tank structure in a suspected area east of the former Building S pad. Due to safety considerations and inaccessibility, only UT-13, north of Building A, was sampled; one liquid sample was analyzed for RCRA hazardous waste characteristics for organics and metals, and pesticides and PCBs.

The analytical results did not indicate any significant concern for VOC or metal contamination; in addition, no pesticides and PCBs were detected. The TCLP analytical results indicate that the sample tested was not RCRA hazardous by characteristic. Fifteen soil samples were taken adjacent to the fifth suspected UST location north of the Wastewater Disposal Basins which showed limited VOC detections, all below NYSDEC soil guidance values (NYSDEC Technical and Administrative Memorandum (TAGM): Determination of Soil Cleanup Objectives and Cleanup Levels, Revision 4/95). However, as part of the selected remedy, a more complete investigation of the three tanks (a UST north of Building C, a UST between Buildings H and U, and the aforementioned fifth suspected UST inferred to be located north of the Wastewater Disposal Basins that was not investigated via GPR survey), including sampling and analysis of any contents, would be conducted as part of the comprehensive soil remedy to determine if any remediation is necessary.

As discussed in the previous subsection "Subsurface Feature Inspection and Sampling," EPA previously issued the Features AOC to four respondents who currently own and operate the Site which requires that they investigate and, as necessary remediate, these three underground storage tanks. And, as discussed in the previous subsection, this ROD addresses the investigation and remediation of the underground storage tanks, but subject to its satisfactory completion pursuant to the Features AOC.

County Storm Drain Sampling

Historic plans indicated that the on-Site storm drainage system was connected to the county storm sewer system (one former connection existed from the former Wastewater Disposal Basins and one former

connection existed at the eastern portion of the Site). The county storm sewer discharges into the headwaters of Massapequa Creek near Spielman and Roberts Street. Soil/sludge materials present within five manholes accessing Nassau County storm sewer drains along the north side of Motor Avenue (See Figures 5 and 6) were sampled for Site-related constituents (VOCs, cadmium, chromium, or cyanide). Site-related VOCs (i.e., cis-1,2-DCE, TCE, and PCE) were not detected in any of the five samples. Cadmium and chromium were detected in concentrations which were all below their respective Site-specific soil cleanup levels.

Soil Screening and Sampling Conducted as Part of a Groundwater Screening Program

A soil screening and sampling program was implemented to evaluate the potential presence of dense nonaqueous phase liquid (DNAPL)¹ in the subsurface across the entire Site property and to acquire primarily supplemental VOC and metals soil data from locations surrounding suspected source areas. In all, 21 on-Site soil screening borings were completed (see Figure 7) and 28 soil samples were analyzed for VOCs, SVOCs, pesticides and PCBs, metals, and cyanide. In addition, four soil samples were collected from the suspected former Building D Basement area and the eastern portion of the Site for RCRA hazardous waste characteristics for organics and metals. Results from a DNAPL-screening test conducted, using a dye, concluded that the presence of DNAPL in on-Site soils is unlikely. Concentrations detected for VOCs, SVOCs, PCBs, and pesticides were below their respective TAGM values. Although cadmium and chromium were not detected above their respective Site-specific groundwater protection cleanup levels developed for the Site (details for the development of cadmium and chromium cleanup levels are provided below) in the subsurface soil samples (i.e., below 1 foot bgs), they were frequently detected at concentrations above their groundwater protection cleanup levels in surface soils and in soils sampled from the former Wastewater Disposal Basins

¹ Dense nonaqueous phase liquid (DNAPL) is a chemical (or mixture of chemicals) that is a liquid in its pure form, which does not readily mix with water but does slowly sink and dissolve in water. Generally, when present in the subsurface, DNAPLs slowly release vapor and dissolved phase contaminants, resulting in a zone of contaminant vapors above the water table and a plume of dissolved contaminants below the water table. DNAPLs, in general, are very difficult to remediate.

area. The TCLP analytical results indicate that the four soil samples tested were not RCRA hazardous by characteristics.

Comprehensive Soil Sampling Program

2/00' — The comprehensive soil sampling program was conducted in the western portion and part of eastern portion of the Site to further delineate the horizontal and vertical extent of concentrations of cadmium, chromium, and VOCs. This effort was also conducted to derive Site-specific concentrations of cadmium and chromium that would be protective of the underlying groundwater aquifers using the Synthetic Precipitation Leachate Procedure (SPLP) methodology. Using a grid layout approach, 92 soil borings were completed to 20 feet bgs with samples collected at five-foot intervals, beginning with the collection of a surficial sample. The locations of the on-Site grid layout soil borings in Areas A through E are shown in Figure 8. Based on the analytical results for cadmium and chromium (total soil concentrations) and their corresponding SPLP extraction leachate from 18 samples collected from the four SPLP soil borings, 10 mg/kg cadmium and 143 mg/kg chromium were developed as Site-specific soil clean-up levels. (For comparison purpose, the NYSDEC TAGM values for cadmium and chromium are 10 mg/kg and 50 mg/kg, respectively.) Based on NYSDEC's Technical and Administrative Memorandum (TAGM), the following soil cleanup objectives were adopted for VOC contaminants: 0.7 mg/kg of TCE, 0.25 mg/kg of cis-1,2-DCE, and 1.4 mg/kg of PCE.

Thirty-four VOC soil samples were collected from Areas A, B, C, and the northern portion of Area D (excluding the former Wastewater Disposal Basins). Site-related VOCs were detected in only two soil samples (0.19 mg/kg and 0.13 mg/kg TCE), both within the Northwest Disposal Area and both below the TAGM value. Of the 42 VOC soil samples collected from the remainder of Area D (including the former Wastewater Disposal Basins), VOCs were detected in only five soil samples from locations near the former Wastewater Disposal Basins and at the northwest corner of former Building N. Two samples were above the TCE TAGM (0.7 mg/kg) with the highest concentration of 1.17 mg/kg; no other VOC TAGM values were exceeded. Of the 60 VOC soil samples collected from Area E, only one VOC, TCE, exceeded its TAGM value. TCE was detected in soil samples collected in the vicinity of the former Building B Basement area. The detected TCE concentrations ranged from 0.072 mg/kg to 5.09 mg/kg. Fifteen VOC confirmatory soil samples were collected from the former Building B Ramp Pile; none showed any Site-related VOC concentrations above respective TAGM values.

Three hundred and forty soil samples were collected from Areas A through E and analyzed for metals. The results indicate that the former Wastewater Disposal Basins, the former Building B Basement area, the Northwest Disposal Area, and the former Building B Ramp Pile are significant on-property source areas with cadmium and chromium concentrations well in excess of their respective soil cleanup levels; outside these source areas, cadmium and chromium were also detected, in scattered locations, in concentrations above their respective soil cleanup levels. In general, based on the supplemental soil sampling data for VOCs and metals, many of the locations where VOCs were detected in excess of their respective Site-specific soil cleanup levels are co-located with soils that also have cadmium and chromium concentrations above their respective soil cleanup levels.

Samples were also collected for RCRA TCLP characteristics analysis from the various source areas across the Site. Results indicated that samples collected from the Northwest Disposal Area, the former Building B Basement area, and the former Building B Ramp Pile tested positive for RCRA hazardous waste characteristics, due to metals contamination.

The supplemental RI results relating to on-property soils indicate that the majority, or approximately 95%, of the soil contamination is situated on the western portion of the Site (e.g., the former Wastewater Disposal Basins, the former Building B Ramp Pile, and the Northwest Disposal Area); the balance of the soil contamination is situated on the eastern portion of the Site (e.g., the Building B Basement area and the Building G floor drain).

The total volume of Site soils, based on above soil cleanup levels, that would require remediation was estimated at 73,100 cubic yards. In addition, due to the co-location of metal and VOC contaminants of concern, EPA believes that if the contaminated soils are remediated to 10 mg/kg cadmium and 143 mg/kg chromium soils cleanup levels, then the VOC contaminants in soils, estimated at approximately 500 cubic yards, will also be adequately addressed. The bulk of the contamination is located in four discrete areas: the Former Wastewater Disposal Basins (11,400 cubic yards), the Northwest Disposal Area (32,000 cubic yards), the Building B Basement (3,500 cubic yards), and the former Building B Ramp Pile (500 cubic yards); of these soils, the volume of RCRA hazardous soils was estimated to be 16,000 cubic yards. All 16,000 cubic yards of RCRA hazardous soils will be excavated for off-Site disposal and treatment at a RCRA Subtitle C facility. The remaining 25,700 cubic yards of soils represent low-level soil

contamination that are scattered and present throughout seven acres of soils that abut the four discrete source areas.

The results from the soil gas survey and soil borings completed on the easternmost 4-acre portion of the Site by Main Street indicate it is free of any soil contamination above the soil cleanup levels and, therefore, would qualify for a partial Site delisting from the National Priorities List. Similarly, with the exception of land included in the Northwest Disposal Area, the Site property bordering Ellsworth Allen Park does not appear to have been impacted by Site-related disposal activities.

Groundwater Contamination

An extensive groundwater investigation was conducted to evaluate the nature and extent of contamination in both the Upper Glacial aquifer and the Magothy aquifer. Initially, a groundwater screening program was conducted to evaluate groundwater and to optimize locations for permanent monitoring wells to be installed in the Upper Glacial and Magothy aquifers. A total of 17 on-property (see Figure 9) and 34 off-property (see Figure 10) groundwater screening borings were completed, from which 38 screening samples and 113 screening samples, respectively, were collected for analyses of VOCs, cadmium, and chromium. Based on the groundwater screening results, 7 on-property and 31 off-property monitoring wells were installed to augment the existing monitoring well network, which consisted of 26 initial RI monitoring wells (11 on-property and 15 off-property). Therefore, there are currently 16 on-property monitoring wells completed in the Upper Glacial aquifer and 2 on-property monitoring wells completed in the Magothy aquifer (see Figure 11). In addition, there are currently 26 off-property monitoring wells completed in the Upper Glacial aquifer and 20 off-property monitoring wells completed in the Magothy aquifer (see Figure 11). In all, three rounds of new and existing monitoring well sampling were conducted. The first sampling round included 9 on-property wells and 29 off-property wells, the second sampling round included 10 on-property wells and 33 off-property wells (including the Farmingdale High School irrigation well), and the third sampling round included 1 on-property well and 14 off-property wells.

Sampling results indicate that two distinct plumes exist beneath the property. These plumes have been designated as Plume A and Plume B. Plume A originates on the western portion of the Liberty property, while Plume B apparently originates primarily upgradient of the Site, east of Plume A. Plume A is characterized by TCE

concentrations (including degradation products such as cis-1,2-DCE) coming mainly from the former Building B Basement area and the former Wastewater Disposal Basins and extending south-southwest (generally west of Woodward Parkway). There is no significant PCE concentration in Plume A. Plume A is also characterized by chromium and cadmium contamination. Plume B is characterized by PCE concentrations (including degradation products) and extends across the Site toward the south-southwest (generally east of Woodward Parkway). PCE contamination was highest approximately 300 feet north of the Liberty property with a concentration of 1,100 micrograms/liter ($\mu\text{g}/\text{l}$) which indicates that the primary source of Plume B contamination is upgradient of the Liberty property. Unlike Plume A, Plume B is not characterized by chromium and cadmium contamination. Both Plumes A and B were delineated as relatively narrow in shape, which is typical of plumes in sandy aquifers similar to the Upper Glacial aquifer. The on-property and off-property extent of contamination in Plume A has been delineated while further investigation of Plume B and its source(s) is being conducted by EPA.

In Plume A, the cadmium and chromium contamination exists throughout the Upper Glacial aquifer under the Liberty property (maximum detected concentrations of 262 $\mu\text{g}/\text{l}$ cadmium and 156 $\mu\text{g}/\text{l}$ chromium) and to a lesser extent in the the upper portion of the Magothy aquifer (maximum detected concentration of 10 $\mu\text{g}/\text{l}$ chromium - cadmium was not detected). The Safe Drinking Water Act Maximum Contaminant Levels (MCLs) for cadmium and chromium are 5 $\mu\text{g}/\text{l}$ and 50 $\mu\text{g}/\text{l}$, respectively. Inorganic contamination in the off-property groundwater is almost entirely limited to the Upper Glacial aquifer (maximum detected concentrations of 135 $\mu\text{g}/\text{l}$ of cadmium and 553 $\mu\text{g}/\text{l}$ of chromium); chromium was detected at a concentration of 63.5 $\mu\text{g}/\text{l}$ in one sample collected from a monitoring well located near the intersection of Fallwood Parkway and Kent Street and screened in the upper portion of the Magothy aquifer. The inorganic contaminant plume appears to extend approximately a mile beyond the Site property just to the north of the Southern State Parkway.

Plume A sampling data for groundwater beneath the Liberty property indicated that VOC contamination is limited to the upper portion of the Upper Glacial aquifer (maximum detected concentrations of 1,500 $\mu\text{g}/\text{l}$ of TCE, 810 $\mu\text{g}/\text{l}$ of cis-1,2-DCE, and 2 $\mu\text{g}/\text{l}$ of PCE); the MCL for TCE, cis-1,2-DCE and PCE is 5 $\mu\text{g}/\text{l}$. VOC sampling data for off-property groundwater revealed that Site-related VOC contamination is present throughout the Upper Glacial aquifer (maximum detected concentrations of 160 $\mu\text{g}/\text{l}$ of TCE, 48 $\mu\text{g}/\text{l}$ of cis-1,2-DCE, and 7

µg/l of PCE) and into the upper portion of the Magothy aquifer (maximum detected concentrations of 490 µg/l of TCE, 24 µg/l of cis-1,2-DCE, and 3 µg/l of PCE) between Fallwood Parkway and the Woodward Parkway Elementary School; samples collected from the upper portion of the Magothy aquifer downgradient of the school, however, did not exceed drinking water standards. The VOC contaminant plume within the Upper Glacial aquifer also appears to extend approximately a mile beyond the Site property just to the north of the Southern State Parkway.

The depth to the water table is approximately 21 feet bgs, although the Site groundwater table fluctuates between 15 feet bgs and 21 feet bgs. Based on six rounds of groundwater elevations (or depth-to-groundwater table measurements), groundwater flow within the Upper Glacial aquifer was determined to be predominantly horizontal and in the south-southwesterly direction; the horizontal flow velocity in the Upper Glacial aquifer was estimated to be about 1.6 feet/day. The direction of the horizontal component of groundwater flow within the Magothy aquifer is also in the south-southwesterly direction, with a slight south-southeasterly component north of the Farmingdale High School; the horizontal flow velocity in the Magothy aquifer was estimated to be about 0.17 feet/day.

A numerical groundwater fate and transport model, using the United States Geological Survey (USGS) MODFLOW/MT3D model, was also conducted to simulate groundwater flow and transport in the vicinity and downgradient of the Site. The model domain included the Farmingdale and Bethpage area to the north and the Massapequa and Wantagh regions to the south of the Site. In addition, the USGS MODPATH code was used to assess flow paths and travel times between the Site and areas of groundwater discharge. The model was calibrated against observed head data obtained during the supplemental RI activities and against well data contained in the Nassau County Department of Public Works database (e.g., observation wells, supply wells, pumping information). During the calibration process, the flow model input parameters (i.e., literature-based values for hydraulic conductivity, recharge, etc.) were adjusted to produce a model calibrated to average, observed groundwater elevation data. Sensitivity analyses for the main model parameters were performed. The time-versus-concentration plots for cadmium, chromium, and TCE for the 1940-2010 period, generated by the fate and transport model, show that the concentrations of these contaminants peaked during the 1950's and 1960's and have decreased or remained stable since that time.

Through a collaborative effort with the Massapequa and South Farmingdale Water Districts, six sentinel monitoring wells were installed upgradient of the water districts' drinking water supply well fields to serve as an early warning system should contamination migrate close to the well fields. The water districts' periodic monitoring of these sentinel wells has not detected any Site-related contamination.

Massapequa Creek and Preserve

The initial RI revealed that the Liberty groundwater contaminant plume within the Upper Glacial aquifer discharges into Massapequa Creek north of Pond A. The County storm sewer system, to which the on-Site storm drainage system is connected, also discharges into the headwaters of Massapequa Creek. Figure 12 shows several detention ponds along the Massapequa Creek corridor. From north to south, these ponds are referred to as Pond A (north of the Southern State Parkway), Pond 1, Pond 2, Pond 3, Pond 4 (also referred to as Massapequa Reservoir and located south of Sunrise Highway), and Pond 5 (also referred to as Massapequa Lake, located north of Merrick Road and approximately 4.5 miles south of the Site). These ponds were constructed to control localized flooding and silting of the streambed. The conceptual model of Site contamination based upon the RI indicates that these ponds serve as detention basins for runoff and associated sediments entering the creek from the watershed. Pond A, being located farthest upstream and closest to the Liberty Site, therefore has the greatest potential to be affected by contaminated groundwater discharge from the Liberty Site. This information indicated the need to expand the limited investigation of the Massapequa Creek that was initially conducted during the initial RI.

The objective of the supplemental RI was to further define the extent of groundwater discharge, and to evaluate potential ecological effects in an ecological risk assessment. The supplemental RI included the following activities:

- surface water sampling,
- stream and pond sediment sampling,
- sediment toxicity (bioassay) testing,
- fish sampling, and
- benthic macroinvertebrate surveys.

Figure 12 shows the ecological sampling locations in the Massapequa Creek and ponds that were investigated. Mill Pond, located in Bellmore approximately four miles west of the Massapequa Preserve, was utilized as a reference pond with which to compare results of the supplemental RI. Analytical results from the supplemental RI were screened in order to determine potential ecological risks from groundwater requiring further evaluation in the risk assessment. Exceeding screening benchmarks does not necessarily indicate the need for cleanup, or even the presence of actual risks, but indicate the need for further Site-specific evaluation of potential ecological risks in order to form the basis of informed risk management decisions. Results of the supplemental RI indicated that several chemicals present in groundwater discharging from the Site were also present in surface water and sediment at levels exceeding ecologically-based screening benchmarks. The highest frequency and magnitude of these values were noted in Pond A.

Surface Water Sampling

Surface water samples were collected from 13 locations within the Massapequa Creek system and analyzed for VOCs and cadmium, chromium and lead. The samples were collected between the eastern branch headwaters of Massapequa Creek and just south of Pond 2. Results indicated only trace concentrations of VOCs in the surface water samples, none above the NYSDEC chronic ambient water quality standards (AWQS). The major VOC constituent detected was methyl-tertiary butyl ether (MTBE), a common anti-knock gasoline additive, which is non-Site-related and was likely introduced into the Massapequa Creek by stormwater runoff from the adjacent highways and urban development. TCE in excess of 1 µg/l was only detected north of Pond A. Cadmium was detected above the NYSDEC chronic AWQS between Pond A and Pond 1 and above the NYSDEC acute AWQS upstream of Pond A; cadmium concentrations to the south of Pond 1 were either nondetectable or below the AWQS. Total chromium concentrations were below the NYSDEC AWQS throughout the study area. Hexavalent chromium concentrations exceeded the AWQS only north of Pond A. These results are compatible with overall characteristics of shallow groundwater discharge into the Massapequa Creek.

Stream and Pond Sediment Sampling

Five rounds of stream sediment and pond sediment sampling were conducted, though not all locations were sampled in each round.

During the first round, 15 stream or pond sediment samples were collected from locations within the Massapequa Creek and ponds, between the headwaters of the Massapequa Creek and just south of Pond 2. During the second round, 11 pond sediment samples were collected from two locations in Pond A, three locations in and near Pond 1, three locations in Pond 2, and three locations in Pond 3. During the third round, 14 pond sediment samples were collected from one location from Pond A, one location from Pond 1, one location from Pond 2, two locations from Pond 3, three locations from Pond 4 (Massapequa Reservoir), and three locations from Pond 5 (Massapequa Lake), and one location from reference pond (Mill Pond). During the fourth round, 8 sediment samples were collected from Pond A, Pond 1, Pond 2, Pond 3 (two locations), Pond 4, Pond 5, and Mill Pond. During the fifth round, 11 pond sediment samples were collected from Pond A.

Sediment samples collected during rounds 1 and 2 were analyzed for VOCs and metals. Samples collected during rounds 3, 4, and 5 were analyzed for metals only, in particular, cadmium, chromium and lead. Only trace concentrations of the Site-related VOCs, TCE (0.6 to 1.0 $\mu\text{g}/\text{kg}$) and 1,1,1-TCA (0.5 to 2.2 microgram/kilogram ($\mu\text{g}/\text{kg}$)), which is a degradation product of TCE, were detected. Metal concentrations in stream sediments were lower (by about two orders of magnitude) than the metals concentrations in pond sediments. The metals data were compared to NYSDEC guidance values used to screen contaminated sediments for possible adverse ecological impacts. Cadmium concentrations which exceeded the NYSDEC Severe Effect Level (SEL) sediment screening guideline (9 mg/kg) in all ponds except the reference pond (Mill Pond), were highest in Pond A and Pond 1. Chromium concentrations also exceeded the NYSDEC SEL sediment screening guideline (110 mg/kg) in all ponds except the reference pond; chromium concentrations were highest in Pond A, Pond 1, and Pond 4. Lead concentrations also exceeded the NYSDEC SEL sediment screening guideline (110 mg/kg) in all ponds except the reference pond; lead concentrations were highest in Pond A, Pond 1, and Pond 5. Lead is considered non-Site-related as it is believed to have been introduced into the Massapequa Creek via urban runoff.

As the NYSDEC SELs are generic guidance criteria, they suggest the possibility for adverse ecological impacts. In such situations, Site-specific information (e.g., sediment toxicity analyses, fish tissue analyses, and macroinvertebrate analyses) is usually relied upon to provide additional information regarding the potential for ecological effects to result from exposure to contamination present in the system.

Sediment Toxicity (Bioassay) Testing

Sediment toxicity testing was performed to evaluate whether the metals concentrations in sediments have any effect on the survival of acclimated test organisms. Two rounds of sediment toxicity tests were conducted; the first round was conducted on sediments from all six Massapequa Creek ponds and the second round was conducted on sediments from only Pond A where the highest cadmium, chromium, and lead concentrations of 248 mg/kg, 839 mg/kg, and 1,160 mg/kg, respectively, were detected. The sediment toxicity tests were conducted on two standard benthic invertebrate test organisms (*Hyalella azteca* and *Chironomus tentans*) by exposing them to Site sediments. Pond sediments with cadmium concentrations of at least 99.9 ppm and chromium concentrations of at least 457 ppm caused a significant reduction in survival of *Hyalella azteca* and a significant reduction in growth of *Chironomus tentans* compared to the control sediments.

Fish Sampling

Fish tissue sampling was performed to determine metals concentrations in fish tissue, or bioaccumulation, for use in the human and ecological risk assessments. Fish samples (carp and sportfish) were collected from five ponds (Pond A and Pond 2 through Pond 5) and the reference location. Both carcass and fillet analyses were performed for lead, chromium, and cadmium. Fish tissue analytical data indicate that the concentrations of chromium, cadmium, and lead were higher in fish collected from Pond A compared to the downstream ponds. This difference was most pronounced for lead in carp, as might be expected considering the niche of these species. The carp is a bottom feeder with a limited forage range, while sportfish (e.g., bluegill and pumpkinseed) are more mobile and tend to feed in the water column. In Pond A, the decreasing order of relative concentration above the reference sample was lead, chromium and cadmium. In Pond A whole fish sample for carp, lead, chromium, and cadmium were detected at 6.8 mg/kg, 4.0 mg/kg, and 1.0 mg/kg, respectively. For comparison, in reference Mill Pond whole fish sample for carp, lead, chromium, and cadmium were detected at 1.0 mg/kg, 0.42 mg/kg, and 0.025 mg/kg, respectively.

Benthic Macroinvertebrate Surveys

The objective of the benthic macroinvertebrate survey was to evaluate the abundance and diversity of the macroinvertebrate community in the ponds along Massapequa Creek. The composition of

this community can be a useful indicator for the degree of overall impacts to the ecological habitat. Twelve sediment samples for macroinvertebrate analyses were collected from ponds along Massapequa Creek. Results from the macroinvertebrate study indicate that the benthic macroinvertebrate populations at all locations, including the reference location, were impoverished, of low diversity, and consisted largely of bloodworms, a few midges, and leaches. This is attributed to the introduction of contaminants into the locations from urban runoff. However, Pond A was found to have the lowest diversity and the least evenness of all ponds. The Mill Pond reference location also had very low number of total specimens, richness, diversity and evenness.

Additional details on the Site-specific sediment toxicity analyses, fish tissue analyses, and macroinvertebrate analyses as to their risk implications are described under "Summary of Site Risks" below.

SUMMARY OF SITE RISKS

A Human Health Risk Assessment Update (HHRA) (and HHRA Addendum) and Ecological Risk Assessment Update (ERA) were conducted to estimate the human and ecological risks associated with current and future Site conditions. A baseline risk assessment estimates the human health and ecological risk which could result from the contamination at the Site, if no remedial action were taken. As described above, during the comment period, EPA became aware, after the HHRA had already been prepared, that the Town of Oyster Bay had taken significant steps towards formalizing plans to acquire nearly all of the western portion of the Site for recreational development. The Town advised EPA that its planned recreational uses might include, among other uses, walking/nature trail and sensory gardens, a picnic area, cabins, and campgrounds for Boy Scout outings. Based on this information, EPA re-evaluated in the HHRA Addendum potential cancer risks and noncancer hazards associated with these potential future uses of the western portion of the Site.

Human Health Risk Assessment

A four-step process is utilized for assessing Site-related human health risks for a reasonable maximum exposure scenario: Hazard Identification--identifies the contaminants of concern at the Site based on several factors such as toxicity, frequency of occurrence,

and concentration. Exposure Assessment--estimates the magnitude of actual and/or potential human exposures, the frequency and duration of these exposures, and the pathways (e.g., ingesting contaminated well-water) by which humans are potentially exposed. Toxicity Assessment--determines the types of adverse health effects associated with chemical exposures, and the relationship between magnitude of exposure (dose) and severity of adverse effects (response). Risk Characterization--summarizes and combines results of the exposure and toxicity assessments to provide a quantitative assessment of Site-related risks.

Current Federal guidelines for acceptable exposures are an individual lifetime excess carcinogenic risk to a reasonably maximally exposed individual in the range of 10^{-4} to 10^{-6} (e.g., a one-in-ten-thousand to a one-in-a-million excess cancer risk or likelihood of an additional incidence of cancer) and a Hazard Index (HI) (which reflects noncarcinogenic effects for a human receptor) equal to 1.0. An HI greater than 1.0 indicates a potential for noncarcinogenic health effects.

For purposes of the HHRA, the following potential exposure areas were considered: western portion of the Site, eastern portion of the Site, off-property residential areas (includes Ellsworth Allen Park and Woodward Parkway School), and the Massapequa Preserve.

Hazard Identification

During data evaluation, relevant Site information is compiled and analyzed, in order to select contaminants of concern (COCs). For the Liberty site, several inorganic chemicals and organic compounds meeting appropriate QA/QC requirements were selected as COCs because of the potential hazard they pose to human health and the environment. Selection of COCs that would be representative of Site risks for specific environmental media was made for the following potential exposure areas:

- ▶ western portion of the property (surface soil, surface/subsurface soil, on-property Upper Glacial groundwater, and on-property Magothy groundwater),
- ▶ eastern portion of the property (solid waste, aqueous waste, and surface/subsurface soil),
- ▶ off-property residential areas (subsurface soil, off-property Upper Glacial groundwater and off-property Magothy groundwater), and

- Massapequa Preserve (surface water, sediment, and fish tissue).

The most frequently selected COCs include cadmium, chromium, and TCE. Table 2 summarizes the COCs and medium-specific exposure point concentrations for the COCs detected in various media within the aforementioned four potential exposure areas.

Exposure Assessment

Exposure point concentrations were calculated from sample data sets (e.g., soil and sediment) to represent the reasonable maximum exposure (RME) to various current and hypothetical future individuals on and around the Liberty site. Table 3 provides a limited conceptual Site model of potential exposures for the Liberty site. This table focuses on those exposure pathways associated with unacceptable levels of risk. A complete conceptual Site model can be found in Table 1 of the HHRA. Based on current and future land uses, groundwater uses and surface water uses, the HHRA evaluated potential health effects for the following exposure pathways for current and/or future Site use scenarios for each of the four potential exposure areas.

- Western Portion of the Property

Current Trespassers - ingestion of, dermal contact with, and inhalation of surface soil; inhalation of surface/subsurface soil; and inhalation of vapors from Upper Glacial groundwater by a trespasser.

Future Commercial/Industrial Workers - ingestion of, dermal contact with, and inhalation of surface/subsurface soil; inhalation of vapors from Upper Glacial groundwater; inhalation of vapors from Magothy groundwater; and ingestion of Magothy groundwater.

Future Construction Workers - ingestion of, dermal contact with, and inhalation of surface/subsurface soil; inhalation of vapors from Upper Glacial groundwater; inhalation of vapors from Magothy groundwater; and ingestion of Magothy groundwater.

Future Recreational Users - ingestion of, dermal contact with, and inhalation of surface/subsurface soil; inhalation of vapors from Upper Glacial groundwater;

inhalation of vapors from Magothy groundwater; and ingestion of Magothy groundwater (ingestion of, and dermal contact with, soils were re-evaluated in the HHRA Addendum).

▶ Eastern Portion of the Property

Current Trespassers - inhalation of solid waste and aqueous waste.

Current Commercial/Industrial Workers - inhalation of solid waste.

Future Commercial/Industrial Workers - ingestion of, dermal contact with, and inhalation of surface/subsurface soil; and inhalation of solid waste and aqueous waste.

Future Construction Workers - ingestion of, dermal contact with, and inhalation of surface/subsurface soil; ingestion of, dermal contact with, and inhalation of solid waste; and dermal contact with and inhalation of aqueous waste.

▶ Off-property Residential Areas

Current Off-property Residents - inhalation of Upper Glacial groundwater.

Current Off-property School Children - inhalation of Upper Glacial groundwater.

Current Off-property School Employees - inhalation of Upper Glacial groundwater.

Future Off-property Residents - ingestion of, dermal contact with, and inhalation of Magothy groundwater.

Future Off-property Recreational Users - ingestion and inhalation of Upper Glacial groundwater; and ingestion of, dermal contact with, and inhalation of subsurface soils.

▶ Massapequa Preserve

Current Swimmers - ingestion of and dermal contact with surface water; and ingestion of and dermal contact with sediment.

Current Fishers - ingestion of fish tissue.

Many of the sample locations were biased, i.e., they were selected due to the presence of elevated levels of contaminants. Therefore, the values calculated on those data sets are a conservative estimate of the RME. In addition to the calculation of exposure point concentrations (Table 2), several Site-specific assumptions regarding future land-use scenarios and exposure pathways, e.g., inhalation, ingestion, and dermal contact, were made. Assumptions were based on Site-specific conditions to the greatest degree possible, and default parameter values found in EPA risk assessment guidance documents were used in the absence of Site-specific data.

Toxicity Assessment

Standard dose conversion factors, oral and inhalation reference doses, and oral and inhalation cancer slope factors were used to estimate the noncarcinogenic and carcinogenic hazards associated with Site contaminants. Tables 4 and 5 provide the cancer and noncancer toxicity data, respectively, for the COCs based on information in the Integrated Risk Information System (IRIS), the 1997 Health Effects Assessment Summary Tables, and EPA's National Center for Environmental Assessment Superfund Technical Support Team. The risk estimators used in this assessment are accepted by the scientific community as representing reasonable projections of the hazards associated with exposure to the various COCs.

At this time, cancer slope factors and Reference Doses are not available for the dermal route of exposure. Thus, the dermal slope factors used in the assessment have been extrapolated from oral values using appropriate adjustment factors based on data on the chemical's absorption. Adjustments in the oral cancer slope factors and Reference Doses are listed in Tables 5 and 6 of the July 2000 Final Baseline Human Health Risk Assessment report.

A number of chemicals lack adequate toxicity information to quantify the potential risks and hazards associated with exposure. A list of the chemicals not quantitatively evaluated are also provided in the July 2000 Final Baseline Human Health Risk Assessment report. Lack of data to quantify risks and hazards for these chemicals may potentially underestimate the risks and hazards at the Site.

Risk Characterization

The Risk Characterization summarizes the risks and hazards for chemical contaminants through various routes of exposure.

For carcinogens, risks are generally expressed as the incremental probability of an individual's developing cancer over a lifetime as a result of exposure to the carcinogen. Excess lifetime cancer risk is calculated from the following equation:

$$\text{Risk} = \text{CDI} \times \text{SF}$$

where: risk = a unitless probability (e.g., 2×10^{-5}) of an individual's developing cancer
CDI = chronic daily intake averaged over 70 years (mg/kg-day)
SF = slope factor, expressed as (mg/kg-day)⁻¹.

These risks are probabilities that usually are expressed in scientific notation (e.g., 1×10^{-6}). An excess lifetime cancer risk of 1×10^{-6} indicates that an individual experiencing the reasonable maximum exposure estimate has a 1 in 1,000,000 chance of developing cancer as a result of Site-related exposure. This is referred to as an "excess lifetime cancer risk" because it would be in addition to the risks of cancer individuals face from other causes such as smoking or exposure to too much sun. The chance of an individual's developing cancer from all other causes has been estimated to be as high as one in three. EPA's generally acceptable risk range for Site-related exposures is 10^{-4} to 10^{-6} .

The potential for noncarcinogenic effects is evaluated by comparing an exposure level over a specified time period (e.g., life-time) with a reference dose (RfD) derived for a similar exposure period. An RfD represents a level that an individual may be exposed to that is not expected to cause any deleterious effect. The ratio of exposure to toxicity is called a hazard quotient (HQ). An HQ < 1 indicates that a receptor's dose of a single contaminant is less than the RfD, and that toxic noncarcinogenic effects from that chemical are unlikely. The Hazard Index (HI) is generated by adding the HQs for all chemical(s) of concern that affect the same target organ (e.g., liver) or that act through the same mechanism of action within a medium or across all media to which a given individual may reasonably be exposed. An HI < 1 indicates that, based on the sum of all HQ's from different contaminants and exposure routes, toxic noncarcinogenic effects from all contaminants are

unlikely. An HI > 1 indicates that Site-related exposures may present a risk to human health.

The HQ is calculated as follows:

$$\text{Noncancer HQ} = \text{CDI/RfD}$$

where: CDI = Chronic daily intake
RfD = reference dose.

CDI and RfD are expressed in the same units and represent the same exposure period (i.e., chronic, subchronic, or short-term).

The risks presented in Tables 6 and 7 summarize the cancer risks from exposure to those chemicals with risks greater than 1 in 1,000,000 and the noncancer hazards from exposure to those chemicals with Hazard Index greater than 1, respectively.

For the western portion, in the HHRA, the only receptor whose noncarcinogenic hazard exceeds EPA's benchmark value of an HI of 1 is the commercial/industrial worker, exposed to contaminants in the Upper Glacial groundwater and evaluated under a future use scenario, with an HI of 8.9. This exposure currently does not occur, since groundwater is not used as a drinking water source at the Site. The primary contributors to this HI are cadmium (HQ of 7.5) and chromium (HQ of 1.4). None of the cancer risks estimated for the western portion exceed EPA's target risk range. As discussed below (see Human Health Risk Assessment Addendum - Western Parcel), the HHRA Addendum determined that there is an unacceptable noncancer risk to certain recreational users.

For the eastern portion, the receptor whose cumulative risk exceeds one-in-a-million excess cancer risk is the future construction worker (1×10^{-3}), which is greater than the upper boundary of the acceptable cancer risk range. For the future construction worker, the primary contributing medium and route is dermal exposure to aqueous waste, with benzo(a)pyrene and dibenzo(a,h)anthracene as the primary contributors to the cumulative risk. Dermal protection during handling of aqueous wastes would significantly reduce potential exposure and risks for this receptor. The only receptor whose cumulative hazard index exceeds 1.0 is the future construction worker (31). The primary contributor to the hazard index is dermal exposure to aqueous wastes, with chromium (HQ of 1.5) and a PCB (Aroclor 1260 with an HQ of 31) being the primary contaminants of concern.

For the off-property residential areas, the receptors whose cumulative cancer risks exceed EPA's target cancer risk are current and future off-property residents. The current off-property resident's cumulative cancer risk from exposure to the Upper Glacial groundwater is 1.9×10^{-3} , which is driven by vinyl chloride and 1,1-DCE (two degradation products of TCE). The evaluation of noncarcinogenic effects shows that the hazards to the off-Site child resident are 95 (HI values for cadmium of 35, for chromium of 8.7, and for manganese of 50), and the off-Site adult resident are 26 (HI values of 8.4 for cadmium, 6.1 for chromium, and 11 for manganese). Under a future use scenario, the risks to the child and adult residents from exposure to the Magothy groundwater are 4.5×10^{-4} , with vinyl chloride and 1,1-DCE as the most significant contributors to the risk. The noncarcinogenic hazards to the off-Site residents using the Magothy groundwater are 6.8 for the child resident, with chromium (HQ of 1.7) and manganese (HQ of 3.2) as the primary chemicals of concern. The HI for the adult resident is less than EPA's acceptable level. It is noted, however, that these scenarios are hypothetical as the groundwater in the vicinity of the Site is not used for public drinking water supply.

For the Massapequa Preserve, all carcinogenic risks estimated for surface water, sediment, and fish tissue are within EPA's acceptable risk range for all populations. Noncarcinogenic HI values for surface water and fish tissue for all populations and for adults exposed to sediment are less than EPA's benchmark of an HI value of 1. The HI value for children exposed to sediment slightly exceeds the benchmark (HI of 1.1), although no HQ values for an individual chemical exceeds 1.

Finally, several locations were identified as potential areas of concern for chromium. Dermal exposure to chromium may result in allergic responses in certain sensitive individuals, which is called "contact dermatitis." The areas of concern are the western portion surface samples in the northwest disposal area and the southern portion of the disposal basins; the western portion subsurface soil in and near the disposal basins, northwest disposal area and the ramp excavation pile on the Building N foundation (or former Building B Ramp Pile); and the eastern portion subsurface soil in the Building B basement. Potential effects from exposure to chromium in these areas can be managed and reduced by following the appropriate measures as outlined in the health and safety plan, including wearing gloves and other personal protection equipment and limiting exposure to the contaminated materials.

Human Health Risk Assessment Addendum - Western Parcel

In the HHRA Addendum, a four-step process similar to that of the HHRA was utilized for assessing Site-related human health risks for a reasonable maximum exposure scenario: Hazard Identification, Exposure Assessment, Toxicity Assessment, and Risk Characterization. The HHRA Addendum re-evaluated potential cancer risks and noncancer hazards associated with the Town of Oyster Bay's planned future recreational uses of the western portion of the Site, as described above, for the following receptors: adults (over the age of 18 years), adolescents (age of 6 - 18 years), and children (under the age of 6 years).

For an adult recreational user, the cancer risk is within the acceptable range of 10^{-6} to 10^{-4} , while the noncancer risk, from exposure via incidental ingestion and dermal contact, is within EPA's acceptable level of an HI of less than or equal to 1.

For an adolescent recreational user, the cancer risk is within the acceptable range. The noncancer risk slightly exceeds the acceptable level of an HI of 1. When this occurs, the next level of evaluation requires that the HI for each target organ should be calculated to see if the HI for any target organ exceeds the acceptable level. The HI for each target organ is below the benchmark value of 1. This indicates that adverse health effects are not expected for the adolescent as a result of possible exposure to Site-related contaminants.

For a child recreational user, the cancer risk is within the acceptable range. However, the noncancer risk exceeds the benchmark value of 1 (HI of 8.6). The significant contributors to this value are cadmium (HQ of 4.0) and hexavalent chromium (HQ of 1.4). These hazard quotients indicate the potential for noncancer health effects if no remediation occurs. Additional details are provided in an EPA document entitled, "March 25, 2002 Liberty Industrial Finishing Site Human Health Risk Assessment Addendum - Western Parcel," which is provided in APPENDIX I to this ROD.

Ecological Risk Assessment

The purpose of the Ecological Risk Assessment Update (ERA), which was conducted as part of the supplemental RI, was to identify and estimate the potential ecological impacts associated with the exposure of fish and wildlife to Site-related contamination within the Massapequa Preserve. Specifically, the ERA focused on the potential impacts of the COCs found in sediments and surface waters

of the Massapequa Preserve, downstream of the zone of influence of a groundwater plume that originates at the Site, to terrestrial and aquatic ecological receptors.

A four-step process is utilized for assessing Site-related ecological risks for a reasonable maximum exposure scenario:

Problem Formulation - a qualitative evaluation of contaminant release, migration, and fate; identification of contaminants of concern, receptors, exposure pathways, and known ecological effects of the contaminants; and selection of endpoints for further study.

Exposure Assessment - a quantitative evaluation of contaminant release, migration, and fate; characterization of exposure pathways and receptors; and measurement or estimation of exposure point concentrations.

Ecological Effects Assessment - literature reviews, field studies, and toxicity tests, linking contaminant concentrations to effects on ecological receptors.

Risk Characterization - measurement or estimation of both current and future adverse effects.

Surface water and sediment of the Massapequa Preserve were analyzed for both inorganic and organic chemicals, and fish tissues were analyzed for cadmium, chromium, and lead. The COCs were identified by comparing contaminant concentrations in surface water and sediment with the ecologically-based screening benchmarks. Detection of cadmium, chromium, and lead (which is believed to have been introduced into the Massapequa Creek via urban runoff) in most of the Massapequa Creek Pond sediment samples at concentrations above their respective NYSDEC SELs suggested the possibility of adverse effects. Therefore, as explained above, sediment toxicity testing (bioassays) and fish tissue analyses were conducted to further assess the potential effects.

Sediment toxicity testing was performed to evaluate whether the metals concentrations in sediments have any effect on the survival of acclimated test organisms. These tests are bioassays conducted in a laboratory where certain organisms are exposed to contaminated sediment samples and monitored. Two rounds of sediment toxicity tests were conducted; the first round was conducted on sediments from all six Massapequa Creek ponds and the second round was conducted on sediments from only Pond A where

the highest cadmium, chromium, and lead concentrations of 248 mg/kg, 839 mg/kg, and 1,160 mg/kg, respectively, were detected. The sediment toxicity tests were conducted on two standard benthic invertebrate test organisms (*Hyalella azteca* and *Chironomus tentans*) by exposing them to Site sediments. The bioassay results indicated toxicity to the test organisms from exposure to the sediment samples from Pond A. Pond sediments with cadmium concentrations of at least 99.9 ppm and chromium concentrations of at least 457 ppm caused a significant reduction in survival of *Hyalella azteca* and a significant reduction in growth of *Chironomus tentans* compared to the control sediments.

Fish tissue sampling was performed to determine metals concentrations in fish tissue for use in the human and ecological risk assessments. Fish samples were collected from five pond locations in Massapequa Preserve (Pond A and Pond 2 through Pond 5) and from the reference location. Both carcass and fillet analyses were performed for lead, chromium, and cadmium. Comparison of the fish tissue data with literature-based toxicological body burden data indicated that fish are potentially at risk in Pond A. The highest body burdens of chromium and lead were reported in fish collected from Pond A. Comparison of the fish tissue data with literature-based toxicological body burden data indicated that fish are potentially at risk from the contaminated sediments in Pond A. The highest concentrations of cadmium were found in fish from Pond A and Pond 5. The highest concentrations of chromium and lead were found in fish from Pond A. In Pond A, the whole fish sample for carp contained lead, chromium, and cadmium at 6.8 mg/kg, 4.0 mg/kg, and 1.0 mg/kg, respectively.

The objective of the benthic macroinvertebrate survey was to evaluate the abundance and diversity of the macroinvertebrate community in the ponds along Massapequa Creek. Twelve sediment samples for macroinvertebrate analyses were collected from ponds along Massapequa Creek. As explained above, results from the macroinvertebrate study indicate that the benthic macroinvertebrate populations at all locations, including the reference location, were impoverished, of low diversity, and consisted largely of bloodworms, a few midges, and leaches. This is attributed to the introduction of contaminants into the locations from urban runoff. Pond A was found to have the lowest diversity and the least evenness. However, the Mill Pond reference location also had very low number of total specimens, richness, diversity and evenness.

Based on the weight-of-evidence from the cumulative Massapequa Creek investigatory results as described above, it was concluded that Pond A poses potential risks to ecological receptors that include benthic invertebrates and fish.

Discussion of Uncertainties in Risk Assessment

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

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

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

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

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

Specifically, several aspects of risk estimation contribute uncertainty to the projected risks. EPA recommends that the arithmetic average concentration of the data be used for evaluating long-term exposure and that, because of the uncertainty associated

with estimating the true average concentration at a Site, the 95% upper confidence limit (UCL) on the arithmetic average be used as the exposure point concentration. The 95% UCL provides reasonable confidence that the true average will not be underestimated. Exposure point concentrations were calculated from soil sample data sets to represent the reasonable maximum exposure (RME) to various current and hypothetical future populations on and around the Liberty site property. Many of the soil and sediment sample locations were biased, i.e., they were selected due to the presence of elevated levels of contamination. Therefore, the UCL values calculated on those data sets are a conservative estimate of the RME. In fact, the true UCL values on the actual distributions of chemicals of concern in soil are less than the values calculated from the analytical data. Uncertainty associated with sample laboratory analysis and data evaluation is considered low as a result of a rigorous quality assurance program which included data validation of each sample result.

In addition to the calculation of exposure point concentrations, several Site-specific assumptions regarding future land use scenarios, intake parameters, and exposure pathways are a part of the exposure assessment stage of a baseline risk assessment. Assumptions were based on Site-specific conditions to the greatest degree possible, and default parameter values found in EPA risk assessment guidance documents were used in the absence of Site-specific data. However, there remains some uncertainty in the prediction of future use scenarios and their associated intake parameters and exposure pathways. The exposure pathways selected for current scenarios were based on the Site conceptual model and related supplemental RI data. The uncertainty associated with the selected pathways for these scenarios is low because Site conditions support the conceptual model.

Standard dose conversion factors, risk slope factors, and reference doses are used to estimate the carcinogenic and noncarcinogenic hazards associated with Site contaminants. The risk estimators used in this assessment are generally accepted by the scientific community as representing reasonable projections of the hazards associated with exposure to the various chemicals of potential concern.

More specific information concerning public health risks, including a quantitative evaluation of the degree of risk associated with various exposure pathways, is presented in the July 2000 Final Baseline Human Health Risk Assessment report.

Based on the results of the supplemental RI/FS and the baseline risk assessment, EPA has determined that actual or threatened releases of hazardous substances from the Site, if not addressed by the selected remedy, may present a current or potential threat to human health and the environment.

REMEDIAL ACTION OBJECTIVES

Remedial action objectives (RAOs) are specific goals to protect human health and the environment. These objectives are based on available information and standards, such as applicable or relevant and appropriate requirements (ARARs), NYSDEC's recommended soil cleanup objectives, Site-specific risk-based levels, and the most reasonably anticipated future land use for the Site, i.e., commercial/industrial for the eastern portion and commercial/industrial or recreational for the western portion. The RAOs which were developed for soil, sediment, and groundwater are designed, in part, to mitigate the health threat posed by ingestion, dermal contact, or inhalation of vapors and particulates where these soils are contacted or disturbed or where groundwater may be contacted. The RAOs are also intended to mitigate the health threat posed by the ingestion of groundwater and are designed to prevent further leaching of contaminants from the soil to the groundwater.

The following remedial action objectives were established for the Site:

On-Site Soils

- Prevent the direct exposure of receptors to Site-related contaminants through inhalation, direct contact or ingestion, or mitigate soil contaminant concentrations to a level that will not pose unacceptable risks to human health and the environment,
- Reduce the concentration or mobility of soil contaminants to a level which will prevent further degradation of groundwater.
- Remove all RCRA hazardous waste from the Site.
- Remove any structural impediments that might interfere with pre-design sampling and implementation of soil, subsurface feature, and groundwater remediation.

On-Site Subsurface Features (on Eastern Portion of the Site) and Underground Storage Tanks

- removal of contaminated aqueous and/or solid materials from subsurface features and underground storage tanks.

On-Site and Off-Site Groundwater

- Prevent or minimize ingestion, dermal contact and inhalation of inorganic- and organic-contaminated groundwater that are above State and Federal maximum contaminant levels (MCLs).
- Restore groundwater quality to levels which meet State and Federal MCLs.

Massapequa Creek Pond A Sediments

- prevent adverse effects to ecological receptors within the Massapequa Creek and associated ponds caused by exposure to Site-related contaminants.

In order to meet these objectives, preliminary remedial goals, or PRGs, were developed during the supplemental FS for various contaminants of concern. In developing the final soil cleanup numbers presented below, consideration was given to risks posed by the contaminants under reasonably anticipated future uses of the Site, protection of the underlying sole-source aquifer, and the NYSDEC TAGMs.

Based on the information provided in the supplemental RI report and the HHRA, soil cleanup levels of 10 mg/kg cadmium and 143 mg/kg chromium were developed for the Site. The NYSDEC's soil cleanup objectives, as specified in the TAGM, were adopted as the soil cleanup levels for TCE, cis-1,2-DCE, and PCE, respectively: 0.7 mg/kg, 0.25 mg/kg, and 1.4 mg/kg. These soil cleanup levels represent allowable concentrations in soils that would be protective of human health under future commercial/industrial or recreational uses of the Site. These soil cleanup levels would also maintain the drinking-water quality of the underlying groundwater aquifers. Due to the spatial and vertical location of contaminants of concern, EPA believes that if the contaminated soils are remediated to the cadmium and chromium cleanup levels, then the VOC contaminants in soils will also be adequately addressed.

For the purpose of determining whether the subsurface features and the underground storage tanks have been adequately remediated, the following PRGs will be used: 10 mg/kg cadmium; 143 mg/kg chromium; 0.7 mg/kg TCE; 0.25 mg/kg cis-1,2-DCE; 1.4 mg/kg PCE; 1 mg/kg PCBs for soils between zero and 1 foot bgs and 10 mg/kg PCBs for soils below 1 foot bgs; 35 mg/kg cyanide; 0.29 mg/kg benzo[a]pyrene; and 0.29 mg/kg dibenzo[a,h]anthracene. (The PRGs, 10 mg/kg PCBs, 35 mg/kg cyanide, 0.29 mg/kg benzo[a]pyrene, and 0.29 mg/kg dibenzo[a,h]anthracene, are preliminary remediation goals for commercial-industrial risk-based screening concentrations and were developed by EPA Region IX.)

Groundwater cleanup levels for cadmium, chromium, TCE, cis-1,2-DCE, and PCE are State and Federal MCLs, i.e., cadmium = 5 µg/l, chromium = 50 µg/l, TCE = 5 µg/l, cis-1,2-DCE = 5 µg/l, and PCE = 5 µg/l. Due to the distribution of contaminants that were detected in the groundwater, EPA believes that if the contaminated on-Site and off-Site groundwater is remediated to these State and Federal drinking water standards, then all other inorganic and organic contaminants in the groundwater will also be adequately addressed.

Sediment cleanup levels of 50 mg/kg cadmium and 260 mg/kg chromium were developed for remediation of Pond A sediments.

DESCRIPTION OF REMEDIAL ALTERNATIVES

CERCLA §121(b)(1), 42 U.S.C. §9621(b)(1), mandates that a remedial action be protective of human health and the environment, cost-effective, and utilize permanent solutions and alternative treatment technologies or resource recovery technologies to the maximum extent practicable. Section 121(b)(1) also establishes a preference for remedial actions which employ, as a principal element, treatment to reduce permanently and significantly the volume, toxicity, or mobility of the hazardous substances, pollutants and contaminants at a Site. CERCLA §121(d), 42 U.S.C. §9621(d), further mandates that a remedial action attain a level or standard of control of the hazardous substances, pollutants, and contaminants, which at least attains ARARs under Federal and State laws, unless a waiver can be justified pursuant to CERCLA §121(d)(4), 42 U.S.C. §9621(d)(4).

Based on the information contained in the supplemental RI/FS reports and the HHRA and the ERA, the Proposed Plan evaluates, in detail, three remedial alternatives for Site soil contamination, three remedial alternatives for groundwater contamination, and two

remedial alternatives for sediment contamination within Pond A. The soil, groundwater, and sediment alternatives for the Site are presented below. Institutional controls in the form of deed restrictions are also required for all soil and groundwater remedial alternatives.

The construction time for each alternative reflects only the time required to construct or implement the remedy and does not include the time required to negotiate with the PRPs, design the remedial action or procure contracts for design and construction.

The alternatives discussed below may vary in title and description from those identified in the FS report. In addition, in conformance with its July 2000 guidance document entitled, "Guide to Developing and Documenting Cost Estimates During the Feasibility Study," EPA recalculated the costs of the FS remedial alternatives utilizing a discount rate of 7%, assumed a 20-year time frame (except for a 50-year time frame for cap maintenance under Alternative SL-2), and included a category encompassing periodic costs which might be incurred during the long-term operation and maintenance of each alternative.

The remedial alternatives are:

Soil Remedial Alternatives

The cleanup levels for Site soils presented under the discussion entitled, "Remedial Action Objectives," above, would require remediation of approximately 73,100 cubic yards of soil. The bulk of the contamination, including 16,000 cubic yards of soils that are hazardous wastes under RCRA, is located in four discrete areas: the Former Wastewater Disposal Basins (11,400 cubic yards), the Northwest Disposal Area (32,000 cubic yards), the Building B Basement (3,500 cubic yards), and the former Building B Ramp Pile (500 cubic yards), with the remaining 25,700 cubic yards of low-level contaminated soils scattered and present throughout abutting seven acres of soils.

Of particular concern at the Liberty site is contamination in the subsurface soil that may come in contact with the groundwater. Unlike conditions at other sites where subsurface contamination is subject to leaching primarily from infiltrating precipitation, at the Liberty site, there exists a significant volume of contaminated soils that are in contact with the groundwater, as the groundwater table can fluctuate from 15 to 21 feet bgs. In addition to the three soil remedial alternatives described below, two other

alternatives were considered in the supplemental FS report but were not carried through the detailed comparative analysis in the Proposed Plan.

One alternative involving the contaminated soils at depth of 15 to 21 feet included excavating the contaminated soils and replacing this material with clean fill, redepositing the excavated soils above the clean fill and installing a cap. This alternative was eliminated from the detailed consideration in the Proposed Plan because it would not comply with New York Environmental Conservation Law S27-0704 (Long Island Landfill Law) which is an applicable or relevant and appropriate requirement (ARAR) for the Site. This law prohibits the creation of new landfills on Long Island in an effort to protect the sole source aquifer which is the primary source of drinking water for Long Island residents.

Another alternative involved excavation and stabilization of contaminated soils and redeposition of the stabilized material on the Site property. This alternative was also eliminated from detailed consideration in the Proposed Plan because it also would not comply with the Long Island Landfill Law. In addition, this alternative would require time to perform treatability studies, remedial design and the actual treatment of inorganically- and organically-contaminated soils; it would be technically difficult to stabilize some soils given the nature of the highest levels of contamination found at the Site; and it would likely not be widely accepted by the public.

Alternative SL-1: No Action

Capital Cost:	N/A
Total Operation and Maintenance Cost:	N/A
Present Worth Cost:	N/A
Construction Time:	N/A

The Superfund program requires that the "no-action" alternative be considered as a baseline for comparison with the other alternatives. The no-action remedial alternative does not include any physical remedial measures that address the soil contamination at the Site.

Because this alternative would result in contaminants remaining on Site, CERCLA requires that the Site be reviewed at least once every five years. If justified by the review, remedial actions may be implemented to remove or treat the wastes.

Alternative SL-2: Excavation and Off-Site Disposal of Contaminated Soils Near the Water Table and Capping of Other Contaminated Soils

Capital Cost:	\$7,863,000
Total Operation and Maintenance (O&M) Cost:	\$1,077,000
Present Worth Cost*:	\$8,940,000
Construction Time:	1 year

* The present worth costs for Alternative SL-2 are calculated using a discount rate of 7 percent, a 50-year time interval, and annual, as well as periodic, O&M expenses.

Alternative SL-2 would involve the excavation and off-Site disposal of approximately 25,600 cubic yards of contaminated soils at depths of approximately 15 to 21 feet bgs and corresponding overlying soils (above 15 feet bgs) that exceed cadmium and chromium cleanup levels, as well as other Site soils, which would be characterized as RCRA hazardous waste. The excavation, which would need to be conducted when the water table is low, would occur primarily in the area of the Former Wastewater Disposal Basins. The excavated soils would undergo a soil contamination profile analysis (including total waste and TCLP analyses). Depending on these results, the excavated soil would be transported to an off-Site RCRA Subtitle D landfill for disposal as a nonhazardous waste, or to a RCRA Subtitle C landfill for disposal as a hazardous waste. Soils that were not contaminated above Site-specific cleanup levels would be left at the Site. Subsequent to excavation, clean fill would be placed in the excavated areas to restore the Site to the original grade. For cost-estimating purposes, it is assumed that 16,000 cubic yards of the excavated soils would be sent to a RCRA Subtitle C facility.

This alternative would also include capping the remaining areas of the Site (approximately 8.75 acres in total) where concentrations exceed cadmium and chromium cleanup levels. The cap would be either an asphalt cover system or engineered structure, such as a building. If asphalt were used, it would be designed and constructed to include a 5-inch thick bituminous stabilized base overlain by a geotextile fabric and a 2-inch bituminous concrete wearing course with a permeability on the order of 5×10^{-8} cm/sec. The geotextile fabric would prevent surface cracks from spreading, reduce the potential for infiltration through cracks that may occur between maintenance activities, and further reduce the overall permeability of the asphalt cover system. Figure 13 shows a conceptual diagram of the work to be performed under Alternative

SL-2. As part of the engineering evaluation and design for Alternative SL-2, various cover system designs would be tested to ensure that the objective of reducing surface permeability to 5×10^{-8} cm/sec can be achieved. Because the cap is susceptible to weathering and cracking, a maintenance and inspection program would be required to ensure the long-term integrity of the cap. The maintenance and inspection program will consist of visual inspections of the asphalt cap, performed on a quarterly basis. In addition, a comprehensive groundwater monitoring program would be implemented to evaluate the effectiveness of the cap system.

In addition, contaminated USTs and other subsurface features would be remediated through the removal of the aqueous and/or solid materials from the USTs and the subsurface features, via application of readily available technologies (such as liquid and sludge removal by vacuum suction). Related to the UST/features investigation and remediation, sampling and analysis at the northern and eastern sanitary leaching fields would be performed and contaminated soils, sediments, sludges, liquids and/or other forms of Waste associated therewith would be removed and disposed of off Site. As discussed above, under "**SUMMARY OF SITE CHARACTERISTICS**" ("Subsurface Feature Inspection" and "Sampling and Underground Storage Tank (UST) Investigation"), a portion of the UST/subsurface feature and sanitary leaching field activities which are described in this paragraph and a portion of the activities relating to remediation of the Former Building B Ramp Pile, are the subject of an administrative order on consent previously issued by EPA. These activities are included in the selected soil alternatives subject to satisfactory completion pursuant to that administrative order.

This alternative would leave contaminants at the Site and would not allow for unrestricted land use. Therefore, institutional controls (e.g., deed restrictions to limit the future use of the Site to recreational (western portion only) or commercial/industrial uses) to limit demolition or construction at the Site until the subsurface features have been remediated; and a prohibition on Site activities that would damage the cap. In addition, because this alternative would result in soil contamination remaining at the Site, CERCLA would require that the Site be reviewed at least once every five years to ensure that it remains protective of human health and the environment.

Alternative SL-3: Excavation and Off-Site Disposal of All Contaminated Soils

Capital Cost:	\$12,862,000
Total Operation and Maintenance Cost:	\$ 230,000
Present Worth Cost*:	\$13,092,000
Construction Time:	1 ½ years

- * The present worth costs for Alternative SL-3 and for groundwater alternatives and sediment alternatives, discussed below, are calculated using a discount rate of 7 percent, a 20-year time interval, and annual, as well as periodic, O&M expenses.

Alternative SL-3 would involve excavation and off-Site disposal of approximately 73,100 cubic yards of contaminated soils that exceed cadmium and chromium cleanup levels. The excavated soils would undergo a soil contamination profile analysis (including total waste and TCLP analyses). Depending on these results, the excavated soil would be transported to an off-Site RCRA Subtitle D landfill for disposal as a nonhazardous waste, or to a RCRA Subtitle C landfill for disposal as a hazardous waste. Subsequent to excavation, clean fill would be placed in the excavated areas to restore the Site to the original grade. **Figure 14** shows a conceptual diagram of the work to be performed under Alternative SL-3. The USTs/subsurface features/northern and eastern sanitary leaching fields investigation and remediation provisions described under Alternative SL-2 would also pertain to Alternative SL-3. Also, the institutional controls described under Alternative SL-2 would apply to Alternative SL-3 except that there would be no need for the control relating to the prohibition of activities that might damage the integrity of the cap.

Under this alternative, CERCLA's five-year review would also be required to ensure that the remedial action remains protective of human health and the environment.

Groundwater Remedial Alternatives

As noted above, the interim groundwater remedy selected in March 1998 called for the treatment of the contaminated groundwater leaving the Liberty property. However, during the design of the interim groundwater remedy, it was learned that the principal source for Plume B is apparently upgradient of the property, and EPA decided that it was necessary to further evaluate this plume. EPA recently completed the fieldwork for this effort. Because it

has been shown that effective treatment of Plume A will involve treating Plume B, EPA has determined that Plume B should be addressed as part of any Liberty comprehensive groundwater remedial action. A comprehensive groundwater remedy for the Liberty site would thus address contamination from both plumes. EPA is attempting to identify the location of the source of the Plume B contamination and will evaluate options for remediating the source once identified.

The contaminated groundwater at the Site will be remediated to federal and New York State drinking water and groundwater standards.

Alternative GW-1: No Action

Capital Cost:	\$ 180,000
Total Operation and Maintenance Cost:	\$1,080,000
Present Worth Cost:	\$1,260,000
Construction Time:	Immediately

The Superfund program requires that the "no-action" alternative be considered as a baseline for comparison with the other alternatives. The no-action remedial alternative does not include any physical remedial measures that address the off-property groundwater contamination. However, this alternative does include the implementation of a groundwater monitoring program, which would include installation of eight shallow and eight deep monitoring wells. Quarterly sampling, analyses, and water level measurements from new as well as selected existing on-Site and off-Site monitoring wells would be performed to assess contaminant migration and the long-term effectiveness of this no-action alternative. Under this alternative, the interim groundwater action would cease operation after the three-year period (September 2003) authorized under the non-time critical removal action.

Because this alternative would result in contaminants remaining in the groundwater plume above drinking water standards, CERCLA requires that the Site be reviewed at least once every five years. If justified by the review, remedial actions might be implemented to remove or treat the groundwater contamination.

Alternative GW-2: In-Well Groundwater Treatment with
Continuation of the On-property Interim Groundwater Action

Capital Cost*:	\$5,030,000
Total Operation and Maintenance Cost*:	\$9,999,000
Present Worth Cost*:	\$15,029,000
Construction Time:	1 year

* Includes the following costs for Plume B treatment system, employing the same innovative technologies: capital cost of \$813,000, total 20-year operation and maintenance cost of \$1,821,000, and present worth cost of \$2,634,000.

Alternative GW-2 would involve the use of two innovative technologies to remove VOCs and metal contaminants in the groundwater below ground. The first treatment component would involve in-well vapor stripping which is also known as groundwater circulation well (GCW) technology. In such a system, air is pumped into a well causing groundwater in the vicinity of the well to circulate around and through the well, while at the same time causing volatile contaminants to volatilize or be bubbled out of the groundwater. The volatile contaminants would be captured by an above-ground vapor-phase granular activated carbon unit.

As air stripping is not an effective means of removing metals, removal of soluble metal contaminants would be accomplished through a second treatment component which would incorporate a chelating medium which is an organic medium that captures metals. Once the metal contaminants have been removed, the clean groundwater would be pumped back into the aquifers. The chelating materials would be periodically regenerated to remove the captured metals; the resulting metals-contaminated waste would be disposed of at an off-Site EPA-approved hazardous waste facility.

Because the off-property component of the plume in the Magothy aquifer is limited to VOCs (i.e., only VOCs in the upper portion of the Magothy aquifer as compared to VOCs and metals in the Upper Glacial aquifer), it would only require a GCW system for VOC removal; the off-property component of the plume in the Upper Glacial aquifer would, however, require a GCW system coupled with a metals-removal technology component. The optimal location for the off-property GCW treatment system would be between Woodward Parkway and the headwaters of the Massapequa Creek (i.e., east of Woodward Parkway Elementary School near where the elevated Site-related VOC concentrations have been detected). And, the optimal location for the off-property GCW treatment system coupled with a

metals-removal technology component would be in the vicinity of monitoring well cluster MW-9, where the elevated Site-related metal concentrations have been detected. Three GCWs without a metals-removal technology component would be installed approximately 180 feet deep in the Magothy aquifer and three GCWs with a metals-removal technology component would be installed approximately 60 feet deep in the Upper Glacial aquifer. The total circulation rate of these six GCWs would be approximately 375 gallons per minute (gpm).

Because the hydrogeochemical characteristics of the Magothy aquifer are distinct from those of the Upper Glacial aquifer, pilot testing of the GCW treatment component, discussed above, would need to be conducted as part of the design effort to evaluate its effectiveness and feasibility in the Magothy aquifer.

Alternative GW-2 would also involve the continuation of the interim groundwater action with respect to the significantly-contaminated portion of the groundwater plume beneath the Site property within the Upper Glacial aquifer. The interim groundwater action employs innovative technologies identical to those described above. A total of three GCW systems have been installed approximately 90 feet deep into the bottom of the Upper Glacial aquifer, downgradient of the Former Wastewater Disposal Basins on the Site property and parallel to Motor Avenue. The three GCW systems are designed to handle a combined, average flow of 210 gpm. Plume B would also be addressed by installation and long-term operation of five GCW systems in the north-central portion of the Liberty property, within the Upper Glacial aquifer perpendicular to the direction of groundwater flow, to treat VOCs. The configuration of the Plume B treatment system as well as the cost estimates would be further refined upon EPA's review of the recently completed field investigation.

Alternative GW-2 would also include an enhanced monitoring program to document and monitor the leading edge of the off-property groundwater contaminant plume where concentrations are near nondetectable levels or drinking water standards and, therefore, would render the application of any active groundwater remedial alternative economically infeasible. Under this alternative, a Site-specific groundwater fate and transport model would also be performed to assess the effectiveness of natural attenuation in the leading edge of the plume in conjunction with groundwater remediation.

In addition, institutional controls (e.g., deed restrictions to prohibit installation or use of groundwater wells for human consumption purposes) would need to be implemented.

Alternative GW-3: Groundwater Extraction and Treatment with Continuation of Interim Groundwater Action

Capital Cost*:	\$ 5,200,000
Total Operation and Maintenance Cost*:	\$12,424,000
Present Worth Cost*:	\$17,624,000
Construction Time:	1 ½ years

* Includes the following costs for Plume B treatment system, employing the same conventional pump-and-treat technologies: capital cost of \$509,000, total 20-year operation and maintenance cost of \$1,814,000, and present worth cost of \$2,323,000.

Alternative GW-3 would consist of a conventional groundwater pumping and treatment system. The off-property contaminated groundwater would be extracted from both aquifers and pumped to an above-ground treatment system. Inorganic contaminants such as metals would be treated through ion exchange, precipitation with coagulation, and filtration. Organic contaminants would be treated through air stripping coupled to liquid and vapor phase carbon. Treatability studies would be performed to determine the optimum operating parameters for the groundwater treatment system. Residual waste from the treatment process such as sludges from the metals-treatment stage would be disposed of off Site in accordance with all applicable or relevant and appropriate federal and State disposal requirements (e.g., RCRA Land Disposal Requirements (LDRs)); spent carbon used to remove organic contaminants would be handled similarly or regenerated.

Treated groundwater would be either reinjected into aquifers or discharged to the Massapequa Creek. Alternative GW-3 would also involve the continuation of performance of the interim groundwater action; however, it would continue as conventional pumping and treatment as described under the foregoing paragraph. The Plume B treatment system would be conventional pump and treat.

Due to significantly greater potential short-term and long-term impacts associated with construction of an off-property conventional pump-and-treat system, as compared to Alternative GW-2, the off-Site contaminated groundwater would be pumped back to the Liberty site for treatment at an on-property groundwater

treatment system. One of the two extraction well clusters would be optimally located near the Woodward Parkway Elementary School (between Woodward Parkway and the headwaters of the Massapequa Creek) and the other near the Massapequa Creek, near present monitoring well cluster MW-9. The extraction well cluster near the Woodward Parkway Elementary School would be installed approximately 180 feet deep in the Upper Glacial aquifer and the extraction well cluster near the present monitoring well cluster MW-9, to the northwest of the Farmingdale High School, would be installed approximately 60 feet deep in the Magothy aquifer. The total pumping rate of these four groundwater extraction wells would be approximately 250 gpm. An aquifer pumping test to evaluate the hydrogeological characteristics of the Magothy aquifer would need to be conducted as part of the design.

For cost-estimating purposes, it was assumed that the extracted groundwater would be treated to meet drinking water standards required for aquifer reinjection. Approximately eight reinjection wells would be necessary. However, a detailed evaluation of groundwater reinjection would need to be conducted as part of the design effort.

The enhanced monitoring program provisions described under Alternative GW-2 would be carried out under Alternative GW-3.

In addition, the institutional controls and CERCLA five-year review required under Alternative GW-2 would also be required for Alternative GW-3.

Sediment Remedial Alternatives

As previously noted, based on the weight of evidence from the cumulative Massapequa Creek investigation, the remediation of Site-related contamination within the Massapequa Creek ponds will be limited to Pond A. Sediment cleanup levels of 50 mg/kg cadmium and 260 mg/kg chromium were developed for remediation of Pond A sediments. These remedial goals were established in recognition of the Site conceptual model, which indicates that if the groundwater contamination is addressed, the primary source of sediment and surface water contamination within the Massapequa Creek system will also be addressed. Moreover, removal of sediments within Pond A, the farthest upstream pond, where adverse ecological effects are greatest, would remove the primary source of contaminated sediments entering the creek below the Site, and its lower ponds.

Alternative SD-1: No Action

Capital Cost:	\$	N/A
Total Operation and Maintenance Cost:	\$	283,000
Present Worth Cost:	\$	283,000
Construction Time:		Immediately

The Superfund program requires that the "no-action" alternative be considered as a baseline for comparison with the other alternatives. The no-action remedial alternative does not include any physical remedial measures that address the sediment contamination within the Massapequa Creek ponds. However, this alternative does include the implementation of a Pond A sediment and surface water monitoring program. Quarterly sampling and analyses from Pond A sediment and surface water would be performed to assess the continued potential impact from the Site groundwater contaminant.

Because this alternative would result in Site-related contaminants remaining in Pond A, CERCLA requires that the Site be reviewed at least once every five years. If justified by the review, remedial actions might be implemented to remove or treat the Massapequa Creek pond sediments.

Alternative SD-2: Excavation or Vacuum Extraction and Off-Site Disposal of Contaminated Sediments from Pond A

Capital Cost:	\$2,989,000
Total Operation and Maintenance Cost:	\$ 384,000
Present Worth Cost:	\$3,373,000
Construction Time:	1 year

Alternative SD-2 would involve the removal of contaminated sediments from Pond A by either excavation or vacuum extraction. If the sediments were removed by excavation, the pond would be dewatered and then excavated to a desired average depth of 1.5 feet, or a depth sufficient to collect the impacted fine-grained sediments, using conventional earth moving equipment. The underlying coarse sandy and gravelly sediments were found to be not impacted and, therefore, would not be removed. The surface water drained from the pond and stormwater would be diverted temporarily to a detention basin or Massapequa Creek. Sediment erosion control measures, such as the installation of interception trenches, silt fences, and temporary dams would be taken to prevent the downstream dispersion of suspended sediments. If sediment were to be removed by the vacuum extraction method, draining of the pond or the

temporary diversion of surface water and stormwater would not be necessary.

Removal of sediments, with a moisture content of 67%, to a depth of 1.5 feet throughout Pond A (138,000 square feet or 3.2 acres) would generate approximately 2,600 cubic yards of impacted sediments. These sediments would be staged adjacent to the pond and dewatered using a combination of passive draining and active filtration. The excess porewater would be returned to the pond. It is estimated that the volume of dewatered sediment would be approximately 1,300 cubic yards (or about 50% of the wet volume). The substrate of the ponds and any impacted wetlands would be restored. The dewatered sediments (i.e., the filter cake consisting of compressed sediment) would undergo a sediment contamination profile analysis (including total waste and TCLP analyses). Depending on these results, the sediment residue would be transported to an off-Site RCRA Subtitle D landfill for disposal as a nonhazardous waste, or to a RCRA Subtitle C landfill for disposal as a hazardous waste.

To ensure that Pond A remedy, as described above, is protective of the entire Massapequa Creek and Preserve, including the five lower ponds, the remedy will be integrated with an enhanced monitoring program for the remainder of the lower ponds that will consist of periodic surface water and sediment sampling and bioassays. It is expected that this program will further support its determination that only Pond A requires remediation, and demonstrate that removal of the contaminant source in Pond A will have a beneficial effect on downstream pond sediment quality.

SUMMARY OF COMPARATIVE ANALYSIS OF ALTERNATIVES

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

The following "threshold" criteria must be satisfied by any alternative in order to be eligible for selection:

1. Overall protection of human health and the environment addresses whether or not a remedy provides adequate protection

and describes how risks posed through each exposure pathway (based on a reasonable maximum exposure scenario) are eliminated, reduced, or controlled through treatment, engineering controls, or institutional controls.

2. *Compliance with ARARs* addresses whether or not a remedy would meet all of the applicable (legally enforceable), or relevant and appropriate (requirements that pertain to situations sufficiently similar to those encountered at a Superfund site such that their use is well suited to the site) requirements of Federal and State environmental statutes and requirements or provide grounds for invoking a waiver.

The following "primary balancing" criteria are used to make comparisons and to identify the major trade-offs between alternatives:

3. *Long-term effectiveness and permanence* refers to the ability of a remedy to maintain reliable protection of human health and the environment over time, once cleanup goals have been met. It also addresses the magnitude and effectiveness of the measures that may be required to manage the risk posed by treatment residuals and/or untreated wastes.
4. *Reduction of toxicity, mobility, or volume via treatment* refers to a remedial technology's expected ability to reduce the toxicity, mobility, or volume of hazardous substances, pollutants or contaminants at the site.
5. *Short-term effectiveness* addresses the period of time needed to achieve protection and any adverse impacts on human health and the environment that may be posed during the construction and implementation periods until cleanup goals are achieved.
6. *Implementability* refers to the technical and administrative feasibility of a remedy, including the availability of materials and services needed.
7. *Cost* includes estimated capital and operation and maintenance costs, and the present worth costs.

The following "modifying" criteria are considered fully after the formal public comment period on the Proposed Plan is complete:

8. *State acceptance* indicates whether, based on its review of the FS and the Proposed Plan, the State supports, opposes, and/or

has identified any reservations with the preferred alternative.

9. *Community acceptance* refers to the public's general response to the alternatives described in the Proposed Plan and the FS report. Factors of community acceptance to be discussed include support, reservation, and opposition by the community.

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

Soil Remedial Alternatives

- Overall Protection of Human Health and the Environment

Alternative SL-1 would provide no protection of human health and the environment, as it would not address the remedial action objectives for the Liberty site. The contaminants identified in the soils would continue to migrate via all of the routes identified in the supplemental RI.

Alternative SL-3 would provide the greatest degree of overall protection because all 73,100 cubic yards of soils contaminated above groundwater protection soil cleanup levels would be permanently removed from the Site and disposed of at an off-Site EPA-approved hazardous waste facility (some of the soils may need to be treated to satisfy LDR requirements). Alternative SL-2 may not be protective if the western portion of the Site were used for unrestricted recreational use as proposed by the Town of Oyster Bay because such use would call into question the continued reliability of the cap, and SL-2 would otherwise be less protective than Alternative SL-3 in a commercial/industrial (and recreational for the extreme western portion of the Site) because under Alternative SL-2 some soil contamination above the cleanup levels would remain untreated beneath the cap. Alternative SL-2 would also require monitoring and institutional controls to ensure the integrity of the cap.

- Compliance with ARARs

This criterion is not applicable to the "no-action" alternative, Alternatives SL-1.

Alternatives SL-2 and SL-3 would comply with all ARARs, including the Long Island Landfill Law, RCRA standards for owners and operators of hazardous waste treatment, storage and disposal

facilities, RCRA LDRs, and the Department of Transportation manifest standards for transporters of hazardous waste, during the implementation of all on-Site excavation and off-Site disposal activities.

- Long-Term Effectiveness and Permanence

Alternative SL-1 would not provide any long-term effectiveness and permanence since it would not involve any measures for containing, controlling or eliminating any of the Site soil contaminants, or reducing the potential for exposure to these contaminants.

Alternative SL-3 would provide the greatest degree of long-term effectiveness and permanence, as it would result in removal and off-Site disposal of 73,000 cubic yards of contaminated soils from the Site. Alternative SL-2 would not achieve long term effectiveness and permanence if the western portion of the Site were used for unrestricted recreational use as proposed by the Town of Oyster Bay because such use would call into question the continued reliability of the cap. If the western portion of the Site were to be used for commercial/industrial (and recreational for the extreme western portion), then Alternative SL-2 would still be less effective over the long term because a smaller volume of contaminated soils (25,600 cubic yards) would be removed from the Site. A maintenance and inspection program would be required for Alternative SL-2 to ensure long-term effectiveness of the caps.

- Reduction in Toxicity, Mobility, or Volume Through Treatment

Alternative SL-1 would not provide any reduction in toxicity, mobility, or volume through treatment, as no action would be taken to address toxicity, mobility, or volume.

Although Alternatives SL-2 and SL-3 do not employ any treatment technology, both of these alternatives employ an off-Site disposal component that would result in reduction in toxicity, mobility, and volume of contamination at the Site. Alternative SL-3 would provide greater reduction than Alternative SL-2, as Alternative SL-3 would result in the off-Site disposal of 73,100 cubic yards of contaminated soils versus Alternative SL-2's 25,600 cubic yards of contaminated soils. Under both Alternatives SL-2 and SL-3, some of the soils may need to be treated to satisfy LDR requirements at an EPA-approved hazardous waste facility thereby reducing the toxicity and mobility of these contaminated materials at those locations.

- Short-Term Effectiveness

Alternative SL-1 would not include any construction and, therefore, would not present risk or adverse short-term impacts to the community, workers, or the environment as a result of its implementation; however, it would not provide any protection against principal Site threats.

Both Alternatives SL-2 and SL-3 would involve varying degrees of excavating, moving, placing, and regrading of contaminated soils. Therefore, both of these alternatives would present some potential risks to on-Site workers through dermal contact and inhalation from remedial activities. The potential for any adverse short-term impacts associated, however, would be mitigated by utilizing appropriate conventional controls (e.g., dust suppression, mufflers, personal protection equipment, etc.). Both alternatives would also have potential impacts on the surrounding community as each of these alternatives involves the transport of contaminated soils from the Site. The potential short-term risks would be greater for Alternative SL-3 because this alternative involves the transport of a much greater volume of contaminated soils.

- Implementability

Alternative SL-1 can be readily implemented, as it would not include any physical remedial measures to address the soil contamination at the Site.

Alternatives SL-2 and SL-3 would be easily and equally implementable because both use conventional excavation and disposal technologies with proven reliability. Construction of the cap system specified in Alternative SL-2 can be accomplished using proven technologies; equipment, services and materials for this work would be readily available.

- Cost

The estimated capital, total operation and maintenance (O&M), and present-worth costs for each of Alternatives SL-1 through SL-3 are as follows:

Alternative	Capital Cost	Total O&M Cost	Present Worth Cost
SL-1	\$0	\$0	\$0
SL-2	\$7,863,000	\$1,077,000	\$8,940,000
SL-3	\$12,862,000	\$230,000	\$13,092,000

As indicated by the cost estimates, Alternative SL-1 has no associated cost, as it is a no-action alternative. Of the two action alternatives, Alternative SL-2 is less expensive than Alternative SL-3. The high cost associated with Alternative SL-3 is due to the excavation and off-Site disposal of 73,100 cubic yards of contaminated soils as opposed to excavation and off-Site disposal of 25,600 cubic yards of contaminated soils under Alternative SL-2.

Alternative SL-2 could be implemented at an estimated cost of \$8,940,000, while the cost of implementing Alternative SL-3 is estimated at \$13,092,000. Thus, Alternative SL-2 could be implemented for \$4,152,000 less than Alternative SL-3, or 68% of the cost of Alternative SL-3. While this is a significant cost difference, it is much less than the cost differential estimated by EPA at the time of issuance of the Proposed Plan.

- State Acceptance

The NYSDEC concurs with the selected remedy, Excavation and Off-Site Disposal of 73,100 Cubic Yards of Site Soils (SL-3), with Excavation and Off-Site Disposal of 25,600 Cubic Yards of Site Soils, Followed by Placement of an Impermeable Cap over 8.75 Acres of Low-level Contaminated Soils (SL-2), as Contingent Remedy if the Town of Oyster Bay does not acquire all or most of the Western portion of the Site that would otherwise be under the cap for recreational uses, and institutional controls). A letter of concurrence is attached as Appendix V.

- Community Acceptance

Community acceptance of the selected remedy for soil was assessed during the public comment period. Comments were expressed at the August 9, 2001 public meeting and the January 9, 2002 public availability session, and written comments were received during the public comment period. Members of the community and their elected representatives overwhelmingly disfavored Alternative SL-2 and supported Alternative SL-3, and requested EPA to change the proposed alternatives for soil remediation from Alternative SL-2 to

Alternative SL-3. The commentors expressed their concern over the long-term effectiveness and durability of the 8.75-acre capping component of the selected soil remedy. Specific responses to public comments are addressed in the Responsiveness Summary, which is attached as **Appendix V**.

Groundwater Remedial Alternatives

- Overall Protection of Human Health and the Environment

Alternative GW-1 would provide no protection of human health and the environment, as it would not address the remedial action objectives for the Liberty site. Groundwater contamination identified in the significantly-contaminated off-property portions of Plumes A and B would not be addressed, while the on-property portions of these plumes would only be addressed for the three-year period authorized under the non-time-critical removal action.

Alternative GW-3 would be the more protective of the two action alternatives in permanently removing VOCs and metals from the Upper Glacial Aquifer, and VOCs from the Magothy aquifer. Alternatives GW-2 may not be as protective, because its associated innovative treatment technologies proved to be problematic in implementation of the interim groundwater action, as many operational difficulties were experienced. Both of these alternatives would limit the migration of groundwater contaminants further downgradient, because the groundwater circulation wells being converted to extraction wells associated with Alternative GW-2 and the extraction wells associated with Alternative GW-3 would be designed to have overlapping capture zones and would provide effective capture of the groundwater contaminant plume.

- Compliance with ARARs

Both Alternatives GW-2 and GW-3 would comply with all ARARs, such as the RCRA standards for owners and operators of hazardous waste treatment, storage and disposal facilities, the Clean Air Act (e.g., ambient air quality standards), and the Department of Transportation manifest standards for transporters of hazardous waste. However, it needs to be noted that Alternative GW-3 involves a conventional groundwater extraction and treatment which has been widely used with proven reliability, whereas Alternative GW-2 involves innovative technologies that may present operational difficulties based on experience with the interim groundwater. Alternative GW-3 would also need to comply with the drinking water standards for aquifer reinjection or limitations for discharge to

Massapequa Creek. In addition, Alternatives GW-2 and GW-3 would comply with, if necessary, federal and NYSDEC regulations related to wetlands evaluation/protection and floodplain evaluation/controls.

- Long-Term Effectiveness and Permanence

Alternative GW-1 would not provide any long-term effectiveness and permanence, as it would not address the remedial action objectives for the Liberty site.

Alternatives GW-3 would provide a higher degree of long-term effectiveness and permanence than Alternative GW-2 through the removal of VOCs and metals from the Upper Glacial aquifer and VOCs from the Magothy aquifer. Alternatives GW-2 may not provide as high a long-term effectiveness and permanence as would Alternative GW-3, because its associated innovative treatment technologies proved to be problematic in implementation of the interim groundwater action, as many operational difficulties were experienced.

- Reduction in Toxicity, Mobility, or Volume Through Treatment

Alternative GW-1 would not provide any reduction in toxicity, mobility, or volume through treatment, as no action would be taken under this alternative.

Alternatives GW-3 would provide a higher reduction in toxicity, mobility, and volume through treatment than Alternative GW-2, through the permanent removal of VOCs and metals from the Upper Glacial aquifer and VOCs from the Magothy aquifer. Alternatives GW-2 may not provide as high a reduction in toxicity, mobility, and volume through treatment as would Alternative GW-3, because its associated innovative treatment technologies proved to be problematic in implementation of the interim groundwater action, as many operational difficulties were experienced.

- Short-Term Effectiveness

Alternative GW-1 would not include any construction measures and, therefore, would not present any risk or adverse short-term impacts to the community, workers, or the environment as a result of its implementation; however, it would not provide any protection against the threats posed by the contaminated groundwater.

Alternatives GW-2 and GW-3 would pose minimal potential adverse risks to the community, workers, and the environment over the short term. Potential risks for these alternatives would be those typically associated with construction activity, and an appropriate health and safety program would be established to minimize any such risks. Alternative GW-3 would entail greater intrusive activities (e.g., additional trenching/piping activities to connect the extraction wells to the off-property groundwater treatment system) than Alternative GW-2 in the construction of their respective off-property groundwater treatment systems. The potential for any adverse short-term impacts associated with the construction activities, however, would be addressed by utilizing appropriate conventional and engineering controls (e.g., dust suppression, mufflers, personal protection equipment, etc.).

- Implementability

Alternative GW-1 would be the most readily implementable as it is a no-action alternative, followed in order by Alternatives GW-2 and GW-3.

Of the two action groundwater remedial alternatives, Alternative GW-2 would be the more readily implementable, as Alternative GW-2 would employ the same innovative technologies that are being used successfully for the interim groundwater action. Although Alternative GW-3 would involve conventional groundwater extraction and treatment which has been widely used with proven reliability, it would be more difficult to construct than Alternative GW-2 because of the size of the treatment plant and the amount of piping necessary to accommodate the high groundwater pumping rate. In addition, Alternative GW-3 would necessitate acquiring public or private property (between Woodward Parkway and the headwaters of the Massapequa Creek) to site the treatment system.

- Cost

The estimated capital, total O&M, and present-worth costs for each of Alternatives GW-1 through GW-3 are as follows:

Alternative	Capital Cost	Total O&M Cost	Present Worth Cost
GW-1	\$180,000	\$1,080,000	\$1,260,000
GW-2	\$5,030,000 ¹	\$9,999,000 ¹	\$15,029,000 ¹
GW-3	\$5,200,000 ²	\$12,424,000 ²	\$17,624,000 ²

¹ Includes the following costs for Plume B treatment system, employing the same innovative technologies: capital cost of \$813,000, total 20-year operation and maintenance cost of \$1,821,000, and present worth cost of \$2,634,000.

² Includes the following costs for Plume B treatment system, employing the same conventional pump-and-treat technologies: capital cost of \$509,000, total 20-year operation and maintenance cost of \$1,814,000, and present worth cost of \$2,323,000.

As indicated by the cost estimates, there is a significant cost increase between Alternative GW-1, the no-action alternative, and the other action alternatives, GW-2 and GW-3. Of the two action alternatives, Alternative GW-3 is more expensive than Alternative GW-2, due to the added O&M costs associated with a conventional groundwater extraction and treatment system.

- State Acceptance

As stated above, the NYSDEC concurs with the selected remedy, Conventional Pump and Treat with Continuation of the On-property Interim Groundwater Action (GW-3) by Conventional Pumping and Treatment and Institutional Controls. A letter of concurrence is attached as Appendix V.

- Community Acceptance

Community acceptance of the selected remedy for groundwater was assessed during the public comment period. The community generally supports Alternative GW-3. Specific responses to public comments are addressed in the Responsiveness Summary, which is attached as Appendix V.

Sediment Remedial Alternatives

- Overall Protection of Human Health and the Environment

Alternative SD-1 would provide no protection of ecological receptors, as it would not meet the remedial action objectives for the Liberty site; the contaminants identified in Pond A sediments would continue to pose a threat to ecological resources in this ecosystem. Alternative SD-2 would be fully protective of human health and the environment via permanent removal of 2,600 cubic yards of contaminated sediments in Pond A and the enhanced monitoring program for the remainder of the lower ponds.

- Compliance with ARARs

This criterion is not applicable to the "no-action" alternative, Alternative SD-1.

Alternative SD-2 would comply with all ARARs, including the NYSDEC surface water quality standards. In addition, due to associated off-property construction activities, Alternative SD-2 would comply with, if necessary, federal and NYSDEC regulations related to wetlands evaluation/protection and floodplain evaluation/controls. Alternative SD-2 would also comply with the Department of Transportation manifest standards for transporters of hazardous waste and the RCRA standards for owners and operators of hazardous waste treatment, storage and disposal facilities

- Long-Term Effectiveness and Permanence

Alternative SD-1 would not provide any long-term, effective or permanent measures for containing, controlling or eliminating any of the contaminated sediments within Pond A, or reducing the potential for exposure to these contaminants. Alternative SD-2 would be effective in protecting ecological resources over the long term in that it would result in the permanent removal of 2,600 cubic yards of contaminated sediments from Pond A.

- Reduction in Toxicity, Mobility, or Volume Through Treatment

Because Alternative SD-1 is the "no-action" alternative, it would not result in any reduction in the toxicity, mobility, or volume of contaminants present in the impacted ecosystems. Alternative SD-2 would substantially reduce the volume, toxicity, and mobility of contaminants present in Pond A sediments, as a result of removal, and off-Site transport and disposal of 2,600 cubic yards of contaminated sediments.

- Short-Term Effectiveness

Alternative SD-1 would not include any construction measures and, therefore, would not present potential risks or adverse short-term impacts to Site workers or the environment as a result of its implementation. Alternative SD-2 would present some potential risks to workers through dermal contact and inhalation from remedial activities. The potential for any adverse short-term impacts to Site workers, however, would be readily mitigated by using personal protection equipment and following appropriate health and safety procedures. Alternative SD-2 would also present

short-term impacts to wetlands, flora, and fauna. Sediment erosion control measures, such as the installation of interception trenches, silt fences, and temporary dams would be taken to prevent the downstream dispersion of suspended sediments. Following the implementation of Alternative SD-2, wetlands restoration would be required.

- Implementability

Alternative SD-1 can be readily implemented, as it would not include any physical remedial measures to address the Pond A sediments. Although Alternative SD-2 would use conventional excavation or vacuum extraction technologies which have proven reliability, it would be less readily implementable than Alternative SD-1, as Alternative SD-2 may require the resolution of issues that could arise from coordinating and consulting with State and local regulatory agencies (e.g., NYSDEC Bureau of Fisheries and Wildlife, Nassau County Department of Recreation and Parks, and Nassau County Department of Public Works). These issues would likely include delineation and restoration of sensitive or ecologically valuable wetlands.

- Cost

The estimated capital, total O&M, and present-worth costs for Alternatives SD-1 and SD-2 are as follows:

Alternative	Capital Cost	Total O&M Cost	Present Worth Cost
SD-1	N/A	\$283,000	\$283,000
SD-2	\$2,989,000	\$384,000	\$3,373,000

The costs associated with Alternative SD-1 are for a Pond A sediment and surface water monitoring program whereas the costs for Alternative SD-2 are for removal of contaminated sediments from Pond A.

- State Acceptance

As stated above, NYSDEC concurs with the selected remedy, Excavation and Off-Site Disposal of 2,600 Cubic Yards of Contaminated Pond a Sediments (SD-2) with an enhanced monitoring program for the remainder of the lower ponds. A letter of concurrence is attached as Appendix V.

- Community Acceptance

Community acceptance of the selected remedy for Pond A sediment was assessed during the public comment period. EPA believes that the community generally supports this approach. Specific responses to public comments are addressed in the Responsiveness Summary, which is attached as **Appendix V**.

PRINCIPAL THREAT WASTES

There are no source materials that meet the definition of principal threat wastes at the Site.

SELECTED REMEDY

Summary of the Rationale for the Selected Remedy

Based upon consideration of the requirements of CERCLA, the detailed analysis of the alternatives, and public comments, NYSDEC and EPA have determined that Alternative GW-3 (Conventional Pump and Treat with Continuation of the On-property Interim Groundwater Action by Conventional Pumping and Treatment and Institutional Controls), to address the on-property and off-property groundwater contamination, Alternative SD-2 (Excavation and Off-Site Disposal of 2,600 Cubic Yards of Contaminated Pond A Sediments with an enhanced monitoring program for the Remainder of the Lower Ponds), to address Massapequa Creek sediments, and Alternative SL-3 (Excavation and Off-Site Disposal of 73,100 Cubic Yards of Site Soils, investigation and remediation of USTs, features and sanitary leaching fields and institutional controls) to address the Site soils and features, are the appropriate remedies, best satisfy the requirements of CERCLA Section 121, 42 U.S.C. §9621 and the NCP's nine evaluation criteria for remedial alternatives, 40 CFR §300.430(e)(9).

The selected groundwater remedy Alternative GW-3, while somewhat more costly than Alternative GW-2, is expected to be more easily implementable, more effective over the long-term, and is favored by the community and the State. Unlike Alternative GW-2, Alternative GW-3 utilizes well demonstrated treatment technologies; as noted above, during the implementation of the non-time-critical groundwater removal action, the innovative treatment technologies specified in Alternative GW-2 proved to be problematic, as many operational difficulties were experienced. Alternative GW-1 (No

Action) would not be protective of human health and the environment, since it would not actively address the potential human health and ecological risks posed by the contaminated media.

Alternative SD-2 eliminates all potential adverse effects to ecological receptors within the Massapequa Creek from exposure to Site-related contaminants, Alternative SD-1, the no-action alternative, would not address these risks.

Alternative SL-1 would not be protective of human health nor the groundwater resource, since it would not address contaminated features or the contaminants in the soils that continue to serve as a source of groundwater contamination. Alternative SL-3, as well as Alternative SL-2 (if constructed and maintained properly) would both be protective of human health and the groundwater resource. Alternative SL-2 would provide this protection at less cost than Alternative SL-3, however Alternative SL-3 provides a greater degree of long-term effectiveness and permanence. Alternative SL-3 garnered overwhelming support from the community, while the community was opposed to Alternative SL-2.

The Proposed Plan identified Alternative SL-2 as the Preferred Remedy for addressing the soil contamination at the Site. However, during the comment period the Town of Oyster Bay indicated that it had taken significant steps towards formalizing plans to acquire the western portion of the Site, including nearly all of the area that would be capped under Alternative SL-2, for the purposes of expanding Ellsworth Allen Park. The Town indicated that the recreational uses planned for the property would include walking/nature trail and sensory gardens, a picnic area, cabins and campgrounds for Boy Scout outings. The development of the property would be phased in over a period of 10 years or more. This would result in disruption of significant portions of the property for trenching (utilities and irrigation), digging (for the planting of trees and shrubbery) and excavation (for the building of rest room facilities, cabins, trails, etc.). The cap component of Alternative SL-2 would be incompatible with Town's proposed use of the park over the short and long term. The Town's proposed use of the park might also compromise monitoring and maintenance the cap, thereby compromising the long-term effectiveness of the remedy. This information resulted in a re-evaluation of Alternative SL-2 and SL-3 against the criteria listed in the NCP, and other program goals. Alternative SL-3 is the selected soil remedy contingent upon the Town's acquisition of the property for recreational use. Alternative SL-3 would allow the Town to use the publicly owned property as a park without limitation. However, if the Town does

not complete the acquisition process within a time frame of approximately 6-8 months, or satisfactorily demonstrate to EPA that they will acquire the property for such purposes within a reasonable time frame, then EPA will implement Alternative SL-2 as a contingency remedy.

Description of the Selected Remedy

The major components of the selected remedy include:

① Groundwater (Alternative GW-3):

- . continued operation of the ongoing interim groundwater treatment system that is being converted to a conventional pump-and-treat system to address the groundwater underlying the Site property contaminated by previous operations at the Site,
- . continuation of interim groundwater action by construction and operation of a conventional pump-and-treat system (Ion Exchange, Precipitation with Coagulation, Filtration, Air Stripping and Granular Activated Carbon with Two Groundwater Extraction Wells) to address groundwater underlying the Site property which is believed to have been contaminated by an upgradient source,
- . construction and operation of a conventional 250-gpm pump-and-treat system (Ion Exchange, Precipitation with Coagulation, Filtration, Air Stripping and Granular Activated Carbon with Four Groundwater Extraction Wells) to treat off-property groundwater contamination,
- . construction of all groundwater treatment systems on the Liberty property,
- . restoration of the aquifer through reduction of contaminant levels to State and Federal MCLs (e.g., 5 µg/l for cadmium, 50 µg/l for chromium, and 5 µg/l for TCE, cis-1,2-DCE, and PCE),
- . discharge of treated groundwater to Massapequa Creek surface water or reinjection of treated groundwater into the aquifer,
- . implementation of a groundwater monitoring program, and

- . institutional controls to prohibit installation or use of groundwater wells for human consumption.
- ② Massapequa Preserve (Alternative SD-2):
- . excavation and off-Site disposal of approximately 2,600 cubic yards of contaminated sediments within Pond A of nearby Massapequa Creek and Preserve, and
 - . implementation of a monitoring program for the remainder of the ponds within the Massapequa Preserve to demonstrate that the removal of Pond A sediments is protective of the downstream ecosystem from contaminants associated with the Liberty site.
- ③ Soils (Alternative SL-3):
- . excavation and off-Site disposal of all soils contaminated above groundwater protection levels (10 mg/kg cadmium and 143 mg/kg chromium), estimated at 73,100 cubic yards,
 - . removal of contaminated aqueous and/or solid materials from three underground storage tanks and fifty-six subsurface features, as well as from the northern and eastern sanitary leaching fields, if warranted (it is expected that one underground storage tank, approximately thirty-eight subsurface features, the entire eastern sanitary leaching field, and a small portion of the northern sanitary leaching field will be addressed separately pursuant to the Features AOC),
 - . Removal and off-Site disposal of any soil surrounding the subsurface features that exceed 10 mg/kg cadmium, 143 mg/kg chromium, 0.7 mg/kg TCE, 0.25 mg/kg cis-1,2-DCE, 1.4 mg/kg PCE, ; 1 mg/kg PCBs for soils between zero and 1 foot bgs and 10 mg/kg PCBs for soils below 1 foot bgs, 35 mg/kg cyanide, 0.29 mg/kg benzo[a]pyrene, or 0.29 mg/kg dibenzo[a,h]anthracene, and
 - . institutional controls to restrict the use of the Site to commercial/industrial or, where applicable, to recreational uses.

The major components of the contingent remedy for soils (Alternative SL-2) include:

- . excavation and off-Site disposal of approximately 25,600 cubic yards of soils including: (1) contaminated soils that would be rendered TCLP hazardous, (2) soils in the groundwater table fluctuation zone (approximately 15-21 ft bgs) above the groundwater protection soil cleanup levels of 10 mg/kg cadmium and 143 mg/kg chromium, and (3) any soil above the groundwater protection soil cleanup levels that is excavated to access the soils in (1) and (2),
- . placement of an impermeable cap (with a surface permeability of 5×10^{-8} cm/sec or less) or engineered structure, such as a building, over 8.75 acres of low-level contaminated soils with a requirement to maintain the integrity of the cap,
- . removal of contaminated features and associated soils, as described above, in the selected remedy, and
- . institutional controls to restrict the use of the Site to commercial/industrial or, where applicable, to recreational and an institutional control to prevent activities that could compromise the integrity of the cap.

Note that many of the specific details provided in this section are provided for conceptual purposes and cost estimating purposes; these details may change somewhat during the remedial design and construction process.

Summary of Estimated Remedy Costs

The estimated capital cost for the selected remedy is \$21,052,000. The total present worth cost is \$34,090,000. The total present worth is the sum of capital cost, periodic costs and the present-worth cost of O&M, which are based on a 7% discount rate and a project life of 20 years, for GW-3, SD-2, and SL-3. A detailed breakdown of the costs of the selected remedy are provided in Tables 8, 9, and 10. If the contingency soil remedy Alternative SL-2 is implemented the total capital cost and present worth cost would be \$18,833,000 and \$29,938,000, respectively; the project life for Alternative SL-2 was assumed to be 50 years. A detailed

breakdown of the costs of the contingent remedy (Alternative SL-2) is provided in Tables 11.

These engineering cost estimates are expected to be within +50 to -30 percent of the actual project cost, and are based upon the best available information regarding the anticipated scope of the selected remedy. Changes in the cost elements may occur as a result of new information and data collected during the engineering design of the remedy.

Expected Outcomes of the Selected Remedy

Based upon the human health and ecological risk assessments, NYSDEC and EPA have determined that actual or threatened releases of hazardous substances from the Site, if not addressed by the selected alternative or one of the other active measures considered, present a current or potential threat to public health or the environment.

Specifically, it has been concluded that: (1) construction workers would be at risk via exposure to aqueous waste in the subsurface features, (2) there are potential cross-media impacts to groundwater, (3) there is a potential health risk associated with future use of the contaminated groundwater as a potable water source, and (4) there is a potential risk to ecological receptors from exposure to Pond A sediments.

The selected alternative will remove the contaminants in features that present a risk to construction workers, remove contaminants in soils that are continuing to serve as a source of contamination to groundwater, extract and treat contaminated groundwater in the sole-source aquifer system so that the groundwater can be restored to its best beneficial use, and remove contaminated sediments from Pond A such the sediments no longer presents a risk to ecological receptors. Potential for short-term human health or ecological risks that could occur while the features, soils and pond sediments are being excavated and transported, can be minimized with fencing, controls on fugitive dusts, maintenance of temporary covers; institutional controls will prevent utilization of contaminated groundwater at the Site until such time as the groundwater is restored. The selected remedy will be cost-effective, and will utilize permanent solutions and alternative treatment technologies or resource recovery technologies to the maximum extent practicable. The selected remedy will also meet the statutory preference for the use of treatment as a principal element. Finally, the selected remedy will provide overall protection of

human health and the environment due to contaminants at the Site.

These actions will restore the Site such that it can be utilized in the future in accordance with the reasonably-anticipated future land use. Under the selected remedy, it is anticipated that it will require approximately one year to complete the design of the source control remedy, and one and a half years to implement the remedy (this time frame would also apply to the contingent remedy). With regard to groundwater, it is anticipated that it will take approximately 2 years to complete the design of the comprehensive system and approximately one and a half years to construct the groundwater collection system. Groundwater cleanup standards are not expected to be achieved for 20 years. The Pond A sediment excavation is expected to be initiated within 2 years and take approximately one year to complete. The property is currently zoned for commercial and light industrial use, though the Town is expected to acquire the western 15 acres of the Site for parkland use. Plans are currently before the Town Board for a supermarket and refueling facility on the easternmost 10 acres. The five remaining acres are also expected to be used for commercial purposes. The aforementioned uses of the property are not expected to change. It is also anticipated that the future use of the groundwater below the Site will not be a drinking water source, although the aquifer does serve as a sole-source aquifer, and there are several public water supply wells downgradient of the Site.

STATUTORY DETERMINATIONS

As previously noted, CERCLA §121(b)(1), 42 U.S.C. §9621(b)(1), mandates that a remedial action must be protective of human health and the environment, be cost-effective, and utilize permanent solutions and alternative treatment technologies or resource recovery technologies to the maximum extent practicable. Section 121(b)(1) also establishes a preference for remedial actions which employ treatment to permanently and significantly reduce the volume, toxicity, or mobility of the hazardous substances, pollutants, or contaminants at a site. CERCLA §121(d), 42 U.S.C. §9621(d), further specifies that a remedial action must attain a degree of cleanup that satisfies ARARs under Federal and State laws, unless a waiver can be justified pursuant to CERCLA §121(d)(4), 42 U.S.C. §9621(d)(4). For the reasons discussed below, EPA has determined that the selected remedy meets the requirements of CERCLA §121, 42 U.S.C. §9621.

Protection of Human Health and the Environment

The selected remedy is protective of human health and the environment. The groundwater extraction and treatment component of the remedy will be effective in achieving protection of human health and the environment over the long term, by restoring groundwater quality to levels which meet State and Federal MCLs. The excavation and off-Site disposal of approximately 2,600 cubic yards of contaminated sediments from Pond A will result in the removal of a significant volume of Site-related contamination from this ecosystem, thereby eliminating any potential adverse effects to ecological receptors within the Massapequa Creek from exposure to these contaminants. The soil remediation component of the selected remedy, that is the excavation and off-Site disposal of approximately 73,000 cubic yards of soil with contaminant levels above the groundwater protection cleanup numbers, will eliminate the cross media impacts to the groundwater, thereby expediting the groundwater restoration and protecting human health and the environment over the long term; in addition the removal of contaminants in the Site features on the eastern portion of the Site will eliminate the future risk posed to construction workers. This remedy also requires the implementation of institutional controls to prevent residential use of the property. Although SL-3 provides a greater level of protectiveness, the contingency remedy for soils would also be protective of human health and the environment. However, because the contingency remedy only requires the excavation and off-Site disposal of 25,600 cubic yards of the most highly contaminated on-Site soils, and requires that a cap be placed over an area of approximately 8.75 acres of low-level contaminated soils, it will rely on an engineered cap and institutional controls to maintain the integrity of the cap to protect human health. The implementation of the remedy, or contingency remedy, will not pose any unacceptable short term risks.

Compliance with ARARs

The National Contingency Plan, Section 300.430 (f)(ii)(B) requires that the selected remedy attain federal and State ARARs. The remedy will comply with the following action-, chemical- and location-specific ARARs identified for the Site and will be demonstrated through monitoring, as appropriate.

Action-Specific ARARs:

- 40 CFR Part 50, National Ambient Air Quality Standards

- 40 CFR Part 61 - National Emissions Standards for Hazardous Air Pollutants
- 40 CFR Part 254.25 - Excavation and Fugitive Dust Emissions
- 49 CFR 173 - Off-Site Transportation of Radioactive Materials
- 40 CFR Parts 260-268 - RCRA Standards for Handling, Transportation and Disposal of Hazardous Waste, including Land Disposal Restrictions
- 6 NYCRR Part 200.6 - Ambient Air Quality Standards
- 6 NYCRR Part 257, Air Quality Standards
- 6 NYCRR Part 212, Air Emission Standards
- 6 NYCRR Parts 370-373 - New York State Standards for Handling, Transportation and Disposal of Hazardous Waste

Chemical-Specific ARARs:

- 40 CFR Part 141 - Federal Safe Drinking Water Act Maximum Contaminant Levels (MCLs)
- 6 NYCRR Part 703 - New York Water Quality Standards
- 10 NYCRR Part 5 - New York State Sanitary Code for Drinking Water

Location-Specific ARARs:

- National Historic Preservation Act
- Executive Order 11990 - Protection of Wetlands
- Executive Order 11988 - Floodplain Management
- New York Environmental Conservation Law §27-0704 - Long Island Landfill Law

To-Be-Considered:

- Air Guide I - NYSDEC Control of Toxic Ambient Air Contaminants

- NYSDEC TAGMs 4003 - Hazardous Soil Cleanup Levels
- New York Guidelines for Soil Erosion and Sediment Control

Cost-Effectiveness

Each of the alternatives has undergone a detailed cost analysis. In that analysis, capital costs, O&M costs and periodic costs have been estimated and used to develop present worth costs. In the present-worth cost analysis, annual costs were calculated for 20 years for the selected remedy (GW-3, SD-2, and SL-3) (for contingent soil remedy SL-2, 50-year time frame was used) using a seven percent discount rate, with 2002 as the base year.

The selected remedy for groundwater GW-3, while somewhat more costly than GW-2, provides greater overall effectiveness compared to costs than GW-2 because it utilizes well demonstrated treatment technologies; as noted above during the implementation of the non-time critical groundwater removal action, the innovative treatment technologies specified in GW-2 proved to be problematic, as many operational difficulties were experienced.

The selected remedy for Massapequa Creek sediments will eliminate all potential adverse effects to ecological receptors within the Massapequa Creek from exposure to Site-related contaminants, the no-action alternative does not address these risks and therefore is not cost-effective.

While the selected remedy for soil Alternative SL-3 will be more costly than Alternative SL-2, it is a permanent remedy that will be compatible with the Town's plans for utilizing the western portion of the property for passive and active parkland. Therefore, its costs are proportional to its overall effectiveness. The contingency remedy Alternative SL-2 would only be implemented if the Town does not acquire the western portion of the Site for parkland. Under this situation, the contingency remedy could be compatible with existing zoning and uses of the property at a lower cost than Alternative SL-3.

The selected comprehensive remedy for the Site will achieve the goals of the response actions and is cost-effective because it will provide the best overall effectiveness in proportion to its cost. For a detailed breakdown of costs associated with the selected remedy, please see Tables 8, 9, and 10.

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

EPA has determined that the selected remedy meets the statutory requirement to utilize permanent solutions and treatment technologies to the maximum extent practicable. The selected groundwater remedy Alternative GW-3, while somewhat more costly than Alternative GW-2, is expected to be more easily implementable, more effective over the long-term, and favored by the community and the State. The alternative treatment technologies specified in Alternative GW-2 proved to be problematic during the non-time-critical removal action. The selected remedy for Massapequa Creek sediments satisfies all of the nine criteria to a greater extent than the no-action alternative. The selected soil remedy, Alternative SL-3, is more protective and permanent over the long term than Alternative SL-2; it provides a greater degree of reduction of toxicity, mobility and volume of contaminants at the Site than Alternative SL-2. Alternative SL-3 is also widely acceptable to the public and compatible with the planned long-term uses of the property. The selection of Alternative SL-3, however, is contingent upon the completion of the Town's acquisition of the property for parkland. If the Town does not acquire the property, then Alternative SL-2 will be implemented as the contingency soil remedy. While Alternative SL-2 is not as permanent a soil remedy as Alternative SL-3, and does not have wide public support, it would still be protective of human health and the environment at less cost than Alternative SL-3.

The selected comprehensive remedy represents the most appropriate solution to contamination at or from the Site in the soil, groundwater, and Massapequa Preserve sediment because it provides the best balance of trade-offs among the alternatives with respect to the nine evaluation criteria.

Preference for Treatment as a Principal Element

The statutory preference for remedies that employ treatment as a principal element is satisfied by the selected remedy. The selected remedy for groundwater would meet the statutory preference for the use of treatment as a principal element. The selected sediment remedy will also meet the statutory preference for the use of treatment as a principal element, to the degree that treatment would be required prior to disposal at an off-Site EPA-approved hazardous waste facility. The selected remedy for soil would meet the statutory preference for the use of treatment as a principal element, to the degree that treatment would be required prior to

disposal at an off-Site EPA-approved hazardous waste facility, as will the contingency remedy for soil. There are no principal threat wastes present at the Site.

Five-Year Review Requirements

Because this remedy will result in hazardous substances, pollutants, or contaminants remaining on-Site above levels that allow for unlimited use and unrestricted exposure, a statutory review will be conducted at five-year intervals starting after initiation of remedial action to ensure that the remedy is, or will be, protective of human health and the environment.

DOCUMENTATION OF SIGNIFICANT CHANGES

The Selected Remedy is different from the Preferred Alternative outlined in the July 2001 Proposed Plan in two important aspects discussed below.

The Proposed Plan identified Alternative GW-2 as the Preferred Alternative. This alternative relied on innovative technologies for groundwater remediation. However, because the interim groundwater treatment system, which also employed the innovative technologies, was experiencing operational difficulties, that prevented the system from continuous operation and effective treatment of groundwater contamination, it was determined that traditional pump and treat technologies should be employed to capture and treat the groundwater contamination. In January 2002 steps to convert the on-Site system into a conventional pump and treat system were initiated. Subsequently, at the January 2002 availability session, the public was informed that Alternative GW-2 was being replaced with Alternative GW-3 as the Agency's preferred groundwater remedy. The selected groundwater remedy Alternative GW-3, while somewhat more costly than Alternative GW-2, is expected to be more easily implementable, more effective over the long-term, and is favored by the community and the State.

The Proposed Plan identified Alternative SL-2 as the Preferred Remedy for addressing the soil contamination at the Site. During the comment period, in letters to EPA and at the public meetings, the community expressed very strong support in favor of Alternative SL-3 and against Alternative SL-2. Also, based in part upon comments received during the public comment period, EPA re-evaluated the cost of the soil alternatives and determined that the

difference in cost between SL-3 and SL-2 had narrowed substantially from what had been assumed for the Proposed Plan. Moreover, during the comment period the Town of Oyster Bay (Town) publicly announced significant steps towards formalizing plans to acquire the western portion of the site, including nearly all of the area that would be capped under Alternative SL-2, for the purposes of expanding Ellsworth Allen Park. The Town indicated that the recreational uses planned for the property would include walking/nature trail and sensory gardens, a picnic area, cabins and campgrounds for Boy Scout outings. The development of the property would be phased in over a period of 10 years or more. This would result in disruption of significant portions of the property for trenching (utilities and irrigation), digging (for the planting of trees and shrubbery) and excavation (for the building of rest room facilities, cabins, trails, etc.). The cap component of Alternative SL-2 would be incompatible with Town's proposed use of the park over the short and long term. The Town's proposed use of the park might also compromise monitoring and maintenance the cap, thereby compromising the long-term effectiveness of the remedy. This information resulted in a re-evaluation of Alternative SL-2 and SL-3 against the criteria listed in the NCP, and other program goals. Alternative SL-3 is the selected soil remedy contingent upon the Town's acquisition of the property for recreational use. Alternative SL-3 would allow the Town to use the publicly owned property as a park without limitation. However, if the Town does not complete the acquisition process within a time frame of approximately 6-8 months, or satisfactorily demonstrate to EPA that they will acquire the property for such purposes within a reasonable time frame, then EPA will implement Alternative SL-2 as a contingency remedy.

DECLARATION FOR THE RECORD OF DECISION

SITE NAME AND LOCATION

Liberty Industrial Finishing Superfund Site
Village of Farmingdale, Town of Oyster Bay, Nassau County,
New York

STATEMENT OF BASIS AND PURPOSE

This Record of Decision (ROD) documents the selection by the U.S. Environmental Protection Agency (EPA) of the remedial action for the Liberty Industrial Finishing site (the Site) in accordance with the requirements of the Comprehensive Environmental Response, Compensation, and Liability Act of 1980, as amended (CERCLA), 42 U.S.C. §9601 et seq. and the National Oil and Hazardous Substances Pollution Contingency Plan (NCP), 40 Code of Federal Regulations (CFR) Part 300. An administrative record for the Site, established pursuant to the NCP, 40 CFR §300.800, contains the documents that form the basis for EPA's selection of the remedial action (see Appendix III).

The New York State Department of Environmental Conservation (NYSDEC) has been consulted on the planned remedial action in accordance with CERCLA §121(f), 42 U.S.C. §9621(f), and it concurs with the selected remedy (see Appendix IV).

ASSESSMENT OF THE SITE

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

DESCRIPTION OF THE SELECTED REMEDY

The Selected Remedy represents the comprehensive remedial action for the Site. It addresses: the soil contamination present primarily on the western half of the property in the Wastewater Disposal Basins, the Building B Basement, and the Northwest Disposal Area; numerous contaminated subsurface features present on the eastern portion of the property; the on-property and off-

property groundwater contamination; and localized contamination in pond sediments in nearby Massapequa Creek. The ROD also includes a contingent remedy for soils, described below, to be implemented if the Town of Oyster Bay does not acquire the western portion of the property for park land use.

The Selected Remedy will restore groundwater to its best beneficial use, a source of drinking water, through active remediation of the aquifer and elimination of contaminants in soils that continue to contaminate the groundwater. The removal of contaminants in Site features will eliminate the future risk posed to construction workers. Remediation of contaminated sediments from Pond A will eliminate any potential adverse effects to ecological receptors within the Massapequa Creek from exposure to these contaminants.

The major components of the Selected Remedy include:

Soils:

- . excavation and off-Site disposal of all soils contaminated above groundwater protection levels, estimated at 73,100 cubic yards,
- . removal of contaminated aqueous and/or solid materials from underground storage tanks and other subsurface features (structures), and
- . institutional controls to restrict the use of the Site to commercial/industrial or, where applicable, to recreational uses.

Groundwater:

- . continued operation of the ongoing interim groundwater treatment system that is being converted to a conventional pump-and-treat system to address the groundwater underlying the Site property contaminated by previous operations at the Site,
- . continuation of the interim groundwater action by construction and operation of a conventional pump-and-treat system to address groundwater underlying the Site property which is believed to have been contaminated by an upgradient source,
- . construction and operation of a conventional pump-and-

treat system to treat off-property groundwater contamination,

- . implementation of a groundwater monitoring program, and
- . institutional controls to prohibit installation or use of groundwater wells for human consumption.

Massapequa Preserve:

- . excavation and off-Site disposal of approximately 2,600 cubic yards of contaminated sediments within Pond A of the Massapequa Preserve, and
- . implementation of a monitoring program for the remainder of the ponds within the Massapequa Preserve.

The Town of Oyster Bay is in the process of acquiring the western portion of the Site for the purpose of expanding Ellsworth Allen Park. If the Town does not complete the acquisition of the western half of the property within a time frame of approximately 6-8 months, or otherwise satisfactorily demonstrate to EPA that it will acquire the property for such purposes within a reasonable time frame, the following contingency remedy for soils will be implemented:

- . excavation and off-Site disposal of approximately 25,600 cubic yards of soils contaminated above Site-specific cleanup levels,
- . placement of an impermeable cap over 8.75 acres of low-level contaminated soils with a requirement to maintain the integrity of the cap,
- . removal of contaminated aqueous and/or solid materials from underground storage tanks and other subsurface features (structures), and
- . institutional controls to restrict the use of the Site to commercial/industrial or, where applicable, to recreational uses and institutional controls to prevent activities that could compromise the integrity of the cap.

In addition to the contingent remedy, it should be noted that approximately two-thirds of the features specified in the selected soil remedy and contingent soil remedy are expected to

be addressed separately pursuant to an Administrative Order on Consent issued to the Site property owners on March 27, 2002. If the property owners fail to implement this work, then all of the Site features will be addressed as part of the Selected Remedy.

DECLARATION OF STATUTORY DETERMINATIONS

The selected remedy meets the requirements for remedial actions set forth in CERCLA §121, 42 U.S.C. §9621: (1) it is protective of human health and the environment; (2) it achieves a level or standard of control of the hazardous substances, pollutants, and contaminants, which at least attains the legally applicable or relevant and appropriate requirements (ARARs) under Federal and State laws; (3) it is cost-effective; (4) it utilizes permanent solutions and alternative treatment (or resource recovery) technologies to the maximum extent practicable; and (5) it satisfies the statutory preference for remedies that employ treatment to reduce the toxicity, mobility, or volume of the hazardous substances, pollutants or contaminants at the Site.

A five-year review of the remedial action pursuant to CERCLA §121(c), 42 U.S.C. §9621(c), will be necessary to ensure that the remedial action remains protective of human health and the environment.

ROD DATA CERTIFICATION CHECKLIST

The ROD contains the remedy selection information noted below. More details may be found in the Administrative Record file for this Site.

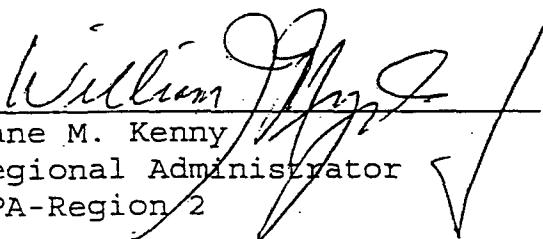
Chemicals of concern and their respective concentrations (see ROD, pages 10 - 25);

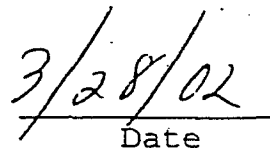
Baseline risk represented by the chemicals of concern (see ROD, pages 25 - 38);

Cleanup levels established for chemicals of concern and the basis for these levels (see ROD, pages 38 - 40);

Estimated capital, annual operation and maintenance, and total present worth costs, discount rate, and the number of years over which the remedy cost estimates are projected (see ROD, pages 44, 48, and 51); and

Key factors that led to selecting the remedy (i.e., how the selected remedy provides the best balance of tradeoffs with respect to the balancing and modifying criteria, highlighting criteria key to the decision) (see ROD, pages 65 - 71).


Jane M. Kenny
Regional Administrator
EPA-Region 2


Date

D/F

UNITED STATES DISTRICT COURT
EASTERN DISTRICT OF NEW YORK

**ORIGINAL
FILED**

IN CLERK'S OFFICE
U.S. DISTRICT COURT, E.D.N.Y.

★ AUG 31 2004 ★

BROOKLYN OFFICE

----- X

UNITED STATES OF AMERICA,

Plaintiff,

- against -

Civil Action
No. CV-04-1308

(Garaufis, J.)
(Levy, M.J.)

COLTEC INDUSTRIES, INC.;
GOODRICH CORPORATION;
55 MOTOR AVENUE LLC;
CUBBIES PROPERTIES, INC.;
JEFRY ROSMARIN;
J. JAY TANENBAUM;
JAN BURMAN;
JEROME LAZARUS;
LIBERTY ASSOCIATES;
WILLIAM HELLER;
KOCH-GLITSCH, LP;
BEAZEREAST, INC.,

Defendants.

----- X

CONSENT JUDGMENT

MOVANT'S COUNSEL IS DIRECTED
TO SERVE A COPY OF THIS ORDER
ON ALL PARTIES UPON RECEIPT

11

TABLE OF CONTENTS

<u>I. BACKGROUND</u>	1
<u>II. JURISDICTION</u>	2
<u>III. PARTIES BOUND</u>	3
<u>IV. DEFINITIONS</u>	3
<u>V. GENERAL PROVISIONS</u>	6
<u>VI. PERFORMANCE OF THE WORK BY SETTLING WORK DEFENDANTS</u>	9
<u>VII. REMEDY REVIEW</u>	12
<u>VIII. QUALITY ASSURANCE, SAMPLING, AND DATA ANALYSIS</u>	12
<u>IX. ACCESS AND INSTITUTIONAL CONTROLS</u>	14
<u>X. REPORTING REQUIREMENTS</u>	17
<u>XI. EPA APPROVAL OF PLANS AND OTHER SUBMISSIONS</u>	18
<u>XII. PROJECT COORDINATORS</u>	20
<u>XIII. ASSURANCE OF ABILITY TO COMPLETE WORK</u>	20
<u>XIV. CERTIFICATION OF COMPLETION</u>	22
<u>XV. EMERGENCY RESPONSE</u>	23
<u>XVI. PAYMENTS FOR RESPONSE COSTS</u>	24
<u>XVII. INDEMNIFICATION AND INSURANCE</u>	27
<u>XVIII. FORCE MAJEURE</u>	29
<u>XIX. DISPUTE RESOLUTION</u>	30
<u>XX. STIPULATED PENALTIES</u>	32
<u>XXI. COVENANTS BY PLAINTIFF</u>	36
<u>XXII. COVENANTS BY SETTLING DEFENDANTS AND SETTLING FEDERAL AGENCIES</u>	38
<u>XXIII. EFFECT OF SETTLEMENT; CONTRIBUTION PROTECTION</u>	40
<u>XXIV. ACCESS TO INFORMATION</u>	41
<u>XXV. RETENTION OF RECORDS</u>	42
<u>XXVI. NOTICES AND SUBMISSIONS</u>	43
<u>XXVII. EFFECTIVE DATE</u>	44
<u>XXVIII. RETENTION OF JURISDICTION</u>	44
<u>XXIX. APPENDICES</u>	45
<u>XXX. COMMUNITY RELATIONS</u>	45
<u>XXXI. MODIFICATION</u>	45
<u>XXXII. LODGING AND OPPORTUNITY FOR PUBLIC COMMENT</u>	46
<u>XXXIII. SIGNATORIES/SERVICE</u>	46
<u>XXXIV. FINAL JUDGMENT</u>	46

I. BACKGROUND

A. The United States of America ("United States"), on behalf of the Administrator of the United States Environmental Protection Agency ("EPA"), filed a complaint in this matter pursuant to Sections 106 and 107 of the Comprehensive Environmental Response, Compensation, and Liability Act ("CERCLA"), 42 U.S.C. §§ 9606, 9607.

B. The United States in its complaint seeks, *inter alia*: (1) reimbursement of costs incurred and to be incurred by EPA and the Department of Justice for response actions at the Liberty Industrial Finishing Superfund Site (the "Site") in the Village of Farmingdale, Town of Oyster Bay, Nassau County, New York, together with accrued interest; and (2) performance of studies and response work by the defendants at the Site consistent with the National Contingency Plan, 40 C.F.R. Part 300 (as amended) ("NCP").

C. In accordance with the NCP and Section 121(f)(1)(F) of CERCLA, 42 U.S.C. § 9621(f)(1)(F), EPA notified the State of New York (the "State") on September 23, 2002 of negotiations with potentially responsible parties regarding the implementation of the remedial design and remedial action for the Site, and EPA has provided the State with an opportunity to participate in such negotiations and be a party to this Consent Judgment.

D. In accordance with Section 122(j)(1) of CERCLA, 42 U.S.C. § 9622(j)(1), EPA notified the U.S. Department of the Interior ("DOI") and the National Oceanic and Atmospheric Administration ("NOAA") on September 23, 2002 of negotiations with potentially responsible parties regarding the release of hazardous substances that may have resulted in injury to the natural resources under Federal trusteeship and encouraged the trustees to participate in the negotiation of this Consent Judgment.

E. The defendants that have entered into this Consent Judgment ("Settling Defendants") do not admit any liability to the Plaintiff arising out of the transactions or occurrences alleged in the complaint, nor do they acknowledge that the release or threatened release of hazardous substances at or from the Site constitutes an imminent or substantial endangerment to the public health or welfare or the environment. The Settling Federal Agencies do not admit any liability arising out of the transactions or occurrences alleged in any claim asserted by the Settling Defendants.

F. Pursuant to Section 105 of CERCLA, 42 U.S.C. § 9605, EPA placed the Site on the National Priorities List, set forth at 40 C.F.R. Part 300, Appendix B, by publication in the Federal Register on June 10, 1986, 51 Fed. Reg. 21054 (1986).

G. In response to a release or a substantial threat of a release of hazardous substances at or from the Site, in November, 1991, EPA commenced a Remedial Investigation and Feasibility Study ("RI/FS") for the Site pursuant to 40 C.F.R. § 300.430, and in January 1997 a group consisting of some of the Settling Defendants (the "CRI/FS Respondents") commenced a "continued RI/FS" for the Site pursuant to 40 C.F.R. § 300.430.

H. The CRI/FS Respondents completed a Remedial Investigation ("RI") Report on July 20, 2000, and the CRI/FS Respondents completed a Feasibility Study ("FS") Report on July 26, 2000.

I. Pursuant to Section 117 of CERCLA, 42 U.S.C. § 9617, EPA published notice of the completion of the FS and of the proposed plan for remedial action on July 23, 2001, in a major local newspaper of general circulation. EPA provided an opportunity for written and oral comments from the public on the proposed plan for remedial action. A copy of the transcript of the public meeting is available to the public as part of the administrative record upon which the Regional Administrator based the selection of the response action.

J. The decision by EPA on the remedial action to be implemented at the Site is embodied in a final Record of Decision ("ROD"), executed on March 28, 2002, on which the State has given its concurrence. The ROD includes EPA's explanation for any significant differences between the final plan and the proposed plan as well as a responsiveness summary to the public comments. Notice of the final plan was published on October 17, 2002 in accordance with Section 117(b) of CERCLA.

K. Based on the information presently available to EPA, EPA believes that the Work (as defined below) will be properly and promptly conducted by the Settling Work Defendants if conducted in accordance with the requirements of this Consent Judgment.

L. The remedial action selected in the ROD addresses, among other things, soil contamination at the Site. For purposes of this Consent Judgment, EPA has determined that the Town of Oyster Bay has acquired, or will, within a reasonable time frame, acquire the western part of the 30-acre portion of the Site for parkland purposes and that the applicable remedial action with respect to soils at the Site thus is the alternative denominated as SL-3 in the ROD.

M. The Settling Work Defendants have established the Liberty Industrial Finishing Site Trust Account to receive certain settlement and other payments with respect to the Site from certain of the Settling Defendants, the Settling Federal Agencies, and third parties. Payments to the Liberty Industrial Finishing Site Trust Account shall only be used to fund the Work, the Features Tasks and/or to pay Future Response Costs.

N. Solely for the purposes of Section 113(j) of CERCLA, the Remedial Action selected by the ROD and the Work to be performed by the Settling Work Defendants shall constitute a response action taken or ordered by the President.

O. The Parties recognize, and the Court by entering this Consent Judgment finds, that this Consent Judgment has been negotiated by the Parties in good faith and implementation of this Consent Judgment will expedite the cleanup of the Site and will avoid prolonged and complicated litigation between the Parties, and that this Consent Judgment is fair, reasonable, and in the public interest.

NOW, THEREFORE, it is hereby Ordered, Adjudged, and Decreed:

II. JURISDICTION

1. This Court has jurisdiction over the subject matter of this action pursuant to 28 U.S.C. §§ 1331 and 1345, and 42 U.S.C. §§ 9606, 9607, and 9613(b). This Court also has personal jurisdiction over the Settling Defendants. Solely for the purposes of this Consent Judgment and the underlying complaint, Settling Defendants waive all objections and defenses

that they may have to jurisdiction of the Court or to venue in this District and all defenses based on statute of limitations. Settling Defendants shall not challenge the terms of this Consent Judgment or this Court's jurisdiction to enter and enforce this Consent Judgment.

III. PARTIES BOUND

2. This Consent Judgment applies to and is binding upon the United States and upon Settling Defendants and their heirs, successors and assigns. Any change in ownership or corporate status of a Settling Defendant including, but not limited to, any transfer of assets or real or personal property, shall in no way alter such Settling Defendant's responsibilities under this Consent Judgment.

3. Settling Work Defendants shall provide a copy of this Consent Judgment to each contractor hired to perform the Work required by this Consent Judgment and to each person representing any Settling Work Defendant with respect to the Site or the Work and shall condition all contracts entered into hereunder upon performance of the Work in conformity with the terms of this Consent Judgment. Settling Work Defendants or their contractors shall provide written notice of the Consent Judgment to all subcontractors hired to perform any portion of the Work required by this Consent Judgment. Settling Work Defendants shall nonetheless be responsible for ensuring that their contractors and subcontractors perform the Work contemplated herein in accordance with this Consent Judgment. With regard to the activities undertaken pursuant to this Consent Judgment, each contractor and subcontractor shall be deemed to be in a contractual relationship with the Settling Work Defendants within the meaning of Section 107(b)(3) of CERCLA, 42 U.S.C. § 9607(b)(3).

IV. DEFINITIONS

4. Unless otherwise expressly provided herein, terms used in this Consent Judgment which are defined in CERCLA or in regulations promulgated under CERCLA shall have the meaning assigned to them in CERCLA or in such regulations. Whenever terms listed below are used in this Consent Judgment, the following definitions shall apply:

“CERCLA” shall mean the Comprehensive Environmental Response, Compensation, and Liability Act of 1980, as amended, 42 U.S.C. §§ 9601, *et seq.*

“Consent Judgment” shall mean this Consent Judgment and all appendices attached hereto (listed in Section XXIX). In the event of conflict between this Consent Judgment and any appendix, this Consent Judgment shall control.

“Day” shall mean a calendar day unless expressly stated to be a working day. “Working day” shall mean a day other than a Saturday, Sunday, or Federal holiday. In computing any period of time under this Consent Judgment, where the last day would fall on a Saturday, Sunday, or Federal holiday, the period shall run until the close of business of the next working day.

“Effective Date” shall be the effective date of this Consent Judgment as provided in Paragraph 112.

“EPA” shall mean the United States Environmental Protection Agency and any successor departments or agencies of the United States.

“Features AOC” shall mean the administrative order on consent (Index number CERCLA-02-2002-2013) issued by EPA on March 27, 2002, pursuant to Section 106(a) of CERCLA, to 55 Motor Avenue Company; Cubbies Properties, Inc.; Jefry Rosmarin; and J. Jay Tanenbaum, current owners and operators of real property included within the Site, requiring the investigation and remediation of certain storage tanks, subsurface features, sanitary leaching fields and an approximately 500 cubic yard mound of contaminated soils located at such real property.

“Features Tasks” shall mean any or all of the work and other obligations required to be performed by the respondents under the Features AOC.

“Future Response Costs” shall mean all costs, including, but not limited to, direct and indirect costs, that the United States incurs in reviewing or developing plans, reports and other items pursuant to this Consent Judgment, verifying the Work, or otherwise implementing, overseeing, or enforcing this Consent Judgment, including, but not limited to, payroll costs, contractor costs, travel costs, laboratory costs, the costs incurred pursuant to Sections VII, IX (including, but not limited to, the cost of attorney time and any monies paid to secure access and/or to secure or implement institutional controls including, but not limited to, the amount of just compensation), XV, and Paragraph 92 of Section XXI. Future Response Costs shall also include all Interim Response Costs.

“Interim Groundwater Tasks” shall mean any or all of the work and other obligations required to be performed by the respondents under the Interim Groundwater UAO.

“Interim Groundwater UAO” shall mean the unilateral administrative order (Index number II CERCLA-98-0208) issued by EPA on August 3, 1998, pursuant to Section 106(a) of CERCLA, to certain of the Settling Defendants, requiring the remediation of groundwater underlying the 30-acre portion of the Site.

“Interim Response Costs” shall mean all costs, including direct and indirect costs, (a) paid by the United States in connection with the Site between March 10, 2002 (as to payroll costs) or March 19, 2002 (as to all other costs) and the Effective Date, or (b) incurred prior to the Effective Date but paid after that date.

“Interest” shall mean interest at the rate specified for interest on investments of the EPA Hazardous Substance Superfund established by 26 U.S.C. § 9507, compounded annually on October 1 of each year, in accordance with 42 U.S.C. § 9607(a). The applicable rate of interest shall be the rate in effect at the time the interest accrues. The rate of interest is subject to change on October 1 of each year.

“National Contingency Plan” or “NCP” shall mean the National Oil and Hazardous Substances Pollution Contingency Plan promulgated pursuant to Section 105 of CERCLA, 42 U.S.C. § 9605, codified at 40 C.F.R. Part 300, and any amendments thereto.

“Operation and Maintenance” or “O & M” shall mean all activities required to maintain the effectiveness of the Remedial Action as required under the Operation and Maintenance Plan approved or developed by EPA pursuant to this Consent Judgment.

“Owner Settling Defendants” shall mean the Settling Defendants listed in Appendix E.

“Paragraph” shall mean a portion of this Consent Judgment identified by an arabic numeral or an upper case letter.

“Parties” shall mean the United States and the Settling Defendants.

“Performance Standards” shall mean the cleanup standards and other measures of achievement of the goals of the Remedial Action, set forth in the Section of the ROD entitled “Remedial Action Objectives,” the “Compliance with ARARs” subsection of the “Selected Remedy” section of the ROD, and Section II of the Statement of Work (“SOW”), as defined below.

“Plaintiff” shall mean the United States.

“Plume B” shall mean those hazardous substances and/or pollutants and contaminants, including tetrachloroethylene, released and threatened to be released into groundwater, from a source or sources located entirely or primarily about one-quarter mile north of the 30-acre portion of the Site, and also includes all areas of groundwater where hazardous substances and/or pollutants or contaminants released from that source or sources come to be located, the extent of which, as of 1999, is depicted generally on the map attached as Appendix H, but Plume B does not include that portion of the groundwater plume originating north of the Site which is commingled with hazardous substances and/or pollutants and contaminants released at or from the 30-acre portion of the Site.

“Prospective Purchaser Agreement” shall mean the Agreement and Covenant Not to Sue, Index Number CERCLA-02-2002-2019, entered into by EPA and the Town of Oyster Bay which became effective on June 10, 2003.

“RCRA” shall mean the Solid Waste Disposal Act, as amended, 42 U.S.C. §§ 6901 *et seq.* (also known as the Resource Conservation and Recovery Act).

“Record of Decision” or “ROD” shall mean the EPA Record of Decision relating to the Site signed on March 28, 2002, by the Regional Administrator, EPA Region II, or his/her delegate, and all attachments thereto. The ROD (excluding appendices) is attached as Appendix A.

“Remedial Action” shall mean those activities, including Operation and Maintenance, to be undertaken by the Settling Work Defendants to implement the ROD, in accordance with the SOW and the final Remedial Design and Remedial Action Work Plans and other plans approved by EPA.

“Remedial Action Work Plan” shall mean the work plan or work plans developed pursuant to Section X of the SOW and approved by EPA, and any amendments thereto.

“Remedial Design” shall mean those activities to be undertaken by the Settling Work Defendants to develop the final plans and specifications for the Remedial Action pursuant to the Remedial Design Work Plan.

“Remedial Design Work Plan” shall mean the work plan developed pursuant to Sections VI and VII of the SOW and approved by EPA, and any amendments thereto.

“Section” shall mean a portion of this Consent Judgment identified by a Roman numeral.

"Settling Defendants" shall mean those Parties identified in Appendices D (Non-Owner Settling Defendants) and E (Owner Settling Defendants) but shall not include the Settling Federal Agencies.

"Settling Federal Agencies" shall mean those departments, agencies, and instrumentalities of the United States identified in Appendix F, which are resolving any claims which have been or could be asserted against them with regard to this Site as provided in this Consent Judgment.

"Settling Work Defendants" shall mean those Parties identified in Appendices D (Non-Owner Settling Defendants) and E (Owner Settling Defendants) other than BeazerEast, Inc. and Koch-Glitsch, LP.

"Site" shall mean the Liberty Industrial Finishing Superfund Site, located in the unincorporated Village of Farmingdale, Town of Oyster Bay, Nassau County, New York, encompassing an area approximately 30 acres in size, which is located at 55 Motor Avenue and designated on the Nassau County tax map as Lots 327 and 329 of Block 518, Section 48, depicted generally on the map attached as Appendix C, as well as those areas where hazardous substances and/or pollutants and contaminants released at or from the 30-acre area have come to be located, but, for purposes of this Consent Judgment, the Site does not include Plume B.

"State" shall mean the State of New York.

"Statement of Work" or "SOW" shall mean the statement of work for implementation of the Remedial Design, Remedial Action, and Operation and Maintenance at the Site, as set forth in Appendix B of this Consent Judgment and any modifications made in accordance with this Consent Judgment.

"Supervising Contractor" shall mean the principal contractor retained by the Settling Work Defendants to supervise and direct the implementation of the Work under this Consent Judgment.

"United States" shall mean the United States of America, including all of its departments, agencies, and instrumentalities, which includes without limitation EPA, the Settling Federal Agencies and any federal natural resource trustee.

"Waste Material" shall mean (1) any "hazardous substance" under Section 101(14) of CERCLA, 42 U.S.C. § 9601(14); (2) any pollutant or contaminant under Section 101(33) of CERCLA, 42 U.S.C. § 9601(33); and (3) any "solid waste" under Section 1004(27) of RCRA, 42 U.S.C. § 6903(27).

"Work" shall mean all activities Settling Work Defendants are required to perform under this Consent Judgment, except those required by Section XXV (Retention of Records).

V. GENERAL PROVISIONS

5. Objectives of the Parties. The objectives of the Parties in entering into this Consent Judgment are to protect public health or welfare or the environment at the Site by the design and implementation of response actions at the Site by the Settling Work Defendants, to reimburse response costs of the Plaintiff, and to resolve the claims of Plaintiff against Settling Defendants and the claims of the Settling Defendants which have been or could have been

asserted against the United States with regard to this Site as provided in this Consent Judgment and to resolve the contribution claims among the Settling Defendants and Settling Federal Agencies.

6. Commitments by Settling Defendants and Settling Federal Agencies.

a. Settling Work Defendants shall finance and perform the Work in accordance with this Consent Judgment, the ROD, and all work plans and other plans, standards, specifications, and schedules set forth herein or developed by Settling Work Defendants and approved by EPA pursuant to this Consent Judgment. Settling Work Defendants shall also reimburse the United States for Future Response Costs as provided in this Consent Judgment. Settling Federal Agencies shall pay a share of the costs of the Work, the Features Tasks, and Future Response Costs through periodic contributions to the Liberty Industrial Finishing Site Trust Account, as provided pursuant to Paragraph 58.b of this Consent Judgment.

b. BeazerEast, Inc. and Koch-Glitsch, LP. BeazerEast, Inc. and Koch-Glitsch, LP are jointly and severally obligated to make the payment required of them under Paragraph 60 of this Consent Judgment.

7. Joint and Several Liability. The obligations of Settling Work Defendants to finance and perform the Work and to pay amounts owed to the United States under this Consent Judgment are joint and several. In the event of the insolvency or other failure of any one or more Settling Work Defendants to implement the requirements of this Consent Judgment, the remaining Settling Work Defendants shall fully comply with all such requirements.

8. Compliance With Applicable Law. All activities undertaken by Settling Work Defendants pursuant to this Consent Judgment shall be performed in accordance with the requirements of all applicable federal and state laws and regulations. Settling Work Defendants must also comply with all applicable or relevant and appropriate requirements of all Federal and state environmental laws as set forth in the ROD and the SOW. The activities conducted pursuant to this Consent Judgment, if approved by EPA, shall be considered to be consistent with the NCP.

9. Permits.

a. As provided in Section 121(e) of CERCLA and Section 300.400(e) of the NCP, no permit shall be required for any portion of the Work conducted entirely on-site (i.e., within the areal extent of contamination or in very close proximity to the contamination and necessary for implementation of the Work). Where any portion of the Work that is not on-site requires a federal or state permit or approval, Settling Work Defendants shall submit timely and complete applications and take all other actions necessary to obtain all such permits or approvals.

b. The Settling Work Defendants may seek relief under the provisions of Section XVIII (Force Majeure) of this Consent Judgment for any delay in the performance of the Work resulting from a failure to obtain, or a delay in obtaining, any permit required for the Work.

c. This Consent Judgment is not, and shall not be construed to be, a permit issued pursuant to any federal or state statute or regulation.

10. Notice to Successors-in-Title.

a. With respect to any property owned or controlled by the Owner Settling Defendants that is located within the Site, within 15 days after the entry of this Consent Judgment, the Owner Settling Defendants shall submit to EPA for review and approval a notice to be filed with the Registry of Deeds, Nassau County, State of New York, which shall provide notice to all successors-in-title that the property is part of the Site, that EPA selected a remedy for the Site on March 28, 2002, and that potentially responsible parties have entered into a Consent Judgment requiring implementation of the remedy. Such notice shall identify the United States District Court in which the Consent Judgment was filed, the name and civil action number of this case, and the date the Consent Judgment was entered by the Court. The Owner Settling Defendants shall record the notice within 10 days of EPA's approval of the notice. The Owner Settling Defendants shall provide EPA with a certified copy of the recorded notice within 10 days of recording such notice.

b. At least 30 days prior to the conveyance of any interest in property located within the Site including, but not limited to, fee interests, leasehold interests, and mortgage interests, the Owner Settling Defendant(s) conveying the interest shall give the grantee written notice of (i) this Consent Judgment, (ii) any instrument by which an interest in real property has been conveyed that confers a right of access to the Site (hereinafter referred to as "access easements") pursuant to Section IX (Access and Institutional Controls), and (iii) any instrument by which an interest in real property has been conveyed that confers a right to enforce restrictions on the use of such property (hereinafter referred to as "restrictive easements") pursuant to Section IX (Access and Institutional Controls). At least 30 days prior to such conveyance, the Owner Settling Defendant(s) conveying the interest shall also give written notice to EPA of the proposed conveyance, including the name and address of the grantee, and the date on which notice of the Consent Judgment, access easements, and/or restrictive easements was given to the grantee.

c. In the event of any such conveyance, the Owner Settling Defendants' obligations under this Consent Judgment, including, but not limited to, their obligation to provide or secure access and institutional controls, as well as to abide by such institutional controls, pursuant to Section IX (Access and Institutional Controls) of this Consent Judgment, shall continue to be met by the Owner Settling Defendants. In no event shall the conveyance release or otherwise affect the liability of the Owner Settling Defendants to comply with all provisions of this Consent Judgment, absent the prior written consent of EPA. If the United States approves, the grantee may perform some or all of the Work under this Consent Judgment.

11. Dismissal of Pending Claims. Within thirty (30) days following the Effective Date, the United States and the Settling Defendants who are parties to the action captioned 55 Motor Avenue Co., et al. v. Liberty Industrial Finishing Corp., et al., Civil Action No. CV-91-0968, which is pending in the United States District Court for the Eastern District of New York, shall submit to the Court for approval a stipulation (1) dismissing the action with prejudice, with the exception of Coltec's cross-claim against Liberty Aero, Inc. and any cross-claims or counterclaims against Grumman Corporation, (2) preserving for all parties claims relating to any

issue that is excepted from Plaintiff's covenant not to sue or take administrative action pursuant to paragraphs 88, 89 and 91 of this Consent Judgment, and (3) with each party bearing its own costs, expenses and attorneys' fees.

VI. PERFORMANCE OF THE WORK BY SETTLING WORK DEFENDANTS

12. Selection of Supervising Contractor.

a. All aspects of the Work to be performed by Settling Work Defendants pursuant to Sections VI (Performance of the Work by Settling Work Defendants), VII (Remedy Review), VIII (Quality Assurance, Sampling and Data Analysis), and XV (Emergency Response) of this Consent Judgment shall be under the direction and supervision of the Supervising Contractor, the selection of which shall be subject to disapproval by EPA. Settling Work Defendants' Supervising Contractor, as well as all other contractors and subcontractors who engage in the "practice of engineering" at the Site on behalf of Settling Work Defendants, as the "practice of engineering" is defined at Section 7201 of the New York State Education Law, must comply with all applicable New York State legal requirements regarding the practice of professional engineering within the State of New York, including, but not limited to, all applicable requirements of the New York State Education Law and Articles 15 and 15-A of the Business Corporation Law. Within 15 days after the lodging of this Consent Judgment, Settling Work Defendants shall notify EPA in writing of the name, title, and qualifications of any contractor proposed to be the Supervising Contractor. With respect to any contractor proposed to be Supervising Contractor, Settling Work Defendants shall demonstrate that the proposed contractor has a quality system that complies with ANSI/ASQC E4-1994, "Specifications and Guidelines for Quality Systems for Environmental Data Collection and Environmental Technology Programs," (American National Standard, January 5, 1995), by submitting a copy of the proposed contractor's Quality Management Plan (QMP). The QMP should be prepared in accordance with "EPA Requirements for Quality Management Plans (QA/R-2)" (EPA/240/B-01/002, March 2001) or equivalent documentation as determined by EPA. EPA will issue a notice of disapproval or an authorization to proceed. If at any time thereafter, Settling Work Defendants propose to change a Supervising Contractor, Settling Work Defendants shall give such notice to EPA and must obtain an authorization to proceed from EPA before the new Supervising Contractor performs, directs, or supervises any Work under this Consent Judgment.

b. If EPA disapproves a proposed Supervising Contractor, EPA will notify Settling Work Defendants in writing. Settling Work Defendants shall submit to EPA a list of contractors, including the qualifications of each contractor, that would be acceptable to them within 30 days of receipt of EPA's disapproval of the contractor previously proposed. EPA will provide written notice of the names of any contractor(s) that it disapproves and an authorization to proceed with respect to any of the other contractors. Settling Work Defendants may select any contractor from that list that is not disapproved and shall notify EPA of the name of the contractor selected within 21 days of EPA's authorization to proceed.

c. If EPA fails to provide written notice of its authorization to proceed or disapproval as provided in this Paragraph and this failure prevents the Settling Work Defendants from meeting one or more deadlines in a plan approved by the EPA pursuant to this Consent

Judgment, Settling Work Defendants may seek relief under the provisions of Section XVIII (Force Majeure) hereof.

13. Remedial Design/Remedial Action.

Settling Work Defendants shall fully implement and comply with the SOW. The Work to be performed by Settling Work Defendants pursuant to this Consent Judgment shall, at a minimum, achieve the Performance Standards and all other requirements of, and be performed in a manner consistent with, the ROD and this Consent Judgment.

14. Continued Implementation of Work.

Settling Work Defendants shall continue to implement the various components of the Remedial Action and O&M until the Performance Standards are achieved and for so long thereafter as is otherwise required under this Consent Judgment.

15. Modification of the SOW or Related Work Plans.

a. If EPA determines that modification to the work specified in the SOW and/or in work plans developed pursuant to the SOW is necessary to achieve and maintain the Performance Standards or to carry out and maintain the effectiveness of the remedy set forth in the ROD, EPA may require that such modification be incorporated in the SOW and/or such work plans, provided, however, that a modification may only be required pursuant to this Paragraph to the extent that it is consistent with the scope of the remedy selected in the ROD.

b. For the purposes of this Paragraph 15 and Paragraphs 52 and 53 only, the "scope of the remedy selected in the ROD," in summary, is:

(I) as to soils: (A) excavation and off-Site disposal of all soils contaminated above the soil Performance Standards; (B) subsequent to excavation of such soils, placement of clean fill in the excavated areas; (C) removal of contaminated aqueous and/or solid materials from underground storage tanks and other subsurface features at the Site; and (D) implementation of institutional controls to restrict the use of the Site to commercial/industrial uses or, where applicable, to recreational uses;

(II) as to groundwater: (A) continued operation of the groundwater treatment system installed pursuant to the Interim Groundwater UAO, to address the groundwater underlying the 30-acre portion of the Site, other than Plume B, in order to reduce contaminant levels so as to achieve Performance Standards and restore the aquifer; (B) construction and operation of a conventional pump-and-treat system to treat groundwater contamination downgradient of the 30-acre portion of the Site, other than Plume B, in order to reduce contaminant levels so as to achieve Performance Standards and restore the aquifer; (C) discharge of treated groundwater to Massapequa Creek surface water or reinjection of treated groundwater into the aquifer; (D) implementation of a groundwater monitoring program; and (E) implementation of institutional controls to prohibit installation or use of groundwater wells for human consumption of the well water or any other purpose which would or could result in human contact with groundwater; and

(III) as to the Massapequa Preserve: (A) removal by excavation or vacuum extraction and off-Site disposal of sediments contaminated above Performance

Standards within Pond A of the Massapequa Preserve; and (B) implementation of a monitoring program for the remainder of the ponds within the Massapequa Preserve.

c. If Settling Work Defendants object to any modification determined by EPA to be necessary pursuant to this Paragraph, they may seek dispute resolution pursuant to Section XIX (Dispute Resolution), Paragraph 71 (record review). The SOW and/or related work plans shall be modified in accordance with final resolution of the dispute.

d. Settling Work Defendants shall implement any work required by any modifications incorporated in the SOW and/or in work plans developed pursuant to the SOW in accordance with this Paragraph.

e. Nothing in this Paragraph shall be construed to limit EPA's authority to require performance of further response actions as otherwise provided in this Consent Judgment.

16. Settling Work Defendants acknowledge and agree that nothing in this Consent Judgment or the Remedial Design or Remedial Action Work Plans constitutes a warranty or representation of any kind by Plaintiff that compliance with the work requirements set forth in the SOW and the Work Plans will achieve the Performance Standards.

17. a. Settling Work Defendants shall, prior to any off-Site shipment of Waste Material from the Site to an out-of-state waste management facility, provide written notification to the appropriate state environmental official in the receiving facility's state and to the EPA Project Coordinator of such shipment of Waste Material. However, this notification requirement shall not apply to any off-Site shipments when the total volume of all such shipments will not exceed 10 cubic yards.

(1) The Settling Work Defendants shall include in the written notification the following information, where available: (1) the name and location of the facility to which the Waste Material is to be shipped; (2) the type and quantity of the Waste Material to be shipped; (3) the expected schedule for the shipment of the Waste Material; and (4) the method of transportation. The Settling Work Defendants shall notify the state in which the planned receiving facility is located of major changes in the shipment plan, such as a decision to ship the Waste Material to another facility within the same state, or to a facility in another state.

(2) The identity of the receiving facility and state will be determined by the Settling Work Defendants following the award of the contract for Remedial Action construction. The Settling Work Defendants shall provide the information required by Paragraph 17.a as soon as practicable after the award of the contract and before the Waste Material is actually shipped.

b. Before shipping any hazardous substances, pollutants, or contaminants from the Site to an off-site location, Settling Work Defendants shall obtain EPA's certification that the proposed receiving facility is operating in compliance with the requirements of CERCLA Section 121(d)(3) and 40 C.F.R. 300.440. Settling Work Defendants shall only send hazardous substances, pollutants, or contaminants from the Site to an off-site facility that complies with the requirements of the statutory provision and regulations cited in the preceding sentence.

VII. REMEDY REVIEW

18. **Periodic Review.** Settling Work Defendants shall conduct any studies and investigations as requested by EPA, in order to permit EPA to conduct reviews, at least every five years, of whether the Remedial Action is protective of human health and the environment, as required by Section 121(c) of CERCLA and any applicable regulations.

19. **EPA Selection of Further Response Actions.** If EPA determines, at any time, that the Remedial Action is not protective of human health and the environment, EPA may select further response actions for the Site in accordance with the requirements of CERCLA and the NCP.

20. **Opportunity To Comment.** Settling Work Defendants and, if required by Sections 113(k)(2) or 117 of CERCLA, the public, will be provided with an opportunity to comment on any further response actions proposed by EPA as a result of the review conducted pursuant to Section 121(c) of CERCLA and to submit written comments for the record during the comment period.

21. **Settling Work Defendants' Obligation To Perform Further Response Actions.** If EPA selects further response actions for the Site, the Settling Work Defendants shall undertake such further response actions to the extent that the reopener conditions in Paragraph 88 or Paragraph 89 (United States' reservations of liability based on unknown conditions or new information) are satisfied. Settling Work Defendants may invoke the procedures set forth in Section XIX (Dispute Resolution) to dispute (1) EPA's determination that the reopener conditions of Paragraph 88 or Paragraph 89 of Section XXI (Covenants by Plaintiff) are satisfied, (2) EPA's determination that the Remedial Action is not protective of human health and the environment, or (3) EPA's selection of the further response actions. Disputes pertaining to the whether the Remedial Action is protective or to EPA's selection of further response actions shall be resolved pursuant to Paragraph 71 (record review).

22. **Submissions of Plans.** If Settling Work Defendants are required to perform the further response actions pursuant to Paragraph 21, they shall submit a plan for such work to EPA for approval in accordance with the procedures set forth in Section VI (Performance of the Work by Settling Work Defendants) and shall implement the plan approved by EPA in accordance with the provisions of this Consent Judgment.

VIII. QUALITY ASSURANCE, SAMPLING, AND DATA ANALYSIS

23. Settling Work Defendants shall use quality assurance, quality control, and chain of custody procedures for all treatability, design, compliance and monitoring samples in accordance with "EPA Requirements for Quality Assurance Project Plans (QA/R5)" (EPA/240/B-01/003, March 2001) "Guidance for Quality Assurance Project Plans (QA/G-5)" (EPA/600/R-98/018, February 1998), and subsequent amendments to such guidelines upon notification by EPA to Settling Work Defendants of such amendment. Amended guidelines shall apply only to procedures conducted after such notification. Prior to the commencement of any monitoring project under this Consent Judgment, Settling Work Defendants shall submit to EPA for approval, after a reasonable opportunity for review and comment by the State, a Quality Assurance Project Plan ("QAPP") that is consistent with the SOW, the NCP and applicable

guidance documents. If relevant to the proceeding, the Parties agree that validated sampling data generated in accordance with the QAPP(s) and reviewed and approved by EPA shall be admissible as evidence, without objection, in any proceeding under this Consent Judgment. Settling Work Defendants shall ensure that EPA and State personnel and their authorized representatives are allowed access at reasonable times to all laboratories utilized by Settling Work Defendants in implementing this Consent Judgment. In addition, Settling Work Defendants shall ensure that such laboratories shall analyze all samples submitted by EPA pursuant to the QAPP for quality assurance monitoring. Settling Work Defendants shall ensure that the laboratories they utilize for the analysis of samples taken pursuant to this Consent Judgment perform all analyses according to accepted EPA methods. Accepted EPA methods consist of those methods which are documented in the "Contract Lab Program Statement of Work for Inorganic Analysis" (Revision No. 11, 1992) and the "Contract Lab Program Statement of Work for Organic Analysis," (Revision No. 9, 1994), and any amendments made thereto during the course of the implementation of this Consent Judgment; however, upon approval by EPA, after opportunity for review and comment by the State, the Settling Work Defendants may use other analytical methods which are as stringent as or more stringent than the CLP- approved methods. Settling Work Defendants shall ensure that all laboratories they use for analysis of samples taken pursuant to this Consent Judgment participate in an EPA or EPA-equivalent QA/QC program. Settling Work Defendants shall only use laboratories that have a documented Quality System which complies with ANSI/ASQC E4-1994, "Specifications and Guidelines for Quality Systems for Environmental Data Collection and Environmental Technology Programs," (American National Standard, January 5, 1995), and "EPA Requirements for Quality Management Plans (QA/R-2)," (EPA/240/B-01/002, March 2001) or equivalent documentation as determined by EPA. EPA may consider laboratories accredited under the National Environmental Laboratory Accreditation Program (NELAP) as meeting the Quality System requirements. Settling Work Defendants shall ensure that all field methodologies utilized in collecting samples for subsequent analysis pursuant to this Consent Judgment will be conducted in accordance with the procedures set forth in the QAPP approved by EPA.

24. Upon request, the Settling Work Defendants shall allow split or duplicate samples to be taken by EPA or its authorized representatives. Settling Work Defendants shall notify EPA not less than 28 days in advance of any sample collection activity unless shorter notice is agreed to by EPA. In addition, EPA shall have the right to take any additional samples that EPA deems necessary. Upon request, EPA shall allow the Settling Work Defendants to take split or duplicate samples of any samples it takes as part of its oversight of the Settling Work Defendants' implementation of the Work.

25. Settling Work Defendants shall submit to each of EPA and the State five copies of the results of all sampling and/or tests or other data obtained or generated by or on behalf of Settling Work Defendants with respect to the Site and/or the implementation of this Consent Judgment unless EPA agrees otherwise.

26. Notwithstanding any provision of this Consent Judgment, the United States hereby retains all of its information gathering and inspection authorities and rights, including enforcement actions related thereto, under CERCLA, RCRA and any other applicable statutes or regulations.

IX. ACCESS AND INSTITUTIONAL CONTROLS

27. To the extent that the Site, or any other property where access and/or land/water use restrictions are needed to implement this Consent Judgment, is owned or controlled by any of the Settling Defendants, such Settling Defendants shall:

a. commencing on the date of lodging of this Consent Judgment, provide the United States and its representatives, including EPA and its contractors, with access at all reasonable times to the Site, or such other property, for the purpose of conducting any activity related to this Consent Judgment including, but not limited to, the following activities:

- (1) Monitoring the Work;
- (2) Verifying any data or information submitted to the United States;
- (3) Conducting investigations relating to contamination at or near the Site;
- (4) Obtaining samples;
- (5) Assessing the need for, planning, or implementing additional response actions at or near the Site;
- (6) Assessing implementation of quality assurance and quality control practices as defined in the approved Quality Assurance Project Plans;
- (7) Implementing the Work pursuant to the conditions set forth in Paragraph 92 of this Consent Judgment;
- (8) Inspecting and copying records, operating logs, contracts, or other documents maintained or generated by Settling Defendants or their agents, consistent with Section XXIV (Access to Information);
- (9) Assessing Settling Work Defendants' compliance with this Consent Judgment; and
- (10) Determining whether the Site or other property is being used in a manner that is prohibited or restricted, or that may need to be prohibited or restricted, by or pursuant to this Consent Judgment;

b. commencing on the date of lodging of this Consent Judgment, refrain from using the Site, or such other property, in any manner that would interfere with or adversely affect the implementation, integrity, or protectiveness of the remedial measures to be performed pursuant to this Consent Judgment. Such restrictions include, but are not limited to: (i) the prohibition of any use of the Site for residential purposes, and (ii) the prohibition of the installation or use of groundwater wells at the Site for purposes of human consumption of the well water or for any other purpose which would or could result in human contact with groundwater; and

c. execute and record in the Registry of Deeds, Nassau County, State of New York, an easement, running with the land, that (i) grants a right of access for the purpose of conducting any activity related to this Consent Judgment including, but not limited to, those activities listed in Paragraph 27.a of this Consent Judgment, and (ii) grants the right to enforce the land/water use restrictions listed in Paragraph 27.b of this Consent Judgment, or other restrictions that EPA determines are necessary to implement, ensure non-interference with, or ensure the protectiveness of the remedial measures to be performed pursuant to this Consent Judgment. Such Settling Defendants shall grant the access rights and the rights to enforce the land/water use restrictions to one or more of the following persons as determined by EPA: (i) the United States, on behalf of EPA, and its representatives, (ii) the State and its representatives, (iii) the other Settling Defendants and their representatives, and/or (iv) other appropriate grantees. Such Settling Defendants shall, within 45 days of entry of this Consent Judgment, submit to EPA for review and approval with respect to such property:

(1) A draft easement, in substantially the form attached hereto as Appendix G, that is enforceable under the laws of the State of New York, and

(2) a current title insurance commitment or some other evidence of title acceptable to EPA, which shows title to the land described in the easement to be free and clear of all prior liens and encumbrances (except when those liens or encumbrances are approved by EPA or when, despite best efforts, Settling Defendants are unable to obtain release or subordination of such prior liens or encumbrances).

Within 15 days of EPA's approval and acceptance of the easement and the title evidence, such Settling Defendants shall update the title search and, if it is determined that nothing has occurred since the effective date of the commitment to affect the title adversely, record the easement with the Registry of Deeds, Nassau County, State of New York. Within 30 days of recording the easement, such Settling Defendants shall provide EPA with a final title insurance policy, or other final evidence of title acceptable to EPA, and a certified copy of the original recorded easement showing the clerk's recording stamps. If the easement is to be conveyed to the United States, the easement and title evidence (including final title evidence) shall be prepared in accordance with the U.S. Department of Justice Title Standards 2001, and approval of the sufficiency of title must be obtained as required by 40 U.S.C. § 255.

28. If the Site, or any other property where access and/or land/water use restrictions are needed to implement this Consent Judgment, is owned or controlled by persons other than any of the Settling Defendants, Settling Work Defendants shall, if EPA so requests, use best efforts to secure from such persons:

a. an agreement to provide access thereto for Settling Work Defendants, as well as for the United States on behalf of EPA, and the State, as well as their representatives (including contractors), for the purpose of conducting any activity related to this Consent Judgment including, but not limited to, those activities listed in Paragraph 27.a of this Consent Judgment;

b. an agreement, enforceable by the Settling Work Defendants and the United States, to refrain from using the Site, or such other property, in any manner that would interfere with or adversely affect the implementation, integrity, or protectiveness of the remedial

measures to be performed pursuant to this Consent Judgment. Such restrictions include, but are not limited to those restrictions listed in Paragraph 27.b of this Consent Judgment; and

c. the execution and recordation in the Registry of Deeds, Nassau County, State of New York, of an easement, running with the land, that (i) grants a right of access for the purpose of conducting any activity related to this Consent Judgment including, but not limited to, those activities listed in Paragraph 27.a of this Consent Judgment, and (ii) grants the right to enforce the land/water use restrictions listed in Paragraph 27.b of this Consent Judgment, or other restrictions that EPA determines are necessary to implement, ensure non-interference with, or ensure the protectiveness of the remedial measures to be performed pursuant to this Consent Judgment. The access rights and/or rights to enforce land/water use restrictions shall be granted to one or more of the following persons, as determined by EPA: (i) the United States, on behalf of EPA, and its representatives, (ii) the State and its representatives, (iii) the Settling Work Defendants and their representatives, and/or (iv) other appropriate grantees. Within 45 days of EPA's request, Settling Work Defendants shall submit to EPA for review and approval with respect to such property:

(1) A draft easement, in substantially the form attached hereto as Appendix G, that is enforceable under the laws of the State of New York, and

(2) a current title insurance commitment, or some other evidence of title acceptable to EPA, which shows title to the land described in the easement to be free and clear of all prior liens and encumbrances (except when those liens or encumbrances are approved by EPA or when, despite best efforts, Settling Work Defendants are unable to obtain release or subordination of such prior liens or encumbrances)

Within 15 days of EPA's approval and acceptance of the easement and the title evidence, Settling Work Defendants shall update the title search and, if it is determined that nothing has occurred since the effective date of the commitment to affect the title adversely, the easement shall be recorded with the Registry of Deeds, Nassau County, State of New York. Within 30 days of the recording of the easement, Settling Work Defendants shall provide EPA with a final title insurance policy, or other final evidence of title acceptable to EPA, and a certified copy of the original recorded easement showing the clerk's recording stamps. If easement is to be conveyed to the United States, the easement and title evidence (including final title evidence) shall be prepared in accordance with the U.S. Department of Justice Title Standards 2001, and approval of the sufficiency of title must be obtained as required by 40 U.S.C. § 255.

29. For purposes of Paragraphs 27 and 28 of this Consent Judgment, "best efforts" includes the payment of reasonable sums of money in consideration of access, access easements, land/water use restrictions, restrictive easements, and/or an agreement to release or subordinate a prior lien or encumbrance except that "best efforts" shall not require the payment of money to the Town of Oyster Bay in connection with portions of the Site owned by the Town. If (a) any access or land/water use restriction agreements required by Paragraphs 28.a or 28.b of this Consent Judgment are not obtained within 45 days of the date of entry of this Consent Judgment, (b) or any access easements or restrictive easements required by Paragraph 28.c of this Consent Judgment are not submitted to EPA in draft form within 45 days of EPA's request therefor, or (c) Settling Defendants are unable to obtain an agreement pursuant to Paragraph 27.c.(2) or

Paragraph 28.c.(2) from the holder of a prior lien or encumbrance to release or subordinate such lien or encumbrance to the easement being created pursuant to this Consent Judgment within 45 days of the date of entry of this Consent Judgment, the Settling Defendants subject to Paragraph 27, or Settling Work Defendants, as the case may be, shall promptly notify the United States in writing, and shall include in that notification a summary of the steps that such Settling Defendants have taken to attempt to comply with Paragraph 27 or 28 of this Consent Judgment. The United States may, as it deems appropriate, assist such Settling Defendants in obtaining access or land/water use restrictions, either in the form of contractual agreements or in the form of easements running with the land, or in obtaining the release or subordination of a prior lien or encumbrance. Such Settling Defendants shall reimburse the United States in accordance with the procedures in Section XVI (Payments for Response Costs), for all costs incurred, direct or indirect, by the United States in obtaining such access, land/water use restrictions, and/or the release/subordination of prior liens or encumbrances including, but not limited to, the cost of attorney time and the amount of monetary consideration paid or just compensation.

30. If EPA determines that land/water use restrictions in the form of state or local laws, regulations, ordinances or other governmental controls are needed to implement the remedy selected in the ROD, ensure the integrity and protectiveness thereof, or ensure non-interference therewith, Settling Defendants shall cooperate with EPA's efforts to secure such governmental controls.

31. Notwithstanding any provision of this Consent Judgment, the United States retains all of its access authorities and rights, as well as all of its rights to require land/water use restrictions, including enforcement authorities related thereto, under CERCLA, RCRA and any other applicable statute or regulations.

X. REPORTING REQUIREMENTS

32. In addition to any other requirement of this Consent Judgment, Settling Work Defendants shall submit to EPA and the State written monthly progress reports that: (a) describe the actions which have been taken toward achieving compliance with this Consent Judgment during the previous month; (b) include a summary of all results of sampling and tests and all other data received or generated by Settling Work Defendants or their contractors or agents in the previous month; (c) identify all work plans, plans and other deliverables required by this Consent Judgment completed and submitted during the previous month; (d) describe all actions, including, but not limited to, data collection and implementation of work plans, which are scheduled for the next six weeks and provide other information relating to the progress of construction, including, but not limited to, critical path diagrams, Gantt charts and Pert charts; (e) include information regarding percentage of completion, unresolved delays encountered or anticipated that may affect the future schedule for implementation of the Work, and a description of efforts made to mitigate those delays or anticipated delays; (f) include any modifications to the work plans or other schedules that Settling Work Defendants have proposed to EPA or that have been approved by EPA; and (g) describe all activities undertaken in support of EPA's Community Relations Plan for the Site during the previous month and those to be undertaken in the next six weeks. Settling Work Defendants shall submit these progress reports to EPA and the State by the tenth day of every month following the lodging of this Consent Judgment until EPA notifies the Settling Work Defendants pursuant to Paragraph 53.b of Section XIV (Certification

of Completion). If requested by EPA, Settling Work Defendants shall also provide briefings for EPA to discuss the progress of the Work.

33. The Settling Work Defendants shall notify EPA of any change in the schedule described in a monthly progress report for the performance of any activity, including, but not limited to, data collection and implementation of work plans, no later than seven days prior to the performance of the activity.

34. Upon the occurrence of any event during performance of the Work that Settling Work Defendants are required to report pursuant to Section 103 of CERCLA or Section 304 of the Emergency Planning and Community Right-to-know Act (EPCRA), Settling Work Defendants shall within 24 hours of the onset of such event orally notify the EPA Project Coordinator or the Alternate EPA Project Coordinator (in the event of the unavailability of the EPA Project Coordinator), or, in the event that neither the EPA Project Coordinator or Alternate EPA Project Coordinator is available, the Chief of the New York Remediation Branch of the Emergency and Remedial Response Division, EPA Region II. These reporting requirements are in addition to the reporting required by CERCLA Section 103 or EPCRA Section 304.

35. Within 20 days of the onset of such an event, Settling Work Defendants shall furnish to EPA a written report, signed by the Settling Work Defendants' Project Coordinator, setting forth the events which occurred and the measures taken, and to be taken, in response thereto. Within 30 days of the conclusion of such an event, Settling Work Defendants shall submit a report setting forth all actions taken in response thereto.

36. Settling Work Defendants shall submit to EPA five copies of all plans, reports, and data required by the SOW, the Remedial Design Work Plan, the Remedial Action Work Plan, or any other approved plans, in accordance with the schedules set forth in such plans. Settling Work Defendants shall simultaneously submit five copies of all such plans, reports and data to the State. Upon request by EPA, Settling Work Defendants shall also submit in electronic form all portions of any report or other deliverable Settling Work Defendants are required to submit pursuant to the provisions of this Consent Judgment.

37. All reports and other documents submitted by Settling Work Defendants to EPA (other than the monthly progress reports referred to above) which purport to document Settling Work Defendants' compliance with the terms of this Consent Judgment shall be signed by an authorized representative of the Settling Work Defendants.

XI. EPA APPROVAL OF PLANS AND OTHER SUBMISSIONS

38. After review of any plan, report or other item which is required to be submitted for approval pursuant to this Consent Judgment, EPA, after reasonable opportunity for review and comment by the State, shall: (a) approve, in whole or in part, the submission; (b) approve the submission upon specified conditions; (c) modify the submission to cure the deficiencies; (d) disapprove, in whole or in part, the submission, directing that the Settling Work Defendants modify the submission; or (e) any combination of the above. However, EPA shall not modify a submission without first providing Settling Work Defendants at least one notice of deficiency and an opportunity to cure within 14 days, except where to do so would cause serious disruption to the Work or where previous submission(s) have been disapproved due to material defects and

the deficiencies in the submission under consideration indicate a bad faith lack of effort to submit an acceptable deliverable.

39. In the event of approval, approval upon conditions, or modification by EPA, pursuant to Paragraph 38.a, b, or c, Settling Work Defendants shall proceed to take any action required by the plan, report, or other item, as approved or modified by EPA subject only to their right to invoke the Dispute Resolution procedures set forth in Section XIX (Dispute Resolution) with respect to the modifications or conditions made by EPA. In the event that EPA modifies the submission to cure the deficiencies pursuant to Paragraph 38.c and the submission has a material defect, EPA retains its right to seek stipulated penalties, as provided in Section XX (Stipulated Penalties).

40. Resubmission of Plans.

a. Upon receipt of a notice of disapproval pursuant to Paragraph 38.d, Settling Work Defendants shall, within 14 days or such longer time as specified by EPA in such notice, correct the deficiencies and resubmit the plan, report, or other item for approval. Any stipulated penalties applicable to the submission, as provided in Section XX, shall accrue during the 14-day period or otherwise specified period but shall not be payable unless the resubmission is disapproved or modified due to a material defect as provided in Paragraphs 41 and 42.

b. Notwithstanding the receipt of a notice of disapproval pursuant to Paragraph 38.d, Settling Work Defendants shall proceed, at the direction of EPA, to take any action required by any non-deficient portion of the submission. Implementation of any non-deficient portion of a submission shall not relieve Settling Work Defendants of any liability for stipulated penalties under Section XX (Stipulated Penalties).

41. In the event that a resubmitted plan, report or other item, or portion thereof, is disapproved by EPA, EPA may again require the Settling Work Defendants to correct the deficiencies, in accordance with the preceding Paragraphs. EPA also retains the right to modify or develop the plan, report or other item. Settling Work Defendants shall implement any such plan, report, or item as modified or developed by EPA, subject only to their right to invoke the procedures set forth in Section XIX (Dispute Resolution).

42. If upon resubmission, a plan, report, or item is disapproved or modified by EPA due to a material defect, Settling Work Defendants shall be deemed to have failed to submit such plan, report, or item timely and adequately unless the Settling Work Defendants invoke the dispute resolution procedures set forth in Section XIX (Dispute Resolution) and EPA's action is overturned pursuant to that Section. The provisions of Section XIX (Dispute Resolution) and Section XX (Stipulated Penalties) shall govern the implementation of the Work and accrual and payment of any stipulated penalties during Dispute Resolution. If EPA's disapproval or modification is upheld, stipulated penalties shall accrue for such violation from the date on which the initial submission was originally required, as provided in Section XX.

43. All plans, reports, and other items required to be submitted to EPA under this Consent Judgment shall, upon approval or modification by EPA, be enforceable under this Consent Judgment. In the event EPA approves or modifies a portion of a plan, report, or other

item required to be submitted to EPA under this Consent Judgment, the approved or modified portion shall be enforceable under this Consent Judgment.

XII. PROJECT COORDINATORS

44. Within 20 days of lodging this Consent Judgment, Settling Work Defendants and EPA will notify each other, in writing, of the name, address and telephone number of their respective designated Project Coordinators and Alternate Project Coordinators. If a Project Coordinator or Alternate Project Coordinator initially designated is changed, the identity of the successor will be given to the other Parties at least 5 working days before the changes occur, unless impracticable, but in no event later than the actual day the change is made. The Settling Work Defendants' Project Coordinator shall be subject to disapproval by EPA and shall have the technical expertise sufficient to adequately oversee all aspects of the Work. The Settling Work Defendants' Project Coordinator shall not be an attorney for any of the Settling Work Defendants in this matter. He or she may assign other representatives, including other contractors, to serve as a Site representative for oversight of performance of daily operations during remedial activities.

45. EPA may designate other representatives, including, but not limited to, EPA and State employees, and federal and State contractors and consultants, to observe and monitor the progress of any activity undertaken pursuant to this Consent Judgment. EPA's Project Coordinator and Alternate Project Coordinator shall have the authority lawfully vested in a Remedial Project Manager (RPM) and an On-Scene Coordinator (OSC) by the NCP, 40 C.F.R. Part 300. In addition, EPA's Project Coordinator or Alternate Project Coordinator shall have authority, consistent with the NCP, to halt any Work required by this Consent Judgment and to take any necessary response action when s/he determines that conditions at the Site constitute an emergency situation or may present an immediate threat to public health or welfare or the environment due to release or threatened release of Waste Material.

46. Settling Work Defendants' Project Coordinator shall be available to meet with EPA, at EPA's request.

XIII. ASSURANCE OF ABILITY TO COMPLETE WORK

47. Within 30 days of entry of this Consent Judgment, Settling Work Defendants shall establish and maintain financial security in the amount of \$31,767,000 in one or more of the following forms:

- a. A surety bond guaranteeing performance of the Work;
- b. One or more irrevocable letters of credit equaling the total estimated cost of the Work;
- c. A trust fund established to fund the Work at the Site substantially meeting the requirements of a trust fund described at 40 C.F.R. Sections 264.145 and 264.151(a)(1);
- d. A guarantee to perform the Work by one or more parent corporations or subsidiaries, or by one or more unrelated corporations that have a substantial business relationship with at least one of the Settling Work Defendants and that satisfies the requirements of 40 C.F.R. Section 264.143(f); or

e. A demonstration that one or more of the Settling Work Defendants satisfy the requirements of 40 C.F.R. Section 264.143(f). For these purposes, (i) references in 40 C.F.R. Section 264.143(f) to "the sum of the current closure and post closure cost estimates and the current plugging and abandonment cost estimates" shall mean the amount of financial security required to be established and maintained pursuant to this Section, and (ii) the demonstration by one or more of such Settling Work Defendants may be made by submission to EPA of current financial statements certified by the independent certified public accountant(s) for the relevant Settling Work Defendant(s), together with a written explanation of how the provisions of this subparagraph have been satisfied.

48. If the Settling Work Defendants seek to demonstrate the ability to complete the Work through a guarantee by a third party pursuant to Paragraph 47.d of this Consent Judgment, Settling Work Defendants shall demonstrate that the guarantor satisfies the requirements of 40 C.F.R. Part 264.143(f) applied in accordance with Paragraph 47.e. If Settling Work Defendants seek to demonstrate their ability to complete the Work by means of the financial test or the corporate guarantee pursuant to Paragraph 47.d or 47.e, they shall resubmit sworn statements conveying the information required by 40 C.F.R. Part 264.143(f) annually, on the anniversary of the Effective Date. In the event that EPA determines at any time that the financial assurances provided pursuant to this Section are inadequate, Settling Work Defendants shall, within 30 days of receipt of notice of EPA's determination, obtain and present to EPA for approval one of the other forms of financial assurance listed in Paragraph 47 of this Consent Judgment. Settling Work Defendants' inability to demonstrate financial ability to complete the Work shall not excuse performance of any activities required under this Consent Judgment.

49. If Settling Work Defendants can show that the estimated cost to complete the remaining Work has diminished below the amount set forth in Paragraph 47 above after entry of this Consent Judgment, Settling Work Defendants may, on any anniversary date of entry of this Consent Judgment, or at any other time agreed to by the Parties, reduce the amount of the financial security provided under this Section to the estimated cost of the remaining work to be performed. Settling Work Defendants shall submit a proposal for such reduction to EPA, in accordance with the requirements of this Section, and may reduce the amount of the security upon approval by EPA. In the event of a dispute, Settling Work Defendants may reduce the amount of the security in accordance with the final administrative or judicial decision resolving the dispute.

50. Settling Work Defendants may change the form of financial assurance provided under this Section at any time, upon notice to and approval by EPA, provided that the new form of assurance meets the requirements of this Section. In the event of a dispute, Settling Work Defendants may change the form of the financial assurance only in accordance with the final administrative or judicial decision resolving the dispute.

51. EPA will cause to be discharged and released of record, the lien perfected by EPA in July 1996 pursuant to Section 107(l) of CERCLA, 42 U.S.C. 9607(l), on the real property situated within the Site and owned by Owner Settling Defendants, if EPA has been requested to do so in a writing signed on behalf of Coltec Industries, Inc. on the basis that Owner Settling Defendants have provided to Coltec Industries, Inc. satisfactory assurances of the ability of the Owner Settling Defendants to satisfy their financial obligations with respect to this Consent

Judgment as provided by separate agreement between Owner Settling Defendants and Coltec Industries, Inc.

XIV. CERTIFICATION OF COMPLETION

52. Completion of the Remedial Action.

a. Within 90 days after Settling Work Defendants conclude that the Remedial Action has been fully performed and the Performance Standards have been attained, Settling Work Defendants shall schedule and conduct a pre-certification inspection to be attended by Settling Work Defendants and EPA. If, after the pre-certification inspection, the Settling Work Defendants still believe that the Remedial Action has been fully performed and the Performance Standards have been attained, they shall submit a written report requesting certification to EPA for approval, with a copy to the State, pursuant to Section XI (EPA Approval of Plans and Other Submissions) within 30 days of the inspection. In the report, a registered professional engineer and the Settling Work Defendants' Project Coordinator shall state that the Remedial Action has been completed in full satisfaction of the requirements of this Consent Judgment. The written report shall include as-built drawings signed and stamped by a professional engineer. The report shall contain the following statement, signed by a responsible corporate official of a Settling Work Defendant or the Settling Work Defendants' Project Coordinator:

To the best of my knowledge, after thorough investigation, I certify that the information contained in or accompanying this submission is true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

If, after completion of the pre-certification inspection and receipt and review of the written report, EPA, after reasonable opportunity to review and comment by the State, determines that the Remedial Action or any portion thereof has not been completed in accordance with this Consent Judgment or that the Performance Standards have not been achieved, EPA will notify Settling Work Defendants in writing of the activities that must be undertaken by Settling Work Defendants pursuant to this Consent Judgment to complete the Remedial Action and achieve the Performance Standards, provided, however, that EPA may only require Settling Work Defendants to perform such activities pursuant to this Paragraph to the extent that such activities are consistent with the "scope of the remedy selected in the ROD," as that term is defined in Paragraph 15.b. EPA will set forth in the notice a schedule for performance of such activities consistent with the Consent Judgment or require the Settling Work Defendants to submit a schedule to EPA for approval pursuant to Section XI (EPA Approval of Plans and Other Submissions). Settling Work Defendants shall perform all activities described in the notice in accordance with the specifications and schedules established pursuant to this Paragraph, subject to their right to invoke the dispute resolution procedures set forth in Section XIX (Dispute Resolution).

b. If EPA concludes, based on the initial or any subsequent report requesting Certification of Completion and after a reasonable opportunity for review and comment by the State, that the Remedial Action has been performed in accordance with this Consent Judgment

and that the Performance Standards have been achieved, EPA will so certify in writing to Settling Work Defendants. This certification shall constitute the Certification of Completion of the Remedial Action for purposes of this Consent Judgment, including, but not limited to, Section XXI (Covenants by Plaintiff). Certification of Completion of the Remedial Action shall not affect Settling Work Defendants' obligations under this Consent Judgment.

53. Completion of the Work.

a. Within 90 days after Settling Work Defendants conclude that all phases of the Work have been fully performed, Settling Work Defendants shall schedule and conduct a pre-certification inspection to be attended by Settling Work Defendants and EPA. If, after the pre-certification inspection, the Settling Work Defendants still believe that the Work has been fully performed, Settling Work Defendants shall submit a written report by a registered professional engineer stating that the Work has been completed in full satisfaction of the requirements of this Consent Judgment. The report shall contain the following statement, signed by a responsible corporate official of a Settling Work Defendant or the Settling Work Defendants' Project Coordinator:

To the best of my knowledge, after thorough investigation, I certify that the information contained in or accompanying this submission is true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

If, after review of the written report, EPA, after reasonable opportunity to review and comment by the State, determines that any portion of the Work has not been completed in accordance with this Consent Judgment, EPA will notify Settling Work Defendants in writing of the activities that must be undertaken by Settling Work Defendants pursuant to this Consent Judgment to complete the Work, provided, however, that EPA may only require Settling Work Defendants to perform such activities pursuant to this Paragraph to the extent that such activities are consistent with the "scope of the remedy selected in the ROD," as that term is defined in Paragraph 15.b. EPA will set forth in the notice a schedule for performance of such activities consistent with the Consent Judgment or require the Settling Work Defendants to submit a schedule to EPA for approval pursuant to Section XI (EPA Approval of Plans and Other Submissions). Settling Work Defendants shall perform all activities described in the notice in accordance with the specifications and schedules established therein, subject to their right to invoke the dispute resolution procedures set forth in Section XIX (Dispute Resolution).

b. If EPA concludes, based on the initial or any subsequent request for Certification of Completion by Settling Work Defendants and after a reasonable opportunity for review and comment by the State, that the Work has been performed in accordance with this Consent Judgment, EPA will so notify the Settling Work Defendants in writing.

XV. EMERGENCY RESPONSE

54. In the event of any action or occurrence during the performance of the Work which causes or threatens a release of Waste Material from the Site that constitutes an emergency situation or may present an immediate threat to public health or welfare or the

environment, Settling Work Defendants shall, subject to Paragraph 55, immediately take all appropriate action to prevent, abate, or minimize such release or threat of release, and shall immediately notify the EPA's Project Coordinator, or, if the Project Coordinator is unavailable, EPA's Alternate Project Coordinator. If neither of these persons is available, the Settling Work Defendants shall notify the Chief of the Response and Prevention Branch of the Emergency and Remedial Response Division of EPA, Region II, at (732) 321-6656, or, if such person or his/her delegee is unavailable, the EPA Region II Emergency 24-hour Hot Line at (732) 548-8730. Settling Work Defendants shall take such actions in consultation with EPA's Project Coordinator or other available authorized EPA officer and in accordance with all applicable provisions of the Health and Safety Plans, the Contingency Plans, and any other applicable plans or documents developed pursuant to the SOW. In the event that Settling Work Defendants fail to take appropriate response action as required by this Section, and EPA takes such action instead, Settling Work Defendants shall reimburse EPA all costs of the response action not inconsistent with the NCP pursuant to Section XVI (Payments for Response Costs).

55. Nothing in the preceding Paragraph or in this Consent Judgment shall be deemed to limit any authority of the United States a) to take all appropriate action to protect human health and the environment or to prevent, abate, respond to, or minimize an actual or threatened release of Waste Material on, at, or from the Site, or b) to direct or order such action, or seek an order from the Court, to protect human health and the environment or to prevent, abate, respond to, or minimize an actual or threatened release of Waste Material on, at, or from the Site, subject to Section XXI (Covenants by Plaintiff).

XVI. PAYMENTS FOR RESPONSE COSTS

56. Payments for Future Response Costs.

a. Settling Work Defendants shall pay to EPA all Future Response Costs not inconsistent with the NCP, provided, however, that if EPA receives payments in excess of \$1,000,000 from the Town of Oyster Bay pursuant to Paragraph 18 of the Prospective Purchaser Agreement, then the amount of Future Response Costs required to be paid by Settling Work Defendants under this Paragraph 56.a shall be reduced by forty percent (40%) of the amount, if any, in excess of \$1,000,000 paid to EPA under Paragraph 18 of the Prospective Purchaser Agreement. On a periodic basis the United States will send Settling Work Defendants billings for such costs. The billings will be accompanied by a printout of cost data in EPA's financial management system and, to the extent applicable, in DOJ's financial management system. Settling Work Defendants shall make all payments within 45 days of Settling Work Defendants' receipt of each bill requiring payment, except as otherwise provided in Paragraph 57. Notwithstanding the foregoing, Settling Work Defendants shall not be obligated to make payment for Future Response Costs until the amounts payable to EPA pursuant to Paragraph 18 of the Prospective Purchaser Agreement have been determined by EPA. To the extent that Future Response Costs are not yet due, the United States may, in lieu of a billing, periodically send to the Settling Work Defendants a cost summary accompanied by a printout of cost data in EPA's financial management system and, to the extent applicable, in DOJ's financial management system setting forth the amount of Future Response Costs that were paid in that period, followed by a billing once the amounts payable to EPA pursuant to Paragraph 18 of the Prospective Purchaser Agreement have been determined by EPA. Settling Work Defendants

shall pay Interest on Future Response Costs from the earlier of the date of the billing or the date that the cost summary is sent to Settling Work Defendants, until the date of their payment. Settling Work Defendants shall make all payments under this Paragraph via electronic funds transfer ("EFT"). Payment shall be remitted via EFT to Mellon Bank, Pittsburgh, Pennsylvania, and Settling Work Defendants shall provide the following information to their bank:

- Amount of payment
- Title of Mellon Bank account to receive the payment: **EPA**
- Account code for Mellon Bank account receiving the payment: **9108544**
- Mellon Bank ABA Routing Number: **043000261**
- Name of paying Settling Work Defendants
- Case number: **[INSERT INFORMATION]**
- Site/spill identifier: **02T3**

b. At the time of payment, Settling Work Defendants shall send notice that payment has been made to the United States in accordance with Section XXVI (Notices and Submissions) and to the Comptroller, Financial Management Branch, U.S. Environmental Protection Agency, Region II, 290 Broadway, New York, NY 10007-1866.

c. The total amount to be paid by Setting Work Defendants pursuant to Subparagraph 56.a shall be deposited in the Liberty Industrial Finishing Site Special Account within the EPA Hazardous Substance Superfund to be retained and used to conduct or finance response actions at or in connection with the Site, or to be transferred by EPA to the EPA Hazardous Substance Superfund.

57. Settling Work Defendants may contest payment of any Future Response Costs under Paragraph 56 if they determine that the United States has made a mathematical error or if they allege that a cost item that is included represents costs that are inconsistent with the NCP. Such objection shall be made in writing within 30 days of receipt of the bill or the cost summary provided pursuant to Paragraph 56.a, whichever is earlier, must be sent to the United States pursuant to Section XXVI (Notices and Submissions), and shall initiate the Dispute Resolution procedures in Section XIX (Dispute Resolution). Any such objection shall specifically identify the contested Future Response Costs and the basis for objection. In the event of an objection to costs that are the subject of a bill, the Settling Work Defendants shall, within the 45-day period referred to in Paragraph 56.a, pay all uncontested Future Response Costs to the United States in the manner described in Paragraph 56. Simultaneously, the Settling Work Defendants shall establish an interest-bearing escrow account in a federally-insured bank duly chartered in the State of New York and remit to that escrow account funds equivalent to the amount of the contested Future Response Costs. The Settling Work Defendants shall send to the United States, as provided in Section XXVI (Notices and Submissions), a copy of the transmittal letter and check paying the uncontested Future Response Costs, and a copy of the correspondence that establishes and funds the escrow account, including, but not limited to, information containing the identity of the bank and bank account under which the escrow account is established as well as a bank statement showing the initial balance of the escrow account. In the case of a dispute

concerning a bill for Future Response Costs, if the United States prevails in the dispute, then within 14 days of the resolution of the dispute, the Settling Work Defendants shall pay the sums due (with accrued interest) to the United States in the manner described in Paragraph 56. In the case of a dispute concerning a cost summary sent under Paragraph 56 in lieu of a bill, if the United States prevails in the dispute, the Settling Work Defendants shall, within 45 days of receipt of a bill for those costs, pay the sums due (with accrued interest) to the United States as described in Paragraph 56. If the Settling Work Defendants prevail concerning any aspect of the contested costs, the Settling Work Defendants shall pay that portion of the costs (plus associated accrued interest) for which they did not prevail to the United States in the manner described in Paragraph 56; Settling Work Defendants shall be disbursed any balance of the escrow account. The dispute resolution procedures set forth in this Paragraph in conjunction with the procedures set forth in Section XIX (Dispute Resolution) shall be the exclusive mechanisms for resolving disputes regarding the Settling Work Defendants' obligation to reimburse the United States for its Future Response Costs.

58. Payments by Settling Federal Agencies.

a. Settling Federal Agencies shall pay a share of the costs of the Work, the Features Tasks, and Future Response Costs through periodic contributions to the Liberty Industrial Finishing Site Trust Account, as provided pursuant to Paragraph 58.b of this Consent Judgment.

b. The Settling Federal Agencies shall pay:

(I) 50% of the Net funding for the Work and the Features Tasks, to the extent that such costs are consistent with the NCP and this Consent Judgment; and

(II) 50% of the amount of Net Future Response Costs.

For purposes of this Paragraph 58.b, the term "Net" means the actual amounts paid by Settling Work Defendants for the Work and the Features Tasks (including the expenses of the Settling Work Defendants' Project Coordinator and retained consultants), and Future Response Costs, less amounts received by the Liberty Industrial Finishing Site Account from or on account of: (A) the Owner Settling Defendants or any other Settling Defendant (other than Coltec Industries, Inc. or Goodrich Corporation), (B) Liberty Aero Corporation, or (C) other persons, if any, who may settle with or otherwise pay to Settling Defendants and Settling Federal Agencies for the Work, the Features Tasks, or for Future Response Costs on account of claims against them for potential responsibility for the Site pursuant to Section 107(a) of CERCLA, 42 U.S.C. § 9607(a).

The Settling Federal Agencies shall make periodic payments into the Liberty Industrial Finishing Site Trust Account, in accordance with the following:

(i) As soon as reasonably practicable after the Effective Date, the United States, on behalf of the Settling Federal Agencies, will pay \$250,000, by deposit into the Liberty Industrial Finishing Site Trust Account.

(ii) Thereafter, and after the initial \$250,000 deposited pursuant to subparagraph 58.b.(i) has been applied toward the Settling Federal Agencies' share of "Qualifying Expenditures," the United States, on behalf of the Settling Federal Agencies, will

initiate the process to pay, by deposit into the Liberty Industrial Finishing Site Trust Account, the appropriate Settling Federal Agencies' share of Qualifying Expenditures for the preceding semi-annual period. For purposes of this Paragraph 58.b, the term "Qualifying Expenditures" means those expenditures that have been made for performance of Work and Features Tasks (including the expenses of the Settling Work Defendants' Project Coordinator and retained consultants), to the extent that such expenditures are consistent with the NCP, or for reimbursement of Future Response Costs pursuant to Paragraph 56 of this Consent Judgment, and provided that such costs have actually been disbursed for such purposes. Settling Federal Agencies will make best efforts (A) to review and, if appropriate, approve such expenditures as Qualifying Expenditures within sixty (60) days of receipt of documentation, as set forth in subparagraph 58.b(iii), enabling Federal Agencies to make such determination; and (B) to deposit such amount into the Liberty Industrial Finishing Site Trust Account as soon as reasonably practicable.

(iii) On a semi-annual basis, the Settling Work Defendants' Project Coordinator shall provide to the Settling Federal Agencies a claim for payment. For the covered period, the claim for payment shall include (A) an invoice for the costs of performance of the Work and the Features Tasks, (B) an invoice for the expenses of the Settling Work Defendants' Project Coordinator and consultants selected and retained by the Settling Work Defendants to advise and assist their Project Coordinator in carrying out the Work and the Features Tasks, (C) copies of the Liberty Industrial Finishing Site Trust Account statements, (D) sufficient documentation to allow verification of the accuracy of the costs and expenses claimed, (E) confirmation from the Settling Work Defendants that such costs and expenses have actually been disbursed, and (F) a statement by the Project Coordinator, the Settling Work Defendants, and the entity(ies) performing the Work and the Features Tasks that such costs and expenses were properly incurred in connection with work performed in compliance with the terms of this Consent Judgment or the Features AOC, and are consistent with the NCP.

59. The Parties to this Consent Judgment recognize and acknowledge that the payment obligations of the Settling Federal Agencies under this Consent Judgment can only be paid from appropriated funds legally available for such purpose. Nothing in this Consent Judgment shall be interpreted or construed as a commitment or requirement that any Settling Federal Agency obligate or pay funds in contravention of the Anti-Deficiency Act, 31 U.S.C. § 1341, or any other applicable provision of law.

60. Payments by BeazerEast, Inc. and Koch-Glitsch, LP. BeazerEast, Inc. and Koch-Glitsch, LP, jointly and severally, shall, within thirty days of the Effective Date of this Consent Judgment, deposit \$1,254,000 into the Liberty Industrial Finishing Site Trust Account, to be used solely to help fund performance of the Work and/or payment of Future Response Costs.

XVII. INDEMNIFICATION AND INSURANCE

61. Settling Work Defendants' Indemnification of the United States

a. The United States does not assume any liability by entering into this agreement or by virtue of any designation of Settling Work Defendants as EPA's authorized representatives under Section 104(e) of CERCLA. Settling Work Defendants shall indemnify, save and hold harmless the United States (with the exception of the Settling Federal Agencies) and its officials, agents, employees, contractors, subcontractors, or representatives for or from

any and all claims or causes of action arising from, or on account of, negligent or other wrongful acts or omissions of Settling Work Defendants, their officers, directors, employees, agents, contractors, subcontractors, and any persons acting on their behalf or under their control, in carrying out activities pursuant to this Consent Judgment, including, but not limited to, any claims arising from any designation of Settling Work Defendants as EPA's authorized representatives under Section 104(e) of CERCLA. Further, the Settling Work Defendants agree to pay the United States (with the exception of the Settling Federal Agencies) all costs it incurs including, but not limited to, attorneys fees and other expenses of litigation and settlement arising from, or on account of, claims made against the United States based on negligent or other wrongful acts or omissions of Settling Work Defendants, their officers, directors, employees, agents, contractors, subcontractors, and any persons acting on their behalf or under their control, in carrying out activities pursuant to this Consent Judgment. The United States shall not be held out as a party to any contract entered into by or on behalf of Settling Work Defendants in carrying out activities pursuant to this Consent Judgment. Neither the Settling Work Defendants nor any such contractor shall be considered an agent of the United States.

b. The United States shall give Settling Work Defendants notice of any claim for which the United States plans to seek indemnification pursuant to Paragraph 61, and shall consult with Settling Work Defendants prior to settling such claim.

62. Settling Work Defendants waive all claims against the United States for damages or reimbursement or for set-off of any payments made or to be made to the United States, arising from or on account of any contract, agreement, or arrangement between any one or more of Settling Work Defendants and any person for performance of Work on or relating to the Site, including, but not limited to, claims on account of construction delays. In addition, Settling Work Defendants shall indemnify and hold harmless the United States with respect to any and all claims for damages or reimbursement arising from or on account of any contract, agreement, or arrangement between any one or more of Settling Work Defendants and any person for performance of Work on or relating to the Site, including, but not limited to, claims on account of construction delays.

63. No later than 15 days before commencing any on-site Work, Settling Work Defendants shall secure, and shall maintain until the first anniversary of EPA's Certification of Completion of the Remedial Action pursuant to Subparagraph 52.b of Section XIV (Certification of Completion) comprehensive general liability insurance with limits of ten million dollars, combined single limit, and automobile liability insurance with limits of ten million dollars, combined single limit, naming the United States as an additional insured. In addition, for the duration of this Consent Judgment, Settling Work Defendants shall satisfy, or shall ensure that their contractors or subcontractors satisfy, all applicable laws and regulations regarding the provision of worker's compensation insurance for all persons performing the Work on behalf of Settling Work Defendants in furtherance of this Consent Judgment. Prior to commencement of the Work under this Consent Judgment, Settling Work Defendants shall provide to EPA certificates of such insurance and a copy of each insurance policy. Settling Work Defendants shall resubmit such certificates and copies of policies each year on the anniversary of the Effective Date. If Settling Work Defendants demonstrate by evidence satisfactory to EPA that any contractor or subcontractor maintains insurance equivalent to that described above, or

insurance covering the same risks but in a lesser amount, then, with respect to that contractor or subcontractor, Settling Work Defendants need provide only that portion of the insurance described above which is not maintained by the contractor or subcontractor.

XVIII. FORCE MAJEURE

64. "Force majeure," for purposes of this Consent Judgment, is defined as any event arising from causes beyond the control of the Settling Work Defendants, of any entity controlled by Settling Work Defendants, or of Settling Work Defendants' contractors, that delays or prevents the performance of any obligation under this Consent Judgment despite Settling Work Defendants' best efforts to fulfill the obligation. The requirement that the Settling Work Defendants exercise "best efforts to fulfill the obligation" includes using best efforts to anticipate any potential force majeure event and best efforts to address the effects of any potential force majeure event (1) as it is occurring and (2) following the potential force majeure event, such that the delay is minimized to the greatest extent possible. "Force Majeure" does not include financial inability to complete the Work or a failure to attain the Performance Standards or failure to make payments described in Section XVI (Payments for Response Costs).

65. If any event occurs or has occurred that may delay the performance of any obligation under this Consent Judgment, whether or not caused by a force majeure event, the Settling Work Defendants shall notify orally EPA's Project Coordinator or, in his or her absence, EPA's Alternate Project Coordinator or, in the event both of EPA's designated representatives are unavailable, the Chief of the New York Remediation Branch, Emergency and Remedial Response Division, EPA Region II, within 48 hours of when Settling Work Defendants first knew that the event might cause a delay. Within 5 days thereafter, Settling Work Defendants shall provide in writing to EPA an explanation and description of the reasons for the delay; the anticipated duration of the delay; all actions taken or to be taken to prevent or minimize the delay; a schedule for implementation of any measures to be taken to prevent or mitigate the delay or the effect of the delay; the Settling Work Defendants' rationale for attributing such delay to a force majeure event if they intend to assert such a claim; and a statement as to whether, in the opinion of the Settling Work Defendants, such event may cause or contribute to an endangerment to public health, welfare or the environment. The Settling Work Defendants shall include with any notice all available documentation supporting their claim that the delay was attributable to a force majeure. Failure to comply with the above requirements shall preclude Settling Work Defendants from asserting any claim of force majeure for that event for the period of time of such failure to comply, and for any additional delay caused by such failure. Settling Work Defendants shall be deemed to know of any circumstance of which Settling Work Defendants, any entity controlled by Settling Work Defendants, or Settling Work Defendants' contractors knew or should have known.

66. If EPA agrees that the delay or anticipated delay is attributable to a force majeure event, the time for performance of the obligations under this Consent Judgment that are affected by the force majeure event will be extended by EPA for such time as is necessary to complete those obligations. An extension of the time for performance of the obligations affected by the force majeure event shall not, of itself, extend the time for performance of any other obligation. If EPA does not agree that the delay or anticipated delay has been or will be caused by a force majeure event, EPA will notify the Settling Work Defendants in writing of its decision. If EPA

agrees that the delay is attributable to a force majeure event, EPA will notify the Settling Work Defendants in writing of the length of the extension, if any, for performance of the obligations affected by the force majeure event.

67. If the Settling Work Defendants elect to invoke the dispute resolution procedures set forth in Section XIX (Dispute Resolution), they shall do so no later than 15 days after receipt of EPA's notice. In any such proceeding, Settling Work Defendants shall have the burden of demonstrating by a preponderance of the evidence that the delay or anticipated delay has been or will be caused by a force majeure event, that the duration of the delay or the extension sought was or will be warranted under the circumstances, that best efforts were exercised to avoid and mitigate the effects of the delay, and that Settling Work Defendants complied with the requirements of Paragraphs 64 and 65, above. If Settling Work Defendants carry this burden, the delay at issue shall be deemed not to be a violation by Settling Work Defendants of the affected obligation of this Consent Judgment identified to EPA and the Court.

XIX. DISPUTE RESOLUTION

68. Unless otherwise expressly provided for in this Consent Judgment, the dispute resolution procedures of this Section shall be the exclusive mechanism to resolve disputes arising under or with respect to this Consent Judgment. However, the procedures set forth in this Section shall not apply to actions by the United States to enforce obligations of the Settling Defendants that have not been disputed in accordance with this Section.

69. Any dispute which arises under or with respect to this Consent Judgment shall in the first instance be the subject of informal negotiations between the parties to the dispute. The period for informal negotiations shall not exceed 20 days from the time the dispute arises, unless it is modified by written agreement of the parties to the dispute. The dispute shall be considered to have arisen when one party sends the other parties a written Notice of Dispute.

70. Statements of Position.

a. In the event that the parties cannot resolve a dispute by informal negotiations under the preceding Paragraph, then the position advanced by EPA shall be considered binding unless, within 14 days after the conclusion of the informal negotiation period, Settling Work Defendants invoke the formal dispute resolution procedures of this Section by serving on the United States a written Statement of Position on the matter in dispute, including, but not limited to, any factual data, analysis or opinion supporting that position and any supporting documentation relied upon by the Settling Work Defendants. The Statement of Position shall specify the Settling Work Defendants' position as to whether formal dispute resolution should proceed under Paragraph 71 or Paragraph 72.

b. Within 14 days after receipt of Settling Work Defendants' Statement of Position, EPA will serve on Settling Work Defendants its Statement of Position, including, but not limited to, any factual data, analysis, or opinion supporting that position and all supporting documentation relied upon by EPA. EPA's Statement of Position shall include a statement as to whether formal dispute resolution should proceed under Paragraph 71 or 72. Within 14 days after receipt of EPA's Statement of Position, Settling Work Defendants may submit a Reply.

c. If there is disagreement between EPA and the Settling Work Defendants as to whether dispute resolution should proceed under Paragraph 71 or 72, the parties to the dispute shall follow the procedures set forth in the paragraph determined by EPA to be applicable. However, if the Settling Work Defendants ultimately appeal to the Court to resolve the dispute, the Court shall determine which paragraph is applicable in accordance with the standards of applicability set forth in Paragraphs 71 and 72.

71. Formal dispute resolution for disputes pertaining to the selection or adequacy of any response action and all other disputes that are accorded review on the administrative record under applicable principles of administrative law shall be conducted pursuant to the procedures set forth in this Paragraph. For purposes of this Paragraph, the adequacy of any response action includes, without limitation: (1) the adequacy or appropriateness of plans, procedures to implement plans, or any other items requiring approval by EPA under this Consent Judgment; and (2) the adequacy of the performance of response actions taken pursuant to this Consent Judgment. Nothing in this Consent Judgment shall be construed to allow any dispute by Settling Work Defendants regarding the validity of the ROD's provisions.

a. An administrative record of the dispute shall be maintained by EPA and shall contain all statements of position, including supporting documentation, submitted pursuant to this Section. Where appropriate, EPA may allow submission of supplemental statements of position by the parties to the dispute.

b. The Director of the Emergency and Remedial Response Division ("ERRD"), EPA Region II, will issue a final administrative decision resolving the dispute based on the administrative record described in Paragraph 71.a. This decision shall be binding upon the Settling Work Defendants, subject only to the right to seek judicial review pursuant to Paragraph 71.c and d.

c. Any administrative decision made by EPA pursuant to Paragraph 71.b. shall be reviewable by this Court, provided that a motion for judicial review of the decision is filed by the Settling Work Defendants with the Court and served on all Parties within 10 days of receipt of EPA's decision. The motion shall include a description of the matter in dispute, the efforts made by the parties to resolve it, the relief requested, and the schedule, if any, within which the dispute must be resolved to ensure orderly implementation of this Consent Judgment. The United States may file a response to Settling Work Defendants' motion.

d. In proceedings on any dispute governed by this Paragraph, Settling Work Defendants shall have the burden of demonstrating that the decision of the ERRD Director is arbitrary and capricious or otherwise not in accordance with law. Judicial review of EPA's decision shall be on the administrative record compiled pursuant to Paragraph 71.a.

72. Formal dispute resolution for disputes that neither pertain to the selection or adequacy of any response action nor are otherwise accorded review on the administrative record under applicable principles of administrative law, shall be governed by this Paragraph.

a. Following receipt of Settling Work Defendants' Statement of Position submitted pursuant to Paragraph 70, the ERRD Director, EPA Region II, will issue a final decision resolving the dispute. The ERRD Director's decision shall be binding on the Settling

Work Defendants unless, within 10 days of receipt of the decision, the Settling Work Defendants file with the Court and serve on the parties a motion for judicial review of the decision setting forth the matter in dispute, the efforts made by the parties to resolve it, the relief requested, and the schedule, if any, within which the dispute must be resolved to ensure orderly implementation of the Consent Judgment. The United States may file a response to Settling Work Defendants' motion.

b. Notwithstanding Paragraph N of Section I (Background) of this Consent Judgment, judicial review of any dispute governed by this Paragraph shall be governed by applicable principles of law.

73. The invocation of formal dispute resolution procedures under this Section shall not extend, postpone or affect in any way any obligation of the Settling Work Defendants under this Consent Judgment, not directly in dispute, unless EPA or the Court agrees otherwise. Stipulated penalties with respect to the disputed matter shall continue to accrue but payment shall be stayed pending resolution of the dispute as provided in Paragraph 82. Notwithstanding the stay of payment, stipulated penalties shall accrue from the first day of noncompliance with any applicable provision of this Consent Judgment. In the event that the Settling Work Defendants do not prevail on the disputed issue, stipulated penalties shall be assessed and paid as provided in Section XX (Stipulated Penalties).

XX. STIPULATED PENALTIES

74. Settling Defendants shall be liable for stipulated penalties in the amounts set forth in Paragraphs 75 and 76 to the United States for failure to comply with the requirements of this Consent Judgment which are specified below and which are applicable to them under the terms of this Consent Judgment, unless excused under Section XVIII (Force Majeure). "Compliance" by Settling Work Defendants shall include completion of the activities under this Consent Judgment or any work plan or other plan approved under this Consent Judgment identified below in accordance with all applicable requirements of law, this Consent Judgment, and any plans or other documents approved by EPA pursuant to this Consent Judgment and within the specified time schedules established by and approved under this Consent Judgment.

75. Stipulated Penalty Amounts.

a. The following stipulated penalties shall accrue per violation per day for any noncompliance identified in Subparagraph 75.b:

<u>Penalty Per Violation Per Day</u>	<u>Period of Noncompliance</u>
\$ 2,000	1st through 14th day
\$ 4,000	15th through 30th day
\$ 8,000	31st day and beyond

b. Compliance Milestones.

(1) submission and, if necessary, revision and resubmission of any plan, report, or other deliverable required by Section VI (Performance of the Work by

Settling Work Defendants) or by the SOW or by any plan which is prepared pursuant to Section VI or the SOW and approved by EPA;

(2) any deadline imposed by Section VI (Performance of the Work by Settling Work Defendants) or by the SOW or by any plan which is prepared pursuant to Section VI or the SOW and approved by EPA;

(3) obligations imposed by Section XV (Emergency Response);

(4) obligations imposed by Section IX (Access and Institutional Controls);

(5) performance of the Remedial Design in accordance with the ROD, the approved Remedial Design Work Plan, and this Consent Judgment;

(6) implementation of the Remedial Action in accordance with the ROD, the approved Remedial Design Reports and approved Remedial Action Work Plan, the approved O&M Plan and O&M Manual, and this Consent Judgment;

(7) modification of the SOW or related work plans pursuant to Paragraph 15 and implementation of the work called for by such modifications in accordance with the modified SOW or work plan;

(8) performance of studies and investigations and further response actions pursuant to Section VII (Remedy Review); and

(9) any other requirement of this Consent Judgment that applies to Settling Defendants or Settling Work Defendants and that is not identified in Subparagraph 76.b.

76. Stipulated Penalty Amounts.

a. The following stipulated penalties shall accrue per violation per day for any noncompliance with the requirements identified in Subparagraph 76.b:

<u>Penalty Per Violation Per Day</u>	<u>Period of Noncompliance</u>
\$ 1,000	1st through 14th day
\$ 2,500	15th through 30th day
\$ 5,000	31st day and beyond

b. Compliance Milestones.

(1) permitting split or duplicate samples, quality assurance, and other requirements pursuant to Section VIII (Quality Assurance, Sampling, and Data Analysis);

(2) designation of Settling Work Defendants' Project Coordinator as required by Section XII (Project Coordinators);

(3) obligations imposed by Section XIII (Assurance of Ability to Complete Work);

(4) timely submission and, if necessary, revision and resubmission of the name, title and qualifications of the proposed Supervising Contractor pursuant to Section VI (Performance of the Work by Settling Work Defendants);

(5) requirements set forth in Section XIV (Certification of Completion), including, *inter alia*, both the requirement to make the certification and the requirement that the certification be truthful;

(6) timely notification regarding any delay or anticipated delay, consistent with Paragraph 65;

(7) indemnification and insurance requirements set forth in Section XVII (Indemnification and Insurance);

(8) requirements set forth in Section X (Reporting Requirements);

(9) timely submission of written notification of any off-site shipment of Waste Material from the Site to an out-of-state waste management facility pursuant to Paragraph 17;

(10) submission of documents and other information in accordance with Section XXIV (Access to Information), and

(11) payments required by Section XVI (Payments for Response Costs).

77. In the event that EPA assumes performance of a portion or all of the Work pursuant to Paragraph 92 of Section XXI (Covenants by Plaintiff), Settling Work Defendants shall be liable for a stipulated penalty in the amount of \$1,000,000 in addition to any other stipulated penalties for which they are liable under this Section.

78. All penalties shall begin to accrue on the day after the complete performance is due or the day a violation occurs, and shall continue to accrue through the final day of the correction of the noncompliance or completion of the activity. However, stipulated penalties shall not accrue: (1) with respect to a deficient submission under Section XI (EPA Approval of Plans and Other Submissions), during the period, if any, beginning on the 31st day after EPA's receipt of such submission until the date that EPA notifies Settling Work Defendants of any deficiency; (2) with respect to a decision by the ERRD Director, EPA Region II, under Paragraph 71.b or 72.a of Section XIX (Dispute Resolution), during the period, if any, beginning on the 21st day after the date that Settling Work Defendants' reply to EPA's Statement of Position is received until the date that the Director issues a final decision regarding such dispute; or (3) with respect to judicial review by this Court of any dispute under Section XIX (Dispute Resolution), during the period, if any, beginning on the 31st day after the Court's receipt of the final submission regarding the dispute until the date that the Court issues a final decision regarding such dispute. Nothing herein shall prevent the simultaneous accrual of separate penalties for separate violations of this Consent Judgment.

79. Following EPA's determination that Settling Work Defendants or Settling Defendants have failed to comply with a requirement of this Consent Judgment, EPA may give Settling Work Defendants or Settling Defendants, as the case may be, written notification of the same and describe the noncompliance. EPA may send the Settling Work Defendants or Settling

Defendants, as the case may be, a written demand for the payment of the penalties. However, penalties shall accrue as provided in the preceding Paragraph regardless of whether EPA has notified the Settling Work Defendants or Settling Defendants of a violation.

80. All penalties accruing under this Section shall be due and payable to the United States within 30 days of the given Settling Defendants' receipt from EPA of a demand for payment of the penalties, unless such Settling Defendants invoke the Dispute Resolution procedures under Section XIX (Dispute Resolution). All payments to the United States under this Section shall be made by EFT in the manner provided in Paragraph 56 a. and b.

81. The payment of penalties shall not alter in any way Settling Work Defendants' obligation to complete the performance of the Work required under this Consent Judgment.

82. Penalties shall continue to accrue as provided in Paragraph 78 during any dispute resolution period, but need not be paid until the following:

a. If the dispute is resolved by agreement or by a decision of EPA that is not appealed to this Court, accrued penalties determined to be owing shall be paid to EPA within 15 days of the agreement or the receipt of EPA's decision or order;

b. If the dispute is appealed to this Court and the United States prevails in whole or in part, Settling Work Defendants or Settling Defendants, as the case may be, shall pay all accrued penalties determined by the Court to be owed to EPA within 60 days of receipt of the Court's decision or order, except as provided in Subparagraph c below;

c. If the District Court's decision is appealed by any Party, Settling Work Defendants or Settling Defendants, as the case may be, shall pay all accrued penalties determined by the District Court to be owing to the United States into an interest-bearing escrow account within 60 days of receipt of the Court's decision or order. Penalties shall be paid into this account as they continue to accrue, at least every 60 days. Within 15 days of receipt of the final appellate court decision, the escrow agent shall pay the balance of the account to EPA or to the given Settling Defendants to the extent that they prevail.

83. If Settling Defendants fail to pay stipulated penalties when due, the United States may institute proceedings to collect the penalties, as well as interest. Such Settling Defendants shall pay Interest on the unpaid balance, which shall begin to accrue on the date of demand made pursuant to Paragraph 80.

84. Nothing in this Consent Judgment shall be construed as prohibiting, altering, or in any way limiting the ability of the United States to seek any other remedies or sanctions available by virtue of Settling Defendants' violation of this Consent Judgment or of the statutes and regulations upon which it is based, including, but not limited to, penalties pursuant to Section 122(l) of CERCLA, provided, however, that the United States shall not seek civil penalties pursuant to Section 122(l) of CERCLA for any violation for which a stipulated penalty is provided herein, except in the case of a willful violation of the Consent Judgment.

85. Notwithstanding any other provision of this Section, the United States may, in its unreviewable discretion, waive any portion of stipulated penalties that have accrued pursuant to this Consent Judgment.

XXI. COVENANTS BY PLAINTIFF

86. In consideration of the actions that will be performed and the payments that will be made by the Settling Defendants under the terms of the Consent Judgment, and except as specifically provided in Paragraphs 88, 89, and 91 of this Section, the United States covenants not to sue or to take administrative action against Settling Defendants pursuant to Sections 106 and 107(a) of CERCLA relating to the Site. For the Settling Work Defendants, except with respect to future liability, these covenants not to sue shall take effect upon the Effective Date of the Consent Judgment. With respect to future liability, these covenants not to sue shall take effect as to the Settling Work Defendants upon Certification of Completion of Remedial Action by EPA pursuant to Paragraph 52.b of Section XIV (Certification of Completion). For BeazerEast, Inc. and Koch-Glitsch, LP, these covenants not to sue shall take effect upon the receipt by the Liberty Industrial Finishing Site Trust Account of the payment required from those parties by Paragraph 60 of this Consent Judgment. These covenants not to sue are conditioned upon the satisfactory performance by Settling Defendants of their obligations under this Consent Judgment. These covenants not to sue extend only to the Settling Defendants and do not extend to any other person.

87. In consideration of the payments that will be made by the Settling Federal Agencies under the terms of the Consent Judgment, and except as specifically provided in Paragraphs 88, 89, and 91 of this Section, EPA covenants not to take administrative action against the Settling Federal Agencies pursuant to Sections 106 and 107(a) of CERCLA relating to the Site. Except with respect to future liability, EPA's covenant shall take effect upon the receipt by the Liberty Industrial Finishing Site Trust Account of the \$250,000 payment required from the Settling Federal Agencies by Paragraph 58.b.(i) of this Consent Judgment. With respect to future liability, EPA's covenant shall take effect upon Certification of Completion of Remedial Action by EPA pursuant to Paragraph 52.b of Section XIV (Certification of Completion). EPA's covenant is conditioned upon the satisfactory performance by Settling Federal Agencies of their obligations under this Consent Judgment. EPA's covenant extends only to the Settling Federal Agencies and does not extend to any other person.

88. United States' Pre-certification Reservations. Notwithstanding any other provision of this Consent Judgment, the United States reserves, and this Consent Judgment is without prejudice to, the right to institute proceedings in this action or in a new action, or to issue an administrative order seeking to compel Settling Work Defendants, and EPA reserves the right to issue an administrative order seeking to compel the Settling Federal Agencies,

a. to perform further response actions relating to the Site, or

b. to reimburse the United States for additional costs of response if, prior to Certification of Completion of the Remedial Action:

(1) conditions at the Site, previously unknown to EPA, are discovered,

or

(2) information, previously unknown to EPA, is received, in whole or

in part,

and EPA determines that these previously unknown conditions or information together with any other relevant information indicates that the Remedial Action is not protective of human health or the environment.

89. United States' Post-certification Reservations. Notwithstanding any other provision of this Consent Judgment, the United States reserves, and this Consent Judgment is without prejudice to, the right to institute proceedings in this action or in a new action, or to issue an administrative order seeking to compel Settling Work Defendants, and EPA reserves the right to issue an administrative order seeking to compel the Settling Federal Agencies,

a. to perform further response actions relating to the Site, or

b. to reimburse the United States for additional costs of response if, subsequent to Certification of Completion of the Remedial Action:

(1) conditions at the Site, previously unknown to EPA, are discovered,

or

(2) information, previously unknown to EPA, is received, in whole or

in part,

and EPA determines that these previously unknown conditions or this information together with other relevant information indicate that the Remedial Action is not protective of human health or the environment.

90. For purposes of Paragraph 88, the information and the conditions known to EPA shall include only that information and those conditions known to EPA as of the date the ROD was signed and set forth in the ROD for the Site and the administrative record supporting the ROD. For purposes of Paragraph 89, the information and the conditions known to EPA shall include only that information and those conditions known to EPA as of the date of Certification of Completion of the Remedial Action and set forth in the ROD, the administrative record supporting the ROD, the post-ROD administrative record, or in any information received by EPA pursuant to the requirements of this Consent Judgment prior to Certification of Completion of the Remedial Action.

91. General reservations of rights. The United States reserves, and this Consent Judgment is without prejudice to, all rights against Settling Defendants, and EPA and the federal natural resource trustees reserve, and this Consent Judgment is without prejudice, to all rights against Settling Federal Agencies, with respect to all matters not expressly specified in Paragraphs 86 and 87. Notwithstanding any other provision of this Consent Judgment, the United States reserves all rights against Settling Defendants, and EPA and the federal natural resource trustees reserve all rights against Settling Federal Agencies, with respect to:

a. claims based on a failure by Settling Defendants or the Settling Federal Agencies to meet a requirement of this Consent Judgment;

b. liability arising from the past, present, or future disposal, release, or threat of release of Waste Material outside of the Site;

c. liability based upon the Settling Defendants' ownership or operation of the Site, or upon the Settling Defendants' transportation, treatment, storage, or disposal, or the arrangement for the transportation, treatment, storage, or disposal of Waste Material at or in connection with the Site, other than as provided in the ROD, the Work, or otherwise ordered by EPA, after signature of this Consent Judgment by the Settling Defendants;

d. liability for damages for injury to, destruction of, or loss of natural resources, and for the costs of any natural resource damage assessments;

e. criminal liability;

f. liability for violations of federal or state law which occur during or after implementation of the Remedial Action;

g. liability, prior to Certification of Completion of the Remedial Action, for additional response actions that EPA determines are necessary to achieve Performance Standards, but that cannot be required pursuant to Paragraph 15 (Modification of the SOW or Related Work Plans);

h. liability for Plume B, including but not limited to liability for the implementation of, and for the costs of the implementation of, that portion of the remedy selected in the ROD which is focused on Plume B;

i. liability for the Features Tasks, to the extent the Features Tasks are not fully and properly carried out under the Features AOC, including but not limited to liability for the implementation of, and for the costs of the implementation of the Features Tasks; and

j. liability for the Interim Groundwater Tasks, to the extent the Interim Groundwater Tasks are not fully and properly carried out under the Interim Groundwater UAO, including but not limited to liability for the implementation of, and for the costs of the implementation of the Interim Groundwater Tasks.

92. Work Takeover In the event EPA determines that Settling Work Defendants have ceased implementation of any portion of the Work, are seriously or repeatedly deficient or late in their performance of the Work, or are implementing the Work in a manner which may cause an endangerment to human health or the environment, EPA may assume the performance of all or any portions of the Work as EPA determines necessary. Settling Work Defendants may invoke the procedures set forth in Section XIX (Dispute Resolution), Paragraph 71, to dispute EPA's determination that takeover of the Work is warranted under this Paragraph. Costs incurred by the United States in performing the Work pursuant to this Paragraph shall be considered Future Response Costs that Settling Work Defendants shall pay pursuant to Section XVI (Payment for Response Costs).

93. Notwithstanding any other provision of this Consent Judgment, the United States retains all authority and reserves all rights to take any and all response actions authorized by law.

XXII. COVENANTS BY SETTLING DEFENDANTS AND SETTLING FEDERAL AGENCIES

94. Covenant Not to Sue by Settling Defendants. Subject to the reservations in Paragraph 96, Settling Defendants hereby covenant not to sue and agree not to assert any claims

or causes of action against the United States with respect to the Site or this Consent Judgment, including, but not limited to:

- a. any direct or indirect claim for reimbursement from the Hazardous Substance Superfund (established pursuant to the Internal Revenue Code, 26 U.S.C. § 9507) through CERCLA Sections 106(b)(2), 107, 111, 112, 113 or any other provision of law;
- b. any claims against the United States, including any department, agency or instrumentality of the United States under CERCLA Sections 107 or 113 related to the Site or any claim for contribution or reimbursement including those that may arise under State law; or
- c. any claims arising out of response actions at or in connection with the Site, including any claim under the United States Constitution, the Tucker Act, 28 U.S.C. § 1491, the Equal Access to Justice Act, 28 U.S.C. § 2412, as amended, or at common law.

Except as provided in Paragraph 103 (waiver of claim-splitting defenses), these covenants not to sue shall not apply in the event that the United States brings a cause of action or issues an order pursuant to the reservations set forth in Paragraphs 88, 89, 91.b - 91.d or 91.g - 91.j, but only to the extent that Settling Defendants' claims arise from the same response action, response costs, or damages that the United States is seeking pursuant to the applicable reservation.

95. Covenant by Settling Federal Agencies. Settling Federal Agencies hereby agree not to assert any direct or indirect claim for reimbursement from the Hazardous Substance Superfund (established pursuant to the Internal Revenue Code, 26 U.S.C. § 9507) through CERCLA Sections 106(b)(2), 107, 111, 112, 113 or any other provision of law with respect to the Site or this Consent Judgment. This covenant does not preclude demand for reimbursement from the Superfund of costs incurred by a Settling Federal Agency in the performance of its duties (other than pursuant to this Consent Judgment) as lead or support agency under the NCP (40 C.F.R. Part 300).

96. The Settling Defendants reserve, and this Consent Judgment is without prejudice to:

(a) claims against the United States, subject to the provisions of Chapter 171 of Title 28 of the United States Code, for money damages for injury or loss of property or personal injury or death caused by the negligent or wrongful act or omission of any employee of the United States while acting within the scope of his office or employment under circumstances where the United States, if a private person, would be liable to the claimant in accordance with the law of the place where the act or omission occurred. However, any such claim shall not include a claim for any damages caused, in whole or in part, by the act or omission of any person, including any contractor, who is not a federal employee as that term is defined in 28 U.S.C. § 2671; nor shall any such claim include a claim based on EPA's selection of response actions, or the oversight or approval of the Settling Work Defendants' plans or activities. The foregoing applies only to claims which are brought pursuant to any statute other than CERCLA and for which the waiver of sovereign immunity is found in a statute other than CERCLA; and

(b) contribution claims against the Settling Federal Agencies in the event any claim is asserted by the United States against the Settling Defendants under the authority of or under Paragraphs 88, 89, 91.b - 91.d, or 91.g - 91.j of Section XXI (Covenants by Plaintiff), but

only to the same extent and for the same matters, transactions, or occurrences as are raised in the claim of the United States against Settling Defendants.

(c) claims, if any, against the United States on account of the failure by Settling Federal Agencies to comply with their obligations under this Consent Judgment.

97. Nothing in this Consent Judgment shall be deemed to constitute preauthorization of a claim within the meaning of Section 111 of CERCLA, 42 U.S.C. § 9611, or 40 C.F.R. § 300.700(d).

98. Settling Defendants agree not to assert any claims for contribution against the Town of Oyster Bay for response actions taken or to be taken and response costs incurred or to be incurred by the United States or any other person with respect to the "Existing Contamination" (as that term is defined in Paragraph 8.f. of the Prospective Purchaser Agreement), provided that nothing herein is intended to affect any claims by the Owner Settling Defendants against the Town of Oyster Bay for compensation in connection with the Town's taking by eminent domain of property owned by any Owner Settling Defendant.

XXIII. EFFECT OF SETTLEMENT; CONTRIBUTION PROTECTION

99. Except as provided in Paragraph 98 (Waiver of Claims Against Town of Oyster Bay) nothing in this Consent Judgment shall be construed to create any rights in, or grant any cause of action to, any person not a Party to this Consent Judgment. The preceding sentence shall not be construed to waive or nullify any rights that any person not a signatory to this Consent Judgment may have under applicable law. Except as provided in Paragraph 98 (Waiver of Claims Against Town of Oyster Bay), each of the Parties expressly reserves any and all rights (including, but not limited to, any right to contribution), defenses, claims, demands, and causes of action which each Party may have with respect to any matter, transaction, or occurrence relating in any way to the Site against any person not a Party hereto.

100. The Parties agree, and by entering this Consent Judgment this Court finds, that the Settling Defendants and the Settling Federal Agencies are entitled, as of the Effective Date, to protection from contribution actions or claims as provided by CERCLA Section 113(f)(2), 42 U.S.C. § 9613(f)(2) for matters addressed in this Consent Judgment. For purposes of the preceding sentence, the "matters addressed" in this Consent Judgment are all response actions taken or to be taken and all response costs incurred or to be incurred by the United States or any other person with respect to the Site. The "matters addressed" in this settlement do not include those response costs or response actions as to which the United States has reserved its rights under this Consent Judgment (except for claims for failure to comply with this Consent Judgment), in the event that the United States asserts rights against Settling Defendants (or EPA or the federal natural resource trustees asserts rights against Settling Federal Agencies) coming within the scope of such reservations.

101. The Settling Defendants agree that with respect to any suit or claim for contribution brought by them for matters related to this Consent Judgment they will notify the United States in writing no later than 60 days prior to the initiation of such suit or claim.

102. The Settling Defendants also agree that with respect to any suit or claim for contribution brought against them for matters related to this Consent Judgment they will notify in

writing the United States within 10 days of service of the complaint on them. In addition, Settling Defendants shall notify the United States within 10 days of service or receipt of any Motion for Summary Judgment and within 10 days of receipt of any order from a court setting a case for trial.

103. In any subsequent administrative or judicial proceeding initiated by the United States for injunctive relief, recovery of response costs, or other appropriate relief relating to the Site, Settling Defendants shall not assert, and may not maintain, any defense or claim based upon the principles of waiver, res judicata, collateral estoppel, issue preclusion, claim-splitting, or other defenses based upon any contention that the claims raised by the United States in the subsequent proceeding were or should have been brought in the instant case; provided, however, that nothing in this Paragraph affects the enforceability of the covenants not to sue set forth in Section XXI (Covenants by Plaintiff).

XXIV. ACCESS TO INFORMATION

104. Settling Defendants shall provide to EPA, upon request, copies of all documents and information within their possession or control or that of their contractors or agents relating to activities at the Site or to the implementation of this Consent Judgment, including, but not limited to, sampling, analysis, chain of custody records, manifests, trucking logs, receipts, reports, sample traffic routing, correspondence, or other documents or information related to the Work. Settling Defendants shall also make available to EPA, for purposes of investigation, information gathering, or testimony, their employees, agents, or representatives with knowledge of relevant facts concerning the performance of the Work.

105. Business Confidential and Privileged Documents.

a. Settling Defendants may assert business confidentiality claims covering part or all of the documents or information submitted to Plaintiff under this Consent Judgment to the extent permitted by and in accordance with Section 104(e)(7) of CERCLA, 42 U.S.C. § 9604(e)(7), and 40 C.F.R. § 2.203(b). Documents or information determined to be confidential by EPA will be afforded the protection specified in 40 C.F.R. Part 2, Subpart B. If no claim of confidentiality accompanies documents or information when they are submitted to EPA, or if EPA has notified Settling Defendants that the documents or information are not confidential under the standards of Section 104(e)(7) of CERCLA or 40 C.F.R. Part 2, Subpart B, the public may be given access to such documents or information without further notice to Settling Defendants.

b. The Settling Defendants may assert that certain documents, records and other information are privileged under the attorney-client privilege or any other privilege recognized by federal law. If the Settling Defendants assert such a privilege in lieu of providing documents, they shall provide the Plaintiff with the following: (1) the title of the document, record, or information; (2) the date of the document, record, or information; (3) the name and title of the author of the document, record, or information; (4) the name and title of each addressee and recipient; (5) a description of the contents of the document, record, or information; and (6) the privilege asserted by Settling Defendants. However, no documents, reports or other information created or generated pursuant to the requirements of the Consent Judgment shall be withheld on the grounds that they are privileged.

106. No claim of confidentiality shall be made with respect to any data, including, but not limited to, all sampling, analytical, monitoring, hydrogeologic, scientific, chemical, or engineering data, or any other documents or information evidencing conditions at or around the Site.

XXV. RETENTION OF RECORDS

107. Until 10 years after the Settling Defendants' receipt of EPA's notification pursuant to Paragraph 53.b of Section XIV (Certification of Completion of the Work), each Settling Defendant shall preserve and retain all non-identical copies of records and documents (including records or documents in electronic form) now in its possession or control or which come into its possession or control that relate in any manner to its liability under CERCLA with respect to the Site, provided, however, that Settling Defendants who are potentially liable as owners or operators of the Site must retain, in addition, all documents and records that relate to the liability of any other person under CERCLA with respect to the Site. Each Settling Defendant must also retain, and instruct its contractors and agents to preserve, for the same period of time specified above all non-identical copies of the last draft or final version of any documents or records (including documents or records in electronic form) now in its possession or control or which come into its possession or control that relate in any manner to the performance of the Work, provided, however, that each Settling Defendant (and its contractors and agents) must retain, in addition, copies of all data generated during the performance of the Work and not contained in the aforementioned documents required to be retained. Each of the above record retention requirements shall apply regardless of any corporate retention policy to the contrary.

108. At the conclusion of this document retention period, Settling Defendants shall notify the United States at least 90 days prior to the destruction of any such records or documents, and, upon request by the United States, Settling Defendants shall deliver any such records or documents to EPA. The Settling Defendants may assert that certain documents, records and other information are privileged under the attorney-client privilege or any other privilege recognized by federal law. If the Settling Defendants assert such a privilege, they shall provide the Plaintiff with the following: (1) the title of the document, record, or information; (2) the date of the document, record, or information; (3) the name and title of the author of the document, record, or information; (4) the name and title of each addressee and recipient; (5) a description of the subject of the document, record, or information; and (6) the privilege asserted by Settling Defendants. However, no documents, reports or other information created or generated pursuant to the requirements of the Consent Judgment shall be withheld on the grounds that they are privileged.

109. Each Settling Defendant hereby certifies individually that, to the best of its knowledge and belief, after thorough inquiry, it has not altered, mutilated, discarded, destroyed or otherwise disposed of any records, documents or other information (other than identical copies) relating to its potential liability regarding the Site since notification of potential liability by the United States or the State or the filing of suit against it regarding the Site and that it has fully complied with any and all EPA requests for information pursuant to Section 104(e) and 122(e) of CERCLA, 42 U.S.C. §§ 9604(e) and 9622(e), and Section 3007 of RCRA, 42 U.S.C. § 6927.

110. The United States acknowledges that each Settling Federal Agency (1) is subject to all applicable Federal record retention laws, regulations, and policies; and (2) has certified that it has fully complied with any and all EPA requests for information pursuant to Section 104(e) and 122(e) of CERCLA, 42 U.S.C. §§ 9604(e) and 9622(e), and Section 3007 of RCRA, 42 U.S.C. § 6927.

XXVI. NOTICES AND SUBMISSIONS

111. Whenever, under the terms of this Consent Judgment, written notice is required to be given or a report or other document is required to be sent by one Party to another, it shall be directed to the individuals at the addresses specified below, unless those individuals or their successors give notice of a change to the other Parties in writing. All notices and submissions shall be considered effective upon receipt, unless otherwise provided herein. Written notice as specified herein shall constitute complete satisfaction of any written notice requirement of the Consent Judgment with respect to the United States, EPA, the Settling Federal Agencies, and the Settling Defendants, respectively.

As to the United States or EPA:

Five (5) copies of all work plans, design documents, and technical reports and one (1) copy of all required written communications shall be sent to:

Chief, Central New York Remediation Section
New York Remediation Branch
Emergency and Remedial Response Division
U.S. Environmental Protection Agency, Region II
290 Broadway, 20th Floor
New York, NY 10007-1866
Attention: Lorenzo Thantu, Liberty Industrial Finishing
Superfund Site Remedial Project Manager

One copy of all required written communications other than work plans, design documents and technical reports shall also be sent to each of the following individuals:

Chief, New York/Caribbean Superfund Branch
Office of Regional Counsel
U.S. Environmental Protection Agency, Region II
290 Broadway, 17th Floor
New York, NY 10007-1866
Attention: Michael A. Mintzer, Liberty Industrial Finishing
Superfund Site Attorney

Chief, Environmental Enforcement Section
Environment and Natural Resources Division
U.S. Department of Justice
P.O. Box 7611
Ben Franklin Station

Washington, D.C. 20044
Re: DOJ Case Number 90-11-2-1222

United States Attorney
Eastern District of New York
One Pierrepont Plaza, 14th Floor
Brooklyn, NY 11201
Re: USAO File Number 2002V04083

As to the State:

When submitting to EPA any written communication required hereunder, Settling Defendants shall simultaneously submit one (1) copy of that communication (unless the given document is a plan or report, in which case five (5) copies shall be submitted) to:

NYS Department of Environmental Conservation
Division of Hazardous Waste Remediation
Bureau of Eastern Remedial Action
Federal Projects Section
625 Broadway, Albany, NY 12233-7015
Attention: Heather Bishop, Project Manager

As to the Settling Work Defendants:

Name and address of Settling Work Defendants' Project Coordinator

As to Settling Defendants other than Settling Work Defendants

At the address shown on the signature page of this Consent Judgment for such Settling Defendant

XXVII. EFFECTIVE DATE

112. The effective date of this Consent Judgment shall be the date upon which this Consent Judgment is entered by the Court, except as otherwise provided herein.

XXVIII. RETENTION OF JURISDICTION

113. This Court retains jurisdiction over both the subject matter of this Consent Judgment and the Settling Defendants for the duration of the performance of the terms and provisions of this Consent Judgment for the purpose of enabling any of the Parties to apply to the Court at any time for such further order, direction, and relief as may be necessary or appropriate for the construction or modification of this Consent Judgment, or to effectuate or enforce compliance with its terms, or to resolve disputes in accordance with Section XIX (Dispute Resolution) hereof.

114. All disputes relating to the enforcement and interpretation of this Consent Judgment shall be determined in accordance with Federal law.

XXIX. APPENDICES

115. The following appendices are attached hereto and are part of this Consent Judgment:

“Appendix A” is the ROD.

“Appendix B” is the SOW.

“Appendix C” is the description and/or map of the Site.

“Appendix D” is the complete list of the Non-Owner Settling Defendants.

“Appendix E” is the complete list of the Owner Settling Defendants.

“Appendix F” is the complete list of the Settling Federal Agencies.

“Appendix G” is a draft easement.

“Appendix H” is a general depiction of the extent of Plume B.

XXX. COMMUNITY RELATIONS

116. Settling Work Defendants shall propose to EPA their participation in the Community Relations Plan to be developed by EPA. EPA will determine the appropriate role for the Settling Work Defendants under the Plan. Settling Work Defendants shall also cooperate with EPA in providing information regarding the Work to the public. As requested by EPA, Settling Work Defendants shall participate in the preparation of such information for dissemination to the public and in public meetings which may be held or sponsored by EPA to explain activities at or relating to the Site.

XXXI. MODIFICATION

117. Schedules specified in this Consent Judgment for completion of the Work may be modified by agreement of EPA and the Settling Work Defendants. All such modifications shall be made in writing.

118. Except as provided in Paragraph 15 (Modification of the SOW or Related Work Plans), no material modifications shall be made to the SOW without written notification to and written approval of the United States, Settling Work Defendants, and the Court, if such modifications fundamentally alter the basic features of the selected remedy within the meaning of 40 C.F.R. 300.435(c)(2)(B)(ii). Prior to providing its approval to any modification, the United States will provide the State with a reasonable opportunity to review and comment on the proposed modification. Modifications to the SOW that do not materially alter that document, or material modifications to the SOW that do not fundamentally alter the basic features of the selected remedy within the meaning of 40 C.F.R.300.435(c)(2)(B)(ii), may be made by written agreement between EPA, after providing the State with a reasonable opportunity to review and comment on the proposed modification, and the Settling Work Defendants.

119. Nothing in this Consent Judgment shall be deemed to alter the Court's power to enforce, supervise or approve modifications to this Consent Judgment.

XXXII. LODGING AND OPPORTUNITY FOR PUBLIC COMMENT

120. This Consent Judgment shall be lodged with the Court for a period of not less than thirty (30) days for public notice and comment in accordance with Section 122(d)(2) of CERCLA, 42 U.S.C. § 9622(d)(2), and 28 C.F.R. § 50.7. The United States reserves the right to withdraw or withhold its consent if the comments regarding the Consent Judgment disclose facts or considerations which indicate that the Consent Judgment is inappropriate, improper, or inadequate. Settling Defendants consent to the entry of this Consent Judgment without further notice.

121. If for any reason the Court should decline to approve this Consent Judgment in the form presented, this agreement is voidable at the sole discretion of any Party and the terms of the agreement may not be used as evidence in any litigation between the Parties.

XXXIII. SIGNATORIES/SERVICE

122. Each undersigned representative of a Settling Defendant to this Consent Judgment and the Assistant Attorney General for the Environment and Natural Resources Division of the Department of Justice certifies that he or she is fully authorized to enter into the terms and conditions of this Consent Judgment and to execute and legally bind such Party to this document.

123. Each Settling Defendant hereby agrees not to oppose entry of this Consent Judgment by this Court or to challenge any provision of this Consent Judgment unless the United States has notified the Settling Defendants in writing that it no longer supports entry of the Consent Judgment..

124. Each Settling Defendant shall identify, on the attached signature page, the name, address and telephone number of an agent who is authorized to accept service of process by mail on behalf of that Party with respect to all matters arising under or relating to this Consent Judgment. Settling Defendants hereby agree to accept service in that manner and to waive the formal service requirements set forth in Rule 4 of the Federal Rules of Civil Procedure and any applicable local rules of this Court, including, but not limited to, service of a summons.

XXXIV. FINAL JUDGMENT

125. This Consent Judgment constitutes the final, complete, and exclusive agreement and understanding among the parties with respect to the settlement embodied in the Consent Judgment. The parties acknowledge that there are no representations, agreements or understandings relating to the settlement other than those expressly contained in this Consent Judgment.

126. Upon approval and entry of this Consent Judgment by the Court, this Consent Judgment shall constitute a final judgment between and among the United States and the Settling Defendants. The Court finds that there is no just reason for delay and therefore enters this judgment as a final judgment under Fed. R. Civ. P. 54 and 58.

SO ORDERED THIS __ DAY OF _____, 20__.

United States District Judge

THE UNDERSIGNED PARTY enters into this Consent Judgment in the matter of *United States v. Coltec Industries, Inc., et al.*, relating to the Liberty Industrial Finishing Superfund Site.

FOR THE UNITED STATES OF AMERICA

3.3.04

Date

Tom Sansonetti

THOMAS L. SANSONETTI
Assistant Attorney General
Environment and Natural Resources Division
U.S. Department of Justice
Washington, D.C. 20530

3/25/04

Date

Catherine Adams Fiske/SMTA

Catherine Adams Fiske
Environmental Enforcement Section
Environment and Natural Resources Division
U.S. Department of Justice
One Gateway Center - Suite 616
Newton, MA 02493

3/25/04

Date

Michael Rowe/SMTA

Michael Rowe
Environmental Defense Section
Environment and Natural Resources Division
U.S. Department of Justice
P.O. Box 23986
Washington, D.C. 20026-3986

3/29/04

Date

Sandra L. Levy

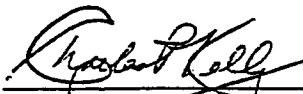
Sandra L. Levy
Assistant United States Attorney
Eastern District of New York
U.S. Department of Justice
One Pierrepont Plaza, 14th Floor
Brooklyn, NY 11201

FOR: ROSLYNN R. MAUSKOPF
United States Attorney
Eastern District of New York

THE UNDERSIGNED PARTY enters into this Consent Judgment in the matter of *United States v. Coltec Industries, Inc., et al.*, relating to the Liberty Industrial Finishing Superfund Site.

Date: March 29, 2004

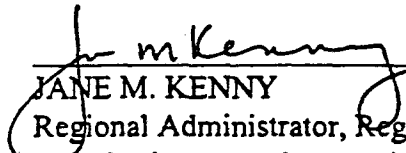
ROSLYNN R. MAUSKOPF
United States Attorney
Eastern District of New York

By: 

CHARLES P. KELLY
Assistant United States Attorney
610 Federal Plaza
Central Islip, NY 11722-4454

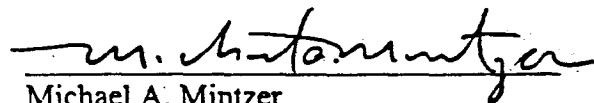
THE UNDERSIGNED PARTY enters into this Consent Judgment in the matter of *United States v. Coltec Industries, Inc., et al.*, relating to the Liberty Industrial Finishing Superfund Site.

9/30/03
Date



JANE M. KENNY
Regional Administrator, Region II
U.S. Environmental Protection Agency
290 Broadway
New York, NY 10007

9/30/03
Date



Michael A. Mintzer
Assistant Regional Counsel
U.S. Environmental Protection Agency
Region II
290 Broadway
New York, NY 10007

THE UNDERSIGNED PARTY enters into this Consent Judgment in the matter of *United States v. Coltec Industries, Inc., et al.*, relating to the Liberty Industrial Finishing Superfund Site.

FOR Coltec Industries, Inc. */

September 26, 2003
Date

Signature: John R. Mayo
Name (print): John R. Mayo
Title: Assistant Secretary
Address: 5605 Carnegie Blvd.
Charlotte, NC 28209

Agent Authorized to Accept Service on Behalf of Above-signed Party:

Name (print): John R. Mayo
Title: Assistant Secretary
Address: 5605 Carnegie Blvd.
Charlotte, NC 28209
Ph. Number: 704-731-1525

*/ A separate signature page must be signed by each corporation, individual or other legal entity that is settling with the United States.

THE UNDERSIGNED PARTY enters into this Consent Judgment in the matter of *United States v. Coltec Industries, Inc., et al.*, relating to the Liberty Industrial Finishing Superfund Site.

FOR Castro Corporation*/

September 26, 2003
Date

Signature: [Handwritten Signature]
Name (print): Robert J. O'Brien
Title: Counsel for Castro Corporation
Address: Thompson Hill LLP
2900 Park Center
137 Public Square
Cleveland OH 44114

Agent Authorized to Accept Service on Behalf of Above-signed Party:

Name (print): R Leonard Rowe, Jr.
Title: Legal Counsel II
Address: E. Church Corporation
Four Coliseum Center
2730 West Tuxedo Road
Ph. Number: 216-441-1472, 216-232-1717
704-423-8819

*/ A separate signature page must be signed by each corporation, individual or other legal entity that is settling with the United States.

THE UNDERSIGNED PARTY enters into this Consent Judgment in the matter of *United States v. Coltec Industries, Inc., et al.*, relating to the Liberty Industrial Finishing Superfund Site.

FOR 55 McTen Ave Co, LLC *1

9/26/03
Date

Signature: [Handwritten Signature]
Name (print): J. J. [Handwritten]
Title: Pres Cubbins Prop Inc Member
Address: _____

Agent Authorized to Accept Service on Behalf of Above-signed Party:

Name (print): _____
Title: _____
Address: _____

Ph. Number: _____

*1 A separate signature page must be signed by each corporation, individual or other legal entity that is settling with the United States.

THE UNDERSIGNED PARTY enters into this Consent Judgment in the matter of *United States v. Coltec Industries, Inc., et al.*, relating to the Liberty Industrial Finishing Superfund Site.

FOR Cubbies Prop: Inc #1

9/26/03
Date

Signature: [Handwritten Signature] Pres.
Name (print): _____
Title: Pres
Address: _____

Agent Authorized to Accept Service on Behalf of Above-signed Party:

Name (print): _____
Title: _____
Address: _____

Ph. Number: _____

*/ A separate signature page must be signed by each corporation, individual or other legal entity that is settling with the United States.

THE UNDERSIGNED PARTY enters into this Consent Judgment in the matter of *United States v. Coltec Industries, Inc., et al.*, relating to the Liberty Industrial Finishing Superfund Site.

FOR Jefry Rosman */

9/26/03
Date

Signature: Jefry Rosman
Name (print): _____
Title: B
Address: B

Agent Authorized to Accept Service on Behalf of Above-signed Party:

Name (print): _____
Title: _____
Address: _____

Ph. Number: _____

*/ A separate signature page must be signed by each corporation, individual or other legal entity that is settling with the United States.

THE UNDERSIGNED PARTY enters into this Consent Judgment in the matter of *United States v. Coltec Industries, Inc., et al.*, relating to the Liberty Industrial Finishing Superfund Site.

FOR J. JAY TANENBAUM

9/26/03
Date

Signature: [Handwritten Signature]
Name (print): J. JAY TANENBAUM
Title: _____
Address: _____

Agent Authorized to Accept Service on Behalf of Above-signed Party:

Name (print): _____
Title: _____
Address: _____

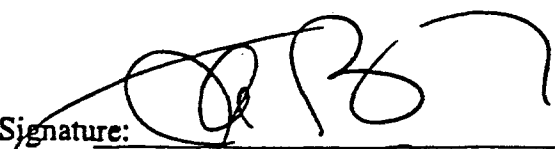
Ph. Number: _____

*/ A separate signature page must be signed by each corporation, individual or other legal entity that is settling with the United States.

THE UNDERSIGNED PARTY enters into this Consent Judgment in the matter of *United States v. Coltec Industries, Inc., et al.*, relating to the Liberty Industrial Finishing Superfund Site.

FOR Jan Burman *1

9-25-03
Date

Signature: 
Name (print): Jan Burman
Title: _____
Address: 2545 Hempstead Tpk
Suite 401
EAST MERRIDEN NY
11554

Agent Authorized to Accept Service on Behalf of Above-signed Party:

Name (print): James Rigano
Title: _____
Address: Certilman Balin
1393 Veteran Memorial Hwy - S. 2015
Hempstead, NY 11788
Ph. Number: 631 979-3000

*1/ A separate signature page must be signed by each corporation, individual or other legal entity that is settling with the United States.

THE UNDERSIGNED PARTY enters into this Consent Judgment in the matter of *United States v. Coltec Industries, Inc., et al.*, relating to the Liberty Industrial Finishing Superfund Site.

FOR Jerome Hazzard *

9/25/03
Date

Signature: Jerome Hazzard
Name (print): Jerome HAZARD
Title: _____
Address: 21 Horseshoe Rd.
Old Westbury NY

Agent Authorized to Accept Service on Behalf of Above-signed Party:

Name (print): James Rigano
Title: _____
Address: Certman Bldg
1193 Veterans Memorial Hwy
Hempstead NY 11758 5-14301
Ph. Number: 634 631 979300

*/ A separate signature page must be signed by each corporation, individual or other legal entity that is settling with the United States.

THE UNDERSIGNED PARTY enters into this Consent Judgment in the matter of *United States v. Coltec Industries, Inc., et al.*, relating to the Liberty Industrial Finishing Superfund Site.

FOR Liberty Associates ^{*/}
By: William Heller, General Partner

Sept 25, 2003
Date

Signature: William Heller
Name (print): WILLIAM HELLER
Title: GENERAL PARTNER
Address: 161 E 11th Ave
Roselle N, NJ 07203

Agent Authorized to Accept Service on Behalf of Above-signed Party:

Name (print): _____
Title: _____
Address: _____

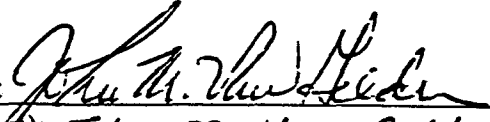
Ph. Number: _____

^{*/} A separate signature page must be signed by each corporation, individual or other legal entity that is settling with the United States.

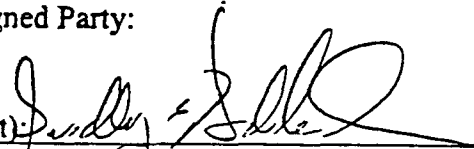
THE UNDERSIGNED PARTY enters into this Consent Judgment in the matter of *United States v. Coltec Industries, Inc., et al.*, relating to the Liberty Industrial Finishing Superfund Site.

FOR Koch-Glitsch LP *1
by and through its General
Partner, KGGP, LP

09/29/03
Date

Signature:  .QR
Name (print): John M. Van Gelder
Title: Director
Address: 4111 E. 37th North
Wichita, Ks 67220

Agent Authorized to Accept Service on Behalf of Above-signed Party:

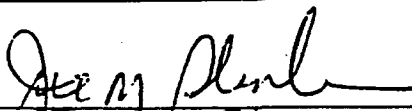
Name (print): 
Title: Bradley E. Haddock
Vice President + General
Counsel of KGGP, LLC
Address: 4111 E. 37th North, Wichita, Ks
Ph. Number: (316) 828-5946 67220

*1/ A separate signature page must be signed by each corporation, individual or other legal entity that is settling with the United States.

THE UNDERSIGNED PARTY enters into this Consent Judgment in the matter of *United States v. Coltec Industries, Inc., et al.*, relating to the Liberty Industrial Finishing Superfund Site.

FOR : BEAZER EAST, INC., on its behalf and on behalf of Lamtex Industries, Inc. and their past and present subsidiaries, parent companies, predecessors, and successors */

Date

Signature: 
Name (print): Jill M. Blunden
Title: Vice President
Address: One Oxford Ctr.
Suite 3000
Pittsburgh, PA 15219

Agent Authorized to Accept Service on Behalf of Above-signed Party:

Name (print): _____
Title: _____
Address: _____

Ph. Number: _____

*/ A separate signature page must be signed by each corporation, individual or other legal entity that is settling with the United States.

APPENDIX B
to Consent Judgment in the matter of
United States v. Coltec Industries et al., relating to the Liberty Industrial Finishing
Superfund Site

STATEMENT OF WORK

Liberty Industrial Finishing Superfund Site
Village of Farmingdale, Town of Oyster Bay, Nassau County, New York

STATEMENT OF WORK

Liberty Industrial Finishing Superfund Site Village of Farmingdale, Town of Oyster Bay, Nassau County, New York

I. WORK TO BE PERFORMED

The objectives of the Work to be conducted at the Site pursuant to the Consent Judgment (the terms "Work," "Site" and "Consent Judgment" as used herein are defined in Section IV of the Consent Judgment to which this Statement of Work is attached) are:

Remedial Work Element I - On-Site Soils

- Mitigate soil contaminant concentrations to a level that will not pose unacceptable risks to human health and to a level which will prevent further degradation of groundwater.
- Remove all hazardous waste as defined in RCRA (the term "RCRA" as used herein is defined in Section IV of the Consent Judgment) from the Site.
- Remove any structural impediments that might interfere with pre-design sampling and implementation of soil, subsurface feature, and groundwater remediation.

Remedial Work Element II - On-Site Subsurface Features (on Eastern Portion of the Site) and Underground Storage Tanks (USTs)

- Remove of contaminated aqueous and/or solid materials from subsurface features and USTs.

Remedial Work Element III - On-Site and Off-Site Groundwater

- Prevent or minimize ingestion, dermal contact and inhalation of inorganic- and organic-contaminated groundwater that are above State and Federal maximum contaminant levels (MCLs).
- Restore groundwater quality to levels which meet State and Federal MCLs.

Remedial Work Element IV - Massapequa Creek Pond A Sediments

- Prevent adverse effects to ecological receptors within the Massapequa Creek and associated ponds caused by exposure to Site-related contaminants.

These objectives are expected to be met through the implementation of the remedy selected in the Record of Decision (or ROD) for the Site (the term "Record of Decision" or "ROD" as used herein is defined in Section IV of the Consent Judgment). The major components of the selected remedy include the following four Remedial Work Elements:

Remedial Work Element I - On-Site Soils

- Excavation and off-Site disposal of all soils contaminated above the soil Performance Standards (contamination in soils exceeding groundwater protection soil cleanup levels: 10 milligrams/kilogram (mg/kg) cadmium, 143 mg/kg chromium, 0.7 mg/kg trichloroethene (TCE), 0.25 mg/kg cis-1,2-dichloroethene (cis-1,2-DCE), and 1.4 mg/kg tetrachloroethene (PCE), presently estimated at 73,100 cubic yards),
- Subsequent to excavation of such soils, placement of clean fill in the excavated areas, and
- Implementation of institutional controls to restrict the use of the Site to commercial/industrial or, where applicable, to recreational uses.

Remedial Work Element II - On-Site Subsurface Features (on Eastern Portion of the Site) and USTs

- Removal of contaminated aqueous and/or solid materials from three USTs and approximately fifty-six subsurface features, as well as from the northern and eastern sanitary leaching fields, if warranted, and removal of a contaminated above-ground mound of soils (approximately 50 feet by 40 feet) originating from the former building B basement area ("Building B Ramp Pile"), and
- Removal and off-Site disposal of any soil surrounding the subsurface features that exceed 10 mg/kg cadmium, 143 mg/kg chromium, 0.7 mg/kg TCE, 0.25 mg/kg cis-1,2-DCE, 1.4 mg/kg PCE, 1 mg/kg PCBs for soils between zero and 1 foot below ground surface (bgs) and 10 mg/kg PCBs for soils below 1 foot bgs, 35 mg/kg cyanide, 0.29 mg/kg benzo[a]pyrene, or 0.29 mg/kg dibenzo[a,h]anthracene.

The ROD selected the Features Tasks (the term "Features Tasks" is defined in Section IV of the Consent Judgment) as a portion of the comprehensive remedy and the Features Tasks are a part of the Work included within Remedial Work Element II. However, the Features Tasks are required to be addressed in the Features AOC (the term "Features AOC" is defined in Section IV of the Consent Judgment) and will not be addressed under the Consent Judgment and this Statement of Work (SOW) unless EPA notifies Settling Work Defendants (the term "Settling Work Defendants" as used herein is defined in Section IV of the Consent Judgment) that all or any portion of the Features Tasks have not been satisfactorily addressed under the Features AOC, in which event EPA will modify this SOW to cover those portion of the Features Tasks that have not been satisfactorily addressed under the Features AOC.

Remedial Work Element III - On-Site and Off-Site Groundwater

- Continued operation of the groundwater treatment system installed pursuant to the Interim Groundwater UAO (the term "Interim Groundwater UAO" is defined in Section IV of the Consent Judgment), to address the groundwater underlying the 30-acre portion of the Site,

other than Plume B (the term "Plume B" is defined in Section IV of the Consent Judgment), in order to reduce contaminant levels so as to achieve Performance Standards and restore the aquifer (the interim groundwater treatment system is being converted to a conventional pump-and-treat system (Ion Exchange, Precipitation with Coagulation, Filtration, Air Stripping and Granular Activated Carbon) (or other appropriate treatment system configuration as may be approved by EPA in its sole discretion provided that all Performance Standards can be fully achieved and maintained) pursuant to the Interim Groundwater UAO) (Prior to construction of expanded treatment capacity for recovered off-Site groundwater, if groundwater data indicate that the effects of Remedial Work Element I (the source area soil remedy) have reduced or eliminated the need for continued groundwater recovery at the 30-acre portion of the Site, based on achievement of Performance Standards in groundwater under the 30-acre portion of the Site, then, if requested by the Settling Work Defendants and if EPA concurs with the Settling Work Defendants' conclusions, EPA may at such time, in its sole discretion, take steps such as, if required, seeking a modification to the Work by means of an Explanation of Significant Differences to the ROD, as would allow the modification of the SOW and the Remedial Action Work Plan for Remedial Work Element III so as to require the Settling Work Defendants to construct only the treatment system capacity required to achieve the Performance Standards.),

- Construction and operation of a 250-gpm pump-and-treat system (Ion Exchange, Precipitation with Coagulation, Filtration, Air Stripping and Granular Activated Carbon with Four Groundwater Extraction Wells) (or other appropriate treatment system configuration as may be approved by EPA in its sole discretion provided that all Performance Standards can be fully achieved and maintained) to treat groundwater contamination downgradient of the 30-acre portion of the Site, other than Plume B, in order to reduce contaminant levels so as to achieve Performance Standards and restore the aquifer (the exact numbers, depths, pumping rates, and locations of extraction wells to be determined during the RD),
- Construction of all groundwater treatment systems (exclusive of the piping leading to the treatment works) shall be within the area where the current treatment system is located on the 30-acre portion of the Site unless EPA approves of the location of another area (if a separate treatment system with a different location is required for off-Site groundwater, the location of this treatment system will be made by EPA based on engineering and economic criteria as well as community acceptance, compliance with zoning and land use requirements and compliance with all other applicable requirements or relevant and appropriate requirements identified during the RD).
- Continued operation of the groundwater treatment systems in order to restore the aquifer through achievement of groundwater Performance Standards, including reduction of contaminant levels to State and Federal MCLs (e.g., 5 micrograms/liter ($\mu\text{g/l}$) for cadmium, 50 $\mu\text{g/l}$ for chromium, and 5 $\mu\text{g/l}$ for TCE, cis-1,2-DCE, and PCE),
- Discharge of treated groundwater to Massapequa Creek surface water or reinjection of

treated groundwater into the aquifer,

- Implementation of a groundwater monitoring program, and
- Implementation of institutional controls to prohibit installation or use of groundwater wells for human consumption of the well water or any other purpose which would or could result in human contact with groundwater.

Remedial Work Element IV - Massapequa Preserve

- Removal by excavation or vacuum extraction and off-Site disposal of sediments within Pond A of Massapequa Preserve that are contaminated above Performance Standards (contamination in sediments exceeding sediment cleanup levels: 50 mg/kg cadmium and 260 mg/kg chromium, presently estimated at 2,600 cubic yards), and
- Implementation of a monitoring program for the remainder of the ponds within the Massapequa Preserve to demonstrate that the removal of Pond A sediments is protective of the downstream ecosystem from contaminants associated with the Liberty site.

The Work to be performed under the Consent Judgment shall include, but shall not be limited to, the following:

- A. Pre-remedial design (pre-RD) activities associated with Remedial Work Elements I, II, III and IV;
- B. Remedial design (RD) activities associated with Remedial Work Elements I, II, III and IV;
- C. Implementation of the remedial action (RA) for Remedial Work Elements I, II, III and IV; and
- D. Monitoring related to Remedial Work Elements III and IV.

II. PERFORMANCE STANDARDS

Performance Standards are the cleanup standards and other measures to achieve the goals of the Remedial Action (the term "Performance Standards" as used herein is defined in Section IV of the Consent Judgment).

Remedial Work Element I - On-Site Soils

Groundwater protection soil cleanup levels: 10 mg/kg cadmium, 143 mg/kg chromium, 0.7 mg/kg

TCE, 0.25 mg/kg cis-1,2-DCE, and 1.4 mg/kg PCE

Remedial Work Element II - On-Site Subsurface Features (on Eastern Portion of the Site) and USTs

Subsurface features soil cleanup levels: 10 mg/kg cadmium, 143 mg/kg chromium, 0.7 mg/kg TCE, 0.25 mg/kg cis-1,2-DCE, 1.4 mg/kg PCE, 1 mg/kg PCBs for soils between zero and 1 foot bgs and 10 mg/kg PCBs for soils below 1 foot bgs, 35 mg/kg cyanide, 0.29 mg/kg benzo[a]pyrene, or 0.29 mg/kg dibenzo[a,h]anthracene

Remedial Work Element III - On-Site and Off-Site Groundwater

State and Federal MCLs (e.g., 5 µg/l for cadmium, 50 µg/l for chromium, and 5 µg/l for TCE, cis-1,2-DCE, and PCE).

Remedial Work Element IV - Massapequa Creek Pond A Sediments

Sediment cleanup levels: 50 mg/kg cadmium and 260 mg/kg chromium

In addition, the remedy shall comply with all Applicable or Relevant and Appropriate Requirements (ARARs) as set forth herein and in the ROD. Accordingly, the remedy will reduce the risk to human health and the environment at the Site.

III. PROJECT SUPERVISION/MANAGEMENT, PROJECT COORDINATOR

The pre-RD, RD, and RA, monitoring, and any other activities performed under the Consent Judgment will be under the direction and supervision of a qualified New York State-licensed professional engineer (hereinafter, Supervising Contractor) and will meet any and all requirements of applicable federal, State and local laws. Within forty-five (45) days (when used herein, the term "day" or "Day" shall mean "Day" as defined in Section IV of the Consent Judgment) of the lodging of the Consent Judgment, the Settling Work Defendants shall notify EPA and the New York State Department of Environmental Conservation (NYSDEC), in writing, of the names, titles, and qualifications of the Supervising Contractor proposed to be used in the development and implementation of the work to be performed. Such engineer shall engage in the "practice of engineering" at the Site on behalf of Settling Work Defendants, as the "practice of engineering" is defined at Section 7201 of the New York State Education Law, and shall comply with all applicable New York State legal requirements regarding the practice of professional engineering within the State of New York, including, but not limited to, all applicable requirements of the New York State Education Law and Articles 15 and 15-A of the Business Corporation Law. Selection of any such engineer, contractor, or subcontractor shall be subject to approval by EPA as provided in Section VI of the Consent Judgment.

IV. PRE-REMEDIAL DESIGN ACTIVITIES

The pre-RD activities to be performed in the implementation of the selected remedy for the Site include the following:

- A. Collect soil samples to define the excavation boundaries of the contaminated soils exceeding cleanup objectives unless EPA, at the request of Settling Work Defendants, determines that such activity is not necessary to support Remedial Design. These soil samples will be collected to support Remedial Design activities. In addition, geotechnical and hydrogeologic testing may be performed to determine steps that will be taken during construction to ensure excavation stability;
- B. Complete investigation of the subsurface features and the USTs (as identified in the URS Corporation's March 12, 2003 letter to Lorenzo Thantu of EPA entitled, "Summary of Known or Suspected Underground Storage Tanks"), as well as the portion of the northern sanitary leaching field, not addressed by the Features AOC, including sampling and analysis, in order for EPA to determine if any remediation is necessary (i.e., exceedance of Performance Standards);
- C. Perform a hydrogeologic investigation to collect hydrogeologic and chemical data from relevant monitoring wells necessary for the design of the groundwater extraction/treatment systems;
- D. Conduct engineering evaluation of the feasibility of discharging treated groundwater from the groundwater extraction/treatment systems to the Massapequa Creek;
- E. Collect sediment samples within Pond A to define the excavation boundaries of the contaminated sediments exceeding Performance Standards. These Pond A sediment samples will be collected to support Remedial Design activities. In addition, sediment dewatering tests may be performed to determine steps that will be taken to manage potential excess water content in the sediments;
- F. Prepare a Wetland Mitigation Plan to determine possible measures to mitigate wetland loss from Pond A remedy implementation. The Wetland Mitigation Plan shall outline actions to be taken to avoid disruption of wetlands, minimize impacts to wetlands, and/or compensate (replacement) for wetlands potentially affected by remedial activities associated with the Site. The Wetland Mitigation Plan shall include, but shall not be limited to, a depiction of the wetland boundaries identified by the delineation and a description of major plant communities, soil type(s), and hydrology, with the results clearly plotted on a Site map;
- G. Prepare a Wetland Restoration Plan that addresses in detail how the impacted wetlands, as result of Pond A remedy implementation, would be fully restored;

- H. Prepare Stage 1A Cultural Resources Survey report, if warranted, for Pond A in accordance with the provision of the National Historic Preservation Act, 16 U.S.C. § 470. (While it has been determined by EPA that the National Historic Preservation Act is not an ARAR for the 30-acre portion of the Site, no such determination has been made for the Massapequa Preserve portion of the Site.);
- I. Conduct an ecological study for Pond A that will incorporate data gathered during the Remedial Investigation study and will be supported, if necessary, by additional surface water samples, sediment samples, and bioassays; and
- J. Perform an evaluation of the potential impacts the Remedial Action will have on the 100-year and 500-year flood plain.

V. REMEDIAL DESIGN ACTIVITIES

The RD activities to be performed in the implementation of the selected remedy for the Site include the following:

- A. Develop plans and specifications for the excavation and off-Site treatment and/or disposal of contaminated Site soils exceeding cleanup objectives.
- B. Develop a soil remedy post-excavation confirmatory sampling plan, in accordance with EPA's guidance document entitled, "Methods for Evaluating the Attainment of Cleanup Standards, Volume 1: Soils and Solid Media."
- C. Develop plans and specifications for remediation technologies that will be utilized to remove aqueous and/or solid materials from the subsurface features and the USTs (as identified in the URS Corporation's March 12, 2003 letter to Lorenzo Thantu of EPA entitled, "Summary of Known or Suspected Underground Storage Tanks").
- D. Develop plans and specifications for remediation of the eastern sanitary leaching field and the northern sanitary leaching field, if warranted based on sampling results from the investigation conducted per Subsection IV.B.
- E. Design the recontouring and grading for the excavated and backfilled areas.
- F. Design the groundwater extraction/treatment systems as outlined in the ROD. The groundwater extraction/treatment systems design shall include, at a minimum:
 - 1. Provision for the extraction of contaminated groundwater utilizing a network of recovery wells;

2. Conducting treatability studies for the on-Site treatment of the on-Site and off-Site contaminated groundwater, if necessary;
 3. A final determination of the treatment process for groundwater. The conceptual treatment process outlined in the ROD includes ion exchange, precipitation with coagulation, filtration, air stripping and granular activated carbon (or other appropriate treatment);
 4. A determination of the exact number, depth, pumping rates, and location of extraction wells;
 5. A final determination of the discharge option for treated groundwater; and
 6. Develop an Operation and Maintenance Plan (O&M Plan), prepared in accordance with instructions for preparation of operation and maintenance plans in the "Remedial Design/Remedial Action Handbook," dated June, 1995 (OSWER 9355.0-4A), which includes, but is not limited to, a description of the personnel requirements, responsibilities, and duties, including discussion for training, lines of authority, sampling, analysis, and monitoring conducted under the Consent Judgment.
- G. Design a plan to provide for long-term groundwater quality monitoring to evaluate the effectiveness of the remedial action.
- H. Develop a plan for performance of air monitoring during construction activities at the Site to ensure that air emissions resulting from construction activities meet applicable or relevant and appropriate air emission requirements
- I. Preparation of a plan for establishing institutional controls (i.e., deed restrictions) designed to restrict the use of the Site to commercial/industrial or, where applicable, to recreational uses, and to prohibit the installation and use of groundwater wells at the Site for human consumption of the well water or any other purpose which would or could result in human contact with groundwater until groundwater cleanup standards are achieved.
- J. Develop a plans and specifications for the excavation and off-Site treatment and/or disposal of contaminated Pond A sediments exceeding cleanup objectives.
- K. Develop a sediment remedy post-excavation confirmatory sampling plan, in accordance with EPA's guidance document entitled, "Methods for Evaluating the Attainment of Cleanup Standards, Volume 1: Soils and Solid Media."
- L. Finalize the Wetland Mitigation Plan required by Subsection IV.F, which shall detail

actions to be taken during the Pond A remedy implementation to avoid disruption of wetlands, minimize impacts to wetlands, and/or compensate (replacement) for wetlands potentially affected by remedial activities associated with the Site.

- M. Design an enhanced monitoring program that will consist of surface water and sediment sampling and bioassays to be periodically conducted to monitor the effectiveness of the Pond A remedy subsequent to its implementation.

VI. REMEDIAL DESIGN WORK PLAN

Within ninety (90) days of the date on which Settling Work Defendants receive written notification from EPA of the approval of the Supervising Contractor, Settling Work Defendants shall submit a detailed Remedial Design Work Plan for the design of the selected remedy to EPA for review and approval as provided for below and in Section XI of the Consent Judgment (EPA Approval of Plans and Other Submissions). The Remedial Design Work Plan shall provide for the collection of all data needed for performing the pre-RD and the necessary RD activities.

The Work Plan shall comply with CERCLA and relevant EPA guidance, including EPA document entitled *Guidance on Oversight of Remedial Designs and Remedial Actions performed by Potentially Responsible Parties*, (OSWER directive 9355.5-01, EPA/540/g-90-001), dated April 1990 and shall be in conformance, *inter alia*, with the *Superfund Remedial Design and Remedial Action Guidance*, dated June 1986, and other EPA guidance documents.

A Field Sampling Plan (FSP), Quality Assurance Project Plan (QAP_jP), and Health and Safety Plan (HSP) approved by EPA for the supplemental RI/FS may be utilized with appropriate addenda or revisions to these plans, as necessary, to accomplish the pre-RD and RD tasks. The Remedial Design Work Plan shall include plans and schedules for implementation of pre-RD and RD tasks, and shall include, but not be limited to, the following items and as appropriate, QAP_jP Addendum to be combined with FSP Addendum, and HSP Addendum shall comply with the following requirements:

A. Quality Assurance/Quality Control Project Plan and Field Sampling Plan

A Quality Assurance/Quality Control Project Plan (QAP_jP) shall be prepared consistent with EPA *Requirements for Quality Assurance Project Plans for Environmental Data Operations*, (EPA QA/R-5, October 1998), and shall include the following elements:

- 1. A detailed description of the sampling, analysis, and monitoring that shall be performed during the RD phase, consistent with this SOW, the ROD, and the Consent Judgment. At a minimum, the QAP_jP shall provide the following:
 - a. A plan for the performance of air monitoring, including air

- monitoring prior to and during construction at the Site, as necessary, to ensure that any air emissions resulting from the excavation, loading onto trucks, and transportation meet applicable or relevant and appropriate air emission requirements;
- b. A plan for defining specific areas of Site soil excavation;
 - c. A plan for defining specific areas of the subsurface features and the USTs that will be remediated;
 - d. A plan for defining specific areas of the eastern sanitary leaching field and the northern sanitary leaching field that will be remediated, if warranted based on sampling results from the investigation conducted per **Subsection IV.B**;
 - e. A plan for conducting treatability studies and for construction of the remediation system for the on-Site treatment of the on-property and off-property contaminated groundwater, and
 - f. A plan for defining specific areas of Pond A sediment excavation.
2. All sampling, analysis, data assessment, and monitoring shall be performed in accordance with the *Region II CERCLA Quality Assurance Manual*, Revision 1, EPA Region 2, dated October 1989, and any updates thereto, or an alternate EPA-approved test method, and the guidelines set forth in the Consent Judgment. All testing methods and procedures shall be fully documented and referenced to established methods or standards.
 3. The QAPP shall also specifically include the following items:
 - a. An explanation of the way(s) the sampling, analysis, and monitoring will produce data for the RD phase;
 - b. A detailed description of the sampling, analysis, and testing to be performed, including sampling methods, analytical and testing methods, sampling locations and frequency of sampling;
 - c. A map depicting sampling locations; and
 - d. A schedule for performance of specific tasks.
 4. In the event that additional sampling locations and analyses are utilized or required, Settling Work Defendants shall submit to EPA an addendum to the

QAP_P for approval by EPA.

5. The QAP_P shall address the following elements:

Project Management

- a. Title and Approval Sheet
- b. Table of Contents and Document Control Format
- c. Distribution List
- d. Project/Task Organization and Schedule
- e. Problem Definition/Background
- f. Project/Task Description
- g. Quality Objectives and Criteria for Measurement Data
- h. Special Training Requirements/Certification
- i. Documentation and Records

Measurement/Data Acquisition

- j. Sampling Process Design
- k. Sampling Methods Requirements
- l. Sample Handling and Custody Requirements
- m. Analytical Methods Requirements
- n. Quality Control Requirements
- o. Instrument/Equipment Testing, Inspection, and Maintenance Requirements
- p. Instrument Calibration and Frequency
- q. Inspection/Acceptance Requirements for Supplies and Consumables
- r. Data Acquisition Requirements (Non-Direct Measurements)
- s. Data Management

Assessment/Oversight

- t. Assessments and Response Actions
- u. Reports to Management

Data Validation and Usability

- v. Data Review, Validation, and Verification Requirements
- w. Validation and Verification Methods
- x. Reconciliation with Data Quality Objectives

6. In order to provide quality assurance and maintain quality control with respect to all samples to be collected, Settling Work Defendants shall ensure

the following:

- a. Quality assurance and chain-of-custody procedures shall be performed in accordance with standard EPA protocol and guidance, including the *Region II CERCLA Quality Assurance Manual, Revision 1*, EPA Region 2, dated October 1989, and any updates thereto, and the guidelines set forth in the Consent Judgment.
- b. The laboratory to be used must be specified. If the laboratory participates in the Contract Laboratory Program (CLP) for the analysis to be performed for this investigation, then project specific Performance Evaluation (PE) samples will not be required, as CLP laboratories run EPA PEs on a quarterly basis. If the proposed laboratory does not participate in the CLP for the analyses required, PE samples must be analyzed to demonstrate the capability to conduct the required analysis prior to being approved for use. Once a non-CLP laboratory has been selected, the laboratory should submit a copy of their Laboratory Quality Assurance Program Plan to EPA for review and approval.

For any analytical work performed at a non-CLP laboratory, including that done in a fixed laboratory, in a mobile laboratory, or in on-Site screening analyses, Settling Work Defendants must submit to EPA a "Non-CLP Superfund Analytical Services Tracking System" form for each non-CLP laboratory utilized during a sampling event, within thirty (30) days after acceptance of the analytical results. Upon completion, such documents shall be submitted to EPA Project Coordinator, with a copy of the form and transmittal letter to:

Regional Sample Control Center Coordinator
EPA Region 2
Division of Environmental Science & Assessment
2890 Woodbridge Avenue, Bldg. 209, MS-215
Edison, NJ 08837

- c. The laboratory utilized for analyses of samples must perform all analyses according to accepted EPA methods as documented in the *Contract Lab Program Statement of Work for Organic Analysis*, (OLM04.2) or the latest revision, and the *Contract Lab Program Statement of Work for Inorganic Analysis*, (ILM04.0) or the latest revision, or other EPA approved methods.
- d. Unless indicated otherwise in the approved QAP_P, all data shall be

validated upon receipt from the laboratory.

- e. Submission of the validation package (checklist, report, and Form I containing the final data) shall be made to EPA, prepared in accordance with the provisions of Subparagraph g., below.
- f. Assurance that all analytical data that are validated as required by the QAP;P are validated according to the procedures stated in *EPA Region II Contract Lab Program Organics Data Review and Preliminary Review* (SOP #HW-6, Revision 11), dated June 1996, or the latest revision, and the *Evaluation of Metals Data for the Contract Laboratory Program* (SOP #HW-2, Revision 11), dated January 1992 or the latest revision, or EPA-approved equivalent procedures. Region 2 Standard Operating Procedures are available at: <http://www.epa.gov/region02/smb/sops.htm>.
- g. Unless indicated otherwise in the approved QAP;P, Settling Work Defendants shall require deliverables equivalent to CLP data packages from the laboratory for analytical data. Upon the EPA's request, Settling Work Defendants shall submit to EPA the full documentation (including raw data) for this analytical data. EPA reserves the right to perform an independent data validation, data validation check, or qualification check on generated data.
- h. Settling Work Defendants shall insert a provision in its contract(s) with the laboratory utilized for analyses of samples, which will require granting access to EPA personnel and authorized representatives of EPA for the purpose of ensuring the accuracy of laboratory results related to the Site.

B. Health and Safety Contingency Plan

A Health and Safety Contingency Plan (HSCP) for all activities, except the pre-RD sampling activities, performed under the Consent Judgment shall be developed by Settling Work Defendants to address the protection of public health and safety and the response to contingencies that could impact public health, safety, and the environment. The HSCP that was used for the performance of the supplemental RI at the Site may be used by Settling Work Defendants, with appropriate revisions if necessary, for the pre-RD efforts. The HSCP shall satisfy the requirements of the *Occupational Safety and Health Guidance for Hazardous Waste Site Activities*, (June 1990, DHHS NIOSH Publication No. 90-117), and the Occupational Safety and Health Administration, U.S. Department of Labor (OSHA) requirements cited below:

1. All Site activities shall be performed in such a manner as to ensure the safety and health of personnel so engaged. All Site activities shall be conducted in accordance with all pertinent general industry (29 CFR Part 1910) and construction (29 CFR Part 1926) OSHA standards, and EPA's *Standard Operating Safety Guides* (OSWER, 1988), as well as any other applicable State and municipal codes or ordinances. All Site activities shall comply with those requirements set forth in OSHA's final rule entitled *Hazardous Waste Operations and Emergency Response*, 29 CFR §1910.120, Subpart H.
2. The HSCP shall include, at a minimum, the following items:
 - a. Plans showing the location and layout of any temporary facilities to be constructed on or near the Site;
 - b. Description of the known hazards and evaluation of the risks associated with the Site and the potential health impacts related to the Site activities;
 - c. List of key personnel and alternates responsible for Site safety, response operations, and protection of the public;
 - d. Description of levels of protection (based on specified standards) to be utilized by all personnel;
 - e. Delineation of Work, decontamination, and safe zones, and definitions of the movement of zones;
 - f. Description of decontamination procedures for personnel and equipment, and handling and removal of disposable clothing or equipment;
 - g. Incidental emergency procedures which address emergency care for personnel injuries and exposure problems, and containment measures. These procedures shall include evacuation routes, internal and external communications procedures for response to fire, explosion, or other emergencies, the name of the nearest hospital and the route to that hospital. Local agencies with the capability to respond to emergencies shall be identified and their capabilities shall be described. A description of the procedures for informing the community of these measures shall be outlined;
 - h. Description of the personnel medical surveillance program in effect;

- i. Description of monitoring for personnel safety;
- j. Description of routine and special personnel training programs; and
- k. Description of an air monitoring program to determine concentrations of airborne contaminants to which workers on-Site and persons near the Site boundary may be exposed. The results of work-zone air monitoring may be used as a trigger for implementing Site-boundary air monitoring.

C. Description of Pre-Remedial Design and Remedial Design Tasks

The Remedial Design Work Plan shall include a detailed description of all other pre-RD and RD tasks (see Sections IV. and V., above) to be performed, along with a schedule for performance of those tasks. Such tasks shall include, at a minimum, the preparation of the RD Reports required by Section VIII., below, and tasks necessary to ensure compliance with ARARs, as outlined herein and in the ROD. The Remedial Design Work Plan shall include an outline of the requirements of the RD Reports.

1. Access and Other Approvals and Institutional Controls

The Remedial Design Work Plan shall include descriptions of all approvals which Settling Work Defendants will need to obtain to perform the Work and all institutional controls which Settling Work Defendants will need to implement or obtain to comply with the Consent Judgment, with the exception of those approvals needed from EPA. This description shall detail how such approvals will be obtained and how such institutional controls will be obtained or implemented, and shall include a schedule for obtaining or implementing all necessary approvals and institutional controls. Such approvals and institutional controls shall include, without limitation, the consents of owners of property at or near the Site regarding access to conduct sampling, monitoring or other activities, in accordance with the Consent Judgment, institutional controls required by the ROD and the Consent Judgment, and regarding approvals from any off-Site facility accepting waste materials from the Site. This description shall be amended if subsequent approvals are required.

2. RD Schedules, Draft Schedule for Remedial Action, and Monitoring

The Remedial Design Work Plan shall include a schedule covering all pre-RD and RD activities, including but not limited to, the submittal of the RD Reports listed in Section VIII., below. The Remedial Design Work Plan

shall also include a draft schedule for remedial action ("RA") and monitoring activities. The schedule shall be in the form of a task/subtask activity bar chart or critical path method sequence of events.

3. The draft schedule for RA and monitoring activities may be revised during the remedial process, subject to the EPA's approval (see Subsections VIII.A.4. and VIII.C.8., below).
4. The RD schedule shall provide for the completion and submittal to EPA of the Final Design Reports for Remedial Work Elements I, II, and IV within **eight (8) months** of EPA's written notification of approval of the Remedial Design Work Plan. The RD schedule shall also provide for the completion and submittal to EPA of the Final Design Report for Remedial Work Element III within **eighteen (18) months** of EPA's notification of approval of the Remedial Design Work Plan.
5. The draft schedule for the RA shall provide for the completion of the implementation of Remedial Work Elements II and IV within **eight (8) months** of EPA approval of the RA Work Plan (RAWP) for Remedial Work Element II and IV. The draft schedule for the RA shall also provide for the completion of construction of Remedial Work Elements I and III within **sixteen (16) months** of EPA approval of the RAWP for Remedial Work Element I and III.

VII. APPROVAL OF REMEDIAL DESIGN WORK PLAN

EPA will either approve the Remedial Design Work Plan, or will require modification of such plan in accordance with the procedures set forth in the Consent Judgment. Settling Work Defendants shall implement the EPA-approved Remedial Design Work Plan in accordance with the schedules contained therein.

VIII. REMEDIAL DESIGN

Settling Work Defendants shall perform the pre-RD and RD activities in conformance with the Remedial Design Work Plan approved by EPA and within the time frames specified in the RD schedule contained therein. The RD shall include the preparation of a Preliminary RD Report (30% completion), a Pre-Final RD Report (95% completion), and a Final RD Report (100% completion) for Remedial Work Elements I, II, III, and IV.

A. Preliminary, Pre-Final, and Final RD Reports

The RD reports shall be submitted to EPA and NYSDEC in accordance with the schedule set forth in the approved Remedial Design Work Plan. Each RD report shall include a discussion of the design criteria and objectives, with emphasis on the capacity and ability to meet design objectives successfully. Each such report shall also include the plans and specifications that have been developed at that point in time, along with a design analysis. The design analysis shall provide the rationale for the plans and specifications, including results of all sampling and testing performed, supporting calculations and documentation of how these plans and specifications will meet the requirements of the ROD and shall provide a discussion of any impacts these findings may have on the RD. Each of the design reports for Remedial Work Elements I, II, III, and IV shall also include the following items (unless EPA agrees that such item need not be covered), as appropriate:

1. A technical specification for photographic documentation of the remedial construction work;
2. A discussion of the manner in which the RA will achieve the Performance Standards;
3. A plan for establishing institutional controls (i.e., deed restrictions) designed to restrict the use of the Site to commercial/industrial or, where applicable, to recreational uses, and to prohibit the installation and use of groundwater wells at the Site for human consumption of the well water or any other purpose which would or could result in human contact with groundwater until groundwater cleanup standards are achieved.
4. A draft schedule for remedial action activities, and a preliminary schedule for monitoring activities.

B. Additional Preliminary RD Report Requirements

The Preliminary RD Reports (30% completion) for Remedial Work Elements I, II, III, and IV shall include, as appropriate:

1. Preliminary drawings showing general arrangement of all work proposed;
2. A discussion of the manner in which the pre-design components detailed in Section IV., above, for the Remedial Action will be considered;
3. Draft Piping & Instrumentation diagrams, as necessary, showing all equipment and control systems;
4. Table of Contents for the specifications, including a listing of items from the Construction Specifications Institute master format that are expected to be

included in the construction specifications. This master format is presented in the Construction Specifications Institute's *Manual of Practice*, 1985 edition, available from the Construction Specifications Institute, 601 Madison Street, Alexandria, Virginia 22314;

5. Engineering plans representing an accurate identification of existing Site conditions and an illustration of the work proposed. Typical items to be provided on such drawings include, at a minimum, the following:
 - a. Title sheet including at least the title of the project, a key map, the name of the designer, date prepared, sheet index, and EPA/NYSDEC Project identification;
 - b. All property data including owners of record for all properties within 200 feet of the Site;
 - c. A Site survey including the distance and bearing of all property lines that identify and define the project Site;
 - d. All easements, rights-of-way, and reservations;
 - e. All buildings, structures, wells, facilities, and equipment (existing and proposed) if any;
 - f. A topographic survey, including existing and proposed contours and spot elevations for all areas that will be affected by the remedial activities, based on U.S. Coast and Geodetic Survey data;
 - g. All utilities, existing and proposed;
 - h. Location and identification of all significant natural features including, *inter alia*, wooded areas, water courses, wetlands, flood hazard areas, and depressions;
 - i. Flood hazard data and 100-year and 500-year flood plain delineation;
 - j. North arrow, scale, sheet numbers and the person responsible for preparing each sheet;
 - k. Decontamination areas, staging areas, borrow areas and stockpiling areas;
 - l. Miscellaneous detail sheets;

- m. Definitions of all symbols and abbreviations; and
 - n. A specification for a sign at the Site. The sign should identify the project, the name of the contractor performing the RD/RA work or the PRP Group, state that the project is being performed under EPA oversight, and provide EPA contact for further information.
- 6. Survey work that is appropriately marked, recorded and interpreted for mapping property easements and design completion;
 - 7. Drawings of all proposed equipment, improvements, details and all other construction and installation items to be developed in accordance with the current standards and guidelines of the New York State Board of Professional Engineers and Land Surveyors. Drawings shall be of standard size, approximately 24" x 36". A list of drawing sheet titles shall be provided;
 - 8. Engineering plans (as necessary) indicating, at a minimum, the following:
 - a. Site security measures;
 - b. Roadways; and
 - c. Electrical, mechanical, structural, and HVAC drawings, if required.
 - 9. Any value engineering proposals.

C. Additional Pre-Final/Final RD Report Requirements

The Pre-Final and Final RD Reports for Remedial Work Elements I, II, III, and IV shall also include, as appropriate:

- 1. Final plans and specifications;
- 2. An O&M Plan. The O&M Plan shall be prepared in accordance with the *Superfund RD and RA Guidance* dated September 1986, OSWER Directive 9355.0-4A. The O&M Plan shall include, but not be limited to, a description and discussion of the following:
 - a. personnel requirements, responsibilities, duties, lines of authority and training requirements;
 - b. all sampling, analysis, and monitoring to be conducted under the Consent Judgment;

- c. all monitoring requirements related to the groundwater extraction and treatment system; and
 - d. all monitoring requirements related to enhanced Pond A monitoring program including surface water and sediment sampling and bioassays that will be periodically conducted to monitor the effectiveness of the Pond A remedy subsequent to its implementation.
3. A Construction Quality Assurance Project Plan (CQAPP), which shall detail the approach to quality assurance during construction activities at the Site, shall specify a quality assurance official ("QA Official"), independent of the Supervising Contractor, to conduct a quality assurance program during the construction phase of the project. The CQAPP shall address sampling, analysis, and monitoring to be performed during the remedial construction phase of the Work. Quality assurance items to be addressed include, at a minimum, the following:
 - a. Inspection and certification of the Work;
 - b. Measurement and daily logging;
 - c. Field performance and testing;
 - d. As-built drawings and logs;
 - e. Testing of the Work to establish whether the design specifications are attained; and
 - f. Testing methods appropriate to remedial construction including, at a minimum, testing of remedial construction materials, as necessary, prior to use, and testing of constructed remedial components to ensure that they meet design specifications.
4. A report describing those efforts made to secure access and institutional controls and obtain other approvals and the results of those efforts (see Section VI.C., above). Legal descriptions of property or easements to be acquired shall be provided.
5. A final engineer's construction cost estimate, which may be provided under separate cover concurrent with submittal of the Final RD Report.
6. A plan for implementation of construction and construction oversight.

7. A method for selection of the construction contractor(s).
8. A proposed schedule for implementing all of the above.

IX. APPROVAL OF RD REPORTS

- A. EPA will review and comment on each of the RD Reports for Remedial Work Elements I, II, III, and IV. Settling Work Defendants shall make those changes required by EPA's comments/modifications in accordance with the procedures set forth in the Consent Judgment.
- B. Changes required by EPA's comments on the Remedial Work Elements I, II, III, and IV Preliminary RD Reports shall be made in the Remedial Work Elements I, II, III, and IV Pre-Final RD Reports, respectively. Changes required by EPA's comments on the Remedial Work Elements I, II, III, and IV Pre-Final RD Reports shall be made in the Remedial Work Elements I, II, III, and IV Final RD Reports, respectively.
- C. EPA will either approve the Final RD Reports or require modification of each, in accordance with the procedures set forth in the Consent Judgment. The EPA-approved Final RD Reports shall also be referred to as the "Final Design Report I, Final Design Report II, Final Design Report III, and Final Design Report IV" for Remedial Work Elements I, II, III, and IV, respectively.

X. REMEDIAL ACTION

Within forty (40) days after approval of the Final Design Report by EPA for a given Remedial Work Element, Settling Work Defendants shall award a contract for the RA for the respective Remedial Work Element.

- A. Within forty (40) days of the award of the RA contract for a given Remedial Work Element, Settling Work Defendants shall submit an RAWP for remedial construction activities for the respective Remedial Work Element. Each RAWP shall include, at a minimum, the following items:
 1. If applicable, a "Request for Modification of Approved Final RD Report," including any requests for modification of the approved Final Design Report, based on construction methods identified by the contractor(s), or proposed modification of the construction schedule developed under Section VIII., above, or any other requests for modification, subject to EPA approval in its sole discretion.

2. A Site Management Plan (SMP) for RA activities. The SMP for RA shall include, at a minimum, the following items:
- a. Tentative identification of the RA Project Team (including, but not limited to the construction contractor(s)).
 - b. A final schedule for the completion of the RA and all major tasks therein, as well as a schedule for completion of required plans, and other deliverables (see Section VI.C., above).
 - c. Methodology for implementation of the Construction Quality Assurance Plan (developed during the RD).
 - d. Methodology for implementation of the O&M Plan.
 - e. Procedures and plans for the decontamination of construction equipment and the disposal of contaminated materials.
 - f. Methods for satisfying permitting requirements.
 - g. Discussion of the methods by which construction operations shall proceed, addressing, without limitation, the following:
 - (1) Timing of and manner in which activities shall be sequenced;
 - (2) Preparation of the Site including security, utilities, decontamination facilities, construction trailers, and equipment storage;
 - (3) Coordination of construction activities;
 - (4) Site maintenance during the RA;
 - (5) Coordination with local authorities regarding contingency planning and potential traffic obstruction; and
 - (6) Entry and access to the Site during the construction period(s) and periods of inactivity, including provisions for decontamination, erosion control, and dust control.
 - h. Discussion of construction quality control, including:
 - (1) Methods of performing the quality control inspections.

including when inspections should be made and what to look for;

- (2) Control testing procedures for each specific test. This includes information which authenticates that personnel and laboratories performing the tests are qualified and the equipment and procedures to be used comply with applicable standards;
 - (3) Procedures for scheduling and managing submittals, including those of subcontractors, off-Site fabricators, suppliers, and purchasing agents; and
 - (4) Reporting procedures including frequency of reports and report formats.
3. A Quality Assurance/Quality Control Project Plan (QAP₃P) consistent with *EPA Requirements for Quality Assurance Project Plans for Environmental Data Operations*, (EPA QA/R-5, October 1998) (see Section VI.A., above, for these requirements).
 4. An updated HSCP for the Remedial Construction phase of the Work (see Section VI.B., above, for these requirements). The HSCP shall address health and safety measures to be implemented and observed by construction personnel, as well as recommended health and safety measures for the adjacent community and general public, together with a description of the program for informing the community of these recommendations. The HSCP shall include the name of the person responsible in the event of an emergency situation, as well as the necessary procedures that must be taken in the event of an emergency, as outlined in the Consent Judgment.

B. Approval of Remedial Action Work Plan

EPA will either approve the RAWP for a given Remedial Work Element or require modification of it in accordance with the procedures set forth in the Consent Judgment.

C. Performance of Remedial Construction

1. Upon the EPA's written approval of the RAWP for a given Remedial Work Element, Settling Work Defendants shall initiate the remedial construction in accordance with the RAWP and the approved Final Design Report for the given Remedial Work Element, which includes the approved remedial

construction schedule.

2. During performance of the remedial construction, Settling Work Defendants may identify and request EPA approval for field changes to the approved RAWP for a given Remedial Work Element, Final Design Report and construction schedule, as necessary, to complete the work. EPA will either approve, disapprove, or require modification of any requests for field changes in accordance with the procedures set forth in the Consent Judgment.

D. Operation and Maintenance Manual (O&M Manual)

1. No later than **forty-five (45) days** prior to the scheduled completion date of the remedial construction phase of Remedial Work Element III, Settling Work Defendants shall submit to EPA an O&M Manual. The O&M Manual shall conform to EPA guidelines for operation and maintenance manuals contained in *Considerations for Preparation of Operation and Maintenance Manuals*, EPA 68-01-0341, and any updates thereto.
2. The O&M Manual shall include, at a minimum, the following:
 - a. An amended QAPP consistent with **Section VI.A., above**.
 - b. An HSCP for RA activities consistent with **Section VI.B., above**.
 - c. A discussion of potential operating problems and remedies for such problems.
 - d. A discussion of alternative procedures in the event of system failure.
 - e. A schedule for equipment replacement.
 - f. An RA schedule that identifies the frequency of RA activities and the timing of those activities.
3. EPA will either approve the O&M Manual or require modification of it, in accordance with the procedures set forth in the Consent Judgment.
4. Proposed modifications to the approved O&M Manual may be submitted to EPA for consideration upon completion of construction or thereafter if Settling Work Defendants can demonstrate that such modifications would enhance and/or maintain the environmental monitoring programs.
5. EPA will either approve, disapprove, or require modifications of the request

for modification of the O&M Manual in accordance with the procedures set forth in the Consent Judgment.

XI. PRE-FINAL INSPECTIONS, REMEDIAL ACTION REPORTS, NOTICE OF CONSTRUCTION COMPLETION

- A. At least **fourteen (14) days** prior to the completion of construction of Remedial Work Elements I, II, III, and IV, Settling Work Defendants and their contractor(s) shall be available to accompany EPA personnel and/or their representatives on a pre-final inspection for each Remedial Work Element. Each pre-final inspection shall consist of a walkover of the Site to determine the completeness of the construction of each Remedial Work Element and its consistency with the RD Reports, the Consent Judgment, the ROD and applicable Federal and State laws, rules, and regulations.
- B. Following each pre-final inspection, EPA will either specify the necessary corrective measures to the construction phase of the Remedial Action, as appropriate, or determine that construction is complete. If EPA requires corrective measures to any of the Remedial Work Elements, Settling Work Defendants shall undertake the corrective measures according to a schedule approved by EPA. Within **fourteen (14) days** after completion of the construction of the corrective measures, Settling Work Defendants and their contractor(s) shall be available to accompany EPA personnel or their representatives on a final inspection. Said inspection will be followed by further directions and/or notifications by EPA as provided above in this paragraph.
- C. Settling Work Defendants shall submit a Draft Remedial Action Report for Remedial Work Elements I, II, and IV, and a Draft Interim Remedial Action Report for Remedial Work Element III within **thirty (30) days** of EPA's determination that construction of the Remedial Work Element is complete as set forth in **Subsection XI.B., above**. These reports shall include the following sections:
1. Introduction
 - a. Include a brief description of the location, size, environmental setting, and operational history of the Site.
 - b. Describe the operations and waste management practices that contributed to contamination of the Site.
 - c. Describe the regulatory and enforcement history of the Site.
 - d. Describe the major findings and results of Site investigation

activities.

- e. Describe prior removal and remedial activities at the Site.

2. Background

- a. Summarize requirements specified in the ROD. Include information on the cleanup goals, institutional controls, monitoring requirements, operation and maintenance requirements, and other parameters applicable to the design, construction, operation, and performance of the RA.
- b. Provide additional information regarding the basis for determining the cleanup goals, including planned future land use.
- c. Summarize the RD, including any significant regulatory or technical considerations or events occurring during the preparation of the RD.
- d. Identify and briefly discuss any ROD amendments or explanation of significant differences.

3. Construction Activities

- a. Provide a step-by-step summary description of the activities undertaken to construct and implement the RA (*e.g.*, mobilization and Site preparatory work; construction of the treatment system; associated Site work, such as fencing and surface water collection and control; system operation and monitoring; and sampling activities).
- b. Refer the reader to the Appendices for characteristics, Site conditions, and operating parameters for the system.

4. Chronology of Events

- a. Provide a tabular summary that lists the major events for the Remedial Work Element, and associated dates of those events, starting with ROD signature.
- b. Include significant milestones and dates, such as, remedial design submittal and approval; ROD amendments; mobilization and construction of the remedy; significant operational events such as treatment system, application start-up, monitoring and sampling events, system modifications, operational down time, variances or

noncompliance situations, and final shutdown or cessation of operations; final sampling and confirmation-of-performance results; required inspections; demobilization; and completion or startup of post-construction operation & maintenance activities.

- c. For Remedial Work Element III, indicate when cleanup goals are projected to be achieved for the groundwater restoration.

5. Performance Standards and Construction Quality Control

- a. Describe the overall performance of the technology in terms of comparison to cleanup goals.
- b. For treatment remedies, identify the quantity of material treated, the strategy used for collecting and analyzing samples, and the overall results from the sampling and analysis effort.
- c. Provide an explanation of the approved construction quality assurance and construction quality control requirements or cite the appropriate reference for this material. Explain any substantial problems or deviations.
- d. Provide an assessment of the performance data quality, including the overall quality of the analytical data, with a brief discussion of QA/QC procedures followed, use of a QAPP, comparison of analytical data with data quality objectives.

6. Final Inspection and Certifications

- a. Report the results of the various RA contract inspections, and identify noted deficiencies.
- b. Briefly describe adherence to health and safety requirements while implementing the RA. Explain any substantial problems or deviations.
- c. For Remedial Work Elements I, II, and III, summarize details of the institutional controls (e.g., the type of institutional control, who will maintain the control, who will enforce the control).
- d. Describe results of pre-certification inspection.
- e. This section shall include a certification statement, signed by a

responsible corporate official of one or more of the Settling Work Defendants or by the Settling Work Defendants' Project Coordinator, which states the following:

"To the best of my knowledge, after thorough investigation, I certify that the information contained in or accompanying this submission is true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

7. Continued Operation and Maintenance Activities

- a. For Remedial Work Element III, describe the general activities for post-construction operation and maintenance activities, such as monitoring, Site maintenance, and closure activities.
- b. Identify potential problems or concerns with such activities.
- c. For Remedial Work Element III, describe the future groundwater restoration activities to meet cleanup goals.

8. Summary of Project Costs

- a. Provide the actual final costs for the project. If actual costs are not available, provide estimated costs.
- b. Provide the costs previously estimated in the ROD for the selected remedy, including, as applicable, RA capital costs, RA operating costs, and number of years of operation. Adjust the estimates to the same dollar basis year as the actual project costs, and provide the index used.
- c. Compare actual RA costs to the adjusted ROD estimates. If outside range of -30 to +50 percent, explain the reasons for differences.
- d. For treatment remedies, calculate unit costs based on the sum of the actual RA capital and RA operating costs divided by the quantity of material treated.
- e. Refer the reader to the Appendix for a detailed breakdown of costs.

9. Observations and Lessons Learned

- a. Provide Site-specific observations and lessons learned from the project, highlighting successes and problems encountered and how they were resolved.

10. Contact Information

- a. Provide contact information (names, addresses, phone numbers, and contract/reference data) for the major design and remediation contractors, as applicable.

11. Appendices: Cost and Performance Summary

- a. The specific parameters for documenting cost and performance information are presented in the *Guide to Documenting and Managing Cost and Performance Information for Remediation Projects*, EPA 542-B-98-007.
- b. Identify the matrix characteristics and Site conditions that most affected the cost and performance, the corresponding values measured for each characteristic or condition, and the procedures used for measuring those characteristics or conditions. For Remedial Work Elements I, II, and IV, these items include the soil/sediment type and particle size distribution, environmental setting, media properties, and quantity of soils and sediments excavated for off-Site treatment/disposal.
- c. Identify the operating parameters specified by the remediation contractor that most affected the cost and performance, the corresponding values measured for each parameter, and the procedures used for measuring those parameters. For Remedial Work Element III, these items include system throughput, pumping rate, flow rate, mixing rates, residence time, operating pressure and temperature, moisture content, and pH.
- d. Provide a detailed breakout of the actual RA capital costs and estimated RA operating costs (e.g., costs to operate and maintain the water treatment process).
- e. Provide supplemental information in appendices to the RA Report. These could include a map of the Site and operable unit, a schematic of the treatment system, supplemental performance information, and a list of references.

- D. EPA will either approve the Draft Remedial Action Reports for Remedial Work Elements I, II, and IV, and the Draft Interim Remedial Action Report for Remedial Work Element III, thus making them the Final Remedial Action Report for Remedial Work Elements I, II, and IV, and the Final Interim Remedial Action Report for Remedial Work Element III; require modifications of them; and/or require corrective measures to fully and properly implement the Remedial Action(s), in accordance with **Subsection XI.B., above.**

XII. PERFORMANCE OF CONTINUED OPERATION OF THE RA

- A. Upon EPA's approval of the Interim Remedial Action Report for Remedial Work Element III in accordance with **Subsection XI.D., above**, Settling Work Defendants shall continue remedial action and monitoring activities in accordance with the approved O&M Manual.
- B. Notice of Completion and Final Remedial Action Report for Remedial Work Element III
1. Within **thirty (30) days** of the date that Settling Work Defendants conclude that they have met the Performance Standards as specified in the ROD and this SOW for the third consecutive year (or a shorter period if approved by EPA in its sole discretion), or, if Alternative Remedial Strategies are authorized by EPA, within **thirty (30) days** of completion of those strategies, Settling Work Defendants shall submit to EPA a Notice of Completion and a Final Remedial Action Report.
 2. EPA will determine whether the RA (including any Alternative Remedial Strategies) has been completed in accordance with the standards, specifications and reports required by the Consent Judgment. If EPA determines that they have not been so completed, EPA will notify Settling Work Defendants in writing of those tasks which must be performed to complete the RA (including any Alternative Remedial Strategies). Settling Work Defendants shall then implement the specified activities and tasks in accordance with the specifications and schedules established by EPA and shall then submit a further report on the specified activities and tasks and certification signed by a licensed professional engineer, within **thirty (30) days** after completion of the specified activities and tasks. Any modifications to the Final Report for the RA required by EPA shall be in accordance with the procedures set forth in the Consent Judgment.
 3. Upon EPA's certification of completion of the RA (including any Alternative Remedial Strategies), Settling Work Defendants shall perform

post-remediation monitoring in accordance with the Post-Remediation Monitoring Plan, as set forth in Section XIII., below.

C. Goal for Aquifer Restoration

1. As set forth in the ROD, the Performance Standards for aquifer restoration at the Site are the federal and state MCLs for various chemicals detected in the Site groundwater. Settling Work Defendants shall continue the remedial action related to the groundwater remediation system until the Performance Standards have not been exceeded for a period of three (3) consecutive years, or a shorter period if approved by EPA in its sole discretion.
2. Settling Work Defendants may petition EPA in writing for authorization to amend the groundwater O&M Manual if, based on the results of groundwater monitoring, Settling Work Defendants believe that some or all of the Performance Standards specified in the ROD will not be reached in the time period projected in the approved O&M Manual. Settling Work Defendants shall not submit such a petition until they have performed O&M of the groundwater remediation system for at least three (3) years from the date of EPA's approval of the Interim Remedial Action Report for Remedial Work Element III, as set forth in Section XI.D., above, or a shorter period if approved by EPA in its sole discretion.
3. Settling Work Defendants' petition for authorization to amend the groundwater O&M Manual shall include, at a minimum, the following information, as well as any other information and analyses EPA requests prior to or following submission of the petition:
 - a. a list identifying each Performance Standard that has not been met;
 - b. a description of any changes in the conceptual model for Site contamination since issuance of the ROD, including geological, hydrogeologic, and geochemical characterizations;
 - c. comprehensive groundwater monitoring data relevant to the groundwater remedy implemented;
 - d. an analysis of the performance of the groundwater remedy which describes the spatial and temporal trends in groundwater contaminant concentrations within the groundwater plume (e.g., whether contaminant migration has been effectively prevented (as well as any reduction or changes in the overall size or location of the groundwater plume), or stabilized (or very slow decreases in contaminant

concentrations));

- e. a description of any proposed contingency measures; and
- f. a predictive analysis of the approximate time frame required to achieve the Performance Standards with both the existing groundwater remediation systems and that to be implemented with any proposed contingency measures using methods appropriate for the data and Site-specific conditions. Such analysis shall also address the uncertainty, if any, inherent in these predictions.

The petition shall not be deemed complete until all information and analyses required and/or requested by EPA are submitted by the Settling Work Defendants.

- D. If, based on the results of groundwater monitoring, EPA believes that one or more of the Performance Standards specified in the ROD will not be reached in the time period projected in the approved O&M Manual and if Settling Work Defendants have not petitioned EPA in writing for authorization to amend the O&M Manual, EPA may require Settling Work Defendants to implement contingency measures and to submit a Contingency Measures Plan (see Subsection XII.E., below).
- E. A Contingency Measures Plan shall be submitted to EPA by Settling Work Defendants within sixty (60) days of receipt of EPA's written determination that contingency measures are appropriate. The Contingency Measures Plan shall:
 - 1. address design, construction, and O&M of the Contingency Measures, as appropriate;
 - 2. include an amended QAPP and HSCP for O&M activities, as appropriate; and
 - 3. include a schedule for the implementation of the Contingency Measures.
- F. EPA will either approve the Contingency Measures Plan or disapprove and/or require modification of such plan, in accordance with the procedures set forth in the Consent Judgment.
- G. Settling Work Defendants shall commence with the implementation of the Contingency Measures Plan within thirty (30) days of receipt of EPA's written approval of the Contingency Measures Plan.
- H. No action taken by EPA pursuant to this Section of the SOW, including EPA's

decision on Settling Work Defendants' petition(s), shall be subject to dispute resolution under Section XIX (Dispute Resolution) of the Consent Judgment nor shall it be subject to judicial review.

XIII. POST REMEDIATION MONITORING PLAN

- A. Within sixty (60) days of the date on which all designated groundwater monitoring points have recorded readings less than or equal to the Performance Standards specified in the ROD and this SOW for the third consecutive year (or a shorter period if approved by EPA in its sole discretion), or within sixty (60) days of the date that EPA determines, in its sole discretion, that one or more ARAR waivers are granted and all other groundwater ARARs have been met and/or waived, Settling Work Defendants shall submit to EPA a Post-Remediation Monitoring ("PRM") Plan.
- B. The PRM Plan shall include, at a minimum, the following:
 - 1. A QAPP for PRM activities consistent with Section VI.A., above;
 - 2. An HSCP for PRM activities;
 - 3. A description of work to be performed under PRM activities; and
 - 4. A PRM schedule that identifies the frequency of monitoring and when these activities will commence.
- C. EPA will either approve the PRM Plan, or require modification of it, in accordance with the procedures set forth in the Consent Judgment.

XIV. POST-REMEDATION MONITORING

- A. Upon EPA's approval of the PRM Plan, Settling Work Defendants shall commence with the PRM program for a period of three (3) years, in accordance with the PRM Plan, which includes the PRM schedule.
- B. If groundwater contaminant concentrations increase above the Performance Standards (as specified in the ROD and this SOW), or contaminant concentrations increase above the alternative Performance Standards as set forth in Section XIII., above, during post-remediation monitoring, EPA will evaluate the need for and may require Settling Work Defendants to reinstate the remediation system.
- C. Notice of Completion and Final Report for Post-Remediation Monitoring

1. Within five (5) days of the completion of post-remediation monitoring, Settling Work Defendants shall submit to EPA a Notice of Completion for Post-Remediation Monitoring. The Notice of Completion for Post-Remediation Monitoring shall be signed by a licensed professional engineer meeting all requirements of applicable Federal, State, and local laws, and shall certify that the PRM activities have been completed in full satisfaction of the requirements of the Consent Judgment, this SOW, and all plans, specifications, schedules, reports and other items developed hereunder.
2. Within sixty (60) days of the completion of post-remediation monitoring, Settling Work Defendants shall submit to EPA a Final Report for Post-Remediation Monitoring. The Final Report for Post-Remediation Monitoring shall summarize the Work performed under the PRM Plan and the data so generated. Deliverables under the Final Report for Post-Remediation Monitoring shall be signed by a licensed professional engineer meeting all requirements of applicable Federal, State, and local laws, and shall certify that the PRM activities and report deliverables have been completed in full satisfaction of the requirements of the Consent Judgment, this SOW, and all plans, specifications, schedules, reports and other items developed hereunder. Any modifications to the Final Report for Post-Remediation Monitoring required by EPA shall be in accordance with the procedures set forth in the Consent Judgment.
3. EPA will determine whether the PRM activities or any portions(s) thereof have been completed in accordance with the standards, specifications, and reports required by the Consent Judgment. If EPA determines that PRM activities have not been so completed, EPA will notify Settling Work Defendants in writing of those tasks which must be performed to complete the post-remediation monitoring. Settling Work Defendants shall then implement the specified activities and tasks in accordance with the specifications and schedules established by EPA and shall then submit a further report on the specified activities and tasks, certified by a licensed professional engineer meeting all requirements of applicable Federal, State, and local laws, within thirty (30) days after completion of the specified activities and tasks. EPA will notify Settling Work Defendants in writing when PRM activities have been completed in accordance with the requirements of the Consent Judgment.

XIV. INSTITUTIONAL CONTROLS

Institutional Controls shall be required to restrict the use of the Site to commercial/industrial or, where applicable, to recreational uses, and to prohibit the installation and use of

groundwater wells at the Site for human consumption of the well water or any other purpose which would or could result in human contact with groundwater until groundwater cleanup standards are achieved.. Settling Work Defendants shall secure Institutional Controls in accordance with the procedures set forth in the Consent Judgment. The restrictions pertaining to future Site use (i.e., commercial/industrial or, where applicable, recreational uses) shall be maintained indefinitely whereas the restrictions pertaining to the installation and use of groundwater wells at the Site shall be maintained until EPA notifies Settling Work Defendants that EPA has determined, after a reasonable opportunity for review and comment by the State, that the restrictions may be lifted from the Site, or a portion of the Site, without posing a threat to human health and the environment.

XVI. CERTIFICATION OF COMPLETION OF THE WORK

Within ninety (90) days after Settling Work Defendants conclude that all phases of the Work required by the Consent Judgment have been fully performed, Settling Work Defendants shall schedule and conduct a pre-certification inspection to be attended by Settling Work Defendants and EPA. If, after the pre-certification inspection, Settling Work Defendants still believes that the Work has been fully performed, Settling Work Defendants shall submit a written report by a New York State licensed professional engineer stating that the Work has been completed in full satisfaction of the requirements of the Consent Judgment. If, after review of the written report, EPA, after reasonable opportunity for review and comment by the State, determines that any portion of the Work has not been completed in accordance with the Consent Judgment, EPA will notify Settling Work Defendants in writing of the activities that must be undertaken by Settling Work Defendants pursuant to the Consent Judgment to complete the Work.

If EPA concludes, based on the initial or any subsequent request for Certification of Completion by Settling Work Defendants and after a reasonable opportunity for review and comment by the State, that the Work has been performed in accordance with the Consent Judgment, EPA will so notify Settling Work Defendants in writing.