Department of Environmental Conservation

Division of Environmental Remediation

Record of Decision

Yonkers Downtown Waterfront Development Environmental Restoration Site Phase 1, Operable Unit 1 (Parcel F)

City of Yonkers
Westchester County
Site Number B-00045-3

November 1998

New York State Department of Environmental Conservation
GEORGE E. PATAKI, *Governor* JOHN P. CAHILL, *Commissioner*

DECLARATION STATEMENT

ENVIRONMENTAL RESTORATION RECORD OF DECISION

YONKERS DOWNTOWN WATERFRONT DEVELOPMENT SITE PHASE 1, OPERABLE UNIT 1 (PARCEL F)

City of Yonkers, Westchester County, New York
Site Number B-00045-3

Statement of Purpose and Basis

The Record of Decision (ROD) presents the selected remedial action for the Yonkers Downtown Waterfront Development Site, Phase 1, Operable Unit 1 (Parcel F), an environmental restoration site which was chosen in accordance with the New York State Environmental Conservation Law (ECL).

This decision is based upon the Administrative Record of the New York State Department of Environmental Conservation (NYSDEC) for the Yonkers Downtown Waterfront Development Site, Phase 1, Operable Unit 1 (Parcel F), and upon public input to the Proposed Remedial Action Plan (PRAP) presented by the NYSDEC. A bibliography of the documents included as a part of the Administrative Record is included in Appendix B of the ROD.

Assessment of the Site

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

Description of Selected Remedy

Based upon the results of the Site Investigation/Remedial Alternatives Report (SI/RAR) for the Yonkers Downtown Waterfront Development Site, Phase 1, Operable Unit 1 (Parcel F), and the criteria identified for evaluation of alternatives the NYSDEC has selected Alternative 3. The components of the remedy are as follows:

1. A remedial design program to verify the components of the conceptual design and provide the details necessary for the construction, operation and maintenance, and monitoring of the remedial program. Any uncertainties identified during the SI/RAR will be resolved.

2. Placement of two feet of clean soil over areas designated as "green" areas in the Yonkers Waterfront Development Plan which are to be used in recreational or residential settings, such as lawns, gardens, parks, etc., where existing onsite soils would otherwise be exposed at the ground surface.

3. Access and use restrictions including, at a minimum, notification to NYSDEC if any intrusive activities are planned.

New York State Department of Health Acceptance

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

Declaration

The selected remedy is protective of human health and the environment, complies with State and Federal requirements that are legally applicable or relevant and appropriate to the remedial action to the extent practicable, and is cost effective.

12/4/98
Date

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

TABLE OF CONTENTS

FIGURES

TABLES

APPENDICES

SECTION 1 SITE LOCATION AND DESCRIPTION

The City of Yonkers' State assistance application for the Yonkers Downtown Waterfront Development Site, Phase 1, Environmental Restoration Project was approved by the New York State Department of Environmental Conservation (NYSDEC) on January 27, 1998. This property consists of approximately 10 acres along the eastern shore of the Hudson River in the City of Yonkers, Westchester County, New York (Figure 1). This waterfront property has a history of industrial use going back more than 100 years. This industrial history indicated the potential for soil and groundwater contamination, as discussed in a report titled "Phase I Environmental Site Assessment Report", dated April 1997.

This Record of Decision (ROD) for the Yonkers Downtown Waterfront Development Site specifically addresses only Parcel F (Figure 2). However this ROD, and the SI/RAR report it is based on, provides a technical discussion and conceptual remedial plan for two parcels, Parcels E and F. This ROD does not include remedies for Parcel E because it is being carried out under a different NYSDEC program. Parcel E is being conducted under the Voluntary Cleanup Program and Parcel F is being done as an Environmental Restoration (Brownfields) Project. Only work carried out under the Brownfields program is eligible for reimbursement (at a level of 75%) by the State.

Parcel F is being addressed as a separate operable unit, Operable Unit 1, in order to facilitate current development plans for this waterfront property which call for construction activities on this parcel (along with Parcel E) in Spring 1999. An operable unit represents a portion of the site remedy which, for technical or administrative reasons, can be addressed separately to eliminate or mitigate a release, threat of release or exposure pathway resulting from the site contamination.

The entire site (Phase I and Phase II parcels) boundaries are defined by: the Jack Frost Sugar facility to the south; the Hudson River to the west; the Habirshaw Athletic Club to the north; and the New York Central Railroad (NYCRR or Conrail) train tracks and Alexander Street to the east. Parcel E is abutted by the U.S. Lifesaving Corps the north, MetroNorth Railroad to the east, Parcel F across the Main Street cul-de-sac to the south and the Yonkers Recreational Pier and the Hudson River to the west.

Parcel J is the proposed promenade of the redevelopment plan, and will be located west-adjacent to all the waterfront parcels (Parcels A through I) along the Hudson River. In this study, Parcel J was not reported as a separate parcel, but was included with the adjacent Parcels E and F.

SECTION 2 SITE HISTORY

2.1 Operational/Disposal History

Parcel E - Parcel E, a 44,773 square foot property (approximately 1 acre), did not exist until some time between 1886 and 1917, at which time it was filled and utilized by the City of Yonkers Water Department and included a machine shop, stables, and store areas. The City of Yonkers Department of Public Works (DPW) occupied the site in 1951 until some time between 1971 and 1978 and included Water Bureau repairs, auto repairs and a boiler room. The City of Yonkers DPW leased the building to the Yonkers Post Office from 1978 to 1985. By 1991, the site was utilized as a wharf and is currently a grassed area with marble sculptures located on the western side of the parcel.

Parcel F - Parcel F, a 52,846 square foot property (approximately 1.2 acres), was occupied by cooper

smiths and a sugar house from before 1886 until some time before 1917, at which time it was used by a sugar refining company. By 1951, the site was occupied by a wire drawing mill that remained on-site until some time between 1971 and 1975. The Site was then occupied by the Four Star Beer Distributers until the building was demolished sometime before 1980. The site is currently utilized as a parking lot for the Scrimshaw House condominium building and an area formerly occupied by the Scrimshaw House Sales Pavilion, which had been located at the northwestern corner of the parcel. The sales pavilion was demolished in early 1998; the foundation remains.

2.2 Remedial History

A report titled "City of Yonkers Downtown Waterfront Master Plan, Phase 1 Environmental Site Assessment Report" was issued April 1997 by AKRF, Inc. for the City of Yonkers. The objective of this scope of work was to collect available published information and to identify potential areas where oil and hazardous materials are likely to be present at the Site. The study area of the above investigation consisted of 14.71 acres over 12 parcels, Parcels A through L (Figure 2).

The area of concern being addressed by this ROD includes Parcel F (along with a technical discussion of Parcel E) of the Phase 1 portion of the Yonkers Downtown Waterfront Project. Phase 1 includes Parcels C (southern portion), D, E (under the Voluntary Cleanup Program), F, H, I and portions of J. The remaining parcels will be subsequently addressed under separate operable units. Figure 2 illustrates areas encompassing Phase 1, Phase 2 and Parcels E and F.

No prior remedial actions are known to have occurred on Parcels E and F.

SECTION 3 CURRENT STATUS

To determine the nature and extent of any contamination by hazardous substances of this environmental restoration site, the City of Yonkers has recently completed a Site Investigation/Remedial Alternatives Report (SI/RAR).

3.1 Summary of the Site Investigation

The purpose of the SI was to define the nature and extent of any contamination resulting from previous activities at the site.

The SI was conducted between May 1998 and August 1998. A report entitled "Site Investigation for Phase I, Parcels E and F, Yonkers Downtown Waterfront Project Site" has been prepared describing the field activities and findings of the SI in detail.

The SI included the following activities:

- Grid survey
- Soil gas survey
- Electromagnetic survey
- Ground penetrating radar
- Test pits
- Soil borings and monitoring wells

- Monitoring well sampling
- Surface soil sampling
- Background soil sampling
- TCLP analysis of select soil samples
- Monitoring well elevation survey

To determine which media (soil, groundwater, etc.) contain contamination at levels of concern, the SI analytical data were compared to environmental Standards, Criteria, and Guidance (SCGs). Groundwater, drinking water and surface water SCGs identified for the Yonkers Downtown Waterfront Site were based on NYSDEC Ambient Water Quality Standards and Guidance Values and Part V of NYS Sanitary Code. NYSDEC TAGM 4046 soil cleanup guidelines for the protection of groundwater, background conditions and risk-based remediation criteria are all used as SCGs for soils.

Chemical concentrations are reported in parts per billion (ppb) and parts per million (ppm). For comparison purposes, SCGs are given for each medium (Tables 1 through 4).

3.1.1 Nature and Extent of Contamination

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

3.1.1.1 Soil Gas Survey

The soil gas survey was conducted to better delineate the areas where soil borings, monitoring wells, and test pits should be located. This procedure is performed by surveying the levels of volatile compounds found in pockets of gases in the soil. Sampling points for the soil gas survey were chosen to obtain adequate coverage of Parcels E and F, and were also based on information obtained during the electromagnetic (EM) and ground penetrating radar (GPR) surveys described in Sections 3.1.1.2 and 3.1.1.3.

Parcel E - The results of the soil gas survey indicated possible sources of contamination in the southern corner of the parcel, south of the sculpture area and the northeastern corner of the parcel. EM results also indicated anomalies in this area. Based on these findings, borings and monitoring well locations were selected. The soil gas sampling locations and contaminant concentrations are presented in Figure 3.

Parcel F - The results of the soil gas survey indicated possible sources of contamination in the southwestern and the north-central sections of the parcel. Electromagnetic (EM) survey results also indicated anomalies in the southwestern area of the parcel. The soil gas sampling locations and concentrations are presented in Figure 4.

3.1.1.2 Electromagnetic Survey

The electromagnetic (EM) survey was performed to determine the possible existence of underground storage tanks and other subsurface metallic features which may be a source of contamination. Signal interference from surficial and buried objects such as steel cable, wires, rebar, metallic refuse, cars, fencing etc., are common.

Parcel E - The EM survey for Parcel E indicated one possible underground storage tank and several possible subsurface pipes. These locations were investigated further through other field screening surveys and test pit excavations. No underground storage tanks or pipes were identified.

Parcel F - The EM survey for Parcel F indicated anomalies in the south-central portion of the parcel, the central area of the parcel, and the northeast corner of the parcel. An anomaly with the possible fingerprint of a buried tank was detected in the north-central region of the parcel, however, test pits and borings in these areas showed no underground storage tanks or pipes.

3.1.1.3 Ground Penetrating Radar

A ground penetrating radar (GPR) survey was conducted to better delineate the anomalies detected during the EM survey and areas where the EM survey could not be conducted. The GPR can detect the shape of buried objects, and can delineate drums and tanks.

Parcel E - The results of the GPR survey indicated possible subsurface features for Parcel E in the central southern portion, the southwestern corner, and the central northern portion. Based on these findings in conjunction with the EM survey results, the locations of test pits TP-1E, TP-3E and TP-5E were selected.

Parcel F - The results of the GPR survey provided no evidence that underground storage tanks were located on Parcel F.

3.1.1.4 Test Pits

The combined results of the EM survey, the GPR survey, and soil gas survey were used to determine the location of test pits. Test pit locations are presented on Figures 5 and 6.

Parcel E - Six test pits were excavated on Parcel E. Based on organic vapor readings and visual inspection, four soil samples from the test pits were collected and submitted for laboratory analysis.

Test pits TP-1E and TP-2E were excavated in the sculpture area of Parcel E based on preliminary GPR survey results that indicated the presence of two possible underground storage tanks. No tanks were located with the test pits. Soil observed in test pits TP-1E and TP-2E consisted of black sand and gravel. Soils from TP-1E had a strong petroleum odor while TP-2E had a slight petroleum odor. Test pits TP-3E, TP-4E, and TP-6E were excavated on the southern portion of Parcel E. Soil encountered in these test pits consisted of brown to black sand, gravel and ash fill. The soil from the test pit TP-3E had a moderate petroleum odor. Test Pit TP-5E was excavated along the entire northern portion of Parcel E. Soil observed in this test pit consisted of brown sand and gravel fill. No odor was noted in this test pit. Based on the soil composition, visual observation, and lack of odor, no soil samples were collected from test pit TP-5E.

Parcel F - Five test pits were excavated on Parcel F. Based on organic vapor readings and visual inspection, four soil samples from the test pits were collected and submitted for laboratory analysis.

Test pit TP-1F was excavated in the northern portion of Parcel F. Concrete block and scrap metal were observed in this excavation. The soil observed consisted of black sand and gravel fill. Four test pits were excavated along the western portion of the parcel within the visitor parking area. Concrete foundations were encountered at approximately three to four feet below grade in test pits TP-2F, TP-4F and TP-5F.

Plastic coated wires and concrete block were encountered in test pit TP-4F. Miscellaneous metal and PVC piping were observed in test pits TP-2F and TP-5F. Soil from these test pits consisted of brown and dark brown sand and gravel fill. Soil samples were collected from test pits TP-1F, TP-3F, TP-4F and TP-5F and a groundwater sample was collected from test pit TP-3F.

Analytical Results of Test Pit Samples From Parcel E and F - VOCs did not exceed NYSDEC Soil Clean-up Objectives in any of the samples. Several semivolatile compounds (SVOCs) exceed NYSDEC Soil Clean-up Objectives, however, most are comparable to background samples collected east of the Site. Levels of SVOCs on Parcel E and F are consistent with a property with previous industrial uses including disposal of construction and demolition debris. Some of the test pit samples show elevated levels of tar-type compounds, typical of properties where urban fill (including asphalt) has been disposed, as was found on these parcels. No detectable levels of pesticides or polychlorinated biphenyls (PCBs) were found. Inorganic (metals) levels on Parcel E and F were found at or below Soil Clean-up Objectives or similar to background samples. Additional soil samples were analyzed using the Toxicity Characteristic Leaching Procedure (TCLP), a laboratory procedure used to measure the potential for metals to leach from soils. No metals exceeded the NYSDEC regulatory level and, therefore, soils are not considered hazardous. Tables 1 and 2 summarize the SVOC data for test pit samples.

3.1.1.5 Soil Borings and Monitoring Wells

Based on the results of the field screening activities, borings and monitoring wells were installed on Parcels E and F. The purpose of this work was to characterize subsurface conditions including groundwater quality both upgradient and downgradient of the parcels. Soil boring and monitoring well locations are presented on Figures 5 and 6.

Parcel E - Three soil borings were advanced on Parcel E; two borings were located on the southwestern portion of the parcel (B-2E and B-3E) and the third was located in the northeast corner (B-1E). However, based on visual observations and lack of odor, no soil samples were sent for laboratory analysis.

Two of the soil borings, B-1E and B-3E, were retrofitted as monitoring wells, MW-1E and MW-3E. Monitoring well MW-1E was installed to serve as an upgradient well. Monitoring well MW-3E was installed to serve as a downgradient well and was located in an area where anomalies were detected in the GPR survey, elevated levels of volatile organic compounds were observed in the soil gas survey, and odors and stained soils were noted in the two test pits excavated in this area.

Parcel F - Based on the results of the field screening activities, ten soil borings were advanced on Parcel F, predominantly along the west (downgradient) and east (upgradient) sides of the parcel. Many of the borings met refusal at shallow depths due to the presence of a concrete foundation within a few feet of the surface and, as such, no samples were collected. Four soil boring samples were collected from borings B-1F, B-2F, B-4F and B-5F.

Two monitoring wells were installed on Parcel F. MW-4BF was installed on the northeastern end of the parcel to serve as an upgradient well and MW-6F was installed downgradient, on the southwestern corner of the parcel.

Analytical Results of Soil Boring Samples From Parcels E and F - Soil boring samples had a similar chemistry as test pit samples. VOCs were not found to exceed NYSDEC Soil Clean-up Objectives in any

of the samples. Several semivolatile compounds (SVOCs) exceed NYSDEC Soil Clean-up Objectives, however, most are comparable to background samples collected east of the Site. Levels of SVOCs on Parcel E and F are consistent with a property with previous industrial uses. No detectable levels of pesticides or polychlorinated biphenyls (PCBs) were found. Inorganic levels on Parcel E and F were found at or below Soil Clean-up Objectives or similar to background samples. As with some of the test pit samples, additional soil samples were analyzed using the Toxicity Characteristic Leaching Procedure (TCLP). No metals exceeded the NYSDEC regulatory level and, therefore, soils are not considered hazardous. Tables 1 and 2 summarize the SVOC data for soil boring samples.

Analytical Results of Groundwater Samples From Parcel E and F - No VOCs, SVOCs, PCBs or pesticides exceeded NYSDEC Water Quality Standards in groundwater samples collected from Parcels E and F. Two rounds of groundwater samples were collected for inorganic analysis, the first round samples were unfiltered and the second round samples were filtered. The unfiltered samples were noted to be turbid with high levels of undissolved constituents. Numerous metals exceeded NYSDEC Water Quality Standards in unfiltered samples, from both upgradient and downgradient samples. Filtered samples showed no exceedances of NYSDEC Water Quality Standards for metals except for sodium, magnesium, iron and manganese. The elevated levels of sodium and magnesium were found in monitoring well MW-6F, located approximately 20 feet from the Hudson River, where brackish groundwater conditions exist. Tables 3 and 4 summarize the inorganic data for groundwater samples (both filtered and unfiltered samples).

3.1.1.6 Surface Soil Sampling

Surface soil samples were collected to determine conditions at the surface in areas where the waterfront development plans call for "green" areas where the existing surface soils may potentially be exposed in park, lawn or garden settings. Surface sample locations are presented on Figure 5.

Parcel E - Two surface samples (0 to 6 inches) were collected on the eastern portion of Parcel E.

Parcel F - No surface samples were collected on Parcel F because the surface material was not considered representative of what is normally thought of as a surface soil. Parcel F is used as a parking lot for the adjacent Scrimshaw condominium complex. This parking lot surface consists of a thick gravel layer, lacking soil material. In lieu of sampling this surface material, soil samples were collected beneath this gravel layer.

Analytical Results of Surface Soil Samples From Parcel E - Results were similar to those found for test pit and soil boring samples. VOCs, PCB's and pesticides were either not present or present at concentrations below NYSDEC Soil Cleanup Objectives. Several SVOCs exceeded NYSDEC Soil Clean-up Objectives, however, levels were comparable to background samples collected east of the Site. Inorganic levels in surface samples collected from Parcel E were present at or below Soil Clean-up Objectives or similar to background samples. Table 1 summarizes the SVOC data for surface soil samples.

3.1.1.7 Background Soil Sampling

Background soil samples were collected to establish soil quality at a location upgradient of the Yonkers Site, away from the influence of any potential site-related contamination. This data provides an indicator of potential upgradient source areas as well as providing a measure of typical soil chemistry for this area for comparison to data collected on site. Three samples were collected east of the site on grassy areas along

municipal streets. The locations of these samples are shown on Figure 7.

Analytical Results of Background Soil Samples - Background surface soil samples were analyzed for SVOCs and metals. As with the onsite soil samples, several SVOCs exceeded NYSDEC Soil Clean-up Objectives, typical for areas which have a history of past industrial use. Mercury was the only inorganic which was anomalously high in background samples. Mercury levels in the three samples ranged from 0.14 ppm to 1.4 ppm, exceeding the Soil Cleanup Objective of 0.1 ppm. The average background level of 0.61 ppm is above the average onsite concentration of 0.32 ppm. Tables 1 and 2 include the SVOC data for background soil samples.

3.1.2 General Topography and Hydrogeology

The topography of the Yonkers Site is relatively flat with site elevations ranging from 5 to 10 feet above sea level. Groundwater generally flows west toward the Hudson River (Figure 7), except as influenced by tidal fluctuations immediately adjacent to the River.

Accounts of the early history of this waterfront property, along with historical areal photographs, indicate that significant fill material was introduced along the River to expand the property westward. Site investigations on Parcels E and F confirm this to be the case. All subsurface investigations encountered fill materials down to the River elevation (6 to 8 feet below ground surface). Below this depth, native soils were encountered consisting of fine to medium sands with some silt and clay.

3.1.3 Private Water Supply Wells

The study area is connected to a municipal water supply. No private wells are known to exist on or adjacent to this property.

3.2 Interim Remedial Measures

Interim Remedial Measures (IRMs) are conducted at sites when a source of contamination or exposure pathway can be effectively addressed before completion of the SI/RAR. No IRM's are known to have been carried out at this Site.

3.3 Summary of Human Exposure Pathways

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

An exposure pathway is how an individual may come into contact with a contaminant. The five elements of an exposure pathway are 1) the source of contamination; 2) the environmental media and transport mechanisms; 3) the point of exposure; 4) the route of exposure; and 5) the receptor population. These elements of an exposure pathway may be based on past, present, or future events.

Human exposure pathways known to presently exist, that have historically existed, or may exist in the future at the Site, include:

Direct contact with (dermal absorption) and ingestion of contaminated soils through residential use.

This potential human exposure pathway at the Yonkers Downtown Waterfront Site, Parcel F, includes dermal contact and ingestion of surface and subsurface soils. This pathway would be addressed through the remedial actions to be implemented at the Site.

3.4 Summary of Environmental Exposure Pathways

No pathways for environmental exposure have been identified for this site.

SECTION 4 ENFORCEMENT STATUS

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

Since no viable PRPs have been identified, there are currently no ongoing enforcement actions. However, legal action may be initiated at a future date by the State to recover State response costs should PRPs be identified. The City of Yonkers will assist the State in its efforts by providing all information to the State which identifies PRPs. The City of Yonkers will also not enter into any agreement regarding response costs without the approval of the NYSDEC.

SECTION 5 SUMMARY OF THE REMEDIATION GOALS

Goals for the remedial program have been established through the remedy selection process stated in 6 NYCRR Part 375-1.10. The overall remedial goal is to meet all Standards, Criteria, and Guidance (SCGs) and be protective of human health and the environment.

The proposed future use for the Yonkers Downtown Waterfront Site, Parcel F, would include residential, commercial and recreational elements. The goals selected for this site are:

- Reduce, control, or eliminate to the extent practicable the contamination present within the surface soils on site.
- Eliminate the potential for direct human contact with contaminated surface soils on site.
- Provide for attainment of SCGs for contaminated surface soils at the limits of the area of concern (AOC), to the extent practicable.

SECTION 6 SUMMARY OF THE EVALUATION OF ALTERNATIVES

The selected remedy should be protective of human health and the environment, be cost effective, comply with other statutory laws and utilize permanent solutions, alternative technologies or resource recovery technologies to the maximum extent practicable. Potential remedial alternatives for the Yonkers Downtown Waterfront Site, Parcel F, were identified, screened and evaluated in a Remedial Alternatives Report (RAR). This evaluation is presented in the report entitled "Site Investigation/Remedial Alternatives Report for Phase I, Parcels E and F, Yonkers Downtown Waterfront Project Site" dated August 1998.

A summary of the detailed analysis follows. As used in the following text, the time to implement reflects only the time required to implement the remedy, and does not include the time required to design the

remedy or procure contracts for design and construction.

6.1 Description of Remedial Alternatives

The potential remedies are intended to achieve the established remedial goals for the SVOC-contaminated soils on Parcel F of the Yonkers Downtown Waterfront Development Site.

Alterative 1 No Action

Present Worth:	$ 0
Capital Cost:	$ 0
Total Present Worth O&M:	$ 0
Time to Implement:	0 years

The no action alternative is evaluated as a procedural requirement and as a basis for comparison. It requires continued monitoring only, allowing the Site to remain in an unremediated state. This alternative would leave the Site in its present condition and would not provide any additional protection to human health. This would be unacceptable for future development plans which call for residential occupancy for Parcel F. Under its current use, which includes parking and park areas, there is no unacceptable risk to human health.

Under the no action alternative, no measures would be taken to remove or contain the contaminated soil. However, this alternative presumes that access and use restrictions would be maintained.

Alternative 2 Excavation and Offsite Disposal

Present Worth:	$500,000
Capital Cost:	$500,000
Total Present Worth O&M:	$ 0
Time to Implement	1 year

The volumes of soil that would be likely to exceed the TAGM 4046 soil clean-up objectives is estimated to be 5,000 cubic yards (estimated as 50% of the soils above the water table on Parcel F). Exact areas and volumes may be higher or lower, but could not be determined without further testing.

Under Alternative 2, the soil would be removed using conventional excavation techniques and the resultant excavation would be backfilled using environmentally clean fill. To minimize the potential for post-construction settlement, the fill would be placed and mechanically compacted. During excavation and backfilling activities, proper surface water management measures would be implemented.
Excavated soil would be stockpiled in varying amounts (typically from 200 to 2,000 cubic yards). Representative samples from each stockpile would be collected and analyzed for chemical characteristics.

The soils determined to exceed soil cleanup criteria would be transported to an appropriate off-site disposal facility. Based on samples tested during the Site Investigation, it is assumed that the soil does not meet the definition of a characteristic hazardous waste (no samples from the site exceeded the hazardous waste thresholds). As such, soils would be taken to a solid waste landfill approved to dispose of such materials. If it is determined that any soil is hazardous, it would have to be taken to an appropriate (RCRA-permitted)

hazardous waste landfill.

Alternative 3 Soil Capping

Present Worth:	$ 30,000
Capital Cost:	$ 30,000
Total Present Worth O&M:	$ 0
Time to Implement	6 months

This technology consists of placing a clean soil cover above the contaminated soil. A two foot soil cover in "green" areas would provide sufficient protection to mitigate the potential for exposure to contaminated soils. Green areas would include those areas of Parcel F which, based on the proposed waterfront development plans, are not covered by buildings, parking areas, sidewalks, etc. These would include such areas as the proposed promenade along the River and garden, recreational or other areas where soil would be exposed at the ground surface. Because the proposed waterfront development plans call for raising the final elevation of the property to comply with the 100 year flood plain elevation requirement of 10 feet above sea level, clean fill will be introduced to these green areas to meet this requirement. It is anticipated that only 300 cubic yards of additional soil will be needed to make up the balance of fill material necessary to complete the cap for Parcel F.

6.2 Evaluation of Remedial Alternatives

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

1. Compliance with New York State Standards, Criteria, and Guidance (SCGs) Compliance with SCGs addresses whether or not a remedy will meet applicable environmental laws, regulations, standards, and guidance. The relevant SCGs for this Site include soil guidance values (Technical and Administrative Guidance Memorandum No. 4046, "Determination of Soil Cleanup Objectives and Cleanup Levels") groundwater standards (NYSDEC Division of Water Technical and Operational Guidance Series 1.1.1, "Ambient Water Quality Standards and Guidance Values") and drinking water standards (NYSDOH Part 5 of the New York State Sanitary Code, Drinking Water Supplies).

The no action alternative is unacceptable as it does not address the remedial action objectives for this Site. Specifically, since contaminated soils would be left unremediated for a planned residential use, the no action alternative would not comply with SCGs.

Alternatives 2 and 3 would achieve compliance with SCGs through contaminant removal or containment. Access and use restrictions following implementation of Alternatives 1 and 3 would apply. Since Alternative 2 includes removal of all contaminated soil which exceeds soil cleanup criteria, no such restrictions would apply.

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

The no action alternative would not be protective of human health as the potential to be exposed to contamination would remain. This alternative would not provide for removal or control of contaminated soils. This potential exposure scenario would only apply to residential use, the proposed use for this property based on the current waterfront development plans. Under its current use, a parking lot and park, no unacceptable risk would exist.

Alternatives 2 and 3 would be protective of human health through removal or isolation of the contaminated soils. Alternative 2, excavation and offsite disposal of contaminated soil, would eliminate onsite contamination so that future use and access restrictions would no longer apply to these parcels. Alternatives 1 and 3 would leave contamination onsite and, as such, would require access and use restrictions.

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

Since there are no actions proposed for Alternative 1, there are no short-term effects associated with this alternative.

Alternative 2 includes excavation and offsite disposal of contaminated soils. Implementation of this alternative would pose short-term effects during excavation and transportation to an offsite landfill. Based on the volume of material generated for this alternative, the potential short-term effects, including potential exposure to the community and the environment during transportation, would be considerable.

There would be minimal short-term effects associated with Alternative 3, capping.

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

The no action alternative would not be effective in the long term. This alternative would not provide for removal or control of contaminated soils, and therefore, would not reduce any existing or future potential risks from the onsite contamination.

Alternatives 2 and 3 would both be protective in the long-term through contaminant removal or a protective cover with access and use restrictions.

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

The no action alternative would not reduce the toxicity, mobility or volume of the waste.

Alternative 2 would include offsite disposal of contaminated soil at a solid or hazardous waste landfill and would reduce the mobility and volume of this waste with respect to the Site.

Alternative 3 would reduce the mobility of the contamination by reducing its exposure to environmental

factors including wind and precipitation. While the toxicity and volume of the waste would remain unchanged, the potential threat to human health or the environment would be reduced since the waste would be contained.

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

All of the alternatives are implementable. The material and personnel for each alternative should be readily available at a reasonable cost in this region.

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

The no action alternative would be the least costly alternative, having no associated costs, however, without acceptable resolution of the potential impacts of the contaminated soils, the property might not be usable and delays associated with future development of the Site may occur.

The costs for Alternative 2 include excavation, loading, transport and disposal of contaminated soil, purchase and placement of clean backfill and necessary health and safety activities, testing and oversight. Excavation, disposal and backfill of an estimated 5,000 cubic yards of contaminated soil would be expected to have a capital cost of approximately $500,000. Minimal operation and maintenance costs would be associated with this alternative.

Since most of the site is planned to be capped with either buildings, pavement or soil during construction, which would include raising the site elevation to meet the 100 year flood plain elevation requirements, the only additional costs associated with Alternative 3 are those relating to the introduction of small amounts of clean soil to address those areas where the two foot cap requirement would not be met by the 100 year flood plain elevation requirement. Although designs for development of the site are not complete, it would be likely that only a narrow strip along the river would require these additional costs. Total costs for Alternative 3, which includes only capital costs of the soil cap (operation and maintenance costs are expected to be very minimal), is estimated to be $30,000.

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

8. Community Acceptance Concerns of the community regarding the SI/RAR report and the Proposed Remedial Action Plan are evaluated. A "Responsiveness Summary" has been prepared that describes public comments received and how the Department has addressed the concerns raised (see Appendix A).

SECTION 7 SUMMARY OF THE SELECTED REMEDY

Based upon the results of the SI/RAR, and the evaluation presented in Section 6, the NYSDEC has selected Alternative 3, Soil Capping, as the remedy for this site.

Alternative 3 has been selected because it is the most cost effective remedial action which will address the remedial objectives for this site. Specifically, contaminated soils will be isolated under a protective soil cap which will be designed to eliminate or significantly reduce the potential for risks associated with direct exposure in a residential setting, the planned future use for Parcel F. In addition, access and use restrictions for Parcel F will be in affect so that accidental exposure through excavation activities will be minimized. These restrictions will likely include notification to NYSDEC if any intrusive activities are planned.

While Alternative 2 (excavation and offsite disposal) and Alternative 3 (capping) would both achieve the remedial objectives for the contaminated soils onsite, Alternative 2 is estimated to be 15 to 20 times more costly.

The estimated present worth cost to implement the remedy is $ 30,000. The cost to construct the remedy is estimated to be $ 30,000. The long-term monitoring cost and operation and maintenance cost for Alternative 3 are expected to be minimal.

The elements of the selected remedy are as follows:

1. A remedial design program to verify the components of the conceptual design and provide the details necessary for the construction, operation and maintenance, and monitoring of the remedial program. Any uncertainties identified during the SI/RAR will be resolved.

2. Placement of two feet of clean soil over areas designated as "green" areas in the Yonkers Waterfront Development Plan which are to be used in recreational or residential settings, such as lawns, gardens, parks, etc., where existing onsite soils would otherwise be exposed at the ground surface.

3. Access and use restrictions including, at a minimum, notification to NYSDEC if any intrusive activities are planned.

SECTION 8 HIGHLIGHTS OF COMMUNITY PARTICIPATION

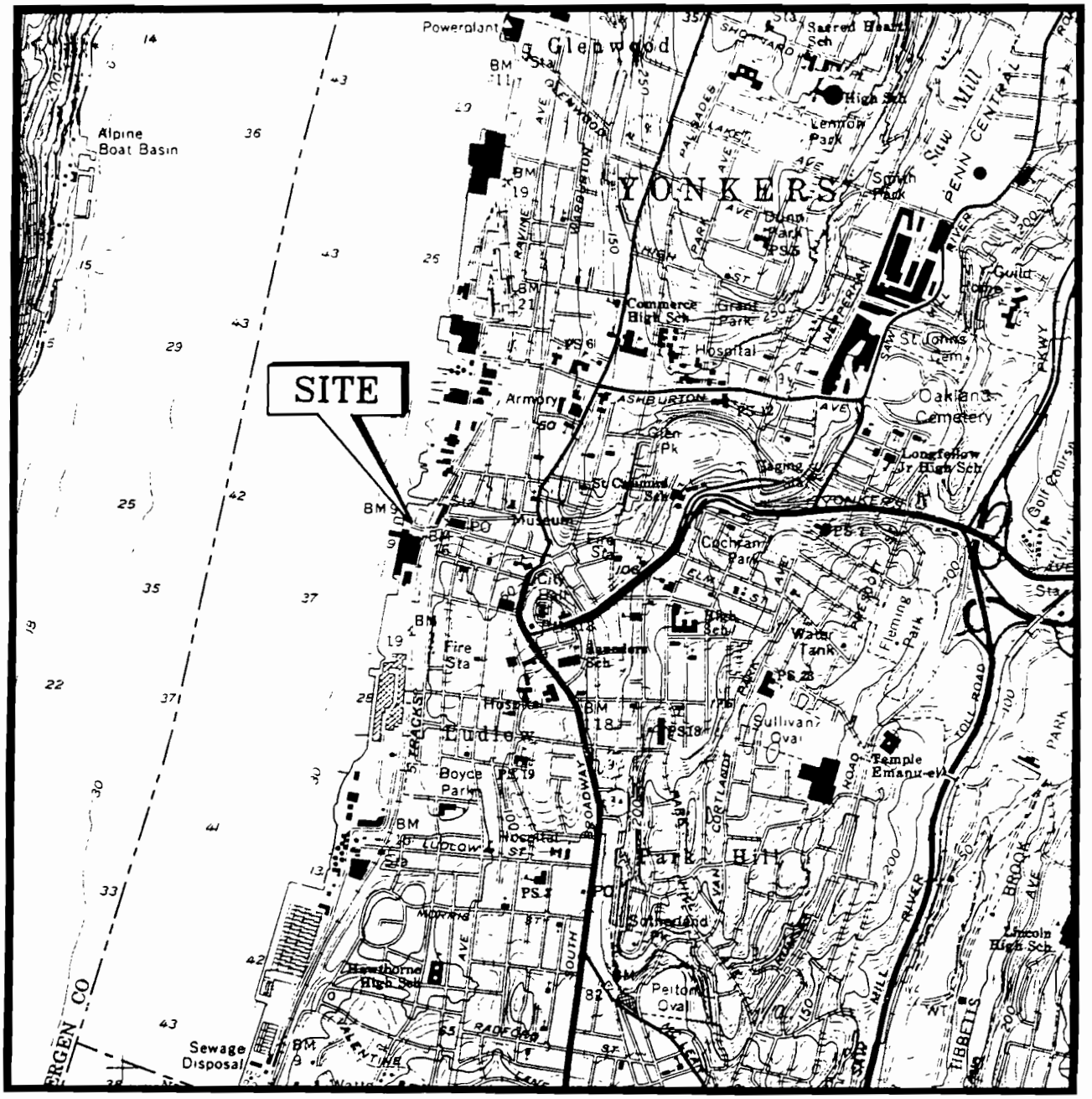
As part of the remedial investigation process, a number of Citizen Participation (CP) activities were undertaken in an effort to inform and educate the public about conditions at the site and the potential remedial alternatives. The following public participation activities were conducted for the site:

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

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

- A fact sheet was issued and a public meeting was held on October 6, 1998 to present the Proposed Remedial Action Plan for the Site.

- In November 1998 a Responsiveness Summary was prepared and made available to the public to address the comments received during the public comment period for the PRAP, held between September 11, 1998 and October 25, 1998.

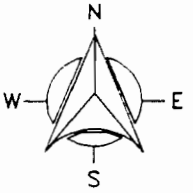


SCALE IN FEET

0' 500' 1000' 1500' 2000' 3000' 4000'

SCALE: 1"=2000'

QUADRANGLE LOCATION



SOURCE:

USGS TOPOGRAPHIC MAP – YONKERS, N.Y.–N.J.
QUADRANGLE – DATED 1966, PHOTOREVISION 1979.

YONKERS WATERFRONT DEVELOPEMENT
YONKERS, NEW YORK

SITE LOCATION MAP

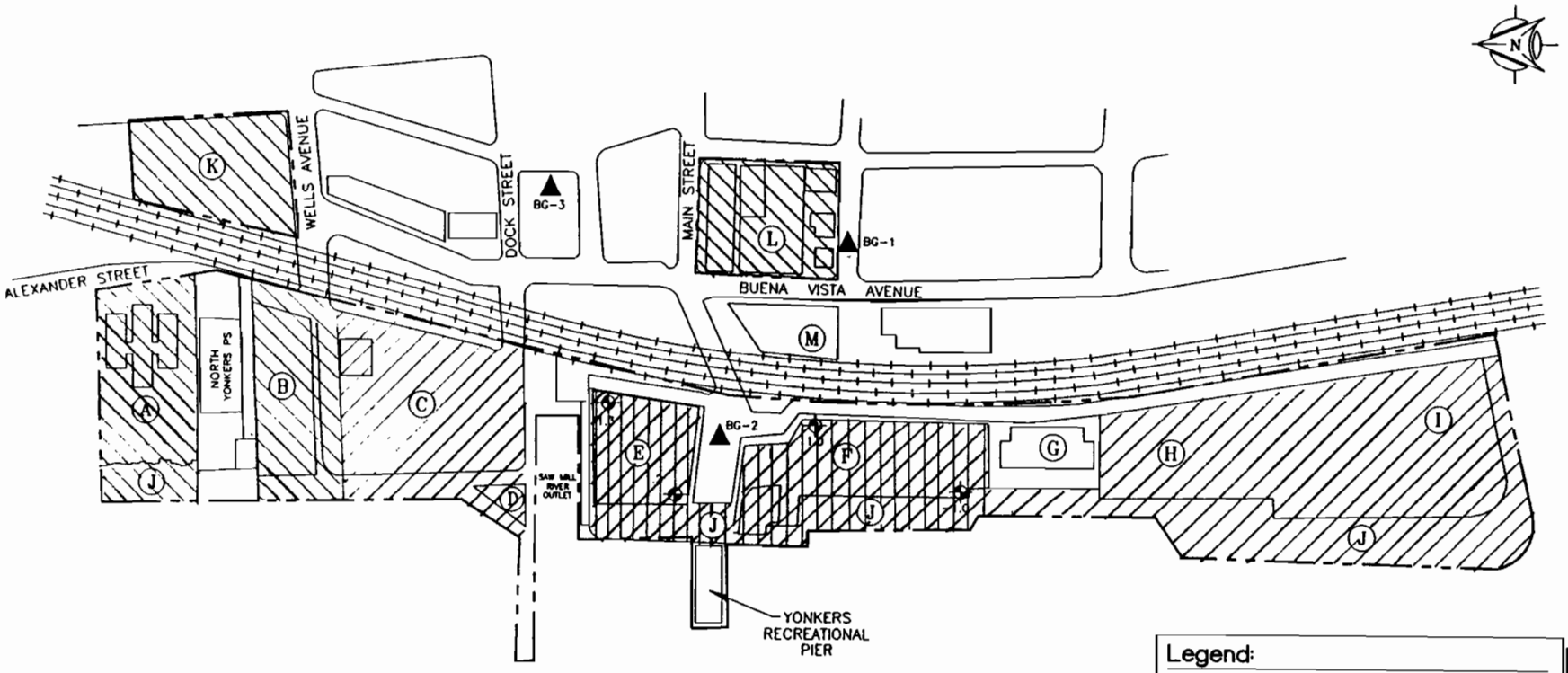
AKRF, Inc.

Environmental Consultants
34 South Broadway White Plains, N.Y. 10601

DATE 6/26/98

PROJECT No. 70004

FIGURE No 1



PHASE 1 PARCELS
CURRENTLY OWNED BY CITY OF YONKERS

PHASE 2 PARCELS
NOT CURRENTLY OWNED BY CITY OF YONKERS

PHASE 1 PARCELS E AND F

Notes:

1. GROUND WATER ELEVATION BASED ON SURVEY PERFORMED ON 6/19/98 AND 7/27/98 BY MUNOZ ENGINEERING.
2. DEPTH TO GROUNDWATER MEASUREMENTS TAKEN ON JULY 16, 1998 DURING LOW TIDE.

Legend:

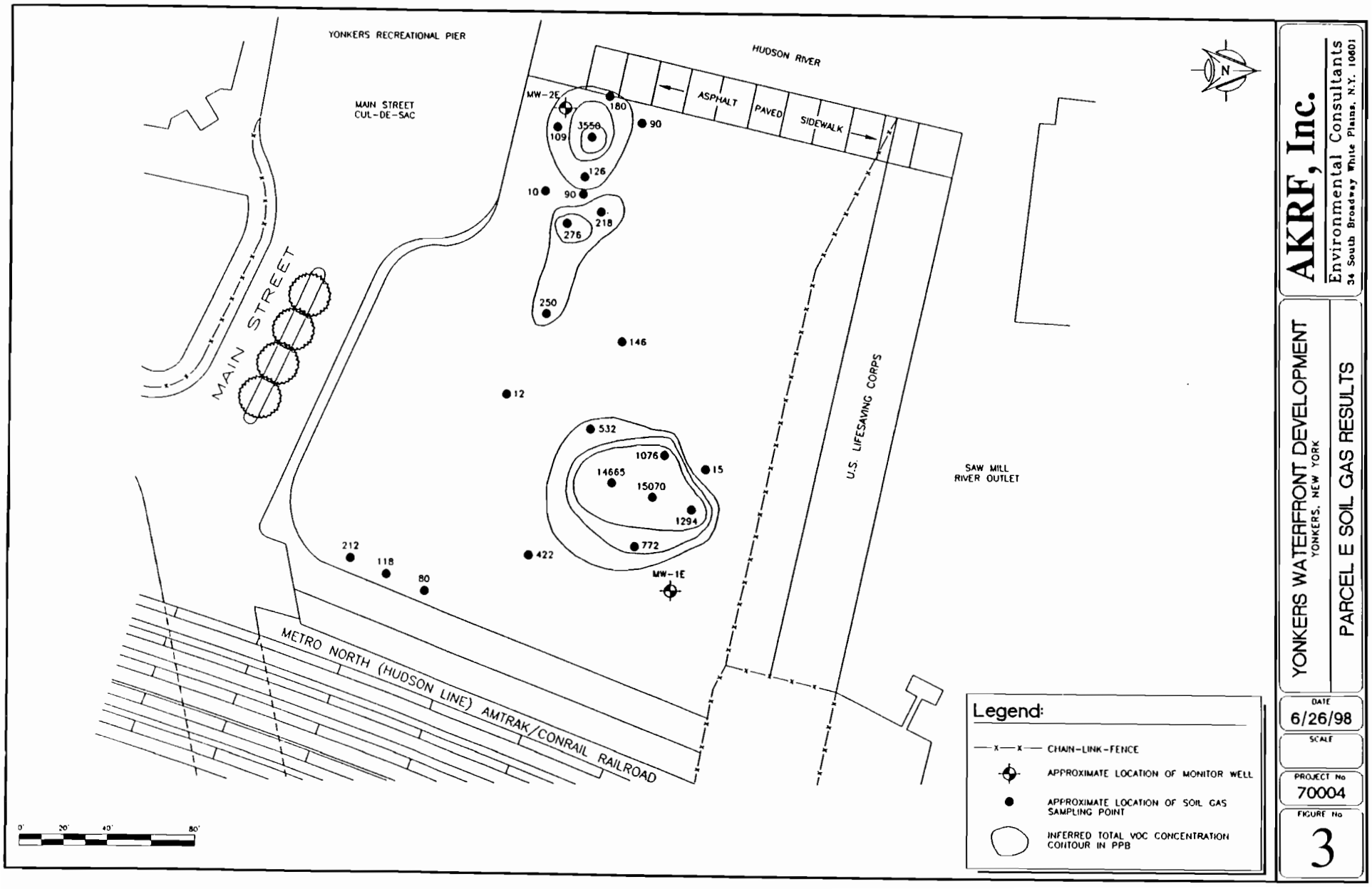
- STUDY SITE BOUNDARY
- RAILROAD STATION
- BG-1 — BACKGROUND SOIL SAMPLE COLLECTED ON JUNE 18, 1998.
- 1.3 — APPROXIMATE LOCATION OF MONITOR WELL AND GROUNDWATER ELEVATION (NGVD)
- (A) — BECZAK ENVIRONMENTAL CENTER; POLICE ATHLETIC LEAGUE; CITY OF YONKERS PARKS DEPT.
- (B) — YONKERS CONTRACTING CO. STORAGE LOT
- (C)(D) — YONKERS PARKING AUTHORITY LOT
- (E) — UNDEVELOPED LAND
- (F) — SCRIMSHAW PARKING LOT
- (G) — SCRIMSHAW HOUSE CONDOMINIUM
- (H)(I) — SOUTHERNMOST VACANT LOT
- (K) — 2-2010 PROPOSED PARKING LOT
- (L) — 1-513 PROPOSED PARKING LOT

AKRF, Inc.
Environmental Consultants
34 South Broadway White Plains, N.Y. 10601

YONKERS WATERFRONT DEVELOPMENT
YONKERS, NEW YORK

SITE PLAN

DATE: 6/26/98
SCALE: N.T.S.
PROJECT No: 70004
FIGURE No: 2



AKRF, Inc.
Environmental Consultants
34 South Broadway White Plains, N.Y. 10601

YONKERS WATERFRONT DEVELOPMENT
YONKERS, NEW YORK

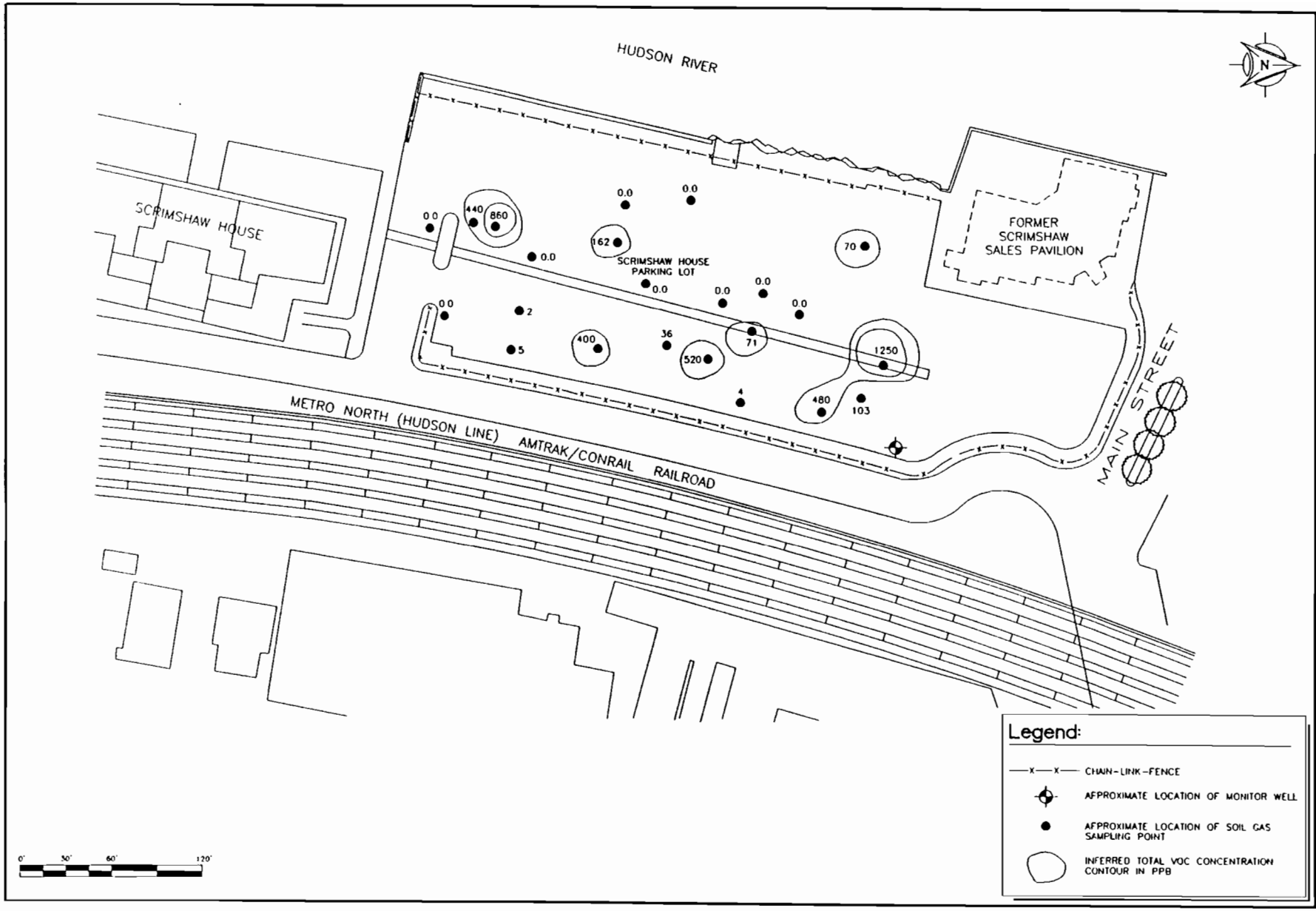
PARCEL E SOIL GAS RESULTS

DATE 6/26/98

SCALE

PROJECT No 70004

FIGURE No 3



AKRF, Inc.
Environmental Consultants
34 South Broadway White Plains, N.Y. 10601

YONKERS WATERFRONT DEVELOPMENT
YONKERS, NEW YORK

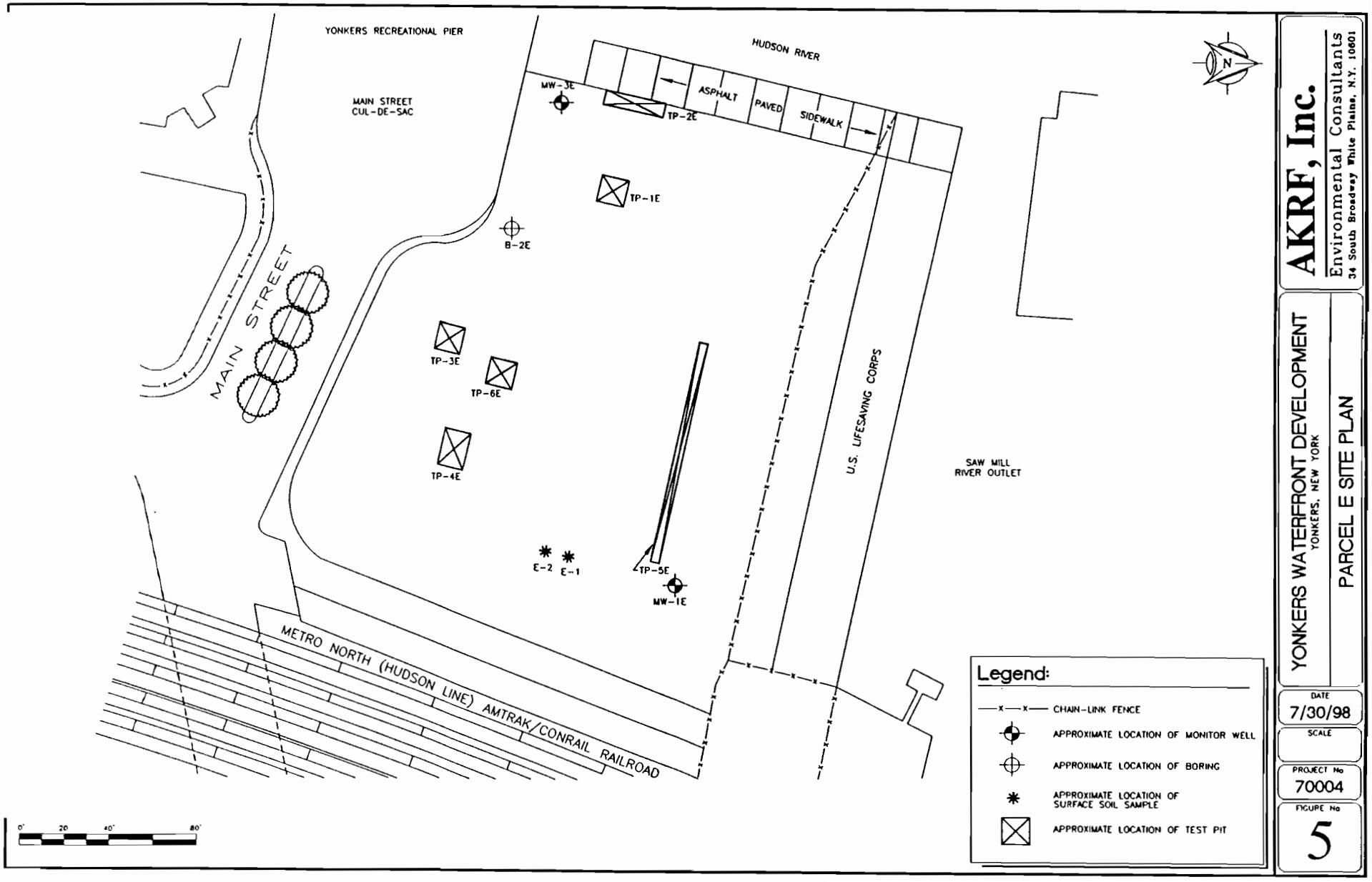
PARCEL F SOIL GAS RESULTS

DATE 6/26/98

SCALE

PROJECT No 70004

FIGURE No 4



AKRF, Inc.
Environmental Consultants
34 South Broadway White Plains, N.Y. 10601

YONKERS WATERFRONT DEVELOPMENT
YONKERS, NEW YORK

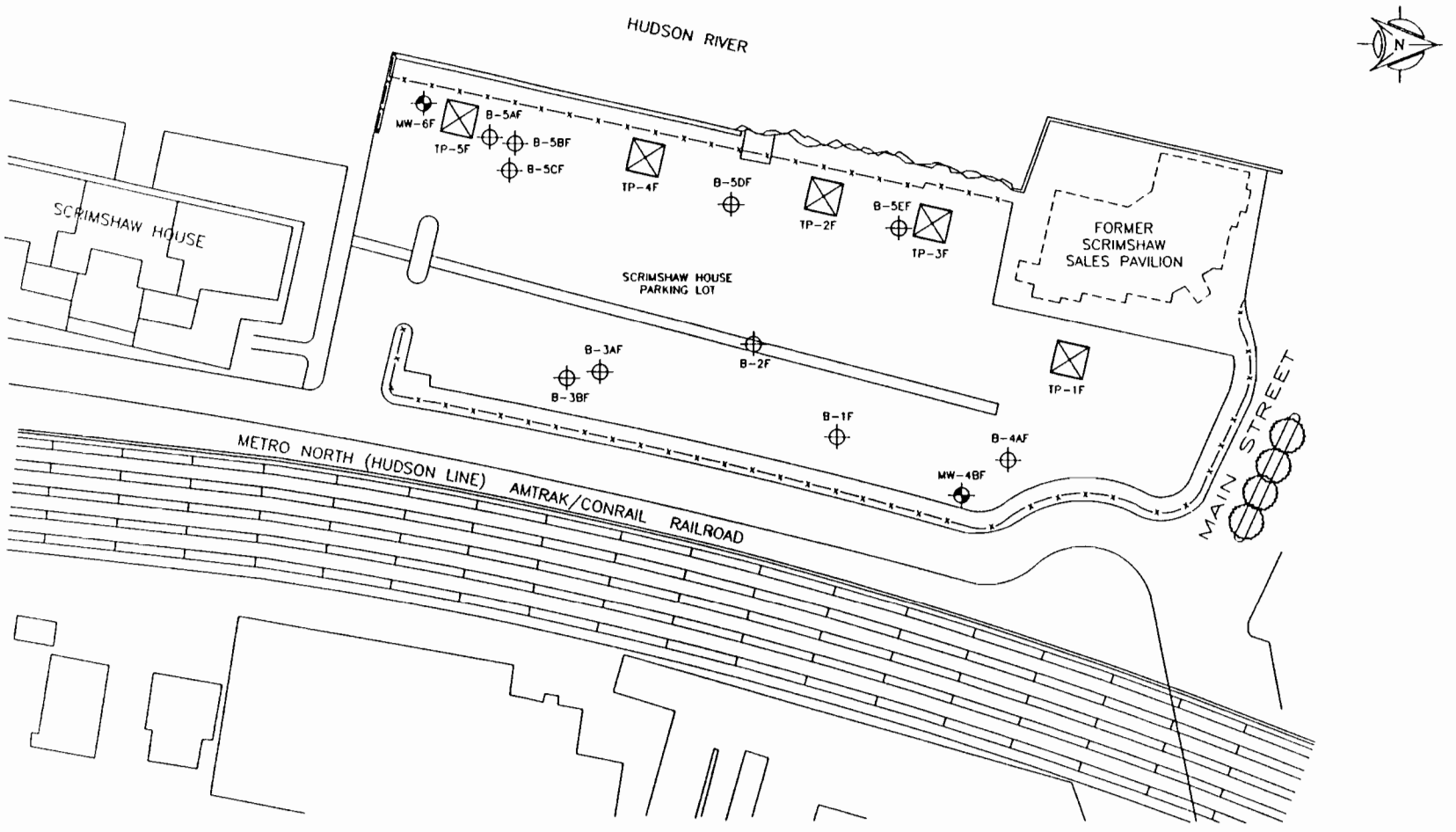
PARCEL E SITE PLAN

DATE 7/30/98

SCALE

PROJECT No 70004

FIGURE No 5



AKRF, Inc.
Environmental Consultants
34 South Broadway White Plains, N.Y. 10601

YONKERS WATERFRONT DEVELOPMENT
YONKERS, NEW YORK

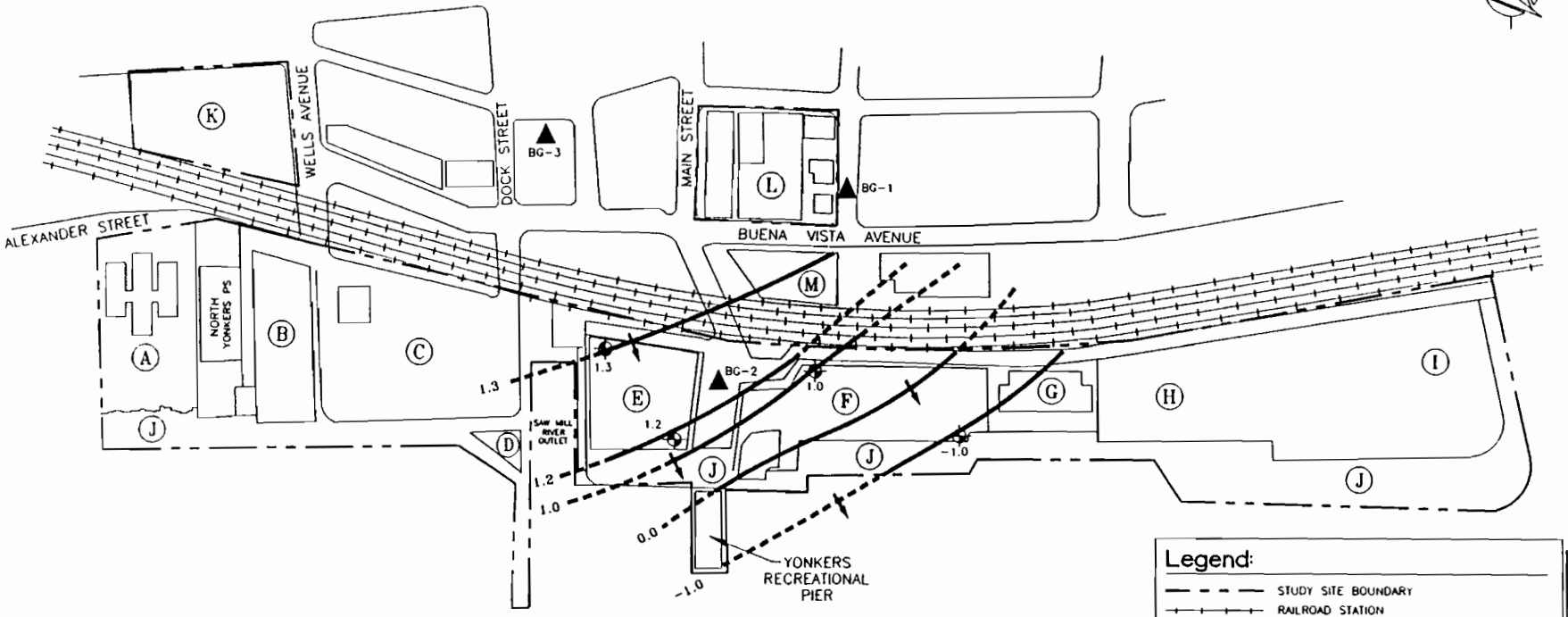
PARCEL F SITE PLAN

DATE
6/26/98

SCALE

PROJECT No
70004

FIGURE No
6



Notes:

1. GROUND WATER ELEVATION BASED ON SURVEY PERFORMED ON 6/19/98 AND 7/27/98 BY MUNOZ ENGINEERING.
2. DEPTH TO GROUNDWATER MEASUREMENTS TAKEN ON JULY 16, 1998 DURING LOW TIDE.

Legend:

- STUDY SITE BOUNDARY
- RAILROAD STATION
- ▲ BG-1 — BACKGROUND SOIL SAMPLE COLLECTED ON JUNE 18, 1998.
- INFERRED GROUNDWATER CONTOUR LINE AND FLOW DIRECTION
- 1.3 — APPROXIMATE LOCATION OF MONITOR WELL AND GROUNDWATER ELEVATION (NGVD)
- (A) — BECZAK ENVIRONMENTAL CENTER; POLICE ATHLETIC LEAGUE; CITY OF YONKERS PARKS DEPT
- (B) — YONKERS CONTRACTING CO; STORAGE LOT
- (C)(D) — YONKERS PARKING AUTHORITY LOT
- (E) — UNDEVELOPED LAND
- (F) — SCRIMSHAW PARKING LOT
- (G) — SCRIMSHAW HOUSE CONDOMINIUM
- (H)(I) — SOUTHERNMOST VACANT LOT
- (K) — 2-2010 PROPOSED PARKING LOT
- (L) — 1-513 PROPOSED PARKING LOT

AKRF, Inc.
Environmental Consultants
34 South Broadway White Plains, N.Y. 10601

YONKERS WATERFRONT DEVELOPMENT

YONKERS, NEW YORK

SITE PLAN

DATE: 6/26/98

SCALE: N.T.S.

PROJECT No.: 70004

FIGURE No.: 7

Table 1
Soil Analytical Summary Table - Semivolatile Organic Compounds [1]
Yonkers Downtown Waterfront - Parcel E
(μg/kg)

Compound	*MW-1E, S3*	*MW-3E, S3*	*MW-3E, S3A*[2]	*TP-1E*	*TP-2E*	*TP-3E*	*TP-6E*	*Surface Soil E-1*	*Surface Soil E-2*	*Soil Clean-Up Objective*[3]	*BG-1*[4]	*BG-2*[4]	*BG-3*[4]
Phenanthrene	1,000	890	1,100	1,400	420J	310J	630J	13,000	800	50,000	310J	95J	1,200
Fluoranthene	1,900	920	1,000	1,200	730	380J	960	12,000	1,200	50,000	600J	240J	2,600
Pyrene	1,700	1,000	1,100	1,200	690J	380J	880	8,800	1,000	50,000	520J	220J	2,200
Benzo(a)anthracene	1,800	430	450	490	360	200	440	4,700	600	224 or MDL	290	140	1,200
Chrysene	1,600	480J	470J	550J	390J	260J	420J	5,300	620	400	370J	180J	1,600
Benzo(b)fluoranthene	3,500	480	520	560	420	260	560	4,800	800	1,100	450	240	2,000
Benzo(k)fluoranthene	1,400	190	200	220	150	110	240	2,200	280	1,100	170	83	860
Benzo(a)pyrene	2,200	420	460	490	360	190	470	3,800	540	61 or MDL	300	160	1,300
Indeno(1,2,3,-cd)pyrene	1,200	180	180	220	160	80	230	2,200	280	3,200	180	87	580
Dibenz(a,h)anthracene	94	ND	20J	26J	18J	ND	ND	200	91	14 or MDL	40J	21J	140
Benzo(g,h,i)perylene	900	230J	200J	250J	170J	91J	220J	2,200J	230 J	50,000	200J	89J	510J

Notes: [1] Samples collected by AKRF, Inc. personnel on June 11, 12, 18 and August 3, 1998 and analyzed for TCL VOCs and SVOCs and TAL metals by Envirotech Research, Inc. a New York State Department of Health certified CLP laboratory.

[2] Sample MW-3E, S-3A is a duplicate sample of Sample MW-3E, S-3.

[3] New York State Department of Environmental Conservation Division of Technical And Administrative Guidance Memorandum (TAGM): Determination of Soil Cleanup Objectives and Cleanup Levels (HWR-94-4046).

[4] BG = Background Sample

J = Data indicates the presence of a compound that meets the identification criteria. The result is less than the quantitation limit but greater than zero.

MDL = Minimum detection level.

U = The compound was not detected at the indicated concentration.

ND = None detected above the minimum detection limit (MDL).

Table 2
Soil Analytical Summary Table - Semivolatile Organic Compounds [1]
Yonkers Downtown Waterfront - Parcel F
(μg/kg)

Compound	*TP-1F*	*TP-3F*	*TP-4F*	*TP-5F*	*B-1F*	*B-2F, S-3*	*MW-4BF, S-4*	*BF-5AF, S-1*	*Soil Cleanup Objective [2]*	*BG-1[3]*	*BG-2[3]*	*BG-3[3]*
Phenanthrene	360J	2,800	700J	2,300J	3,900	19,000	200J	300J	50,000	310J	95J	1,200
Anthracene	80J	770J	260J	590J	740	5,900	35J	100J	50,000	72J	35J	200J
Fluoranthene	580J	4,800	1300J	4,500J	6,500	16,000	280J	540J	50,000	600J	240J	2,600
Pyrene	510J	4,400	1,100J	4,400J	5,400	12,000	260J	490J	50,000	520J	220J	2,200
Benzo(a)anthracene	240	2,400	940J	2,400	2,500	6,900	140	300	224	290	140	1,200
Chrysene	290J	2,500	810U	2,900J	2,900	7,100	130J	320J	400	370J	180J	1,600
Bis(2-ethylhexyl)phthalate	ND	710J	500,000	ND	ND	ND	310J	990J	50,000	NA	NA	NA
Benzo(b)fluoranthene	300	2,700	1,800	3,600	3,800	5,800	200	400	1,100	450	240	2,000
Benzo(k)fluoranthene	130	1,200	680J	1,300	1,400	2,800	81	170	1,100	170	83	860
Benzo(a)pyrene	230	2,300	1,400	2,500	3,000	5,200	140	290	61 or MDL	300	160	1,300
Indeno(1,2,3,-cd)pyrene	120	1,300	450J	1,600	1,200	2,400	43	220	3,200	180	87	580
Dibenz(a,h)anthracene	37J	310	ND	410	95	240	ND	55J	14	40J	21J	140
Benzo(g,h,i)perylene	120J	1,200J	400J	1700J	1,000	2,200J	41J	230J	50,000	200J	89J	510J

Notes: [1] Samples collected by AKRF, Inc. personnel on June 12, 17, and 18, 1998 and analyzed for TCL VOCs and SVOCs and TAL metals by Envirotech Research, Inc. a New York State Department of Health certified CLP laboratory.

[2] NYSDEC Division of Technical And Administrative Guidance Memorandum (TAGM): Determination of Soil Cleanup Objectives and Cleanup Levels (HWR-94-4046).

[3] BG = Background Sample

J = Data indicates the presence of a compound that meets the identification criteria. The result is less than the quantitation limit but greater than zero.

U = The compound was not detected at the indicated concentration.

NA = Not analyzed

ND = None detected above the minimum detection limit.

Table 3
Water Quality Analytical Summary Table - TAL Metals[1]
Yonkers Downtown Waterfront - Parcel E
(μg/l)

Metal	*MW-1E June Total*	*MW-1E July Dissolved*	*MW-3E June Total*	*MW-3E July Dissolved*	*Water Quality Standard[2]*
Aluminum	2,110	ND	840	ND	100
Arsenic	6.0	ND	3.9B	ND	25
Barium	68.3	34.2	24.9B	14.1B	1,000
Calcium	28,300	40,800	15,700	13,600	NS
Chromium	5.4B	ND	1.5B	ND	50
Copper	27.7	ND	7.7B	ND	200
Iron	2,360	ND	1,720	610	300
Lead	137	ND	24.5	4.8B	25
Magnesium	8,320	12,200	2,950B	2,170B	35,000
Manganese	53.2	38.6	138	101	300
Mercury	1.1	ND	ND	ND	2
Nickel	4.2B	ND	ND	ND	NS
Potassium	3,370	2,600B	1,260B	1,350	NS
Sodium	12,100	10,900	30,700	24,700	20,000
Zinc	153	31.6	21.4B	ND	300

Notes: [1] Samples collected by AKRF, Inc. personnel on June 16 and July 16, 1998 and analyzed for TCL VOCs and SVOCs and TAL metals and PCBs by Envirotech Research, Inc., a New York State certified CLP laboratory.
[2] NYS DEC Division of Technical and Operational Guidance Series (TOGS) 1.1.1 - Ambient Water Quality Standards and Guidance Values.
B = Reported Value is less than the Method Detection Limit but greater than or equal to the Instrument Detection Limit.
NS = No Standard
ND = None detected above the minimum detection limit (MDL).

Table 4
Water Quality Analytical Summary Table - TAL Metals[1]
Yonkers Downtown Waterfront - Parcel F
(μg/l)

Metal	*MW-4BF June Total*	*MW-4BF July Dissolved*	*MW-6F July Dissolved*	*MW-6F July Total*	*MW-6FA [3] July Dissolved*	*MW-6FA [3] July Total*	*TP-3F June Total*	*Water Quality Standard[2]*
Aluminum	7,210	ND	ND	57,800	ND	52,600	15,600	100
Arsenic	6.5	ND	ND	56.6	6.1B	53.1	8.1	25
Barium	176	66.4B	111B	464	109B	421	282	1,000
Calcium	83,500	92,000	110,000	89,900	109,000	92,500	141,000	NS
Chromium	11.1	9.7B	ND	136	ND	130	37.5	50
Copper	36.1	ND	ND	448	ND	403	118	200
Iron	9,860	ND	ND	95,300	ND	89,400	21,400	300
Lead	29.4	ND	ND	1,600	ND	1,530	181	25
Magnesium	40,200	38,500	170,000	135,000	166,000	136,000	44,100	35,000
Manganese	2,380	2,700	212	1,620	218	1,530	581	300
Mercury	0.13B	ND	ND	5.4	ND	4.8	0.78	2
Nickel	13.7B	4.8B	ND	107	ND	105	29.1B	NS
Potassium	15,500	14,100	55,700	50,400	54,400	49,100	25,300	NS
Vanadium	15.9B	ND	6.9B	126	6.9B	118	41.3B	14
Sodium	57,900	44,200	1,320,000	1,020,000	1,270,000	1,030,000	293,000	20,000
Zinc	42.5	ND	18.0B	1,250	16.9B	1,190	136	300

Notes: [1] Samples collected by AKRF, Inc. personnel on June 16 and July 16, 1998 and analyzed for TCL VOCs and SVOCs and TAL metals and PCBs by Envirotech Research, Inc., a New York State certified CLP laboratory.

[2] NYSDEC Division of Technical and Operational Guidance Series (TOGS) 1.1.1 - Ambient Water Quality Standards and Guidance Values.

[3]Sample MW-6FA is a blind duplicate of sample MW-6F.

B = Reported Value is less than the Method Detection Limit but greater than or equal to the Instrument Detection Limit.

NS = No Standard

Appendix A
Responsiveness Summary

Yonkers Downtown Waterfront Development Site
Phase 1, Operable Unit 1 (Parcel F)
Site Number B00045-3

The issues below were raised during the public meeting for the Proposed Remedial Action Plan (PRAP) held on October 6, 1998 at the Philipse Manor Hall, 27 Warburton Avenue, City of Yonkers, New York. The purpose of the meeting was to present the PRAP for the Site and receive comments on the PRAP for consideration during the selection of a remedy. A copy of the responsiveness summary is available for public view at the Site's document repositories.

The following are verbal comments received during the public meeting on October 6, 1998:

Question: Does the groundwater you speak about in this study include, or is it affected by, the Hudson River?

Response: The groundwater onsite is strongly affected by the chemistry of the Hudson River given its close proximity to the River. The Hudson River at this location, which is relatively close to the Atlantic Ocean, has a high saline content. As a result, groundwater samples collected onsite share a similar chemistry which includes high levels of magnesium, manganese and sodium, reflective of this saline environment.

Question: Was Parcel F originally part of the Hudson River?

Response: Yes. Much of the land currently present along the Yonkers waterfront did not exist at the turn of the century. It has since been built out using fill material. The intrusive investigations, including test pits and borings, showed fill material throughout the investigation area down to the water table.

Question: How deep were the borings?

Response: The borings were as deep as 20 feet.

Question: Would the proposed cap prevent leaching of contaminants into the Hudson River?

Response: Although the intent of the cap is not to prevent leaching of the soils into the Hudson River, much of the capped area includes buildings, asphalt parking lots and cement walkways, which would limit infiltration of precipitation. As a result, leaching of soils in these areas would be limited. Where the two feet of soil cover is proposed, leaching of underlying soils would not be prevented, although it might be somewhat limited. Leaching of contaminants from the soils was not a concern when the various alternatives were evaluated. Groundwater data showed that the low levels of contaminants found in onsite soils were not leaching into the groundwater. This is what we would expect based not only on the low levels found, but also on the kind of contaminants, including semivolatile compounds, which do not easily dissolve into groundwater.

Question: We've been hearing a lot in the newspapers about contaminant levels at the site and I'm concerned that capping of the site may not be such a good idea. Is this the usual remedy proposed by the NYSDEC for sites with similar types and levels of contamination?

Response: The remedies being selected for other sites in the New York State which have contaminant profiles similar to the Yonkers, Parcel F, Site are dependant on the intended use of the site and any impacts to groundwater quality. In some cases, a no action alternative has been proposed. In other cases, anywhere from six inches to two feet has been chosen. In general, sites where the intended use is industrial, a less aggressive remedy would be implemented. Where plans include residential use, a thicker cover is more likely to be recommended, such as the two foot thick soil cover for this site.

Question: The PRAP calls for contaminants in the soil to be left in place. Due to the tidal influence of the Hudson River which could cause water from the River to leach contaminants from the soil, have the Hudson or Saw Mill Rivers been sampled to determine if they have been impacted? What is being done about the bulkheading to insure that impacts from the Site, including leaching and erosion beneath cap, are limited?

Response: Samples were not collected from the Saw Mill or Hudson Rivers. Based on the investigations that were conducted, it was determined not to be necessary due to the low levels of contaminants in onsite soils. This was also confirmed by the groundwater samples which were collected, which showed none of the contaminants found onsite to be leaching into the groundwater. The few elevated metals which were found in the groundwater are reflective of the chemistry of the Hudson River, which is very saline at this location.

Question: Levels of many of the contaminants at the Site like mercury, which has a cleanup standard of 0.1 ppm, exceed the standard. With most of the analysis exceeding the standard, why is the soil being left in place rather than being removed?

Response: The 0.1 ppm guideline for cleanup of mercury in soils is an objective, not a standard. It is not based on health driven criteria. This cleanup objective is based on background levels for a relatively large geographical area. This objective will vary from area to area based on local natural conditions. Mercury, along with other metals, is nearly always present in soil. The cleanup objective of 0.1 ppm for mercury is based on the average concentration found in the United States. However, because background levels vary, background samples are typically collected on a site- specific basis. At the Yonkers Site, based on three samples collected, background was found to be about 0.6 ppm. Levels onsite fell within a range of 0.1 ppm to 1.0 ppm , and averaged about 0.6 ppm, consistent with background levels. Because onsite levels of mercury are very similar to background levels, do not pose a health risk and are not leaching to groundwater, soil removal is not necessary.

The following is a written comment received during the public comment period, held from September 11, 1998 to October 25, 1998:

Letter dated October 20, 1998 from Francis E. Morganthaler, 14 Boone Street, Yonkers, New York to Thomas Gibbons (NYSDEC). Re: Comments on the PRAP and, specifically, leaving contaminated soils onsite.

Comment: I request that your office support the implementation of Alternative 2 of the Proposed Remedial Action Plan (PRAP) and make sure that all contaminants are removed from the site and properly disposed of. The proposed alternative (Alternative 3) does not go far enough in protecting the health and safety of current and future residents of Yonkers. We have been told that even though contaminants exceeding legal limits have been found onsite, they are "not really dangerous" . There is evidence of mercury, lead, PCB's from old transformers, semivolatile compounds (SVOCs), sodium, magnesium and possibly decomposing underground fuel tanks on this site. There is a possibly that all of these contaminants could conceivably enter the groundwater and contaminate the Hudson River. The purpose of the Brownfields grant is to get rid of any possible contamination, not to cover it over. The capping alternative is merely a cheaper, quick fix approach and leaves the existing problems in place to deal with in the future. Focusing on one parcel at a time rather than dealing with all of the parcels

at once is a better approach. If one parcel is cleaned up and insurmountable problems are identified on another parcel, it could severely impact the project. On May 6, 1998, the United States Environmental Protection Agency (EPA) awarded $200,000 to the City of Yonkers to begin a Brownfields Assessment Demonstration Pilot. This money should be used to assess and cleanup the site, not just cover it over.

Response: While there are some contaminants on Parcel F which exceed applicable standards, criteria and guidelines (SCGs), it has been determined by the New York State Department of Health (NYSDOH) that these low levels of contaminants pose no significant risk to human health in a residential scenario if Alternative 3, capping, is implemented. Because offsite disposal (Alternative 2) offers no increased benefit in reducing health risk, it was not selected due to the considerably higher cost associated with it. In addition, the contaminants present are not leaching into the groundwater and, as a result, would not impact the Hudson River. The purpose of the Brownfields grant is to investigate and, if necessary, clean up contamination using the most cost effective remedial alternative which reduces risk to acceptable levels. To apply a more costly approach with no additional benefit would not be a prudent use of public money. Yonkers' approach to investigate/remediate certain parcels separately to accommodate their future development plans and schedules is not a limitation under the Brownfields grant program. The $200,000 EPA Brownfield grant is for the Alexander Street Brownfield project to conduct a site assessment. This is an unrelated property which adjoins the Yonkers Downtown Waterfront Development Site to the north.

Letter dated October 25, 1998 from Nortrud Spero, Co-President, Hudson Communities Coalition, Inc., 5 Phillipse Place, Yonkers, New York to Thomas Gibbons (NYSDEC). Re: Comments on the PRAP and, specifically, leaving contaminated soils onsite.

Comment: We object to the PRAP. Mercury is one of the deadliest chemicals in the world. Covering it with two feet of soil is unacceptable. You are creating a chemical graveyard in the fourth largest city in NYS and one of the most densely populated sections of Yonkers. The contamination should be removed. The boundaries of the Site are not clear. Has NYS determined that this former landfill is capable of supporting a large development? The proposed projects are Type 1 actions under Yonkers Code, Section 48-4 and are located within the coastal zones . More analysis is necessary. The Yonkers Site should be investigated as one site rather than as several separate parcels. The outfall from the sewage treatment plant was

not mentioned in the report.

Response: See previous response with respect to mercury at the site. Mercury is present onsite at levels consistent with background levels and poses no human health risk at the concentrations found. The simple presence of mercury at the site does not make the Yonkers site a "chemical graveyard" anymore than any other property with similar or even higher levels that are naturally occurring. For mercury to have adverse human health affects, a sufficient concentration of this metal, an exposure pathway and a receptor must all be present. These criteria are not all present on Parcel F and, as such, conditions for impacts to human health are not present. In addition, even under the future residential exposure scenario, there would be no unacceptable risks to human health. A legal description of the Yonkers Site can be obtained from the City of Yonkers. Although the property was originally built out using fill material, NYSDEC has no information to believe that the Yonkers property was ever used as a landfill. The future development plans for the entire 15 acre Yonkers Site, and its potential impacts on the surrounding environment, was addressed as part of an Environmental Impact Statement carried out by the City of Yonkers. The sewage treatment plant and its outfall, located between Parcels A and B, was not addressed in the report as it is an unrelated issue to this Brownfields investigation.

Appendix B
Administrative Record

Yonkers Downtown Waterfront Development Site
Phase 1, Operable Unit 1 (Parcel F)
Site Number B00045-3

1. Phase 1 Environmental Site Assessment Report, City of Yonkers Downtown Waterfront Master Plan, Yonkers, Westchester County, New York, April 1997. Prepared for the City of Yonkers by AKRF, Inc.

2. Proposal for a Site Investigation/Remedial Alternatives Report Work Plan, Yonkers Downtown Waterfront Development Site, Yonkers, Westchester County, New York, May 1997. Prepared for the City of Yonkers and the New York State Department of Environmental Conservation by AKRF, Inc.

3. Site Investigation/Remedial Alternatives Report Work Plan, Yonkers Downtown Waterfront Development Site, Yonkers, Westchester County, New York, March 1998. Prepared for the City of Yonkers and the New York State Department of Environmental Conservation by AKRF, Inc.

4. Site Investigation Report, Yonkers Downtown Waterfront Development Site, Phase 1, Operable Unit 1 (Parcels E and F), Yonkers, Westchester County, New York, August 1998. Prepared for the City of Yonkers and the New York State Department of Environmental Conservation by AKRF, Inc.

5. Remedial Alternatives Report, Yonkers Downtown Waterfront Development Site, Phase 1, Operable Unit 1 (Parcels E and F), Yonkers, Westchester County, New York, September 1998. Prepared for the City of Yonkers and the New York State Department of Environmental Conservation by AKRF, Inc.

6. Proposed Remedial Action Plan, Yonkers Downtown Waterfront Development Site, Phase 1, Operable Unit 1 (Parcel F), Westchester County, New York, September 1998. Prepared by the New York State Department of Environmental Conservation.