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EPA Superfund
Record of Decision:

WHITE CHEMICAL CORP.
EPA ID: NJD980755623
OU 02
NEWARK, NJ
09/29/2005

RECORD OF DECISION
Operable Unit 2 - Soils, Buildings and Above-Ground Storage Tanks
White Chemical Corporation Site, Newark, Essex County, New Jersey

United States Environmental Protection Agency
Region II
September 2005

DECLARATION STATEMENT

RECORD OF DECISION

SITE NAME AND LOCATION

White Chemical Corporation Site (EPA ID# NJD980755623)
Newark, Essex County, New Jersey
Operable Unit 2 for Soils, Buildings and Above-Ground Storage Tanks

STATEMENT OF BASIS AND PURPOSE

This decision document presents the Selected Remedy to address contaminated soils, sump sediments, buildings and tanks at the White Chemical Corporation Superfund Site (Site) in Newark, New Jersey, which was chosen in accordance with the Comprehensive Environmental Response, Compensation and Liability Act, as amended, and, to the extent practicable, the National Oil and Hazardous Substances Pollution Contingency Plan. This decision is based on the Administrative Record file for the Site. The State of New Jersey concurs with the Selected Remedy.

ASSESSMENT OF THE SITE

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

DESCRIPTION OF THE SELECTED REMEDY

The Selected Remedy addresses an estimated 21,185 cubic yards of contaminated soil, nine on-site buildings and above-ground storage tanks on the Site. A previous ROD was signed on September 26J1991. The 1991 ROD required appropriate security measures stabilization of the Site, on-site treatment or neutralization of contaminated material, off-site treatment, recycling or disposal of contaminated material, decontamination arid off-site disposal or recycling of empty drums and containers, decontamination of on-site storage tanks and process piping, and appropriate environmental monitoring. An additional action will be necessary to address groundwater contamination underlying the Site.

The major components of the selected response measure include:

- demolition and off-site disposal of nine on-site buildings;
- removal and off-site disposal of above-ground storage tanks;
- excayation of an estimated 21,185 cubic yards of contaminated soil;
- off-site transportation and disposal of contaminated soil, with treatment as necessary;

- backfilling and grading of all excavated areas with clean soil and seeding the areas;
- placement of a deed notice to restrict land use to non-residential (commercial/light industrial) uses; and
- appropriate environmental monitoring to ensure the effectiveness of the remedy.

This remedy excavates and treats the most highly contaminated soil and, therefore, satisfies EPA's preference for treatment of the principal threat wastes at the Site.

DECLARATION OF STATUTORY DETERMINATIONS

Part 1: Statutory Requirements

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

Part 2: Statutory Preference for Treatment

The Selected Remedy satisfies the statutory preference for treatment as a principal element of the remedy because it addresses the principal threat wastes at the Site.

Part 3: Five-Year Review Requirements

Because this remedy results in hazardous substances, pollutants, or contaminants remaining on the Site above levels that allow for unlimited use and unrestricted exposure, a statutory review will be conducted within five years of the initiation of the remedial action to ensure that the remedy is, or will be, protective of human health and the environment, unless determined otherwise at the completion of the remedial action.

ROD DATA CERTIFICATION CHECKLIST

The following information is included in the Decision Summary section of this Record of Decision. Additional information can be found in the Administrative Record file for the Site.

- Chemicals of concern and their respective concentrations maybe found in the "Site Characteristics" section.
- Baseline risk represented by the chemicals of concern may be found in the "Summary of Site Risks" section.
- A discussion of cleanup levels for chemicals of concern may be found in the "Remedial Action Objectives" section.
- A discussion of source materials constituting principal threats may be found in the "Principal Threat Waste" section.

- Current and reasonably anticipated future land use assumptions are discussed in the "Current and Potential Future Site and Resource Uses" section.
- A discussion of potential land uses that will be available at the Site as a result of the Selected Remedy is found in the "Current and Potential Future Site and Resource Uses" section.
- Estimated capital, annual operation and maintenance (O&M), and total present worth costs are discussed in the "Description of Alternatives" section.
- Key factor(s) 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) may be found in the "Comparative Analysis of Alternatives" and "Statutory Determinations" sections.

George Pavlou, Director
Emergency and Remedial Response Division
U.S. Environmental Protection Agency
Region II

9/29/05
Date

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SITE NAME, LOCATION AND BRIEF DESCRIPTION

The White Chemical Corporation Site measures 4.4 acres, and is located at 660 Frelinghuysen Avenue (Block 3872, Lot 109), Newark, Essex County, NJ. Frelinghuysen Avenue is a major thoroughfare with significant residential, commercial, and industrial populations. The Site is located immediately east of two large manufacturing facilities: a leather company and a sportswear manufacturer. An airport-support services complex is currently located north of the Site, The eastern border of the Site is adjacent to Conrail and Amtrak rail lines that serve as a major rail corridor in New Jersey. Weequahic Park (including Weequahic Lake and a golf course), a school, and several large housing complexes, high-rise senior citizen residences, and cemeteries, are located to the west, within 0.4 mile of the Site.

Major Site features include nine buildings, a former aboveground storage tank (AST) farm (tank farm), an underground tunnel, and a railroad spur. Five large buildings (Building Numbers 33, 34,34A, 35 and 36), three smaller, facility-support buildings (Boiler Room, Pump House and Maintenance Shop), and a decontamination (decon) shed are located on the western portion of the property. Most of these buildings are grouped around the former tank farm near the center of the Site. The Underground tunnel originates in the western portion of Building No. 34 and leads to the south. See Plate 1.

The Site is on the U.S. Environmental Protection Agency's (EPA's) National Priorities List. EPA is the lead agency, and the New Jersey Department of Environmental Protection (NJDEP) is the support agency.

SITE HISTORY AND ENFORCEMENT ACTIVITIES

In September 1970, Central Services Corporation (CSC) purchased the property from the Union Carbide Corporation. It is believed that much of the present Site infrastructure, including sewer and utility commits, and buildings, may date from the time of Union Carbide's ownership. CSC sold the property to the Lancaster Chemical Company, a division of the AZS Corporation, in August 1975.

The White Chemical Corporation (WCC) leased the Site in 1983 and moved its operations from Bayonne, NJ to Newark, NJ. WCC produced three primary groups of chemical products: acid chlorides, brominated organics (both aliphatic and aromatic), and mineral acids, most notably hydriodic acid. The finished products, mostly solids and powders, were generally formulated in small batches following customer specifications.

Beginning in 1989 and continuing through the present, the Site has been the subject of numerous inspections, site assessments, investigations, and removal actions. NJDEP conducted several inspections of the Site between June and September 1989 pursuant to the Resource Conservation and Recovery Act (RCRA). Based on these inspections, NJDEP issued several Notices of Violations for a variety of infractions including improper drum management, leaking drums, open containers, and inadequate aisle space. In October 1989, WCC initiated Chapter 11 bankruptcy proceedings. Between May and August 1990, NJDEP removed approximately 1,000 drums from the Site. On September 7,1990, EPA performed a preliminary assessment of the WCC facility and found numerous air- and water-reactive substances in 55-gallon drums. Approximately 10,900 55-gallon drums of hazardous substances were precariously stacked or improperly stored throughout the Site. Drums and other containers were found in various stages of deterioration fuming and leaking their contents onto the soil. Numerous stains were observed on the soil. Other containers observed were 150 gas cylinders, 126 storage tanks, vats and process reactors, hundreds of fiberpack drums, glass and plastic bottles, and approximately 18,000 laboratory-type containers.

The on-site laboratory contained thousands of unsegregated laboratory chemicals in deteriorating conditions. These containers were haphazardly stored on structurally unsound shelving, or stacked in piles on the floor. EPA overpacked 11 fuming drums and secured them for future handling. In total, 4,200 empty drums were shipped off-site for disposal, and 6,700 drums were staged on-site for later characterization and disposal. In 1990, the EPA Technical Assistance Team reported that five extremely hazardous substances were present at the Site including: allyl alcohol; bromine; chlorine; red phosphorous; and, phosphorous trichloride.

In September 1990, EPA issued a Unilateral Administrative Order (UAO) barring WCC from continuing on-site operations and ordering evacuation of all personnel. In October 1990, the U.S. District Court for the District of New Jersey issued an order enforcing the UAO. In November 1990, the Agency for Toxic Substances and Disease Registry (ATSDR) issued a health consultation that concluded that the Site posed an imminent and substantial health and safety threat to nearby residents and workers. A Public Health Advisory was issued by ATSDR in November 1990. Between 1990 and 1991, EPA removed several thousand drums and performed several assessments at the Site. EPA also developed an interim remedy to stabilize the Site, as described below.

Interim Remedy: Stabilizing the Site (OU1)

EPA typically addresses sites in separate phases or operable units. In developing an overall site strategy, EPA identified the interim remedy as Operable Unit 1 (OU1), this soil, building and above-ground storage tank remedy as Operable Unit 2 (OU2), and the groundwater as Operable Unit 3 (OU3).

Based on the known contamination at the property, EPA proposed the Site for inclusion on the National Priorities List (NPL) on May 9,1991, and the Site was listed on September 25, 1991. The OU1 Record of Decision (ROD), issued on September 26, 1991, required appropriate security measures, stabilization of the Site, on-site treatment or neutralization of contaminated material, off-site treatment, recycling or disposal of contaminated material, decontamination and off-site disposal or recycling of empty drums and containers, decontamination of on-site storage tanks and process piping, and appropriate environmental monitoring.

In June 1991, EPA issued notice letters to potentially responsible parties (PRPs) with notification that they may bje required to conduct response actions at the Site. In March 1992, EPA issued a UAO to eleven PRPs to remove drums, tank contents, laboratory containers, liquids and gas cylinders that were remaining at the site following EPA and NJDEP removal actions. The eleven PRPs included AZS, the landowner at the time, WCC, the operator of the Site, WCC's president, and eight generators. On October 27, 1992, a PRP group consisting of three PRPs complied with the UAO by initiating the response activities and completing them on March 1993. In total, the PRP group removed approximately 7,900 drums, the contents of more than 100 tanks, approximately 12,500 laboratory chemical containers, approximately 50,000 gallons of liquid contained in process tanks, and 14 gas cylinders.

Final Remedy: Soils, Buildings and Above-Ground Storage Tanks (OU2)

The OU2 remedial investigation (RI) field work was conducted from October 1998 through July 1999. The OU2 RI was completed in April 2003 and focused on defining the nature and extent of contamination at the Site. Samples collected include surface and subsurface soil, sump sediment, groundwater and building materials. After completion of the OU2 RI, EPA determined that additional information was needed to evaluate the nature and extent of contamination in the groundwater. Therefore, EPA designated the soils, buildings and above-ground storage tanks as OU2 and the groundwater as OU3.

HIGHLIGHTS OF COMMUNITY PARTICIPATION

On August 4, 2005, EPA released the Proposed Plan and supporting documentation for the on-site soil, buildings and above-ground storage tank remedy (OU2) to the public for comment. EPA made these documents available to the public in the administrative record repositories maintained at the EPA Region II office (290 Broadway, New York, New York) and the Newark Public Library (5 Washington Street, Newark, NJ 07102). EPA published a notice of availability for these documents in the Newark Star Ledger newspaper and opened a public comment period on the documents from August 4,2005 to September 2,2005. On August 9,2005, EPA conducted a public meeting at the Newark City Hall Council Chambers to inform local officials and interested jcitizens about the Superfund process, to review the planned remedial activities at the Site, and to respond to any questions from area residents and other attendees. Responses to the comments received at the public meeting and in writing during the public comment period are included in the Responsiveness Summary (see Appendix . V).

SCOPE AND ROLE OF OPERABLE UNIT

As with many Superfund sites, the problems at the White Chemical Corporation site are complex and, therefore, EPA has organized the work into three phases or operable units (OUs):

- Operable Unit 1: an interim remedy to stabilize the Site and remove leaking drums and other containers of chemical waste (completed in 1993):
- Operable Unit 2: remedy to address contaminated surface and sub-surface soil, nine on-site buildings and above-ground storage tanks.
- Operable Unit 3: groundwater under and near the Site.

EPA selected the interim remedy for OU1 in a ROD signed on September 26, 1991. In March 1993, the PRP group completed construction of this interim remedy. OU2, the subject of this ROD, addresses the surface and deeper subsurface contaminated soil on the Site, nine on-site buildings and above-ground storage tanks. EPA will continue its groundwater investigation for OU3 and propose a remedy for the groundwater in the future.

SUMMARY OF SITE CHARACTERISTICS

Surface elevations across the Site range from approximately 20 feet above mean sea level (msl) in the western and central portions of the property to approximately 14 feet above msl in the southern portion of the property. The Site and immediate vicinity are generally flat and graded with a gentle easterly slope toward the railroad tracks. Most of the Site is covered with asphalt pavement, concrete slabs, or abandoned buildings with small patches of exposed dirt (and some vegetation) on the northern and southern portions of the property and in the area surrounding Building No. 36. No streams or surface water bodies are present on the Site and surface drainage is generally poor. During periods of heavy precipitation, ponding occurs on some portions of the property.

Geology

The Site is located in the Piedmont (Lowlands) Physiographic Province, which is characterized by gently sloping hills. The Lowlands are bounded by the Coastal Plain to the south and east, the New England Uplands to the north, and the Piedmont Uplands to the west. The geology of the region is characterized by unconsolidated sediments deposited on sedimentary bedrock of Triassic Age. The Site is predominantly underlain by deposits consisting of clayey silt and fine to coarse sand. Fill material, ranging in thickness from approximately 2 to 10 feet, is present across the Site. The fill consists mostly of silt with trace sand and gravel. Beneath the fill, clayey silt deposits (alluvium) ranging in thickness from approximately 2 to 10 feet are present. Beneath the alluvium, fine to coarse sand with varying amounts of silt and gravel is present with an occasional silt lens, ranging in thickness from approximately 4 to 40 feet. Weathered shale bedrock is present beneath the sand and ranges in depth from 37 feet below ground surface (bgs) to 55 feet bgs. The thickness of the weathered bedrock ranges from 6 to 10 feet. The surface of the bedrock is relatively flat in the northern portions of the Site, but dips to the east in the eastern portions of the Site and to the south in the southern portions of the Site.

Hydrogeological Characteristics

Data collected during four rounds of synoptic water level measurements (February and July 1999, April and October 2000) indicate that the depth to groundwater ranged from approximately 8 to 13 feet bgs across the Site. These measurements suggest that shallow groundwater flow radiates from a mound that exists near Building No. 34 (see Plate 1), creating a groundwater divide across the center of the Site. Mounding of groundwater near Building No. 34 may be caused by a flooded tunnel that exists under this building. North of the divide, groundwater flows in an easterly direction; south of the divide groundwater flows more uniformly to the south. The groundwater divide is not evident at depth. The direction of deeper groundwater flow generally follows the surface of the underlying bedrock. In the southern portions of the Site, the main component of groundwater flow at depth is to the south, with groundwater flow in the northern portion of the Site varying from northeasterly to southeasterly.

Surface Waters and Wetlands

Two surface water bodies are located near the Site; Weequahic Lake, located west of the Site approximately 11,500 feet from Frelinghuysen Avenue, and the Elizabeth River, located approximately two miles southwest of the Site. Newark Bay lies approximately three miles east of the Site. No direct surface water connections from the Site to any of these water bodies exist. Surface water ponds in several small areas on the property during periods of high rainfall; there are no channels conveying surface water runoff away from the Site.

No federally regulated wetlands are located within the Site boundaries. National Wetland Inventory (NWI) mapping (Elizabeth, NJ-NY quadrangle) for the Site and surrounding area indicates that Weequahic Lake is classified as L1OW (Lacustrine, Limnetic, Open Water). Other wetlands near the Site are associated with either the Elizabeth River or drainage patterns within Newark Liberty International Airport. New Jersey State wetland mapping shows a similar configuration of wetlands in the Site vicinity.

Soils Contamination

Most of the soil contamination at the Site is the result of improper staging, control and maintenance of process chemicals contained in drums, laboratory chemical containers, storage tanks and process tanks. Although soil contamination is present throughout the Site, the majority is located in the top two feet of soil. The OU2 RI concluded that it is unlikely that contaminants migrated off-site through the unsaturated soil.

<u>Surface Soil</u>

Contamination in the surface soil is found in "hot spots" throughout the Site. In the surface soils, volatile organic compounds (VOCs) detected at elevated concentrations included: 1,1,2,2-tetrachloroethane (maximum concentration 28,000 parts per billion (ppb)), 1,1,2-trichloroethane (maximum concentration 1,400 ppb), 1,2-dichloroethane (maximum concentration 31,000 ppb), ethylbenzene (maximum concentration 130,000 ppb), m, p,-xylene (maximum concentration 500,000 ppb), o-xylene (maximum concentration 260,000 ppb), and trichloroethene (maximum concentration 1130,000 ppb).:

Three primary areas at the Site contain surface soil semi-volatile organic compound (SVOC) contamination, between the gate and the eastern Site boundary, the southeast corner (south of the concrete tank pad connected to Building No. 35), and the center of the Site (between Building Nos. 34 and 35). Most of the SVOCs detected in the surface soils are polycyclic aromatic hydrocarbons (PAHs). Although inorganics (or metal) contamination was found at depths up to 12 feet bgs, most of the metal contamination was present in the top two feet of soil. Seven inorganic contaminants were detected at concentrations above established screening criteria. Three pesticides/ polychlorinated biphenyls (PCBs) were detected in the surface soil. In general, elevated pesticide/PCB concentrations were found in very few soil samples and at shallow depths (<4 feet). The highest concentration of PCBs detected in surface soils was 13 parts per million. Detectable levels of polybrominated biphenyls (PBBs) were found in nine of 23 surface soil samples. PBB concentrations ranged from 0.28 ppb to 190 ppb. Detectable levels of dioxin were found in all 11 surface soil samples analyzed for dioxin; however, the maximum concentration detected, 50.87 parts per trillion, is considered acceptable for commercial/industrial properties.

Subsurface Soil

Contamination in the subsurface soils was primarily found near the eastern/northeastern Site boundary. In subsurface soils, 1,1,2,2-tetrachloroethane (maximum concentration 4,300 ppb), 1,2-dichloroethane (maximum concentration 43,000 ppb), and trichloroethene (maximum concentration 6,100 ppb) were detected at elevated levels. Although VOC contamination was found at depths up to 12 feet bgs, most of the contamination is found closer to the surface.

Subsurface soil SVOC contamination was primarily found near the center of the Site. Although SVOC contamination was found at depths up to ten feet bgs, most of the contamination is found closer to the surface. The only inorganic present in subsurface soils at an elevated concentration was thallium. Only one pesticide (dieldrin) was detected in a subsurface soil at a concentration above established screening criteria. Detectable levels of PBBs were found in one of eight subsurface soil samples. PBBs were found at a maximum depth of 3.5 feet bgs at a concentration of 9.2 ppb.

Building 34 Sump Sediment Contamination

Two sump sediment samples were collected from the Site to determine what types of contaminants may have been used in the buildings and to determine if the sumps/floor drains could be potential sources of soil and groundwater contamination. The majority of the contamination was found in the sump sediment sample collected from Building No. 34. VOC concentrations measured in the sump were sufficiently high to indicate that free-phase product may have accumulated in the sump. Residual contamination may exist around and under this sump. The VOCs detected include methylene chloride (maximum concentration 25,230,000 ppb), 1,2-dichloroethane (maximum concentration 27,460,000 ppb), trichloroethene (maximum concentration 230,000 ppb), 1,1,2-trichloroethane (maximum concentration 560,000 ppb), 1,1,2,2-tetrachloroethane (maximum concentration 870,000 ppb), and the hydrocarbons ethylbenzene (maximum concentration 200,000 ppb), o-xylene (maximum concentration 400,000 ppb), and m, p-xylene (maximum concentration 3,800,000 ppb).

The only semi-volatile contaminant detected at an elevated concentration was benzo(a) pyrene. Only one inorganic, antimony, was detected at an elevated concentration. Five pesticides were detected at concentrations that exceeded the screening criteria. These include Gamma-BHC, heptachlor, aldrin, dieldrin, 4,4'-DDD. PBBs were detected in the two sump samples analyzed at concentrations up to 750 ppb.

Building Materials

Asbestos-containing materials (ACMs) both friable and non-friable, were found in all of the Site buildings except the Decon Shed and Pump House. The majority of the ACMs were from laboratory related furnishings, caulking, and miscellaneous debris.

Lead-based paint was detected in Building Nos. 33, 34, 35 and 36, the Boiler Room, and the Pump House. Except for a wooden door casing, all lead-based paint was found on steel or other metal substrates such as columns, beams, windows, doors, stairs, ladders, a wall, an elevator, and a fire escape.

One Toxicity Characteristic Leaching Procedure (TCLP) compound, 1,2-dichloroethane, was detected in a building material sample at a concentration that exceeded the RCRA TCLP-regulatory limit. This sample was collected from the exterior of Building No. 33.

Wipe samples were collected from three buildings; Building Nos. 33, 34 and 35. Analysis of these samples indicated the presence of 24 SVOCs, eight pesticides, PBBs, and 21 metals. Based on the results of the sampling conducted at the Site, the principal threats posed by the Site are portions of the highly contaminated surface and subsurface soils, and the building sump sediments.

CURRENT AND POTENTIAL FUTURE SITE AND RESOURCE USES

The City of Newark is an urban industrial center on the eastern edge of Essex County. Land use on and immediately adjacent to the Site falls almost entirely within the Level I category of Urban or Built-up Land. The Level I Urban or Built-up Land category is characterized by intensive land use where human activities have altered the landscape. Predominant land use surrounding the Site is industrial. The industrial areas are interspersed with some residential and some commercial and service to the southwest of the Site. Immediately to the west of the Site are Weequahic Park and Weequahic Lake. There is some recreational land west of Weequahic Park. The White Chemical Corporation site is currently zoned commercial/industrial. Based upon discussions with the City of Newark, the zoning of this land will not change.

SUMMARY OF SITE RISKS

Based upon the results of the RI, a baseline risk assessment was conducted to estimate the risks associated with current and future Site conditions. The baseline risk assessment estimates the human health risk that could result from the contamination at the Site if no remedial action were taken.

Human Health Risk Assessment

A four-step process is used 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 effect (response). Risk Characterization - summarizes and combines outputs of the exposure and toxicity assessments to provide a quantitative assessment of site-related risks.

Hazard Identification

EPA conducted a baseline risk assessment to evaluate the potential risks to human health and the environment associated with the White Chemical Corporation Superfund site in its current state. Although the risk assessment evaluated many contaminants identified in the soils, the conclusions of the risk assessment indicate that the significant risks are limited to 1,2-dichloroethane, trichloroethene, and xylenes in the soils at the Site, primarily through inhalation of vapors from VOCs in the soils. This section of the decision summary will focus on the risks associated with these contaminants in the soils. A summary of the concentrations of the contaminants of concern in the soils is provided in Table 1.

Exposure Assessment

EPA's baseline risk assessment addressed the potential risks to human health by identifying several potential exposure pathways by which the public may be exposed to contaminant releases at the Site under current and future land use and groundwater use conditions. Future use of the Site is likely to be commercial/industrial, based on historical land use, surrounding property use, current zoning, and future plans for redevelopment. Therefore, exposure to surface and subsurface soils on the White Chemical Company property were evaluated for commercial/industrial workers and construction workers. In addition, due to the potential for exposure from inhalation of vapors from the VOCs in the soils by off-site workers and nearby residents, this pathway was also evaluated in the baseline human health risk assessment, based on modeled air concentrations for the VOCs. For all media, the reasonable maximum exposure, which is the greatest exposure that is likely to occur at the Site, was evaluated.

Toxicity Assessment

Under current EPA guidelines, the likelihood of carcinogenic (cancer-causing) and noncarcinogenic (systemic) effects due to exposure to Site chemicals are considered separately. Consistent with EPA guidance, it was assumed that the toxic effects of the Site-related chemicals would be additive. Thus, carcinogenic and noncarcinogenic risks associated with exposures to individual contaminants of concern were summed to indicate the potential risks associated with mixtures.

Noncarcinogenic risks were assessed using a hazard index (HI) approach, based on a comparison of expected contaminant intake and safe levels of intake (reference doses and inhalation reference doses). Reference doses (RfDs) and inhalation reference doses (RfDis) have been developed by EPA for indicating the potential for adverse health effects. RfDs and RfDis, which are expressed in units of milligrams per kilogram per day (mg/kg-day), are estimates of daily exposure levels for humans thought to be safe over a lifetime (including sensitive individuals). Estimated intakes of chemicals from environmental media (e.g., the amount of a chemical vapor inhaled) are compared with the RfD or RfDi to derive the hazard quotient for the contaminant in the particular medium. The HI is derived by adding the hazard quotients for all compounds within a particular medium that impact a particular receptor population.

An HI greater than 1 indicates that the potential exists for noncarcinogenic health effects to occur because of Site-related exposures. The HI provides a useful reference point for gauging the potential significance of multiple contaminant exposures within a single medium or across media. The toxicity values, including reference doses and inhalation reference doses for the contaminants of potential concern at the Site, are presented in Table 2.

Potential carcinogenic risks were evaluated using the cancer slope factors developed by EPA for the contaminants of potential concern. Cancer slope factors (SFs) and inhalation cancer slope factors (SFis) have been developed for estimating excess lifetime cancer risks associated with exposure to potentially carcinogenic chemicals. SFs and SFis, which are expressed in units of $(mg/kg\text{-}day)^{-1}$ are multiplied by the estimated intake of a potential carcinogen, in mg/kg-day, to generate an upper-bound estimate of the excess lifetime cancer risk associated with exposure to the compound at that intake level. The term "upper bound" reflects the conservative estimate of the risks calculated from the SF or SFi. Use of this approach makes the underestimation of the risk highly unlikely. The SF and SFi values used in this risk assessment for 1,2-dichloroethane, trichloroethene, and xylenes are presented in Table 3.

Risk Characterization

The noncarcinogenic hazard indices (HI) that exceed EPA's acceptable level are presented in Table 4. At the White Chemical Company property, HI values are 3.1 for the future commercial/industrial on-site worker, 21 for the future construction worker, and 2.0 for the current/future off-site commercial/industrial worker. The off-site adult resident is estimated to have an HI value of 9, while the off-site child resident is estimated to have an HI value of 20. In every scenario, inhalation of vapors from soils is the exposure pathway of concern, and 1,2-dichloroethane, trichloroethene, and xylenes are the risk driving contaminants.

For known or suspected carcinogens, EPA considers excess upper-bound individual lifetime cancer risks of between 10^{-4} to 10^{-6} to be acceptable. This level indicates that an individual has no more than approximately a one in ten thousand to one in one million chance of developing cancer as a result of site-related exposure to a carcinogen over a 70-year period under specific exposure conditions at a site. Excess lifetime cancer risks estimated at this site are presented in Table 5. At the White Chemical Superfund Site, the excess lifetime cancer risks are 1×10^{-3} for the future commercial/industrial on-site worker, 3×10^{-5} for the construction worker, and 9×10^{-4} for the current/future commercial/industrial off-site worker. The off-site adult resident is estimated to have an excess lifetime cancer risk of 6×10^{-5}, while the off-site child resident is estimated to have an excess lifetime cancer risk of 3×10^{-5}. In every scenario, inhalation of vapors from soils is the exposure pathway of concern, and trichloroethene is the risk driving contaminant.

Almost all of these are above the National Contingency Plan's (NCP's) acceptable risk range. The calculations were based on reasonable maximum exposure scenarios. These estimates were developed by taking into account various conservative assumptions about the likelihood of a person being exposed to these media.

Uncertainties

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

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

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

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

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

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

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

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

Ecological Risk Assessment

The potential exposure to chemicals in surface soil by small mammals, through ingestion of vegetation, was considered in the screening-level ecological risk assessment. The cottontail rabbit was chosen as the receptor for the surface soil evaluation. The potential for risks to small mammals was (identified for trichloroethene, xylenes, antimony, arsenic and copper in surface soil, at the maximum concentrations. These risks; however, were deemed to be insignificant given the following Site-specific conditions and assessment uncertainties:

- Lack of a significant habitat on or next to the Site,
- High degree of human activity in the Site vicinity,
- Impermeable surfaces, buildings, etc. covering surface soils, and
- Conservative exposure assumptions related to diet, home range, and exposure point concentrations.

The Site offers limited habitat value to wildlife since it is within a highly urbanized location and contains very little vegetation or open space. This is also likely to be the case under the future scenario. Therefore, no further action is recommended regarding ecological receptors at the Site.

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 ARARs and appropriate criteria, advisories, and guidance (i.e., To Be Considered or "TBCs") and risk-based action levels established based on the risk assessment. Remedial action objectives developed for the soil considers all identified Site concerns and contaminant pathways, and are listed below:

- Reduce or eliminate the direct contact threat associated with contaminated soil to levels protective of a commercial/industrial use.
- Reduce or eliminate exposure through inhalation of vapors that may migrate from contaminated soils.
- Minimize or eliminate contaminant migration to the groundwater.
- Maximize consistency with the future development of the Site.

This proposed action would reduce the direct contact excess cancer risk associated with exposure to contaminated soils to below one in a million for commercial/industrial Site uses. This proposed action would also reduce the excess non-cancer risk associated with inhalation exposure to vapors from contaminated soils to below 1 for commercial/industrial Site uses. This will be achieved by reducing the concentration of the surface and subsurface soil contaminants to at or below risk-based levels developed in the risk assessment as shown in Table 6. These risk-based levels are the Remediation Goals for the Site.

Because soils are contaminated with VOCs at levels that could result in continuing sources of groundwater contamination, this proposed action would reduce the threat to groundwater posed by

VOCs in these soils by addressing the VOCs in soils with concentrations in excess of the NJDEP Impact to Groundwater Soil Cleanup Criteria, as indicated in Table 6, to the extent practicable. The estimated depth of the soil excavation of up to 8 feet below ground surface is based on the depth to groundwater which averages 8 feet across the Site. To satisfy the remedial action objectives, an estimated 21,185 cubic yards of contaminated soil would require remediation by each of the active alternatives. This estimate includes the removal of all soil to a depth of 8 feet under Site buildings and tanks because contaminated soil above the remedial goals is believed to be present there. Post demolition soil sampling will confirm the actual depth of soil excavation necessary to achieve Remediation Goals. The location of soil under the buildings and ASTs is shown on Plate 2.

DESCRIPTION OF ALTERNATIVES

The Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) requires that each remedial alternative be protective of human health and the environment, be cost effective, comply with other statutory laws, and utilize permanent solutions and alternative treatment technologies and resource recovery technologies to the maximum extent practicable. In addition, the statute includes a preference for the use of treatment as a principal element for the reduction of toxicity, mobility or volume of hazardous substances.

Common Elements

Many of the remedial alternatives include common components. 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 design the remedy. It generally takes 1-2 years for planning, design and procurement before subsequent construction of the remedial alternative.

The OU2 FS estimates the volume of soil that requires remediation to be 21,185 cubic yards (CY). This includes the soil under all Site buildings and ASTs, which have not been sampled and an additional 30% for slope cutback. Based on the limited TCLP sampling results, it is estimated that approximately 2,000 CY would be considered hazardous under RCRA.

In addition to the technologies indicated under each alternative, all of the alternatives would require an Institutional Control such as a deed restriction because contaminants would remain on Site above levels that would allow for residential use.

Under each alternative, hazardous substances, pollutants, or contaminants remain at the Site above levels that allow for unlimited use and unrestricted exposure. Therefore, EPA would review such action at least every five years.

Each alternative, except S-l, No Action, will require the demolition and off-site disposal of buildings and above-ground storage tanks.

Alternative S-l : No Action

Estimated Capital Cost:	$0
Estimated Annual O&M Cost:	$0
Estimated Present Worth:	$0
Estimated Construction Time:	None

CERCLA and the NCP require the evaluation of No Action as a baseline to which other alternatives are compared. No active remediation or containment of any contamination associated with the soils/buildings/tanks would be performed. However, this alternative would include five-year reviews of Site data as required by CERCLA for sites where contamination remains after initiation of the remedial action.

Because this alternative would result in hazardous substances, pollutants, or contaminants remaining at the Site above levels that allow for unlimited use and unrestricted exposure, EPA would review such action at least every five years.

Alternative S-2: Containment

Estimated Capital Cost:	$2,640,000
Estimated Annual O&M Cost:	$5,000
Estimated Present Worth:	$2,717,000
Estimated Construction Time:	6-12 months

Alternative S-2 consists of the demolition of all on-site buildings, AST removal, and placement of an asphalt cap over the Site. Before building demolition, abatement of asbestos and lead-based paint would be required. All removed asbestos and lead-based paint would be disposed of at an appropriately licensed off-site facility.

As a result of the presence of building material which exceeds TCLP for 1,2-dichloroethane in one sample from Building 33, additional building material samples would be collected during the pre-design or design phase from this building to verify the extent of the contamination. Any hazardous building materials would be segregated and disposed of at an appropriate off-site location. Non-hazardous demolition debris would be disposed of at a sanitary landfill. During building demolition, the existing on-site asphalt would be removed and disposed of at an appropriate facility.

Before removal of on-site ASTs, the tanks would be tested for the presence of asbestos and lead-based paint. No sampling of the ASTs was conducted during the OU2 RI; however, visual evidence indicates the likely presence of both lead paint and asbestos. Following any abatement required by the sampling, the interior of the ASTs would be decontaminated (removal of product or sludge) and removed.

Because greater than 5,000 square feet of the Site would be disturbed during AST removal and building demolition, a Soil Erosion and Sediment Control Plan would be developed. The requirements of this plan would likely include: installation of a silt fence around the Site, construction of a crushed stone stabilized construction entrance, and protection of any on-site catch basins. The Soil Erosion and Sediment Control Plan would also cover any further remedial work at the Site.

Following building demolition and AST removal, the entire Site would be paved with an asphalt cap. The cap would be placed on top of existing Site soil and graded to provide drainage toward existing catch basins. The catch basins would be modified so that they would remain level with the top of the asphalt cap. The asphalt cap would consist of (from bottom to top): a geomembrane liner, one foot of crushed stone sub-base, eight inches of asphalt base and three inches of top course. In addition, a deed restriction would be placed on the Site to limit future intrusive Site activities. Long-term maintenance of the asphalt cap would be required.

Because this alternative would result in hazardous substances, pollutants, or contaminants remaining at the Site above levels that allow for unlimited use and unrestricted exposure, EPA would review such action at least every five years.

Alternative S-3: Soil Vapor Extraction, Asphalt Cap

Estimated Capital Cost:	$3,941,420
Estimated Annual O&M Cost:	$5,000
Estimated Present Worth:	$4,019,000
Estimated Construction Time:	2 years

Following building demolition and AST removal, as described previously under Alternative S-2, VOC-contaminated soil would be treated with Soil Vapor Extraction (SVE). The exact design of the SVE treatment process for the Site would be developed in the design phase through a pilot study. In general, though, a series of vertical wells would be installed around the Site, and a vacuum would be applied to the soil to induce the flow of air and remove the VOCs. Vapors recovered by the wells would be treated using Granular Activated Carbon (GAC). The GAC would need to be periodically removed for off-site regeneration and replacement. After completion of the SVE, the entire Site will be paved with an asphalt cap, as described in Alternative S-2. A deed restriction would be placed on the Site, and long-term maintenance of the asphalt cap would be required.

Because this alternative would result in hazardous substances, pollutants, or contaminants remaining at the Site above levels that allow for unlimited use and unrestricted exposure, EPA would review such action at least every five years.

Alternative S-4: Steam Injection, Asphalt Cap

Estimated Capital Cost:	$4,998,980
Estimated Animal O&M Cost:	$5,000
Estimated Present Worth:	$5,076,000
Estimated Construction Time:	2 years

Following building demolition and AST removal, as described previously under Alternative S-2, VOC-contaminated soil would be treated with steam injection. As with SVE, the steam injection process option is intended to remove volatile organic contaminants in the soil. A pilot test would be required before design. In general, a series of steam injection wells would be installed to a depth just below the bottom of the vadose zone (approximately eight feet below grade). Steam would be injected through these wells, heating the overlying soil, and volatilizing the VOCs. The resulting vapors would then be removed through SVE. While the initial costs for steam injection are higher than for standard SVE, it is possible that these costs can be recouped through a greater efficiency in removal. After completion of the steam injection treatment, the Site will be paved with an asphalt cap, as described in Alternative S-2. A deed restriction would be placed on the Site, and long-term maintenance of the asphalt cap would be required.

Because this alternative would result in hazardous substances, pollutants, or contaminants remaining at the Site above levels that allow for unlimited use and unrestricted exposure, EPA would review such action at least every five years.

Alternative S-5: Excavation and Off-site Disposal

Estimated Capital Cost:	$7,664,440
Estimated Annual O&M Cost:	$0
Estimated Present Worth:	$7,664,440
Estimated Construction Time:	1 year

Following building demolition and AST removal, as described previously under Alternative S-2, all soil contaminated above the Remediation Goals would be excavated and disposed of off-site. There are no foreseen space constraints for the removal of soil at the Site. Excavation could proceed utilizing conventional sloping or benching techniques to provide worker protection and minimize cave-in and/or wall collapse. Following excavation, soil would be stockpiled on-site before transportation to an off-site disposal facility. After removal, the excavated areas would be backfilled with select fill, and then covered with top soil and seed. A deed restriction would be placed on the Site, and long-term maintenance of the asphalt cap would be required.

Because this alternative would result in hazardous substances, pollutants, or contaminants remaining at the Site above levels that allow for unlimited use and unrestricted exposure, EPA would review such action at least every five years.

Alternative S-6: Low Temperature Thermal Desorption

Estimated Capital Cost:	$8,176,560
Estimated Annual O&M Cost:	$5,000
Estimated Present Worth:	$8,177,000
Estimated Construction Time:	1 year

Following building demolition and AST removal, as described in Alternative S-2, all soil contaminated above Remediation Goals would be excavated, as described in Alternative S-5, and treated on-site using *ex situ* low-temperature thermal desorption. During treatment, any oversized objects, such as boulders, would be segregated and decontaminated. Following treatment, the treated soil would be backfilled. Additional select fill would be brought on Site to replace soil volume lost during treatment. The Site would then be covered by topsoil and seeded. A deed restriction would be placed on the Site, and long-term maintenance of the asphalt cap would be required.

Because this alternative would result in hazardous substances, pollutants, or contaminants remaining at the Site above levels that allow for unlimited use and unrestricted exposure, EPA would review such action at least every five years.

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 response measures pursuant to the NCP, 40 CFR § 300.430(e)(9) and OSWER Directive 9355.3-01. The detailed analysis consisted of an assessment of the individual response measure against each of nine evaluation criteria and a comparative analysis focusing upon the relative performance of each response measure against the criteria.

Threshold Criteria - *The first two criteria are known as "threshold criteria " because they are the minimum requirements that each response measure must meet to be eligible for selection as a remedy.*

1. Overall Protection of Human Health and the Environment

Overall protection of human health and the environment addresses whether each alternative provides adequate protection of human health and the environment and describes how risks posed through each exposure pathway are eliminated, reduced, or controlled, through treatment, engineering controls, and/or institutional controls.

Alternative S-l The No Action alternative would not be protective of human health and the environment because contaminated soil and sump material would remain on Site above remediation goals. Therefore, long-term health threats to construction workers, off-site residents, and commercial/industrial workers would not be addressed and the potential remains for future exposure through soil exposure or changes in land use.

Alternative S-2 Overall protection of human health and the environment would be improved under Alternative S-2 because contact with the contaminated soil would be limited by the placement of the impervious cap. However, deed restrictions would need to be imposed that would restrict future digging in subsurface soils and construction at the Site. Since the City of Newark has indicated that the future use of the Site property will be commercial/light industrial, construction in the subsurface soils could occur in the future and this alternative would significantly limit the options for property redevelopment. Migration of VOCs from the soil to the groundwater would be reduced because infiltration would be reduced.

Alternatives S-3 and S-4 Under these alternatives, the overall protection of human health and the environment would be achieved by removal of the VOCs in the soil through on-site treatment. These alternatives are protective of human health and the environment but since residual contaminated soil remains on-site under the asphalt cap a deed restriction would be required to maintain protectiveness.

Alternatives S-5 Under Alternative S-5, protection of human health would be achieved by removing contaminated soil from the Site and placing it in an appropriate off-site facility.

Alternative S-6 Under this alternative, the overall protection of human health and the environment would be achieved by direct removal of the organic contaminants through on-site treatment.

Because the no action alternative (Alternative S-l) is not fully protective of human health and the environment it was eliminated from consideration under the remaining eight criteria.

2. Compliance with applicable or relevant and appropriate requirements (ARARs)

Section 121 (d) of CERCLA and NCP § 300.430(f)(l)(ii)(B) require that remedial actions at CERCLA sites at least attain legally applicable or relevant and appropriate Federal and State requirements, standards, criteria, and limitations which are collectively referred to as "ARARs," unless such ARARs are waived under CERCLA section 121(d)(4). Applicable requirements are those cleanup standards, standards of control, and other substantive requirements, criteria, or limitations promulgated under Federal environmental or State environmental or facility siting laws that specifically address a hazardous substance, pollutant, contaminant, remedial action, location, or other circumstance found at a CERCLA site. Only those State standards identified by a state in a timely manner and that are more stringent than Federal requirements may be applicable.

Relevant and appropriate requirements are those cleanup standards, standards of control, and other substantive requirements, criteria, or limitations promulgated under Federal environmental or State environmental or facility siting laws that, while not "applicable" to a hazardous substance, pollutant, contaminant, remedial action, location, or other circumstance at a CERCLA site address problems or situations sufficiently similar to those encountered at the CERCLA site that their use is well-suited to the particular site. Only those State standards that are identified in a timely manner and are more stringent than Federal requirements may be relevant and appropriate. Compliance with ARARs addresses whether a remedy will meet all of the applicable or relevant and appropriate requirements of other Federal and State environmental statutes or provides a basis for an invoking waiver.

Alternatives S-2, S-3, S-4, S-5 and S-6 would comply with ARARs. Major ARARs are briefly described below.

There are no chemical-specific ARARs for the contaminated soils. The Remediation Goals are risk-based for the surface soils. In addition, NJDEP has developed Impact to Groundwater Soil Cleanup Criteria to address sources of groundwater contamination in soils, which are also TBCs. Alternatives S-2 through S-6 would satisfy these cleanup goals through containment, treatment or removal of contaminated soil.

Air standards set forth in 40 CFR 50 and NJAC 7:27-13 would be addressed through monitoring during remedial activities.

The Resource Conservation and Recovery Act (RCRA) is a federal law that mandates procedures for treating, transporting, storing, and disposing of hazardous substances. All portions of RCRA that were applicable or relevant and appropriate to the proposed remedy for the Site would be met by Alternative S-2 through S-6.

Hazardous waste identification and listing would be performed in accordance with 40 CFR 261 and NJAC 7:25G-5. Hazardous waste disposal would be performed in accordance with 40 CFR 268.45 and NJAC 7:26G11.

Because the documentation regarding the source of contamination is inconclusive, EPA has concluded that; the soil contaminants are not RCRA-listed hazardous waste. Some soil testing has identified soils' that exhibit hazardous characteristics, and these soils would need to be treated off-site to remove these characteristics, in accordance with RCRA, prior to land disposal.

Transport and disposal of solid and hazardous wastes would be performed in accordance with regulations specified by the U.S. Department of Transportation (DOT) 49 CFR 170-179, RCRA (40 CFR 258,263, 264, and 265) and New Jersey (NJAC 7: 26G, NJAC 16: 49).

Primary Balancing Criteria - *The next five criteria, criteria 3 through 7, are known as "primary balancing criteria." These criteria are factors with which tradeoffs between response measures are assessed so that the best option will be chosen, given site-specific data and conditions.*

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3. Long-term effectiveness and permanence

Long-term effectiveness and permanence refers to expected residual risk and the ability of a remedy to maintain reliable protection of human health and the environment over tune, once clean-up levels have been met. This criterion includes the consideration of residual risk that will remain on site (following remediation and the adequacy and reliability of controls.

<u>Alternative S-2</u> Capping with asphalt is an effective means of preventing contact with contaminated soil. The long-term effectiveness of Alternative S-2 would be dependent on maintenance of the cap and therefore this is the least certain of the five remaining alternatives. The cap would need to be maintained for an indefinite time period to prevent contact with contaminated! soil.

Alternatives S-3 and S-4 Under these alternatives, long-term risks would be minimized and permanence nearly achieved for VOC contaminated soil because SVE, or steam injection and SVE would remove most VOC contaminants and the off-gas would be treated. The effectiveness of minimizing contact with residual contamination would be dependent on maintenance of the cap.

Alternative S-5 Under this alternative, the contaminated soil is not treated, but relocated to an off-site location permitted to accept the material for disposal. The off-site location will have the appropriate controls and be licensed to accept this material. Long-term on-site risks will be reduced, because the contaminated soil will be removed. This alternative is considered permanent.

Alternative S-6 Using low-temperature thermal desorption, long-term risks would be eliminated and permanence achieved for VOC contaminated soil because treatment would remove VOC contaminants from the soil, and the off-gas would be treated.

4. Reduction of toxicity, mobility, or volume

Reduction of toxicity, mobility, or volume through treatment refers to the anticipated performance of the treatment technologies that maybe included as part of a remedy.

Alternative S-2 This alternative does not reduce the toxicity or volume of contaminated soil, but the mobility of the contaminants would be decreased because of the reduction of rainwater infiltration after installation of the asphalt cap.

Alternatives S-3 and S-4 These alternatives would reduce the toxicity and volume of the VOCs in the soil through the removal of the VOCs and treatment of the off-gas. The mobility of any residual contamination would be reduced by the installation of the cap.

Alternative S-5 Under this alternative, there would be a reduction in the mobility, toxicity and volume of contaminated soil at the Site through proper disposal in an off-site facility. Minimal reduction in toxicity and volume of VOC contaminated soil may occur when the soil is mixed with other wastes in the landfill. If the hazardous soil requires pretreatment, a reduction of the volume and toxicity would occur.

Alternative S-6 This alternative would reduce the toxicity, mobility, and volume of the organics in the soil through the removal and off-gas treatment.

5. Short-Term Effectiveness

Short-term effectiveness addresses the period of time needed to implement the remedy and any adverse impacts that may be posed to workers, the community and the environment during construction and operation of the remedy until cleanup levels are achieved.

Alternative S-2 This alternative would involve minimal short-term risks to workers and the community during building/tank demolition and installation of the asphalt cap. The short-term risks will be controlled with proper personal protective equipment (PPE), air monitoring, and Site controls.

Alternative S-3 and S-4 These alternatives contains some short-term risks to workers and the community, associated with handling of, and exposure to, off-gases generated during SVE equipment operation. These short-term risks to workers and the community will be controlled with proper PPE, air monitoring, and Site controls.

Alternatives S-3 and S-4 would provide significant impediments to the City of Newark's redevelopment plans for the Site since the placement of recovery wells and treatment systems would limit available land for redevelopment for a significant time period following construction and until remediation goals are achieved. Given the significant levels of contamination remaining in the soil, treatment would potentially be required for a number of years. Before demobilization of equipment there would need to be a monitoring period to ensure that remediation goals were achieved. During the time period required to design, pilot test, implement, arid monitor the results the Site will not be available for redevelopment.

Alternative S-5 This alternative poses short-term risks to on-site workers during building/tank demolition. In addition, during excavation, there are some short-term risks to on-site workers resulting from dust generation, direct contact with contaminated soil and open excavations during treatment. These risks will be reduced with proper PPE, air monitoring, and Site controls. Additional short-term risks are posed during the transport of the contaminated soil to the off-site disposal facility, from accidental spills on roadways.

Alternative S-5 offers the fewest constraints in terms of redevelopment of the property since the excavation and removal will only require a relatively short time period to design and implement.

Alternative S-6 This alternative contains some short-term risks to workers and the community, associated with handling of, and exposure to, off-gases generated during treatment. In addition, during excavation, there are some short-term risks to on-site workers resulting from dust generation, direct contact with contaminated soil and open excavations during treatment. These short-term risks to workers and the community could be controlled with proper PPE, air monitoring, arid Site controls.

6. Implementability

Implementability addresses the technical and administrative feasibility of a remedy from design through construction and operation. Factors such as availability of services and materials, administrative feasibility, and coordination with other governmental entities are also considered.

Alternative S-2 This alternative is easily implemented using standard construction techniques.

Alternatives S-3 SVE has been implemented at many similar sites. A pilot test would be required prior to implementation.

Alternative S-4 *In situ* steam injection could be implemented successfully in a relatively short period of time. Steam injection is a relatively newer and innovative technology, so a pilot test would be required prior to implementation.

Alternative S-5 Excavation and off-site disposal utilizes conventional means and equipment. No new techniques or pilot tests would be required.

Alternative S-6 Low temperature thermal desorption (LTDD) is feasible; however, there have been some problems with the removal of halogenated VOCs at some sites. Because of the proximity of residential areas to the Site there may be community concerns regarding the implementation of LTDD. Care must be taken in the selection of the appropriate thermal desorption equipment.

7. Cost

Includes estimated capital and O&M costs, and net present worth value of capital and O&M costs.

Alternative S-2 costs are estimated to be $2,717,000; Alternative S-3 costs are estimated to be $4,019,000; Alternative S-4 costs are estimated to be $5,076,000; Alternative S-5 costs are estimated to be $7,664,440; and, Alternative S-6 cost are estimated to be $8,177,000.

Modifying Criteria - *The final two evaluation criteria, criteria 8 and 9, are called "modifying criteria " because new information or comments from the state or the community on the Proposed Plan may modify the preferred response measure or cause another response measure to be considered.*

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8. State acceptance

Indicates whether based on its review of the RI/FS reports and the Proposed Plan, the state supports, opposes, and/or has identified any reservations with the selected response measure.

The State of New Jersey concurs with Alternative S-5.

9. Community acceptance

Summarizes the public's general response to the response measures described in the Proposed Plan and the RI/FS reports. This assessment includes determining which of the response measures the community supports, opposes, and/or has reservations about. EPA solicited input from the community on the remedial response measures proposed for the Site. The attached Responsiveness Summary addresses the comments received by the community. The community is supportive of Alternative S-5.

PRINCIPAL THREAT WASTE

This action is considered the final remedy for the soils, buildings and above-ground storage tanks at the Site. This action addresses the contaminated soil and building sump sediments, some of which are considered principal threat wastes because the chemicals of concern are found at concentrations that pose a significant risk. The treatment; alternatives, including Alternatives S-3, S-4 and S-6, and, to a degree, S-5, will meet the "principal threat" waste requirements for considering treatment as a principal element.

SELECTED REMEDY

Based upon consideration of the results of the Site investigation, the requirements of CERCLA, the detailed analysis of the response measures, and public comments, EPA has determined that Alternative S -5 is the appropriate remedy for addressing the contaminated soil and debris at the Site. Alternative S-5 (Excavation; Off-site Disposal with Treatment) satisfies the requirements of CERCLA § 121 and the NCP's nine evaluation criteria for remedial alternatives, 40 CFR § 300.430 (e)(9). Alternative S-5 is comprised of the following components:

- demolition and off-site disposal of nine on-site buildings;
- removal and off-site disposal of above-ground storage tanks;
- excavation of an estimated 21,185 cubic yards of contaminated soil;
- off-site transportation and disposal of contaminated soil, with treatment as necessary;
- backfilling and grading of all excavated areas with clean soil and seeding the areas;
- placement of a deed notice to restrict land use to non-residential (commercial/light industrial) uses; and
- appropriate environmental monitoring to ensure the effectiveness of the remedy.

As part of the implementation of the selected remedy, additional information will be collected to further define the limits of contamination at the Site. For example, soil sampling will be conducted after the on-site buildings and all on-site sumps have been demolished to determine the volume of soil that must be removed from these areas, and to confirm the limits of excavation, including in those areas where contaminated material extends to the property line. In addition, investigations will be conducted where anomalies were detected during ground penetrating radar surveys. Finally, post-excavation sampling will confirm that all contaminated material with concentrations above the remediation goals has been removed.

The estimated cost of Alternative S-5 is $7,664,440. A summary of the estimated remedy cost for Alternative S-5 is included as Table 7 of this ROD. The information in the cost estimate summary table is based on the best available information regarding the anticipated scope of the remedial alternative. Changes in the cost elements are likely to occur as a result of new information and data collected during the engineering design of the remedial alternative. Major changes may be documented in a memorandum in the Administrative Record file, an Explanation of Significant Differences, or a ROD amendment. This is an order-of-magnitude engineering cost estimate that is expected to be within +50 to -30 percent of the actual project cost.

The selection of Alternative S-5 provides the best balance of tradeoffs among response measures with respect to the nine evaluation criteria. EPA believes that Alternative S-5 will be protective of human health and the environment, will be cost effective, and will utilize permanent solutions and alternative treatment technologies or resource recovery technologies to the maximum extent practicable.

STATUTORY DETERMINATIONS

As was previously noted, CERCLA § 121(b)(l) mandates that a remedial action must 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)(l) 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) 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).

Protection of Human Health and the Environment

The Selected Remedy, Alternative S-5, will adequately protect human health and the environment through off-site disposal, with treatment as needed, and deed restrictions. The Selected Remedy will eliminate all significant direct-contact risks to human health and the environment associated with the soil and debris. In addition, this action will eliminate and/or reduce substantial sources of contamination to the groundwater. This action will result in the reduction of exposure levels to acceptable risk levels within EPA's generally acceptable risk range of 10^{-4} to 10^{-6} for carcinogens and below an HI of 1 for non-carcinogens. Implementation of the Selected Remedy will not pose unacceptable short-term risks or adverse cross-media impacts.

Compliance with ARARs

Alternative S-5 will comply with ARARs as described below. Air standards set forth in 40 CFR 50 and NJAC 7:27-13 will be addressed through monitoring during remedial activities. Hazardous waste identification and listing will be performed in accordance with 40 CFR 261 and NJAC 7:25G-5. Hazardous waste disposal will be performed in accordance with 40 CFR 268.45 and NJAC 7:26G11. Transport and disposal of solid and hazardous wastes will be performed in accordance with regulations specified by the U.S. Department of Transportation (DOT) 49 CFR 170-179, RCRA (40 CFR 258, 263,264, and 265) and New Jersey (NJAC 73266, NJAC 16:49). A complete list of all ARARs may be referenced in Table 8.

Cost Effectiveness

In the lead agency's judgment, the Selected Remedy is cost-effective and represents a reasonable value for the money to be spent. In making this determination, the following definition was used: "A remedy shall be cost-effective if its costs are proportional to its overall effectiveness." (NCP § 300.430(f)(l)(ii)(D)) This was accomplished by evaluating the "overall effectiveness" of those alternatives that satisfied the threshold criteria (i.e., were both protective of human health and the environment and ARAR-compliant). Overall effectiveness was evaluated by assessing three of the five balancing criteria in combination (long-term effectiveness and permanence; reduction in toxicity, mobility, and volume through treatment; and short-term effectiveness). Overall effectiveness was then compared with costs to determine cost-effectiveness. The relationship of the overall effectiveness of this remedial alternative was determined to be proportional to its costs and therefore this alternative represents a reasonable value for the money to be spent.

The total present worth for Alternative S-5 is estimated to be $7,664,440. Alternative S-l was determined not to be an acceptable alternative. Alternative S-2 is estimated to cost $2,717,000, Alternative S-3 is estimated to cost $4,019,000, and Alternative S-4 is estimated to cost $5,076,000. However, these alternatives are not as protective of human health as the selected alternative. Alternative S-6 is estimated to cost $8177,000. Therefore, the selected alternative is cost effective as it has been determined to provide the greatest overall protectiveness for its present worth. costs.

Utilization of Permanent Solutions and Alternative Treatment Technologies

EPA has determined that the Selected Remedy represents the maximum extent to which permanent solutions and treatment technologies can be utilized in a practicable manner at the Site. Of those alternatives that are protective of human health and the environment and comply with ARARs. EPA has determined that the Selected Remedy provides the best balance of trade-offs in terms of the five balancing criteria, while also considering the statutory preference for treatment as a principal element and bias against off-site treatment and disposal and considering State and community acceptance. The Selected Remedy satisfies the criteria for long-term effectiveness and permanence by removing all excavated contaminated source material from the Site. The selected remedy does not present short-term risks different from the other alternatives. There are no special implementability issues since the remedy employs standard technologies.

Preference for Treatment as a Principal Element

This remedy excavates and treats the most highly contaminated soil off-site and, therefore, addresses the principal threat wastes at the Site.

Five-Year Review Requirements

Because this remedy results in hazardous substances, pollutants, or contaminants remaining on the Site above levels that allow for unlimited use and unrestricted exposure, a statutory review will be conducted within five years of the initiation of the remedial action for this operable unit, to ensure that the remedy is, or will be, protective of human health and environment, unless determined otherwise at the completion of the remedial action.

DOCUMENTATION OF SIGNIFICANT CHANGES

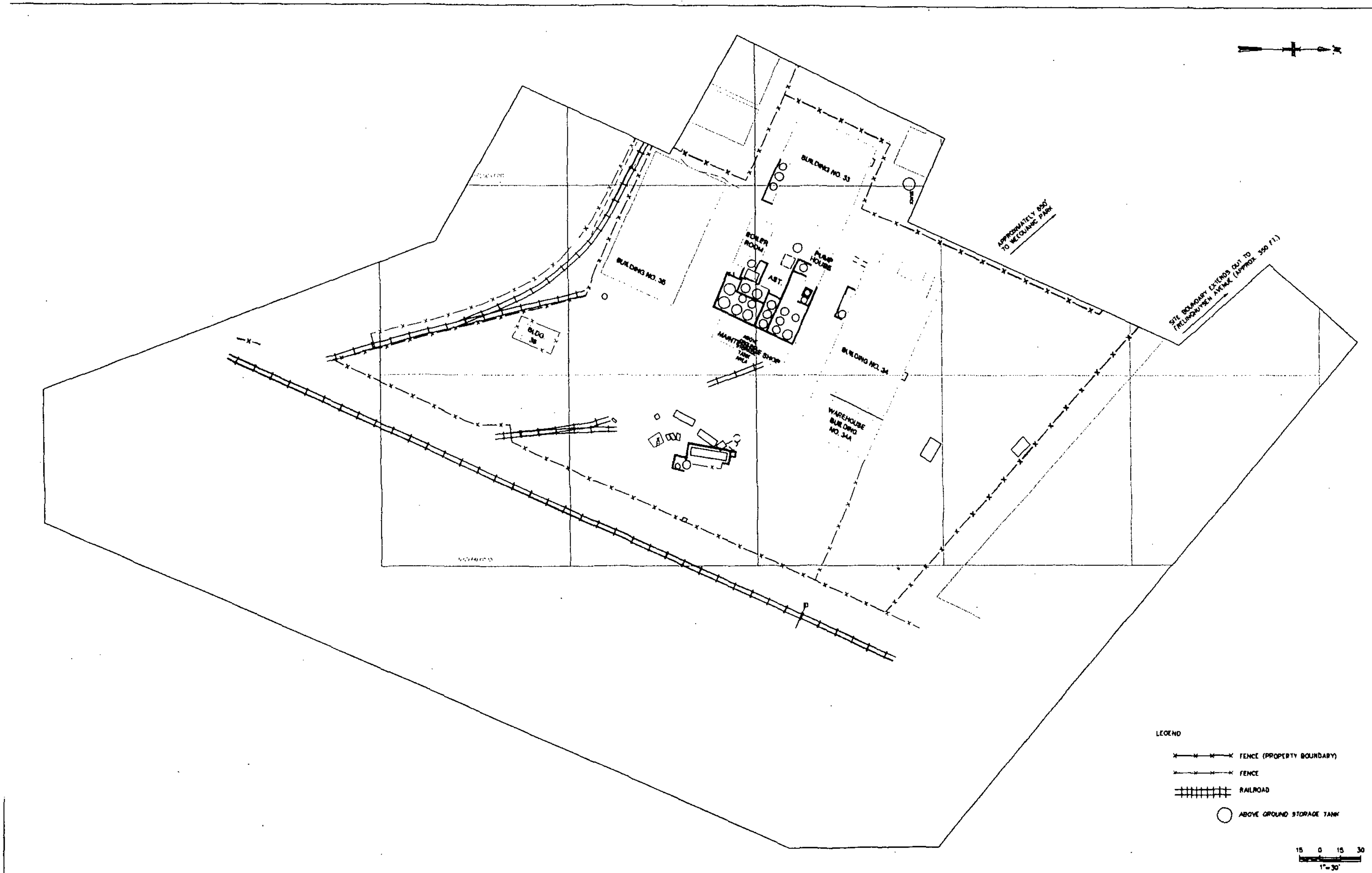
The Proposed Plan for the White Chemical Corporation site was released for public comment on August 4, 2005. The Proposed Plan identified Alternative S-5, Excavation and Off-site Disposal as EPA's preferred alternative. EPA reviewed all written and verbal comments submitted during the public comment period. It was determined that no significant changes to the remedy, as originally identified in the Proposed Plan, were necessary or appropriate.

As part of the implementation of the selected remedy, additional information will be collected to further define the limits of contamination at the Site. For example, soil sampling will be conducted after the on-site buildings and all on-site sumps have been demolished to determine the volume of soil that must be removed from these areas, and to confirm the limits of excavation, including in those areas where contaminated material extends to the property line. In addition, investigations will be conducted where anomalies were detected during ground penetrating radar surveys. Finally, post-excavation sampling will confirm that all contaminated material with concentrations above the remediation goals has been removed.

All building sumps, including those that have not been sampled, are expected to be removed during the implementation of the selected remedy.

Appendix I

Figures



MALCOLM PIRNIE

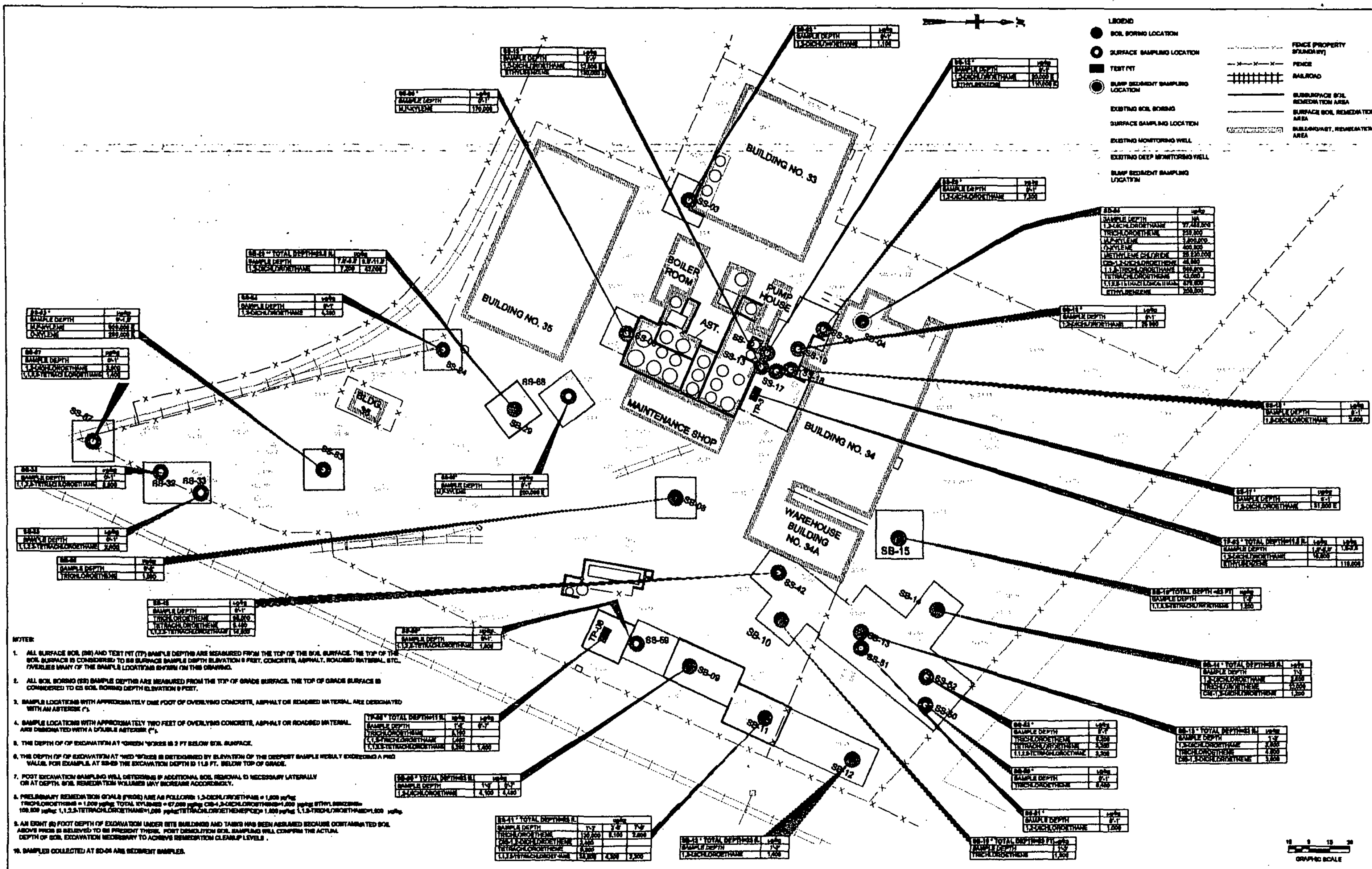
UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

TETRA TECH EC, INC

WHITE CHEMICAL CORPORATION SUPERFUND SITE
NEWARK, NEW JERSEY
USEPA RAC II PROGRAM
CONTRACT NO. 68-W-98-214; W.A. NO. 127-RICO-026J

SITE BASE MAP

PLATE 1



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SURFACE AND SUBSURFACE SOIL REMEDIATION AREAS WHERE VOCs EXCEED PRGs

PLATE 2

Appendix II

Tables

TABLE 1

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

Scenario Timeframe: Current/Future
Medium: All Soils
Exposure Medium: *All Soils*

Exposure Point	Chemical of Potential Concern	Concentration Detected		Concentration Units	Frequency of Detection	Exposure Point Concentration	Exposure Point Concentration Units	Statistical Measure
		Min	Max					
White Chemical All Soils	1,2-Dichloroethane	0.071	43	mg/kg	55/172	3.12	mg/kg	95% UCL - C
	Trichloroethene	0.077	130	mg/kg	62/172	5.36	mg/kg	95% UCL - C
	m,p-Xylenes	0.071	500	mg/kg	33/172	21.8	mg/kg	95% UCL - C
	o-Xylenes	0.075	260	mg/kg	31/172	8.92	mg/kg	95% UCL - C

Key
mg/kg: milligrams per kilogram
95% UCL - C: 95% Chebyshev Upper Confidence Limit

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

The table presents the chemicals of potential concern (COPCs) and exposure point concentration for each of the COPCs detected in media at the White Chemical Superfund site (*i.e.*, the concentration that will be used to estimate the exposure and risk from each COPC in each medium). 1,2-Dichloroethane, trichloroethene, and m-,p-xylenes and o-xylenes are the COPCs in all soils. The table includes the range of concentrations detected for each COPC in all soils, as well as the frequency of detection (i.e., the number of times the chemical was detected in the samples collected at the site), the exposure point concentration (EPC), and how the EPC was derived. Risks and hazards from inhalation of airborne contaminants in vapors emanating from onsite soils are modeled from the all soils EPCs presented and can be found in the Final Risk Assessment Report for the White Chemical Superfund Site.

TABLE 2

Non-Cancer Toxicity Data Summary

-Ingestion

Chemical of Potential Concern	Chronic/ Subchronic	Oral RfD Value	Oral RfD Units	Adjusted RfD (for Dermal)	Adjusted Dermal RfD Units	Primary Target Organ	Uncer-tainty /Modify Factors	Sources of RfD: Target Organ	Dates of RfD:
1,2-Dichloroethane	Chronic	2E-02	mg/kg-day	2E-02	mg/kg-day	Kidney	3000	NCEA	10/02
Trichloroethene	Chronic	3E-04	mg/kg-day	3E-04	mg/kg-day	Liver	3000	NCEA	08/01
Xylenes (total)	Chronic	2E-01	mg/kg-day	2E-01	mg/kg-day	Body Weight	1000	IRIS	02/03

-Inhalation

Chemical of Potential Concern	Chronic/ Subchronic	Inhal. RfC	Inhal. RfC Units	Inhalation RfD	Inhalation RfD Units	Primary Target Organ	Uncer-tainty /Modify Factors	Sources of RfD: Target Organ	Dates of RfC:
1,2-Dichloroethane	Chronic	5E-03	mg/m^3	1.4E-03	mg/kg-day	GI Tract	3000	NCEA	04/93
Trichloroethene	Chronic	4E-02	mg/m^3	1.1E-02	mg/kg-day	Liver, CNS	1000	NCEA	08/01
Xylenes (total)	Chronic	1E-01	mg/m^3	2.9E-02	mg/kg-day	CNS	300	IRIS	02/03

Key
NA: No information available
CNS: Central Nervous System Effects
GI Tract: Gastrointestinal Tract
NCEA: National Center for Environmental Assessment, U.S. EPA
IRIS: Integrated Risk Information System, U.S. EPA
mg/kg: milligrams per kilogram
mg/m^3: milligrams per cubic meter

Summary of Toxicity Assessment

This table provides non-carcinogenic risk information which is relevant to 1,2-dichloroethane, trichloroethene, and xylenes (total), the contaminants of potential concern in surface soils at the White Chemical Superfund Site. The toxicity values for xylenes (total) are applied to both m-,p-xylenes and o-xylenes.

TABLE 3

Cancer Toxicity Data Summary

-Ingestion, Dermal Contact

Chemical of Potential Concern	Oral Cancer Slope Factor	Units	Adjusted Cancer Slope Factor (for Dermal)	Slope Factor Units	Weight of Evidence/ Cancer Guideline Description	Source	Date
1,2-Dichloroethane	9.1E-02	$(mg/kg\text{-}day)^{-1}$	9.1E-02	$(mg/kg\text{-}day)^{-1}$	B2	IRIS	01/91
Trichloroethene	4E-01	$(mg/kg\text{-}day)^{-1}$	4E-01	$(mg/kg\text{-}day)^{-1}$	B2-C	NCEA	08/01
Xylenes (total)	NA	$(mg/kg\text{-}day)^{-1}$	NA	$(mg/kg\text{-}day)^{-1}$			

-Inhalation

Chemical of Potential Concern	Unit Risk	Units	Inhalation Cancer Slope Factor	Slope Factor Units	Weight of Evidence/ Cancer Guideline Description	Source	Date
1,2-Dichloroethane	NA	$(mg/m^3)^{-1}$	NA	$(mg/kg\text{-}day)^{-1}$			
Trichloroethene	NA	$(mg/m^3)^{-1}$	4E-01	$(mg/kg\text{-}day)^{-1}$	B2-C	NCEA	08/01
Xylenes (total)	NA	$(mg/m^3)^{-1}$	NA	$(mg/kg\text{-}day)^{-1}$			

Key

NCEA : National Center for Environmental Assessment
IRIS: Integrated Risk Information System

EPA Group:

A - Human carcinogen
B1 - Probable Human Carcinogen - Indicates that limited human data are available
B2 - Probable Human Carcinogen - Indicates sufficient evidence in animals associated with the site and inadequate or no evidence in humans
C - Possible human carcinogen
D - Not classifiable as a human carcinogen
E - Evidence of noncarcinogenicity

Summary of Toxicity Assessment

This table provides carcinogenic risk information which is relevant to 1,2-dichloroethane, trichloroethene, and xylenes (total), the contaminants of potential concern in surface soils at the White Chemical Superfund Site.

TABLE 4

Risk Characterization Summary - Non-Carcinogens

Scenario Timeframe: Future
Receptor Population: *Commercial/Industrial Onsite Worker*
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Primary Target Organ	Non-Carcinogenic Hazard Quotient			
					Ingestion	Inhalation	Dermal	Exposure Routes Total
All Soils	Air	Vapors in Outdoor Air	1,2-Dichloroethane	Kidney	--	0.2	--	0.2
			Trichloroethene	Liver	--	0.3	--	0.3
			Xylenes	Body Weight	--	0.5	--	0.5
							Total Hazard Index =	3.1

Scenario Timeframe: Future
Receptor Population: Construction Worker
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Primary Target Organ	Non-Carcinogenic Hazard Quotient			
					Ingestion	Inhalation	Dermal	Exposure Routes Total
All Soils	Air	Vapors in Outdoor Air	1,2-Dichloroethane	Kidney	--	0.5	--	0.5
			Trichloroethene	Liver	--	0.1	--	0.1
			Xylenes	Body Weight	--	0.05	--	0.05
							Total Hazard Index =	21

Scenario Timeframe: Current/Future
Receptor Population: Off-site Resident
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Primary Target Organ	Non-Carcinogenic Hazard Quotient			
					Ingestion	Inhalation	Dermal	Exposure Routes Total
All Soils	*Air*	*Vapors in* Outdoor Air	1,2-Dichloroethane	Kidney	--	2	--	2
			Trichloroethene	Liver	--	3	--	3
			Xylenes	Body Weight	--	4	--	4
							Total Hazard Index =	9

TABLE 4

Risk Characterization Summary - Non-Carcinogens

Scenario Timeframe: Current/Future
Receptor Population: Off-site Resident
Receptor Age: Child

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Primary Target Organ	Non-Carcinogenic Hazard Quotient			
					Ingestion	Inhalation	Dermal	Exposure Routes Total
All Soils	Air	Vapors in Outdoor Air	1,2-Dichloroethane	Kidney	--	4	--	4
			Trichloroethene	Liver	--	6	--	6
			Xylenes	Body Weight	--	9	--	9
							Total Hazard Index =	20

Scenario Timeframe: Current/Future
Receptor Population: Commercial/Industrial Off-site Worker
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Primary Target Organ	Non-Carcinogenic Hazard Quotient			
					Ingestion	Inhalation	Dermal	Exposure Routes Total
All Soils	Air	Vapors in Outdoor Air	1,2-Dichloroethane	Kidney	--	0.3	--	0.3
			Trichloroethene	Liver	--	0.5	--	0.5
			Xylenes	Body Weight	--	0.2	--	0.2
							Total Hazard Index =	2.0

Summary of Risk Characterization for Non-Carcinogens

The noncancer risk estimates presented represent both the noncarcinogenic hazards associated with exposure to the contaminants of potential concern as well as the total noncancer hazard index from exposure to all site-related contaminants detected. As shown in the table, the most significant contribution to the total noncancer hazard is from arsenic; no other individual contaminant contributed significantly to the total noncancer hazard.

TABLE 5

Risk Characterization Summary - Carcinogens

Scenario Timeframe: Future
Receptor Population: Commercial/Industrial On-Site Worker
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk			
				Ingestion	Inhalation	Dermal	Exposure Routes Total
All Soils	Air	Vapors in Outdoor Air	Trichloroethene	--	6E-04	--	6E-04
						Total Risk =	*1E-03*

Scenario Timeframe: Future
Receptor Population: Construction Worker
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk			
				Ingestion	Inhalation	Dermal	Exposure Routes Total
All Soils	Air	Vapors in Outdoor Air	Trichloroethene	--	7E-06	--	7E-06
						Total Risk =	3E-05

Scenario Timeframe: Current/Future
Receptor Population: Off-Site Resident
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk			
				Ingestion	Inhalation	Dermal	Exposure Routes Total
All Soils	Air	Vapors in Outdoor Air	Trichloroethene	--	6E-03	--	6E-03
						Total Risk =	6E-03

Scenario Timeframe: Current/Future
Receptor Population: Off-site Resident
Receptor Age: Child

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk			
				Ingestion	Inhalation	Dermal	Exposure Routes Total
All Soils	Air	Vapors in Outdoor Air	Trichloroethene	--	3E-03	--	3E-03
						Total Risk =	3E-03

TABLE 5

Risk Characterization Summary - Carcinogens

Scenario Timeframe: Current/Future
Receptor Population: Commercial/Industrial Off-site Worker
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk			
				Ingestion	Inhalation	Dermal	Exposure Routes Total
All Soils	Air	Vapors in Outdoor Air	Trichloroethene	--	8E-04	--	8E-04
						Total Risk =	9E-04

Summary of Risk Characterization for Carcinogens

The cancer risk estimates presented represent both the cancer risk associated with exposure to the contaminant of concern, Trichloroethene, as well as the total cancer risk from exposure to all site-related contaminants detected. As shown in the table, the most significant contribution to the total cancer risk is from TCE; no other contaminant contributed significantly to the total cancer risk.

TABLE 6 REMEDIATION GOALS SOIL WHITE CHEMICAL CORPORATION SITE				
Contaminant	**Risk Based Action Levels**[1]	**NJDEP Non-Residential Direct Contact Soil Cleanup Criteria (NRDCSCC)**	**NJDEP Impact to Ground Water Soil Criteria (IGWSCC)**	**Remediation Goals**
1,2 Dichloroethane	61,000 ug/kg	24,000 ug/kg	1,000 ug/kg	1,000 ug/kg
cis-1,2,-Dichloroethene	-	100,000 ug/kg	1,000 ug/kg	1,000 ug/kg
Ethylbenzene	-	100,000 ug/kg	100,000 ug/kg	100,000 ug/kg
1,1,2,2,-Tetrachloroethane	-	310,000 ug/kg	1,000 ug/kg	1,000 ug/kg
Tetrachloroethene (PCE)	-	6,000 ug/kg	1000 ug/kg	1,000 ug/kg
1,1,2-Trichloroethane	-	420,000 ug/kg	1,000 ug/kg	1,000 ug/kg
Trichloroethene	1,190 ug/kg	54,000 ug/kg	1,000 ug/kg	1,000 ug/kg
m,p-Xylenes	163,000 ug/kg	1,000,000 μg/kg[2]	67,000 μg/kg[2]	67,000 ug/kg[2]
o-Xylenes	155,000 ug/kg			

Note:
[1] Risk Based Action Levels were developed based on a 10^{-6} risk factor.
[2] Value provided for xylenes (total).

Table 7
REMEDIAL ACTION ALTERNATIVE COST ESTIMATE
White Chemical Corporation Site
Alternative S-2: Asphalt Cap

DESCRIPTION	QUANTITY	UNIT	UNIT COST	COST
BUILDING/AST DEMOLITION, ASPHALT CAP				
Mobilization	1	lump sum	$100,000	$100,000
Asbestos and Lead Paint Abatement (Buildings)	1	lump sum	$250,000	$250,000
Building Demolition	1	lump sum	$450,000	$450,000
Asbestos and Lead Paint Abatement (AST)	1	lump sum	$125,000	$125,000
AST Removal	1	lump sum	$200,000	$200,000
Backfill and Regrading	3,000	cu yd.	$25	$75,000
Asphalt Cap Construction (materials and placement)				
Geomembrane	21,300	sq yd	$5	$106,500
1 foot crushed stone	7,100	cu yd	$20	$142,000
8 inches asphalt base course	21,300	sq yd	$11	$234,300
3 inches asphalt top course	21,300	sq yd	$13	$276,900
SUB-TOTAL CAPITAL COSTS				$1,959,700
Engineering (15%)				$293,955
Contingency (25%)				$489,925
TOTAL CAPITAL COSTS				$2,743,580
ANNUAL O&M COSTS:				
Cap Maintenance	1	lump sum	$5,000.00	$5,000
TOTAL ANNUAL O&M COSTS				$5,000
PRESENT WORTH COSTS:				
Present worth of annual O&M costs, 5% rate over 30 years				$76,862
Total capital costs				$2,743,580
TOTAL PRESENT WORTH				**$2,821,000**

Table 7
REMEDIAL ACTION ALTERNATIVE COST ESTIMATE
White Chemical Corporation Site
Alternative S-3: Soil Vapor Extraction, Asphalt Cap

DESCRIPTION	QUANTITY	UNIT	UNIT COST	COST
BUILDING/AST DEMOLITION, ASPHALT CAP				
Mobilization	1	lump sum	$100,000	$100,000
Asbestos and Lead Paint Abatement (Buildings)	1	lump sum	$250,000	$250,000
Building Demolition	1	lump sum	$450,000	$450,000
Asbestos and Lead Paint Abatement (AST)	1	lump sum	$125,000	$125,000
AST Removal	1	lump sum	$200,000	$200,000
Backfill and Regrading	3,000	cu yd.	$25	$75,000
Asphalt Cap Construction (materials and placement)				
Geomembrane	21,300	sq yd	$5	$106,500
1 foot crushed stone	7,100	cu yd	$20	$142,000
8 inches asphalt base course	21,300	sq yd	$11	$234,300
3 inches asphalt top course	21,300	sq yd	$13	$276,900
SOIL VAPOR EXTRACTION				
Mobilization	1	lump sum	$15,000	$15,000
Pilot Test	1	lump sum	$40,000	$40,000
Treatment (includes well installation, equipment, et cetera)	21,185	cu yd	$30	$635,550
Decontamination/Demobilization	1	lump sum	$50,000	$50,000
Permitting	1	lump sum	$40,000	$40,000
Consulting/Monitoring/Reporting	1	lump sum	$75,000	$75,000
SUB-TOTAL CAPITAL COSTS				$2,815,300
Engineering (15%)				$422,295
Contingency (25%)				$703,825
TOTAL CAPITAL COSTS				$3,941,420
ANNUAL O&M COSTS:				
Cap Maintenance	1	lump sum	$5,000.00	$5,000
TOTAL ANNUAL O&M COSTS				$5,000
PRESENT WORTH COSTS:				
Present worth of annual O&M costs, 5% rate over 30 years				$76,862
Total capital costs				$3,941,420
TOTAL PRESENT WORTH				**$4,019,000**

APPENDIX B

Table 7
REMEDIAL ACTION ALTERNATIVE COST ESTIMATE
White Chemical Corporation Site
Alternative S-4: Steam Injection, Asphalt Cap

DESCRIPTION	QUANTITY	UNIT	UNIT COST	COST
BUILDING/AST DEMOLITION, ASPHALT CAP				
Mobilization	1	lump sum	$100,000	$100,000
Asbestos and Lead Paint Abatement (Buildings)	1	lump sum	$250,000	$250,000
Building Demolition	1	lump sum	$450,000	$450,000
Asbestos and Lead Paint Abatement (AST)	1	lump sum	$125,000	$125,000
AST Removal	1	lump sum	$200,000	$200,000
Backfill and Regrading	3,000	cu yd.	$25	$75,000
Asphalt Cap Construction (materials and placement)				
Geomembrane	21,300	sq yd	$5	$106,500
1 foot crushed stone	7,100	cu yd	$20	$142,000
8 inches asphalt base course	21,300	sq yd	$11	$234,300
3 inches asphalt top course	21,300	sq yd	$13	$276,900
STEAM INJECTION				
Mobilization	1	lump sum	$165,000	$165,000
Pilot Test	1	lump sum	$50,000	$50,000
System Installation	1	lump sum	$690,000	$690,000
Treatment (includes well installation, equipment, et cetera)	1	lump sum	$591,000	$591,000
Permitting	1	lump sum	$40,000	$40,000
Consulting/Monitoring/Reporting	1	lump sum	$75,000	$75,000
SUB-TOTAL CAPITAL COSTS				$3,570,700
Engineering (15%)				$535,605
Contingency (25%)				$892,675
TOTAL CAPITAL COSTS				$4,998,980
ANNUAL O&M COSTS:				
Cap Maintenance	1	*lump sum*	*$5,000.00*	$5,000
TOTAL ANNUAL O&M COSTS				$5,000
PRESENT WORTH COSTS:				
Present worth of annual O&M costs, 5% rate over 30 years				$76,862
Total capital costs				$4,998,980
TOTAL PRESENT WORTH				**$5,076,000**

Table 7
REMEDIAL ACTION ALTERNATIVE COST ESTIMATE
White Chemical Corporation Site
Alternative S-5: Excavation and Off-Site Disposal of All Contaminated Soil

DESCRIPTION	QUANTITY	UNIT	UNIT COST	COST
BUILDING/AST DEMOLITION				
Mobilization	1	lump sum	$100,000	$100,000
Asbestos and Lead Paint Abatement (Buildings)	1	lump sum	$250,000	$250,000
Building Demolition	1	lump sum	$450,000	$450,000
Asbestos and Lead Paint Abatement (AST)	1	lump sum	$125,000	$125,000
AST Removal	1	lump sum	$200,000	$200,000
EXCAVATION AND OFF-SITE DISPOSAL				
Mobilization	1	lump sum	$100,000	$100,000
Removal and Stockpiling of Asphalt and Concrete	4,969	cu yd.	$25	$124,227
Excavation and Stockpiling of Contaminated Soil	19,065	cu yd.	$25	$476,625
Excavation and Stockpiling of RCRA Hazardous Soil	2,120	cu yd.	$25	$53,000
Transportation & Offsite Disposal of Asphalt and Concrete	4,969	cu yd.	$50	$248,453
Transportation & Offsite Disposal of Contaminated Soil	19,065	cu yd.	$60	$1,143,900
Transportation & Offsite Disposal of RCRA Hazardous Soil	2,120	cu yd.	$525	$1,113,000
Post-Excavation Sampling and Analysis	120	sample	$350	$42,000
Backfill and Regrading	29,154	cu yd.	$25	$728,852
Topsoil/Seed (4 inches)	21,300	sq yd	$15	$319,500
SUB-TOTAL CAPITAL COSTS				$5,474,600
Engineering (15%)				$821,190
Contingency (25%)				$1,368,650
TOTAL CAPITAL COSTS				$7,664,440
ANNUAL O&M COSTS:				
No Maintenance Required	1	lump sum	$0.00	$0
TOTAL ANNUAL O&M COSTS				$0
PRESENT WORTH COSTS:				
Present worth of annual O&M costs, 5% rate over 30 years				$0
Total capital costs				$7,664,440
TOTAL PRESENT WORTH				**$7,665,000**

Table 7
REMEDIAL ACTION ALTERNATIVE COST ESTIMATE
White Chemical Corporation Site
Alternative S-6: Ex Situ Low Temperature Thermal Desorption

DESCRIPTION	QUANTITY	UNIT	UNIT COST	COST
BUILDING/AST DEMOLITION				
Mobilization	1	lump sum	$100,000	$100,000
Asbestos and Lead Paint Abatement (Buildings)	1	lump sum	$250,000	$250,000
Building Demolition	1	lump sum	$450,000	$450,000
Asbestos and Lead Paint Abatement (AST)	1	lump sum	$125,000	$125,000
AST Removal	1	lump sum	$200,000	$200,000
LOW TEMPERATURE THERMAL DESORPTION:				
Removal and Stockpiling of Asphalt and Concrete	4,969	cu yd.	$25	$124,227
Mobilization	1	lump sum	$150,000	$150,000
Excavation and Stockpiling of Contaminated Soils	21,185	cu yd.	$25	$529,625
Treatment with Low Temperature Thermal Desorption	21,185	cu yd.	$125	$2,648,125
Post-Treatment Sampling and Analysis	45	sample	$350	$15,750
Post-Excavation Sampling and Analysis	100	sample	$350	$35,000
Transportation & Offsite Disposal of Asphalt and Concrete	4,969	cu yd.	$50	$248,453
Permitting	1	lump sum	$40,000	$40,000
Backfill and Regrading	24,185	cu yd.	$25	$604,625
Topsoil/Seed (4 inches)	21,300	sq yd	$15	$319,500
SUB-TOTAL CAPITAL COSTS				$5,840,400
Engineering (15%)				$876,060
Contingency (25%)				$1,460,100
TOTAL CAPITAL COSTS				$8,176,560
ANNUAL O&M COSTS:				
No Maintenance Required	1	lump sum	$0.00	$0
TOTAL ANNUAL O&M COSTS				$0
PRESENT WORTH COSTS:				
Present worth of annual O&M costs, 5% rate over 30 years				$0
Total capital costs				$8,176,560
TOTAL PRESENT WORTH				**$8,177,000**

Table 8

Chemical Specific ARARs and TBCs
White Chemical Corporation Site

Regulatory Level	ARAR/TBC Identification	Status	Requirement Synopsis	FS Considerations
Federal	40 CFR, Part 268.40 Treatment Standards found in Table 1 in 40 CFR Part 261.24	ARAR	Hazardous constituents in hazardous waste or in treated residue must be at or below values found in the table ("total waste standards') for that waste and the extract of treated residue must be at or below the values found in the "waste extract standards" and the waste must be treated using specified technology	Technology standards or an equivalent treatment technology approved by the administrator exists for wastes prior to land disposal.
Federal	40 CFR, Part 268	ARAR	Land Disposal Restrictions (LDRs) identifies hazardous wastes that are restricted from land disposal and defines the limited circumstances under which an otherwise prohibited waste may be land disposed.	Soil removed for off-site disposal may contain contaminants at concentrations which trigger LDRs.
Federal	OSWER 9355.4-14FSA Soil Screening Guidance	TBC	Overall approach for developing soil screening levels for specific contaminants and exposure pathways at hazardous waste sites under residential use scenario.	Remedial action alternatives include options for in-situ remediation.
Federal	40 CFR Part 265, subparts I and J	ARAR	Defines time frame wastes may be stored on-site. The date on which the accumulation began must be clearly indicated on each container.	Remedial action alternatives may require the temporary storage of hazardous wastes on-site prior to transfer or on-site disposal.
State	New Jersey Soil Cleanup Criteria for Contaminated Sites	TBC	Provides soil cleanup criteria for contaminated sites.	Some alternatives include soil treatment.
State	New Jersey Water Pollution Discharge Elimination System (NJAC:7:14A)	ARAR	Provides requirements for NJPDES-DGW including Underground Injection Control Permit (NJAC 14A-8).	Some remedial action alternatives may require an Underground Injection Control Permit for in-situ injection of material into an aquifer.

Table 8

Location Specific ARARs and TBCs
White Chemical Corporation Site

Regulatory Level	ARAR/TBC Identification	Status	Requirement Synopsis	FS Considerations
Federal	Executive Order on Floodplain Management and Protection of Wetlands E.O. 11988 and 11990	ARAR	Must be developed if remedial action impacts floodplains - avoid to the extent possible the long and short-term adverse impacts associated with the occupancy and modification of floodplains.	Determine floodplains and potential to transport contamination in soil removal alternative.
New Jersey	NJAC 7:13 - Flood Hazard Area Regulations	ARAR	Purpose is to control development in floodplain areas in order to avoid or mitigate the detrimental effects.	Determine floodplains and potential to transport contamination in soil removal alternative or other detrimental effects from in-situ alternatives.
New Jersey	New Jersey's threatened plant species list	TBC	New Jersey's Threatened Plant Species. Division of Parks and Forestry, New Jersey Department of Environmental Conservation	Determine if any plants listed are in the areas to be used for remediation.

Table 8

Action Specific ARARs and TBCs
White Chemical Corporation Site

Regulatory Level	ARAR/TBC Identification	Status	Requirement Synopsis	FS Considerations
Federal	40 CFR, Part 268	ARAR	Land Disposal Restrictions (LDRs) identifies hazardous wastes restricted from land disposal and defines the limited circumstances under which an otherwise prohibited waste may be land disposed.	LDRs contain requirements for testing, treatment, storage, notification, certification of compliance, variances and record keeping. Wastes may be excluded from the ban under select circumstances defined in 40 CFR 268.
Federal	40 CFR, Part 262	ARAR	Standards applicable to generators of hazardous waste.	Remedial actions may generate hazardous waste for treatment and disposal.
Federal	40 CFR, Part 263	ARAR	Standards applicable to transporters of hazardous waste.	Remedial actions may require transportation and off-site disposal of hazardous wastes.
Federal	OSWER Off-site Policy Directive Number 98934.11	ARAR	This ensures that facilities authorized to accept CERCLA generated wastes comply with RCRA operating standards.	Remedial action alternatives include options for off-site disposal.
Federal	OSHA - General Industry Standards (29 CFR 1910)	ARAR	Specify the 8-hour TWA concentration for worker exposure to various organic compounds. Training requirements specified in 29 CFR 1910.	Applicable during remedial actions during construction of facilities for soil remediation.
Federal	OSHA - Safety and Health Standards (29 CFR 1926)	ARAR	OSHA Construction Industry Standards for workers.	Applicable during remedial actions during construction of facilities for soil remediation.

Table 8

Action Specific ARARs and TBCs
White Chemical Corporation Site

Regulatory Level	ARAR/TBC Identification	Status	Requirement Synopsis	FS Considerations
Federal	40 CFR, Part 268	ARAR	Land Disposal Restrictions (LDRs) identifies hazardous wastes restricted from land disposal and defines the limited circumstances under which an otherwise prohibited waste may be land disposed.	LDRs contain requirements for testing, treatment, storage, notification, certification of compliance, variances and record keeping. Wastes may be excluded from the ban under select circumstances defined in 40 CFR 268.
Federal	OSHA - Safety and Health Standards (29 CFR 1904)	ARAR	OSHA Record Keeping, Reporting and Related Regulations.	Applicable during construction of facilities for soil remediation for reporting occupational illnesses or injuries.
Federal	OSWER Directive #9355.7-04, Land Use in the CERCLA Remediation Selection Process	TBC	Consider land use in making remedy selection decisions with a particular focus on the community's desired future use of property.	Land use in and about the source of contamination.
State	"Brownfield and Contaminated Site Remediation Act," N.J.S.A. 58:10B-13.1a(2)(a). Codified in NJAC 7:26-6.4(g).	ARAR	As a condition of the No Further Action/Covenant Not to Sue, the engineering and institutional controls must be evaluated every two years.	Consider for the No Action and Excavation Alternatives if these require any institutional controls or deed restrictions. Require biennial certification submittal.
Federal	DOT Rules for Transportation of Hazardous Materials (49 CFR 107, 171.1-172.558).	ARAR	Provides regulations for the transportation of hazardous waste.	Consider for the soil excavation alternative.

Table 8 Page 5 of 5 Action Specific ARARs and TBCs White Chemical Corporation Site				
State	New Jersey 7:26 Subchapter 3	TBC	Provides regulations of the transportation of solid wastes in New Jersey.	Consider for the soil excavation alternative.
State	New Jersey 7:26E: "Technical Requirements for Site Remediation"	ARAR	Provides requirements for Site Remediation in New Jersey.	Applies to all alternatives.
Federal	RCRA Standards for Excavation and Fugitive Dust 40 CFR 264.251-1264.254.	ARAR	Presents RCRA standards for excavation of hazardous soil.	Consider for the excavation alternative.

Appendix III

ADMINISTRATIVE RECORD INDEX

September 22, 2005

Mr. George Hawley
Newark Public Library
5 Washington Street
Newark, New Jersey 07102

Dear Mr. Hawley:

Enclosed please find a copy of the Administrative Record file for the White Chemical Corporation Superfund site, Operable Unit 2. This is a compilation of the information upon which the Environmental Protection Agency based its selection of the response action for this site. An index is also enclosed.

Thank you for accepting these volumes and any future additions to the Administrative Record. Please make these documents available for public review and treat them as a non-circulating reference - not to be removed from your facility.

If you have any questions, please call me at (212) 637-4296 or Ms. Romona Pezzella, the Project Manager, at (212) 637-4385. If at any time you can no longer maintain the Administrative Record at your facility, please call us and we will arrange to have it moved.

Thank you again for your help.

Sincerely yours,

Jennie Delcimento
Environmental Protection Specialist
Emergency and Remedial Response Division

Enclosure

bcc: R. Pezzella
J. Josephson
H. Drohan

WHITE CHEMICAL CORPORATION SITE
OPERABLE UNIT TWO
ADMINISTRATIVE RECORD
INDEX OF DOCUMENTS

1.0 SITE IDENTIFICATION

1.5 Previous Operable Unit Information

P. 100001 - 100005
Report: Five-Year Review Report. Type la. White Chemical Corp. Site, Newark. New Jersey, prepared by U.S. EPA, Region 2, September 30, 1997.

P. 1.00006 - 100018
Memorandum to Mr. George Pavlou, Director, Emergency and Remedial Response Division, U.S. EPA, Region 2, from Mr. Robert Vaughn, Chief, Special Projects Branch, U.S. EPA, Region 2, re: White Chemical Corporation Site, Second Five-Year Review, September 25, 2002. (Attachment: Five-Year Review Report, White Chemical Superfund Site. Newark, Essex County, New Jersey, prepared by U.S. EPA, Region 2, September 26, 2002.)

3.0 REMEDIAL INVESTIGATION

3.3 Work Plans

P. 300001 - 300015
Letter to Mr. John J. Bachmann, Jr., Contracting Officer, and Mr. Keith Moncino, Project Officer, U.S. EPA, Region 2, from Dev Sachdev, PhD, PE, RAC II Program Manager, Foster Wheeler Environmental Corporation, re: RAC II Program - Contract No. 68-W-98-214, Work Assignment No. 027-RICO- 026J, White Chemical RI/FS, Letter Work Plan, June 17, 1999.

3.4 Remedial Investigation Reports

P. 300016 - 300191
Report: Final Remedial Investigation Report, White Chemical Corporation, Newark, New Jersey, Volume I of III, prepared by Malcolm Pirnie, Foster Wheeler Environmental Corporation, prepared for U.S. EPA, Region 2, April 2003.

P. 300192 - 300651
Report: Final Remedial Investigation Report, White Chemical Corporation, Newark, New Jersey, Volume II of III, prepared by Malcolm Pirnie, Foster Wheeler Environmental - Corporation, prepared for U.S. EPA, Region 2, April 2003.

P. 300652 - 301219 Report: Final Remedial Investigation Report. White Chemical Corporation, Newark, New Jersey, Volume III of III, prepared by Malcolm Pirnie, Foster Wheeler Environmental Corporation, prepared for U.S. EPA, Region 2, April 2003.

P. 301220 - 301689 Report: Final Risk Assessment Report. White Chemical Corporation, Newark, New Jersey, prepared by Malcolm Pirnie, Foster Wheeler Environmental Corporation, prepared for U.S. EPA, Region 2, May 2003.

P. 301690 - 301694 Report: Technical Memorandum Number 1, Work Assignment Number 027-RICO-026J, White Chemical RI/FS, Screening of Remedial Alternatives, April 28, 2004.

3.5 Correspondence

P. 301695 - 3017112 Letter to Mr. Matthew Westgate, U.S. EPA, Region, from Mr. Thomas E. Imbrigiotta, Hydrologist, U.S. Geological Survey, re: Evaluation of the White Chemical Site in New Jersey, April 24, 2003

4.0 FEASIBILITY STUDY

4.3 Feasibility Study Reports

P. 400001 - 400099 Report: Final Feasibility Study Report for Operable Unit 2: On-Site Soil, Buildings and Tanks, White Chemical Corporation Site, Newark, New Jersey, prepared by Malcolm Pirnie, Inc., and Tetra Tech EC, Inc., prepared for U.S. EPA, Region 2, August 2005.

4.6 Correspondence

P. 400100- 400101 Memorandum to Mr. Matthew Westgate, Remedial Project Manager, ERRD/SPB/Mega Projects Team, U.S. EPA, Region 2, from Mr. Michael Sivak, Risk Assessor, ERRD/PSB/Technical Support Team, U.S. EPA, Region 2, re: Draft Feasibility Study Report, White Chemical Superfund Site, February 2004, April 16, 2004.

P. 400102 - 400109 Facsimile Transmittal Form (with attachments) to Mr. Matthew Westgate, U.S. EPA, Region 2, from Mr. Luis Sanders, State of New Jersey, Department of Environmental Protection, re: White Chemical Corporation, Draft Feasibility Study Report, NJDEP Review and Comments, June 9, 2004.

7 .0 ENFORCEMENT

7.4 Consent Decrees

P.	700001 - 700040	United States District Court for the District of New Jersey, United States of America, Plaintiff, v. AZS Corporation, Toyo Soda (America), Inc., Tosoh Corporation, Tosoh America, Inc., and Tosoh USA, Inc., Defendants, Civil Action No. 99-464 (ORD), Notice of Lodging of Consent Decree, February 1, 1999.

10.0 PUBLIC PARTICIPATION

10.1 Comments and Responses

P.	10.00001- 10.00018	Letter (with attachment) to Mr. Jeff Josephson, Team Leader, U.S. EPA, Region 2, from Sharpe James, Mayor, City of Newark, re: White Chemical Company Superfund Site OU-2 (White Chemical Site), Feasibility Study for Buildings, Tanks & Contaminated Soils (June, 2005) (Proposed Plan), August 26, 2005.

10.3 Public Notices

P.	10.00019- 10.00019	United States Environmental Protection Agency Invites Public Comment on the Proposed Plan for the White Chemical Corporation Superfund Site, Essex County, New Jersey, undated.

10.4 Public Meeting Transcripts

P.	10.00020- 10.00057	Letter (with enclosure) dated August 11, 2005, to Ms. Romona Pezzella, U.S. EPA, Region 2, from Mr. Richard J. Feeney, P. E., Tetra Tech EC, Inc., re: USEPA RAC II Contract Number: 68-W-98-214, Work Assignment Number: 127-RICO-026J, White Chemical RI/FS, Transcript from Public Meeting on 9 August 2005.

10.9 Proposed Plan

P.	10.00058- 10.00074	Superfund Program Proposed Plan, White Chemical Corporation Site, prepared by U.S. EPA, Region 2, August 2005.

Appendix IV

STATE CONCURRENCE LETTER

State of New Jersey
Department of Environmental Protection

Richard J. Codey
Acting Governor

Bradley M. Campbell
Commissioner

SEP 2 9 2005

Honorable Alan J. Steinberg, Regional Administrator
United States Environmental Protection Agency Region II
290 Broadway
New York, NY 10007-1866

RE: Record of Decision (ROD) Operable Unit #2
White Chemical Corporation Site, Newark, Essex County, NJ

Dear Mr. Steinberg:

The New Jersey Department of Environmental Protection (Department) has completed review of the September 2005 Draft Record of Decision (ROD) for Operable Unit #2 (OU2) submitted for the referenced site. The OU2 ROD addresses on-site buildings, above-ground storage tanks (ASTs), surface debris, and subsurface soil. The Department is pleased to concur with the chosen remedy.

The selected remedy for OU2 is Alternative S-5 (Excavation; Offsite Disposal with Treatment). Alternative S-5 is comprised of the following components:

- demolition and off-site disposal of nine on-site buildings
- removal and off-site disposal of above ground storage tanks
- excavation of an estimated 21,185 cubic yards of contaminated soil
- off-site transportation and disposal of contaminated soil, with treatment as necessary
- backfilling and grading of all excavated areas
- placement of a deed notice to restrict land use to non-residential use
- appropriate environmental monitoring to ensure the effectiveness of the remedy

As part of remedy implementation, EPA states that it will collect additional sampling information during post excavation. This will allow confirmation of the limits of the various excavation areas, and that all contaminated material with concentrations above the remediation goals have been removed.

Attachment A
Superfund Program Proposed Plan
White Chemical Corporation Site

Superfund Program
Proposed Plan

U.S. Environmental Protection
Agency, Region II

White Chemical Corporation Site

August 2005

EPA ANNOUNCES PROPOSED PLAN

This Proposed Plan describes the remedial alternatives that the U.S. Environmental Protection Agency (EPA) considered to remediate contaminated soils, sump sediments, buildings and tanks at the White Chemical Corporation Superfund Site (Site) located in Newark, New Jersey and identifies EPA's preferred alternative with the rationale for this preference. The Preferred Alternative calls for the excavation, transportation and disposal of an estimated 21,185 cubic yards of contaminated soil. The soil that is highly contaminated would be treated off-site (if required) prior to land disposal. This Proposed Plan includes summaries of all cleanup alternatives for contaminated soil evaluated for use at this Site. This document is issued by EPA, the lead agency for Site activities, and the New Jersey Department of Environmental Protection (NJDEP), the support agency for this project. EPA, in consultation with NJDEP, will select a final soil remedy for the Site after reviewing and considering all information submitted during the 30-day public comment period. EPA, in consultation with NJDEP, may modify the Preferred Alternative or select another response action presented in this Plan based on new information or public comments. Therefore, the public is encouraged to review and comment on all the alternatives presented in this Proposed Plan. A final groundwater remedy will be addressed in a future Proposed Plan and Record of Decision.

EPA is issuing this Proposed Plan as part of its community relations program under section 117(a) of the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA or Superfund). This Proposed Plan summarizes information that can be found in greater detail in the White Chemical Corporation Remedial Investigation and Feasibility Study (RI/FS) reports and other documents contained in the Administrative Record file for this Site. EPA and NJDEP encourage the public to review these documents to gain a more comprehensive understanding of the Site and Superfund activities that have been conducted at the Site.

Dates to remember:
MARK YOUR CALENDAR

PUBLIC COMMENT PERIOD:
August 4 - September 2, 2005
U.S. EPA will accept written comments on the Proposed Plan during the public comment period.

PUBLIC MEETING: August 9, 2005
U.S. EPA will hold a public meeting to explain the Proposed Plan and all of the alternatives presented in the Feasibility Study. Oral and written comments will also be accepted at the meeting. The meeting will be held at the **Newark City Hall Council Chambers, 920 Broad Street, Newark, NJ**

For more information, see the Administrative Record at the following locations:

U.S. EPA Records Center, Region II
290 Broadway, 18th Floor.
New York, New York 10007-1866
(212)-637-3261
Hours: Monday-Friday - 9 am to 5 pm

Newark Public Library
5 Washington Street
Newark, N.J. 07102
(973) 733-5412
Hours: Monday, Tuesday, Wednesday, Friday, and Saturday - 9 am - 5:30 pm; Thursday 9 am - 8:30 pm

SITE HISTORY

The White Chemical Corporation (WCC) Site measures 4.4 acres, and is located at 660 Frelinghuysen Avenue (Block 3872, Lot 109), Newark, Essex County, NJ. Frelinghuysen Avenue is a major thoroughfare with significant residential, commercial, and industrial populations. The Site is located immediately east of two large manufacturing facilities: a leather company and a sportswear manufacturer. An airport-support services complex is currently located north of the Site. The eastern border of the Site is adjacent to Conrail and Amtrack rail lines that serve as a major rail corridor in New Jersey. Weequahic Park (including Weequahic Lake and a golf course), a school, and several large housing complexes, high-rise senior citizen residences, and cemeteries, are located to the west, within 0.4 mile of the Site.

Major Site features include nine buildings, a former aboveground storage tank (AST) farm (tank farm), an underground tunnel, and a railroad spur. Five large buildings (Building Numbers 33, 34, 34A, 35 and 36), three smaller, facility-support buildings (Boiler Room, Pump House and Maintenance Shop), and a decontamination (decon) shed are located on the western portion of the property. The majority of these buildings are grouped around the former tank farm located near the center of the Site. The underground tunnel originates in the western portion of Building No. 34 and leads to the south. See Plate 1.

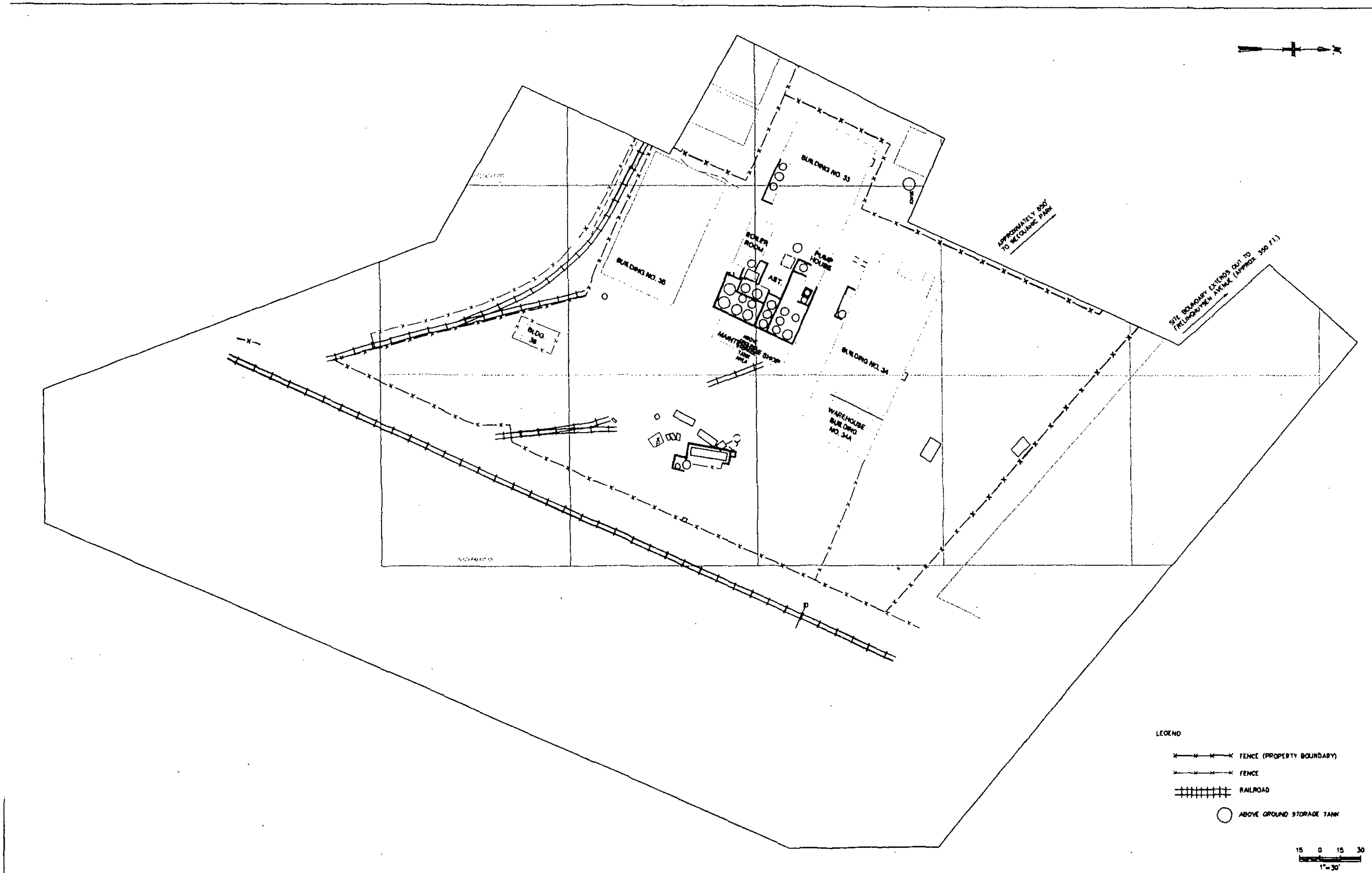
In September 1970, Central Services Corporation (CSC) purchased the property from the Union Carbide Corporation. It is believed that much of the present Site infrastructure, including sewer and utility conduits, and buildings, may date from the time of Union Carbide's ownership. CSC sold the property to the Lancaster Chemical Company, a division of the AZS Corporation, in August 1975.

The White Chemical Corporation (WCC) leased the Site in 1983 and moved its operations from Bayonne, NJ to Newark, NJ. WCC produced three primary groups of chemical products: acid chlorides, brominated organics (both aliphatic and aromatic), and mineral acids, most notably hydriodic acid. The finished products, mostly solids and powders, were generally formulated in small batches following customer specifications.

Beginning in 1989 and continuing through the present, the Site has been the subject of numerous inspections, site assessments, investigations, and removal actions. NJDEP conducted several inspections of the Site between June and September 1989 pursuant to the Resource Conservation and Recovery Act (RCRA). Based on these inspections, NJDEP issued several Notices of Violations for a variety of infractions including improper drum management, leaking drums, open containers, and inadequate aisle space. In October 1989, WCC initiated Chapter 11 bankruptcy proceedings. Between May and August 1990, NJDEP removed approximately 1,000 drums from the Site. On September 7, 1990, EPA performed a preliminary assessment of the WCC facility and found numerous air- and water-reactive substances in 55-gallon drums. Approximately 10,900 55- gallon drums of hazardous substances were precariously stacked or improperly stored throughout the Site. Drums and other containers were found in various stages of deterioration fuming and leaking their contents onto the soil. Numerous stains were observed on the soil. Other containers observed were 150 gas cylinders, 126 storage tanks, vats and process reactors, hundreds of fiberpack drums, glass and plastic bottles, and approximately 18,000 laboratory-type containers.

The on-site laboratory contained thousands of unsegregated laboratory chemicals in deteriorating conditions. These containers were haphazardly stored on structurally unsound shelving, or stacked in piles on the floor. EPA overpacked 11 fuming drums and secured them for future handling. In total, 4,200 empty drums were shipped off-site for disposal, and 6,700 drums were staged on-site for later characterization and disposal. In 1990, the EPA Technical Assistance Team reported that five extremely hazardous substances were present at the Site including: allyl alcohol; bromine; chlorine; red phosphorous; and, phosphorous trichloride.

In September 1990, EPA issued a Unilateral Administrative Order (UAO) barring WCC from continuing on-site operations and ordering evacuation of all personnel. In October 1990, the U.S. District Court for the District of New Jersey issued an order enforcing the UAO. In November 1990, the Agency for Toxic Substances and Disease Registry (ATSDR) issued a health consultation that concluded that the Site posed an imminent and substantial health and safety threat to nearby residents and workers. A Public Health Advisory was issued by ATSDR in November 1990. Between 1990 and 1991, EPA removed several thousand drums and performed several assessments at the Site.



MALCOLM PIRNIE

TETRA TECH EC, INC

WHITE CHEMICAL CORPORATION SUPERFUND SITE
NEWARK, NEW JERSEY
USEPA RAC II PROGRAM
CONTRACT NO. 68-W-98-214; W.A. NO. 127-RICO-026J

SITE BASE MAP

PLATE 1

Based on the known contamination at the property, EPA proposed the Site for inclusion on the National Priorities List (NPL) on May 9, 1991, and the Site was listed on September 25, 1991. The Operable Unit 1 (OU1) Record of Decision (ROD), issued on September 26, 1991, required appropriate security measures, stabilization of the Site, on-site treatment or neutralization of contaminated material, off-site treatment, recycling or disposal of contaminated material, decontamination and off-site disposal or recycling of empty drums and containers, decontamination of on-site storage tanks and process piping, and appropriate environmental monitoring.

RESPONSE ACTIONS	DESCRIPTION AND STATUS
• NJDEP Removal Action (May, 1990-August, 1990).	Approximately 1,000 drums were removed from the Site during a NJDEP removal action. Completed when NJDEP reached its project cost ceiling and requested EPA to take the lead on subsequent removal actions.
ROD 1 (September 1991) • OU-1	Implementation of security measures, stabilization of the Site, on-site treatment or neutralization of contaminated material, off-site treatment, recycling or disposal of contaminated material, decontamination and off-site disposal or recycling of empty drums and containers, decontamination of on-site Storage tanks and process piping, and appropriate environmental monitoring.
• PRP Removal Action (1992)	EPA issued a UAO to implement the OU1 ROD which resulted in the removal of 7,900 drums, approximately 12,500 laboratory chemical containers, approximately 50,000 gallons of liquid contained in process tanks, 14 gas cylinders, and draining and cleaning process tank piping and the contents of 100 tanks. The PRPs completed the removal action in March 1993.
ROD 2 (2005) (the subject of this Proposed Plan) • OU-2	Remediation of Site buildings, tanks, sump sediment and contaminated soils. Reduce the potential for exposure by direct contact or ingestion of unsaturated soils with contaminants above remediation goals. Reduce the potential for exposure through inhalation of vapors that may migrate from unsaturated soils. Reduce the potential for the further migration of contaminants from the unsaturated soils to the groundwater.

In March, 1992, EPA issued a UAO to eleven potentially responsible parties (PRPs). The eleven PRPs included AZS, the landowner at the time, WCC, the operator of the Site, WCCs president, and eight generators. Three of the generator PRPs complied with the UAO, initiating the response activities on October 27, 1992 and completing them on March 1993. In total, the PRP group removed approximately 7,900 drums, the contents of more than 100 tanks, approximately 12,500 laboratory chemical containers, approximately 50,000 gallons of liquid contained in process tanks, and 14 gas cylinders.

In 1996, the City of Newark acquired the Site through foreclosure after AZS failed to pay property taxes.

In 1998, the EPA Environmental Response Team (ERT) conducted a soil and building material investigation at the Site. Results of the sampling activities indicated the presence of heavy metals and polybrominated biphenyls (PBBs) in soil, sump sediment, and building material wipe samples. Semi-volatile organic compounds (SVOCs), heavy metals, and dioxin were also found in the soils and sediments, and asbestos was found in the on-site buildings.

SITE CHARACTERISTICS

The OU2 remedial investigation (RI) field work was conducted from October 1998 through July 1999. The OU2 RI was completed in April 2003 and focused on defining the nature and extent of contamination at the Site. Samples collected include surface and subsurface soil, sump sediment, groundwater and building materials.

Soils

The majority of the soils contamination at the Site is the result of improper staging, control and maintenance of process chemicals contained in drums, laboratory chemical containers, storage tanks and process tanks. Although soil contamination is present throughout the Site, the majority is located within the top two feet of soil. The OU2 RI concluded that it is unlikely that contaminants migrated off-site through the unsaturated soil. VOCs were detected in numerous surface and subsurface soil samples at concentrations that exceeded screening levels. The screening levels used were the New Jersey Department of Environmental Protection (NJDEP) Non-Residential Direct Soil Cleanup Criteria (NRDCSCC), and/or NJDEP Impact to Groundwater Soil Criteria (IGWSCC). These criteria are not Applicable or Relevant and Appropriate Regulations (ARARs) under CERCLA, but are "To Be Considered" criteria (TBCs) for the Site. A total of nine VOCs were detected in the surface soil (0-2 feet below ground surface) and three VOCs were detected in the subsurface soil at concentrations that exceeded the TBCs; the majority of these are chlorinated VOCs.

<u>Surface Soil</u>

Contamination in the surface soil is distributed throughout the Site while the subsurface contamination is primarily found near the eastern/northeastern Site boundary. In the surface soils, VOCs that were detected at very elevated concentrations exceeding TBCs included: 1,1,2,2-tetrachloroethane (28,000 parts per billion (ppb)), 1,1,2-trichloroethane (1,400 ppb), 1,2-dichloroethane (31,000 ppb), ethylbenzene (130,000 ppb), m,p,-xylene (500,000 ppb), o-xylene (260,000 ppb), and trichloroethene (130,000 ppb).

Three primary areas at the Site contain surface soil SVOC contamination above the TBCs, between the gate and the eastern Site boundary, the southeast corner (south of the concrete tank pad connected to Building No. 35), and the center of the Site (between Building Nos. 34 and 35). Seven SVOCs were detected in the surface soil and six SVOCs were detected in the subsurface soil at concentrations that exceeded the TBCs. The majority of these compounds are polycyclic aromatic hydrocarbons (PAHs).

Three pesticides/polychlorinated biphenyls (PCBs) were detected in the surface soil. In general, elevated pesticide/PCB concentrations were found in very few soil samples and at shallow depths (< 4 feet). The highest concentration of PCBs detected in surface soils was 13 parts per million.

Detectable levels of dioxin were found in all 11 surface soil samples analyzed for dioxin; however, the maximum concentration detected, 50.87 parts per trillion, is considered acceptable for commercial/industrial properties.

Although inorganics (or metal) contamination was found at depths up to 12 feet bgs, the majority of the metal contamination was present in the top two feet of soil. Seven inorganic contaminants were detected at concentrations above the TBCs.

Detectable levels of polybrominated biphenyls (PBBs) were found in nine of 23 surface soil samples. PBB concentrations ranged from 0.28 ppb to 190 ppb. There are no federal or state ARARs/TBCs for PBBs.

<u>Subsurface Soil</u>

In subsurface soils, 1,1,2,2-tetrachloroethane, 1,2 - dichloroethane, and trichloroethene exceeded TBCs. Although VOC contamination was found at depths up to 12 feet bgs, the majority of the contamination is found in the top two feet.

Subsurface soil SVOC contamination at concentrations above the TBCs was primarily found near the center of the Site. Although SVOC contamination was found at depths up to ten feet bgs, the majority of the contamination is found in the top two feet. There were only three SVOCs that exceeded TBCs in subsurface soils.

Only one pesticide (dieldrin) was detected at a subsurface soil concentration that exceeded the TBC.

Subsurface soils contained only thallium at a concentration above the NRDCSSC for that inorganic.

Detectable levels of PBBs were found in one of eight subsurface soil samples. PBBs were found at a maximum depth of 3.5 feet bgs at a concentration of 9.2 ppb. There are no federal or state ARARs/TBCs or Soil Screening Levels for PBBs.

RCRA TCLP Soil Sampling

Twenty surface soil and four subsurface soil samples were analyzed for Toxicity Characteristic Leaching Procedure (TCLP) parameters to determine if the soils are RCRA hazardous waste. The majority of the compounds/analytes were detected at trace levels; however, one surface soil sample contained one TCLP contaminant (trichloroethene) at a concentration (580 parts per billion) that exceeded the RCRA TCLP- regulatory limit. Based on these results, the majority of soil on the Site would not be characterized as a RCRA hazardous waste.

Building 34 Sump Sediment

Two sump sediment samples were collected from the Site to determine what types of contaminants may have been used in the buildings and to determine if the sumps/floor drains could be potential sources of soil and groundwater contamination. The majority of the contamination was found in the sump sediment sample collected from Building No. 34. VOC concentrations measured in the sump were sufficiently high to indicate that free-phase product may have accumulated in the sump. Residual contamination may exist around and under this sump. The VOCs that were detected include chlorinated compounds methylene chloride (25,230,000 ppb), 1,2-dichloroethane (27,460,000 ppb), trichloroethene (230,000 ppb), 1,1,2-trichloroethane (560,000 ppb), 1,1,2,2-tetrachloroethane (560,000 ppb), and the hydrocarbons ethylbenzene (200,000 ppb), o-xylene (400,000 ppb), and m,p-xylene (3,800,000 ppb).

The only semi-volatile contaminant detected at concentrations that exceeded TBCs was benzo(a)pyrene (2,900 ppb).

Five pesticides were detected at concentrations that exceeded the TBCs. These include Gamma-BHC , heptachlor, aldrin, dieldrin, 4,4'-DDD.

There are no federal or state ARARs/TBCs for PBB compounds but PBBs were detected in the two sump samples analyzed at concentrations up to 750 ppb.

Only one inorganic, antimony, was detected at a concentration that exceeded the NRDCSCC.

RCRA TCLP Sump Sediment Sampling

Two sump samples were analyzed for TCLP parameter and one contaminant 1,2-dichloroethane was detected at a concentration that exceeded an ARAR. 1,2-dichloroethane was detected at concentrations up to 760,000 ppb which exceeded the RCRA TCLP-regulatory limit of 500 ppb.

Building Materials

Asbestos-containing materials (ACMs) both friable and non-friable, were found in all of the Site buildings except the Decon Shed and Pump House. The majority of the ACMs were from laboratory related furnishings, caulking, and miscellaneous debris.

Lead-based paint was detected in Building Nos. 33,34,35 and 36, the Boiler Room, and the Pump House. With the exception of a wooden door casing, all lead-based paint was found on steel or other metal substrates such as columns, beams, windows doors, stairs, ladders, a wall, an elevator, and a fire escape.

One TCLP compound, 1,2-dichloroethane, was detected in a building material sample at a concentration that exceeded the RCRA TCLP-regulatory limit. This sample was collected from the exterior of Building No. 33.

Wipe samples were collected from three buildings; Building Nos. 33,34 and 35. Analysis of these samples indicated the presence of 24 SVOCs, eight pesticides, PBBs, and 21 metals. None of the detected concentrations can be compared to any standard since there are not federal or state ARARs/TBCs for wipe samples.

WHAT IS A "PRINCIPAL THREAT"?

The NCP establishes an expectation that EPA will use treatment to address the principal threats posed by a site wherever practicable (NCP Section 300.430(a)(1)(iii)(A)). The "principal threat" concept is applied to the characterization of "source materials" at a Superfund site. A source material is material that includes or contains hazardous substances, pollutants or contaminants that act as a reservoir for migration of contamination to groundwater, surface water or air, or acts as a source for direct exposure. Contaminated groundwater generally is not considered to be a source material; however, Non-Aqueous Phase Liquids (NAPLs) in groundwater may be viewed as source material. Principal threat wastes are those source materials considered to be highly toxic or highly mobile that generally cannot be reliably contained, or would present a significant risk to human health or the environment should exposure occur. The decision to treat these wastes is made on a site-specific basis through a detailed analysis of the alternatives using the nine remedy selection criteria This analysis provides a basis for making a statutory finding that the remedy employs treatment as a principal element.

Based on the results of the sampling conducted at the Site, the principal threats posed by the Site are portions of the highly contaminated surface and subsurface soils, and the building sump sediments.

SCOPE AND ROLE OF THE ACTION

As previously discussed, EPA is addressing the remediation of the White Chemical Corporation Site in a phased approach. This ROD, the second of three RODs planned for the Site, focuses on the remediation of the on-site buildings, above-ground storage tanks, on-site soil and sump sediment. The OU1 ROD, issued on September 26, 1991, and the 1990 and 1992 removal actions at the Site resulted in stabilization of the Site, on-site treatment or neutralization of contaminated material, off-site treatment, recycling or disposal of contaminated material, decontamination and off-site disposal or recycling of empty drums and containers, decontamination of on-site storage tanks and process piping, and environmental monitoring. The third and final ROD for the Site will focus on groundwater contamination.

SUMMARY OF SITE RISKS

Based upon the results of the OU2 RI, a baseline risk assessment was conducted to estimate the risks associated with current and future Site conditions.

The 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. Based on current zoning and future development plans, the Site is likely to remain commercial/industrial, and no residential land use is expected at the Site, although surrounding properties are a mix of commercial/industrial facilities and residential homes. Therefore, the baseline human health risk assessment focused on health effects for populations that are likely to be present under these land use scenarios (trespassers, commercial/industrial workers, construction workers and off-site residents) and that could result from current and future direct contact with contaminated surface and subsurface soils, such as incidental ingestion of contaminated soils or inhalation of particulate dust at the Site and off the Site. It is EPA's current judgment that the Preferred Alternative identified in this Proposed Plan, or one of the other active measures considered in the Proposed Plan, is necessary to protect public health or welfare from actual or threatened releases of hazardous substances into the environment.

Human Health Risks

The human health risk assessment evaluated exposure to surface and subsurface soils at the Site under several exposure scenarios, including direct contact exposures to current trespassers exposed to surface soils, and future exposure to surface and subsurface soils by on-site commercial/industrial workers and construction workers, as well as current and future exposures to off-site residents and off-site workers to fugitive dust and vapors generated from on-site soils.

No unacceptable cancer risks or non-cancer hazards were estimated for current trespassers at the Site.

Direct contact exposure, including incidental ingestion of soil, dermal contact with soil, and inhalation of fugitive dust and vapors emanating from soils, is associated with excess lifetime cancer risks of 9×10^{-4} for the commercial/industrial worker. The non-cancer hazard index of 3 exceeds EPA's benchmark of 1. In both estimates, trichloroethene contributes most significantly to the cancer risk and non-cancer hazard.

The evaluation of exposure to future construction workers at the Site results in a non-cancer hazard index of 18, with trichloroethene and 1,2-dichloroethane contributing most significantly to the total hazard. The excess lifetime cancer risk is within acceptable levels.

Off-site residents, both adult and children, were evaluated for exposures to air-borne fugitive dust and vapors from on-site soils migrating off Site. The excess lifetime cancer risks are 6×10^{-3} and 2×10^{-3} for adult and child residents, respectively. The non-cancer hazard index for the child resident is 5; the non-cancer hazard index for the adult is below the benchmark of 1. The risk driving chemicals for both the cancer effects and the non-cancer effects are trichloroethene, 1,2-dichloroethane and xylenes.

WHAT IS RISK AND HOW IS IT CALCULATED?

Superfund baseline human health risk assessment is an analysis of the potential adverse health effects caused by hazardous substance releases from a site in the absence of any actions to control or mitigate these under current- and future-land uses. A four-step process is utilized for assessing site-related human health risks for reasonable maximum exposure scenarios.

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

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

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

Risk Characterization: This step summarizes and combines outputs of the exposure and toxicity assessments to provide a quantitative assessment of site risks. Exposures are evaluated based on the potential risk of developing cancer and the potential for non-cancer health hazards. The likelihood of an individual developing cancer is expressed as a probability. For example, a 10^{-4} cancer risk means a "one-in-ten-thousand excess cancer risk"; or one additional cancer may be seen in a population of 10,000 people as a result of exposure to site contaminants under the conditions explained in the Exposure Assessment. Current Superfund guidelines for acceptable exposures are an individual lifetime excess cancer risk in the range of 10^{-4} to 10^{-6} (corresponding to a one-in-ten-thousand to a one-in-a-million excess cancer risk). For non-cancer health effects, a "hazard index" (HI) is calculated. An HI represents the sum of the individual exposure levels compared to their corresponding reference doses. The key concept for a non-cancer HI is that a "threshold level" (measured as an HI of less than 1) exists below which non-cancer health effects are not expected to occur.

For the off-site worker exposed to fugitive dust and vapors generated from on-site soils, the excess lifetime cancer risk is estimated at 8×10^{-4}, with trichloroethene as the most significant contributor to the cancer risk. The non-cancer hazard index is

2, with trichloroethene and xylenes as most significant contributors.

These risks and hazard levels indicate that there is significant potential risk to workers from direct exposure to contaminated soil and to off-site residents and workers from on-site contaminants in the soils. The risk estimates are based on current reasonable maximum exposure scenarios and were developed by taking into account various conservative assumptions about the frequency and duration of an individual's exposure to the soil and the airborne dust and vapors, as well as the toxicity of the chemicals of concern, including trichloroethene, 1,2-dichloroethane, and xylenes.

The results of the baseline risk assessment were used to derive Site-specific Risk-Based Action Levels (RBALs) for those chemicals in soil with the potential to cause human health risks in excess of EPA acceptable levels. RBALs were derived for trichloroethene, 1,2-dichloroethane and xylenes.

Ecological Risks

The Site offers limited habitat value to wildlife since it is within a highly urbanized location and contains very little vegetation or open space. This is also likely to be the case under the future-use scenario. Therefore, no further action is recommended with regard to ecological receptors at the Site.

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 ARARs and appropriate criteria, advisories, and guidance (i.e., TBCs) and RBALs established based on the risk assessment. Remedial action objectives developed for the soil considers all identified Site concerns and contaminant pathways, and are listed below:

- Reduce or eliminate the direct contact threat associated with contaminated soil to levels protective of a commercial/industrial use.
- Reduce or eliminate exposure through inhalation of vapors that may migrate from contaminated soils.
- Minimize or eliminate contaminant migration to the groundwater.
- Maximize consistency with the future development of the Site.

This proposed action would reduce the direct contact excess cancer risk associated with exposure to contaminated soils to below one in a million for commercial/industrial Site uses. This will be achieved by reducing the concentration of the surface and subsurface soil contaminants to at or below RBALs indicated in Table 1.

Because soils are contaminated with VOCs at levels that could result in continuing sources of groundwater contamination, this proposed action would reduce the threat to groundwater posed by VOCs in these soils by addressing the VOCs in soils in excess of the NJDEP IGWSCC, as indicated in Table 1, to the extent practicable. Therefore, the NJDEP IGWSCC are selected as PRGs for VOCs in soils at the Site. The estimated depth of the soil excavation of up to 8 feet below ground surface is based on the depth to groundwater which averages 8 feet across the Site.

SUMMARY OF REMEDIAL ALTERNATIVES

CERCLA requires that each selected Site remedy be protective of human health and the environment, be cost effective, comply with other statutory laws, and utilize permanent solutions and alternative treatment technologies and resource recovery alternatives to the maximum extent practicable. In addition, the statute includes a preference for the use of treatment as a principal element for the reduction of toxicity, mobility, or volume of the hazardous substances.

The "construction time" for each alternative reflects only the time required to construct or implement the remedy and does not include the time required to design the remedy. It generally takes 1-2 years for planning, design and procurement prior to subsequent construction of the remedial alternative.

The OU2 FS report evaluates in detail six remedial alternatives for contaminated soils.

The OU 2 FS estimates the volume of soil that requires remediation to be 21,185 cubic yards (CY). This includes the soil under all Site buildings and ASTs, which have not been sampled and an additional 30% for slope cutback. Based on the limited TCLP sampling results, it is estimated that approximately 2,000 CY would be considered hazardous under RCRA. A total of six alternatives (S1 through S6) were developed for the soils at the Site.

In addition to the technologies indicated under each alternative, all of the alternatives would require an Institutional Control such as a deed restriction because contaminants would remain on-site above levels that would allow for residential use.

SUMMARY OF REMEDIAL ALTERNATIVES		
Medium	**RI/FS Designation**	**Description**
Site-Wide Soils	S-1	No Action
	S-2	Asphalt Cap - Building demolition and above-ground storage tank removal, followed by construction of an asphalt cap.
	S-3	Soil Vapor Extraction, Asphalt Cap - Building demolition and above-ground storage tank removal, followed by *in situ* treatment of VOC-contaminated soils through SVE and containment of residual contaminated soils under an asphalt cap.
	S-4	Steam Injection, Asphalt Cap - Building demolition and above ground storage tank removal, followed by *in situ* treatment of VOC-contaminated soils through steam injection and containment of residual contaminated soils under an asphalt cap.
	S-5	Off-site Disposal - This alternative consists of building demolition and AST removal, followed by removal of all VOC-contaminated soil above PRGs and transportation off-site to an appropriate disposal facility. Excavated areas would be backfilled with select fill. The Site would be seeded in preparation for redevelopment.
	S-6	Low Temperature Thermal Desorption - Building demolition and above-ground storage tank removal, followed by *ex situ* low temperature thermal desorption and construction of an asphalt cap.

Alternative S-1 : No Action

Estimated Capital Cost:	$0
Estimated Annual O&M Cost:	$0
Estimated Present Worth:	$0
Estimated Construction Time:	None

CERCLA and the National Contingency Plan (NCP) require the evaluation of No Action as a baseline to which other alternatives are compared. No active remediation or containment of any contamination associated with the soils/buildings/tanks would be performed. However, this alternative would include five-year reviews of Site data as required by CERCLA for sites where contamination remains after initiation of the remedial action.

Because this alternative would result in hazardous substances, pollutants, or contaminants remaining at the Site above levels that allow for unlimited use and unrestricted exposure, EPA would review such action at least every five years.

Alternative S-2: Containment

Estimated Capital Cost:	$2,640,000
Estimated Annual O&M Cost:	$5,000
Estimated Present Worth:	$2,717,000
Estimated Construction Time:	6-12 months

Alternative S-2 consists of the demolition of all on-site buildings, AST removal, and placement of an asphalt cap over the Site. Prior to building demolition, abatement of asbestos and lead-based paint would be required. All removed asbestos and lead-based paint would be disposed of at an appropriately licensed off-site facility.

As a result of the presence of building material which exceeds TCLP for 1,2-dichloroethane in one sample from Building 33, additional building material samples would be collected during the pre-design or design phase from this building to verify the extent of the contamination. Any hazardous building materials would be segregated and disposed of at an appropriate off-site location. Non-hazardous demolition debris would be disposed of at a sanitary landfill. During building demolition, the existing on-site asphalt would be removed and disposed of at an appropriate facility.

Prior to removal of on-site ASTs, the tanks would be tested for the presence of asbestos and lead based paint. No sampling of the ASTs was conducted during the OU2 RI; however, visual evidence indicates the likely presence of both lead paint and asbestos. Following any abatement necessitated by the sampling, the interior of the ASTs would be decontaminated (removal of product or sludge) and removed.

Because greater than 5,000 square feet of the Site would be disturbed during AST removal and building demolition, a Soil Erosion and Sediment Control Plan would be developed. The requirements of this plan would likely include: installation of a silt fence around the Site, construction of a crushed stone stabilized construction entrance, and protection of any on-site catch basins. The Soil Erosion and Sediment Control Plan would also cover any further remedial work at the Site.

Following building demolition and AST removal, the entire Site would be paved with an asphalt cap. The cap would be placed on top of existing Site soil and graded to provide drainage towards existing catch basins. The catch basins would be modified so that they would remain level with the top of the asphalt cap. The asphalt cap would consist of (from bottom to top): a geomembrane liner, one foot of crushed stone sub-base, eight inches of asphalt base and three inches of top course. In addition, a deed restriction would be placed on the Site to limit future intrusive Site activities. Long-term maintenance of the asphalt cap would be required.

Because this alternative would result in hazardous substances, pollutants, or contaminants remaining at the Site above levels that allow for unlimited use and unrestricted exposure, EPA would review such action at least every five years.

Alternative S-3: Soil Vapor Extraction, Asphalt Cap

Estimated Capital Cost:	$3,941,420
Estimated Annual O&M Cost:	$5,000
Estimated Present Worth:	$4,019,000
Estimated Construction Time:	2 years

Following building demolition and AST removal, as described previously under Alternative S-2, VOC-contaminated soil would be treated with Soil Vapor Extraction (SVE). The exact design of the SVE treatment process for the Site would be developed in the design phase through a pilot study. In general, though, a series of vertical wells would be installed around the Site, and a vacuum would be applied to the soil to induce the flow of air and remove the VOCs. Vapors that are recovered by the wells would be treated using Granular Activated Carbon (GAC). The GAC would need to be periodically removed for off-site regeneration and replacement. After completion of the SVE, the entire Site will be paved with an asphalt cap, as described in Alternative S-2. A deed restriction would be placed on the Site, and long-term maintenance of the asphalt cap would be required.

Because this alternative would result in hazardous substances, pollutants, or contaminants remaining at the Site above levels that allow for unlimited use and unrestricted exposure, EPA would review such action at least every five years.

Alternative S-4: Steam Injection, Asphalt Cap

Estimated Capital Cost:	$4,998,980
Estimated Annual O&M Cost:	$5,000
Estimated Present Worth:	$5,076,000
Estimated Construction Time:	2 years

Following building demolition and AST removal, as described previously under Alternative S-2, VOC-contaminated soil would be treated with steam injection. As with SVE, the steam injection process option is intended to remove volatile organic contaminants in the soil. A pilot test would be required prior to design. In general, a series of steam injection wells would be installed to a depth just below the bottom of the vadose zone (approximately eight feet below grade). Steam would be injected through these wells, heating the overlying soil, and thereby volatilizing the VOCs. The resulting vapors would then be removed through SVE. While the initial costs for steam injection are higher than for standard SVE, it is possible that these costs can be recouped through a greater efficiency in removal. After completion of the steam injection treatment, the Site will be paved with an asphalt cap, as described in Alternative S-2. A deed restriction would be placed on the Site, and long-term maintenance of the asphalt cap would be required.

Because this alternative would result in hazardous substances, pollutants, or contaminants remaining at the Site above levels that allow for unlimited use and unrestricted exposure, EPA would review such action at least every five years.

Alternative S-5: Excavation and Off-site Disposal

Estimated Capital Cost:	$7,664,440
Estimated Annual O&M Cost:	$0
Estimated Present Worth:	$7,664,440
Estimated Construction Time:	1 year

Following building demolition and AST removal, as described previously under Alternative S-2, all soil contaminated above PRGs would be excavated and disposed of off-site. There are no foreseen space constraints for the removal of soil at the Site. Excavation could proceed utilizing conventional sloping or benching techniques to provide worker protection and minimize cave-in and/or wall collapse. Following excavation, soil would be stockpiled on-site prior to transportation to an off-site disposal facility. After removal, the excavated areas would be backfilled with select fill, and then covered with top soil and seed.

Because this alternative would result in hazardous substances, pollutants, or contaminants remaining at the Site above levels that allow for unlimited use and unrestricted exposure, EPA would review such action at least every five years.

Alternative S-6: Low Temperature Thermal Desorption

Estimated Capital Cost:	$8,176,560
Estimated Annual O&M Cost:	$5,000
Estimated Present Worth:	$8,177,000
Estimated Construction Time:	1 year

Following building demolition and AST removal, as described in Alternative S-2, all soil contaminated above PRGs would be excavated, as described in Alternative S-5, and treated on-site using *ex situ* low-temperature thermal desorption. During treatment, any oversized objects, such as boulders, would be segregated and decontaminated. Following treatment, the treated soil would be backfilled. Additional select fill would be brought on-site to replace soil volume lost during treatment. The Site would then be covered by topsoil and seeded.

Because this alternative would result in hazardous substances, pollutants, or contaminants remaining at the Site above levels that allow for unlimited use and unrestricted exposure, EPA would review such action at least every five years.

EVALUATION OF ALTERNATIVES

In selecting its preferred alternative, EPA uses the nine NCP criteria below to evaluate the viable remedial alternative treatment technologies and resource recovery alternatives to the maximum extent practicable. In alternatives developed for a site. CERCLA requires that each selected site remedy be protective of human health and the environment, be cost effective, comply with other statutory laws, and utilize permanent solutions and addition, the statute includes a preference for the use of treatment as a principal element for the reduction of toxicity, mobility, or volume of the hazardous substances.

COMPARATIVE ANALYSIS

This section of the Proposed Plan profiles the relative performance of each alternative against the nine criteria described below.

EVALUATION CRITERIA FOR SUPERFUND REMEDIAL ALTERNATIVES
Overall Protectiveness of Human Health and the Environment determines whether an alternative eliminates, reduces, or controls threats to public health and the environment through institutional controls, engineering controls, or treatment.
Compliance with ARARs evaluates whether the alternative meets Federal and State environmental statutes, regulations, and other requirements that pertain to the site, or whether a waiver is justified.
Long-term Effectiveness and Permanence considers the ability of an alternative to maintain protection of human health and the environment over time.
Reduction of Toxicity, Mobility, or Volume of Contaminants through Treatment evaluates an alternative's use of treatment to reduce the harmful effects of principal contaminants, their ability to move in the environment, and the amount of contamination present.
Short-term Effectiveness considers the length of time needed to implement an alternative and the risks the alternative poses to workers, residents, and the environment during implementation.
Implementability considers the technical and administrative feasibility of implementing the alternative, including factors such as the relative availability of goods and services.
Cost includes estimated capital and annual operations and maintenance costs, as well as present worth cost. Present worth cost is the total cost of an alternative over time in terms of today's dollar value. Cost estimates are expected to be accurate within a range of +50 to -30 percent.
State/Support Agency Acceptance considers whether the State agrees with EPA's analyses and recommendations, as described in the RI/FS and Proposed Plan.
Community Acceptance considers whether the local community agrees with EPA's analyses and preferred alternative. Comments received on the Proposed Plan are an important indicator of community acceptance.

1. Overall Protection of Human Health and the Environment

Alternatives S-5 and S-6 would be equally protective of human health and the environment, since all contaminated soil above PRGs would be treated or removed from the Site. Alternatives S-3 and S-4 would be slightly less protective since residual contaminated soil may remain on the Site, but any residual risks would be mitigated by placement of an asphalt cap and a deed restriction. The residual risks for Alternative S-2 would be the highest of all other alternatives with the exception of S-1 and the residual risk would be mitigated by placement of an asphalt cap and a deed restriction. Alternative S-1 would not be protective of human health and the environment.

2. Compliance with ARARs

Alternatives S-3, S-4, S-5, and S-6 would be performed in accordance with location-and action-specific ARARs to the extent practicable. These alternatives would also comply with chemical-specific ARARs and TBC guidance. Alternatives S-1 and S-2 would not satisfy ARARs.

3. Long-term Effectiveness and Permanence

Alternatives S-5 and S-6 would provide the highest long-term effectiveness, since the contaminated soil would be treated or removed from the Site. The long-term effectiveness of Alternatives S-3 and S-4 would be slightly lower since residual contamination may remain on-site. Cap maintenance would be required. Alternatives S-1 and S-2 have the highest residual contamination left on-site. Alternative S-2, S-3 and S-4 provide an asphalt cap to mitigate existing risks; Alternative S-1 does not provide any mechanism for mitigating risk.

4. Reduction of Toxicity, Mobility, or Volume of Contaminants Through Treatment

Alternative S-5 provides the greatest reduction in toxicity, mobility and volume of contamination at the Site, but the reduction is via removal and off-site disposal, which may not necessarily include treatment. Alternatives S-3, S-4, and S-6 employ treatments (SVE, steam injection and low temperature thermal desorption (LTTD), respectively) that would address source removal, thereby reducing the toxicity, mobility and volume of contaminants. Alternative S-2 would reduce the mobility of contaminants via capping, but would not alter the toxicity or volume of contaminated material. Alternative S-1 provides no reduction in toxicity, mobility, or volume.

5. Short-term Effectiveness

Alternative S-1 would pose no risk to workers or the community during implementation, since no remedial activities would be conducted. Any risk to workers during implementation of Alternative S-2 would be limited during building/tank demolition and construction of the cap. Alternatives S-3, and S-4 would pose low risks to workers, since the *in situ* treatments associated with these alternatives would cause substantially less disturbance of contaminated soil than Alternatives S-5 and S-6. Alternatives S-3, S-4 and S-6 would also generate volatile emissions which would need to be controlled to protect workers and the community. Alternatives S-5 and S-6 would require excavation of contaminated soil; Alternative S-5 would also require off-site transportation. The potential volatile and dust emissions from both of these alternatives would need to be controlled to protect workers and the community.

6. Implementability

Technical Feasibility

Alternative S-1 is the easiest alternative to implement, since no remedial activities would take place. Alternative S-2 would be the next easiest to implement with only the construction of an asphalt cap. Alternatives S-3 and S-4 would require a pilot test. Alternatives S-5 and S-6 would employ conventional excavation techniques that are readily available from multiple vendors. Alternative S-6 would require construction of an on-site treatment facility. Should additional remedial activities be deemed necessary in the future, Alternatives S-5 and S-6 would best facilitate such activities. Alternatives S-2, S-3 and S-4 would require disturbance and replacement of the asphalt cap.

Administrative Feasibility

Alternatives S-1 and S-2 would leave contamination above PRGs on-site. Alternatives S-3 and S-4 may leave residual contamination. Each of these alternatives, therefore, would require a deed notice, five-year reviews, and coordination with state and local authorities to make decisions with regard to remedial activities.

Availability of Services and Materials

Alternative S-1 would not require any services or materials. Alternatives S-2, S-3, S-4, S-5 and S-6 would require common construction services and materials for implementation of the remedies. Alternatives S-2, S-3 and S-4 would also require Operation and Maintenance services for the cap and/or engineering controls.

7. Cost

There would be no capital or O&M costs associated with Alternative S-1. The remaining alternatives have net present worth costs ranging from $2,821,000 to $8,177,000, increasing in the following order: S-2, S-3, S-4, S-5 and S-6.

8. State/Support Agency Acceptance

The State of New Jersey is still evaluating EPA's preferred alternative presented in this Proposed Plan.

9. Community Acceptance

Community acceptance of the preferred alternatives will be evaluated after the public comment period ends and will be described in the Responsiveness Summary of the ROD, the document that officially formalizes the selection of the remedy.

SUMMARY OF THE PREFERRED ALTERNATIVE

Based upon an evaluation of the various alternatives, EPA recommends Soil Alternative S-5, Off-site Disposal, as the preferred alternative for the remediation of soils, above-ground storage tanks and buildings at the White Chemical Corporation Site. Along with Alterative S-6, Low Temperature Thermal Desorption, Alternative S-5 is the most protective of human health and the environment and provides the highest long-term effectiveness, because all soil above PRGs will be removed from the Site. Alternative S-5 also complies with all Site-specific ARARs and TBCs for the Site. The excavation and off-site disposal of the contaminated soil can be accomplished safely using conventional equipment and techniques and does note require a pilot test to insure its effectiveness. Alternative S-5 will not require any restriction on commercial redevelopment of the Site although as for all alternatives evaluated, Institutional Controls such as a deed restriction that prevents residential development at the Site would be required since the New Jersey Residential Direct Contact Soil Screening Criteria were not considered TBCs for the Site. Finally, of the alternatives that are most protective of human health and the environment and provide the greatest long-term effectiveness (S-5 and S-6), Alternative S-5 is the more cost effective.

Based on information currently available, EPA believes the Preferred Alternative meets the threshold criteria and provides the best balance of tradeoffs among the other alternatives with respect to the balancing and modifying criteria. EPA expects the Preferred Alternative to satisfy the following statutory requirements of CERCLA §121(b): 1) be protective of human health and the environment; 2) comply with ARARs; 3) be cost-effective; 4) utilize permanent solutions and alternative treatment technologies or resource recovery technologies to the maximum extent practicable; and 5) satisfy the preference for treatment as a principal element if treatment of contaminated soil is required prior to disposal.

COMMUNITY PARTICIPATION

EPA and the State of New Jersey provide information regarding the cleanup of the White Chemical Corporation Site to the public through public meetings, the Administrative Record file for the Site, and announcements published in the Star Ledger. EPA and the State encourage the public to gain a more comprehensive understanding of the Site and the Superfund activities that have been conducted at the Site.

The dates for the public comment period, the date, location and time of the public meeting, and the locations of the Administrative Record files, are provided on the front page of this Proposed Plan. EPA Region 2 has designated a Regional Public Liaison Manager as a point-of-contact for community concerns and questions about the federal Superfund program in New York, New Jersey, Puerto Rico and the U.S. Virgin Islands. To support this effort, the Agency has established a 24-hour, toll-free number that the public can call to request information, express their concerns or register complaints about Superfund.

For further Information on the White Chemical Corporation Site, please contact:

Romona Pezzella Remedial Project Manager (212) 637-4385	Pat Seppi Community Relations Coordinator (212) 637-3679

U.S. EPA
290 Broadway 19th Floor.
New York, New York 10007-1866

The Regional Public Liaison Manager for EPA's Region 2 office is:

George H. Zachos
Accelerated Cleanup Manager
Toll-free (888) 283-7626 or (732) 321-6621

U.S. EPA Region 2
2890 Woodbridge Avenues, MS-211
Edison, New Jersey 08837

TABLE 1
PRELIMINARY REMEDIATION GOALS
SOIL
WHITE CHEMICAL CORPORATION SITE

Contaminant	Risk Based Action Levels [1]	NJDEP Non-Residential Direct Contact Soil Cleanup Criteria (NRDCSCC)	NJDEP Impact to Ground Water Soil Criteria (IGWSCC)	Preliminary Remediation Goals
1,2 Dichloroethane	61,000 µg/kg	24,000 µg/kg	1,000 µg/kg	1,000 ug/kg
cis-1,2,-Dichloroethene	-	100,000 ug/kg	1,000 ug/kg	1,000 ug/kg
Ethylbenzene	-	100,000 ug/kg	100,000 ug/kg	100,000 ug/kg
1,1,2,2,-Tetrachloroethane	-	310,000 ug/kg	1,000 ug/kg	1,000 ug/kg
Tetrachloroethene (PCE)	-	6,000 ug/kg	1000 ug/kg	1,000 ug/kg
1,1,2-Trichloroethane	-	420,000 ug/kg	1,000 ug/kg	1,000 ug/kg
Trichloroethene	1,190 µg/kg	54,000 µg/kg	1,000 µg/kg	1,000 ug/kg
m,p-Xylenes	163,000 µg/kg	1,000,000 µg/kg [2]	67,000 µg/kg [2]	67,000 ug/kg [2]
o-Xylenes	155,000 µg/kg			

Note:
[1] Risk Based Action Levels were developed based on a 10^{-6} risk factor.
[2] Value provided for xylenes (total).

Attachment B
Newspaper Articles

..., yet seeks same seat

the judges," Roberts wrote 20 years earlier. "There is much to be said for changing life tenure to a term of years, without the possibility of reappointment."

In the same memo, Roberts railed against what he described as an overreaching federal judiciary. He suggested that lifetime tenure was defensible only if judges stuck to interpreting — rather than making — law. It was a frequent complaint through his writings of the time.

"It is certainly appropriate to protect judges from popular pressure if their task is limited to discerning and applying the intent of the framers or legislators," he wrote. "The federal judiciary today benefits from an insulation from political pressure even as it usurps the roles of the political branches."

His criticisms weren't limited to lifetime tenure. Writing to Fielding earlier that year, Roberts scoffed at a proposal by then-Chief Justice Warren Burger to lighten the Supreme Court's caseload.


ROBERTS

Burger suggested creating a "special temporary panel" of federal appeals court judges to hear cases referred by the Supreme Court.

In a Feb. 10, 1983, memo, Roberts wrote that "a new tier of judicial review is a terrible idea." The justices were to blame for taking too many cases and issuing "opinions so confusing that they often do not even resolve the questions presented," Roberts wrote.

To cut its caseload, he suggested that the high court consider "abdicating the role of fourth or fifth guesser in death penalty cases."

"So long as the court views itself as ultimately responsible for governing all aspects of our society, it will, understandably, be overworked," Roberts wrote. "A new court will not solve this problem."

Monaghan would not provide any details of how the three evaded the international arrest warrant facing them. He insisted he did not consider himself "on the run" — and hoped that Ireland would not extradite them to Colombia.

U.N. appeals for $80M to fight Niger famine

GARIN GOUBLI, Niger — The United Nations appealed yesterday for $80 million to fight a food crisis

paused to reload his army-issued M-16 rifle.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY INVITES PUBLIC COMMENT ON THE PROPOSED PLAN FOR THE WHITE CHEMICAL CORPORATION SUPERFUND SITE ESSEX COUNTY, NEW JERSEY

The U.S Environmental Protection Agency (EPA) invites you to attend a public meeting to discuss the Proposed Plan to address contaminated soils, sump sediments, buildings and above-ground storage tanks (ASTs) at the White Chemical Corporation Superfund Site (Site). EPA's preferred remedy for these contaminated areas of the Site is Excavation and Off-Site Disposal. This alternative requires the demolition of all on-Site buildings and ASTs and excavation of contaminated soil. All building material, tank material and soil would be disposed of at appropriately licensed off-Site facilities. The excavated area would be backfilled and the Site would then be covered with topsoil and seeded. EPA evaluated a total of six alternatives. During the public meeting, EPA representatives will address all of the alternatives, present additional information supporting the recommendation of the preferred remedy and receive public comments.

The public meeting will be held on **August 9, 2005 at 7:00 pm** at the Newark City Hall Council Chambers located at:

920 Broad St., Newark, NJ 07102

To request copy of the Proposed Plan you can:

email Pat Seppi, Community Involvement Coordinator:
seppi.pat@epa.gov

call Pat at (212) 637-3679 or toll-free at 1-800-346-5009

or visit EPA's website:
http://www.epa.gov/region2/superfund/npl/whitechemicalproposal2005.htm

Site-related documents are available for public review at the information repositories established for the Site at the following locations:

Newark Public Library: 5 Washington Street, Newark, NJ 07102, (973) 733-5412, Hours: Monday, Tuesday, Wednesday, Friday, and Saturday – 9 am-5:30 pm; Thursday 9 am-8:30 pm

USEPA Region II: Superfund Records Center, 290 Broadway, 18th Floor, New York, NY 10007-1866, (212) 637-4308, Hours: Monday-Friday 9 am-5 pm

The public comment period for this Proposed Plan runs from August 4, 2005 to September 2, 2005. All written comments or questions should be mailed to:

Jeff Josephson, Team Leader
U.S. Environmental Protection Agency
290 Broadway, 19th Floor
New York, New York 10007-1866
Telephone: (212) 637-4404; fax: (212) 637-4393
Internet: josephson.jeff@epa.gov

Attachment C
Transcript of Public Meeting

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

PUBLIC HEARING RE: WHITE CHEMICAL CORPORATION SUPERFUND SITE	TRANSCRIPT OF PROCEEDINGS

Tuesday, August 9, 2005
7:00 p.m.
Municipal Courthouse
Council Chambers
Broad Street
Newark, New Jersey

PRESENT:

PAT SEPPI
JEFF JOSEPHSON
ROMONA PEZZELLA
DENNIS McGRATH
MICHAEL SIVAK
BILL COLVEN

PUBLIC SPEAKERS:

WILBUR J. McNEIL
ALLEN LITTLE
KIM GADDY

COMPUTER TRANSCRIPTION BY
PROUT & CAMMAROTA, L.L.C.
CERTIFIED SHORTHAND REPORTERS
147 COLUMBIA TURNPIKE

FLORHAM PARK, N. J. 07932

TEL: (973) 660-0600 FAX: (973) 660-1966

CERTIFICATE OF OFFICER

I, PATRICIA A. NIEMIEC, a Certified Shorthand Reporter and a Notary Public of the State of New Jersey, do hereby certify that the following is a true and accurate transcript of the testimony taken stenographically by and before me at the date, time and place aforementioned.

I DO FURTHER CERTIFY that I am neither a relative nor employee, nor attorney or counsel to any parties involved; that I am neither related to nor employed by any such attorney or counsel, and that I am not financially interested in the action.

A NOTARY PUBLIC OF THE STATE OF NEW JERSEY
My Commission Expires: May 19, 2005
C. S. R. License No. 993

MS. SEPPI: Okay. Thank you for being here. We appreciate it.

My name is Pat Seppi, I'm with the Environmental Protection Agency out of Region II, we're headquartered in New York City. And I'd like the people that are also here to introduce themselves to you.

MS. PEZZELLA: Romona Pezzella, EPA Manager for the site.

MR. JOSEPHSON: Jeff Josephson, Team Leader for the New Jersey State Coordination Team. I'm a supervisor in the Superfund Program located in EPA at 290 Broadway in New York City.

MR. SIVAK: I'm Michael Sivak, I'm the Human Health Risk Assessor who works on the project.

MR. COLVIN: I'm Bill Colvin, I work for a company that's contracted to EPA and we execute the projects planned with the EPA.

MR. McGRATH: My name is Dennis McGrath, I also work with a company Malcolm Pirnie (phonetic), who is working for EPA and we conducted the investigations.

MS. SEPPI: Okay. Thank you.

MR. McNEIL: I'm Wilbur McNeil, the

President of the Weequahic Park Association, an organization that received $3 million from the U.S. EPA to do some restoration to or park. We've been concerned about the White Chemical site for sometime. We've had two previous meetings about this site and our concern early on was the groundwater flow and whether it had been tested.

At the time of our last meetings, there was no testing on the aquifer beneath the ground because we're interested in it going into our 80 acre lake. There was an assumption that it might be traveling east, but we were wondering if the EPA had actually done the testing to see which way the water was flowing. But we're also interested as a community organization in developing that site for the community.

MS. SEPPI: Okay. Thank you. We'll address that tonight.

MR. LITTLE: I'm Allen Little, one of the founders of the Weequahic Park Association and a resident of the community.

MS. SEPPI: Great, Thank you.

Well, the reason we're here tonight is to talk about cleaning up White Chemicals, We've come up with a few different alternatives and then an alternative that the EPA feels is the best one to deal with the site, to deal with contaminated soils on the site, to deal with the sediments that are contaminated, and also what to do with the buildings and tanks on the site. We've chosen an alternative, as I've said, that we think is the best way to deal with the site.

We're here for public comment. It started on August 4th and it will continue until September 2nd, and that's where we get your input on what we would like to do. You may agree or you may disagree. This is your time to let us know that.

Now, of course you just got a copy of this plan tonight so you'll have some comments I'm sure, but if you go home tonight and you have additional comments, on the back of the proposed plan, the last page is Romona's address and I think her e-mail address also. You can certainly write or e-mail those additional comments, you have until September 2nd to do that. And it's very important that you make those comments so that they'll become part of our public record. That's why we have the stenographer here this evening, any comment that we hear tonight will also become part of that public record and those comments will be addressed. That's a very important part of this process.

There is a sign in sheet, I know you did sign in, I appreciate that. We wanted to generate a mailing list so the next time we'll be able to notify people when we come out here and have a meeting.

And that's really what I have to say, I think, so I'll turn it over to Jeff now, who is going to talk a little bit about the Superfund program.

MR. JOSEPHSON: I'm just going to talk very quickly and briefly in a manner to summarize the Superfund process so that the rest of the meeting could be put into context.

In 1980, Congress passed the Comprehensive Environmental Response, Compensation and Liability Act, which is more commonly known as the Superfund law. The Superfund law provides for the ability of federal funds to be used for the cleanup of uncontrolled and abandoned hazardous waste sites and for responding to emergencies that involve hazardous substances.

Upon discovery potential abandoned hazardous waste site, EPA will conduct one or more inspections and make a determination if the site should be placed onto the National Priorities List, which is the list of the nation's worst hazard wastes sites.

Once a site is placed on the National Priorities List, selection of a remedy usually requires the conduct of a remedial investigation and feasibility study. The work necessary to clean up a hazardous waste site is often complex and is frequently conducted in stages. EPA often calls the stages operable units. An operable site or unit determines the nature and extent of the contamination as well as the risks to the human health the environment posed by the contamination.

The purpose of the feasibility study is to identify and evaluate remedial alternatives to address the site contamination. Once the feasibility study is completed, EPA develops a proposed plan and presents EPA's preferred clean up alternative to the public.

Public participation is an important element of the Superfund process. The public is provided the opportunity to comment on the results of the studies and proposed remedy. After consideration of the public comments, EPA will document the selected cleanup alternative in the

Record of Decision. Once that Record of Decision is final, the remedial design process begins where the specifications and plans for the selected remedy are developed. Remedial action is initiated after the design is completed and is the stage where construction and cleanup activity occur at the site. To the degree that it's necessary, post cleanup monitoring is conducted, and once the site no longer poses a threat to human health or the environment, it is removed from the Superfund National Priorities List.

Tonight's public hearing will review the results of the operable unit two Remedial Investigation/Feasibility Study, and Romona will be discussing remedial alternatives evaluated in the proposed plan. We will provide EPA's preferred alternative for buildings, contaminated soils, sumps, and tanks at the White Chemical Superfund site.

I'll now turn it over to Romona.

MS. PEZZELLA: Thanks.

I'm going to just briefly present the site history and then I'm going to talk about the sampling that EPA has done to determine the extent of contamination at this site, and then I'll go through the cleanup alternatives that we looked at to address contamination. As Pat said, right now we're looking at contamination of the soils and the buildings on-site and in above ground storage tanks.

All right. Obviously you both know where the site is, so this is just a site map. I wasn't sure who would be here today, whether they'd be familiar with the site. It shows the site location.

The White Chemical Corporation leased that site in 1983. and they produced primarily three groups of chemicals. They had a history of improperly handling the chemicals at the site that they dealt with. Based upon that, in 1990 the State of New Jersey came on to the site and removed about a thousand drums from the site.

In that same year, EPA did an inspection at this site and found significant evidence that materials were being handled improperly at the site. Such evidence included leaking drums and leaking containers. As part of that inspection, EPA shipped about 4,000 empty drums off of this site and also staged almost 7,000 drums to be handled and removed from the site later on.

In 1991 we signed a Record of

Decision for the site. A Record of Decision is a document that we use to describe our cleanup plan for an operable unit. That operable unit that we signed a Record of Decision for in 1991 focused on stabilizing the site, it focused on the drums that were there and other chemical waste.

Starting in 1992, a group of potentially responsible parties took on that cleanup, and among other things that they did was remove almost 8,000 drums from the site and also shipped the contents of more than a hundred tanks off-site.

The next stage of the cleanup for the EPA or the work on the site for the EPA was to look at whether the chemicals of the site had impact on the soil and groundwater, as well as look at the buildings and above ground storage tanks that remained on the site. From 1998 to 1999 EPA collected samples of soil, groundwater, samplings within the buildings, including some sediments, to determine what the extent of contamination was. And I think you're going to be disappointed by what I'm going to say next, which is what we didn't have enough information on the groundwater yet to make a determination about what the best cleanup option for the groundwater would be. And as part of the decision that we're making tonight, we're also talking about what we need to do to get additional information about the groundwater. We're not going to talk about that much tonight, but that is going to be part of the decision that we're making at this stage, that we need to go out and do some additional sampling of groundwater.

But what we did have was enough information to make a determination about what we should do with the soils. The data showed that the contamination on the site was mainly in the top two feet, what we call surface soil, although there were some hot spots that were deeper. We found lead-based paint and asbestos and some chemical contaminants in the building and we also found some contamination in sump sediments.

We issued a remedial investigation report in April of 2003 that documented the results of all the sampling that we had done at the site. Also in 2003, EPA performed a risk assessment to determine if this contamination that we found on the site could potentially pose a risk to the community or to future users of this site, and the results of that risk assessment confirmed that indeed there were several contaminants in the soil that could potentially cause a risk in the future. So the EPA at that stage we began evaluating alternatives for cleaning up the soil and to address the buildings and the above ground storage tanks.

Based on the risk assessment and the remedial investigation, EPA determined that removal of all the site buildings and above ground storage tanks would be necessary and we would have to address about 21,000 cubic yards of contaminated soil on this site. That figure, which I'm not sure how much you can see, but what it shows is the buildings that are on the site that would be removed, the above ground storage tank locations which kind of are in the center of the site, and then you can see -- I don't know, can you see the green and the red outlines? Those are just the hot spots that contain the soil that we need to address. In green are the surface soil locations, that's the top two feet, and the red boxes represent contaminated soil that's below two feet. So you can see there are hot spots, it's not the entire site that has contamination above levels of concern, it's certain hot spots.

In addition, we didn't sample under

the buildings because it was obviously it's hard to do sampling under the buildings while they're still there, so what we assumed in those 21,000 yards of soil is that contamination under the buildings extends down to about eight feet, and that's just an estimate. Once the buildings are removed from the site we're going to do additional sampling to determine how this soil needs to be removed from under the buildings.

We looked at a total of six alternatives to address the buildings and soils at the site. There are some common elements of all the alternatives, based on the current land use, the cleanup addressed risk associated with a commercial or industrial use of this site, therefore -- I should say a non-residential use of the site, therefore deed restrictions would be necessary on the site to restrict the use of the site to non-residential. And that goes for all of the alternatives that we're looking at.

In addition, the EPA will review all the data from the site at least every five years to make sure that the cleanup that we've chosen is still working the way it should.

The first alternative that we looked

at is no action. That's something that our law that we operate under requires us to look at. We use it as a baseline, that's not what we're selecting or presenting for this site. The cost of that would be zero, it's basically no further action taken at the site except for that five year review that I spoke about previously.

All the remaining alternatives will include removal of the buildings and tanks, so I won't keep repeating that. All the other alternatives that we're looking at include removing all the buildings and the above ground storage tanks on the site.

Something else that I need to note for the other alternatives is when we talk about construction time, that just relates to the actual physical construction on the site. There's also time to design the cleanup, which usually takes about one or two years, so you have to add that to the construction time.

Okay. Alternative two is an asphalt cap. Asphalt cap would be installed across the site after the buildings and tanks were removed. That would help prevent contact with contaminated material. The cost of that is about $3 million and we estimate it would take less than one year to construct that.

The third alternative that we looked at was vapor extraction. Under vapor extraction a series of wells are installed around the site and the vacuum is used to pull contamination out from the contaminated areas. It basically addresses volatiles, which are contaminants that easily turn into gases. Those are the contaminants we' re most concerned with at this site. The cost of that is $4 million and the time that we estimate that would take is two years. After that process was done, this alternative also requires that an asphalt cap be placed across the site.

The fourth alternative we looked at is steam injection. It's similar to the vapor extraction; it's basically that you inject steam, warm the soil, and you promote the contaminants turning into gases so they can be extracted. This would also require an asphalt cap when the work was done. The cost is about $5 million and the time frame is the same as alternative three.

Alternative five is excavation and off-site disposal. The approximately 21,000 yards of soil that I talked about previously would be excavated from the site, excavated and sent off-site for disposal. We then bring fill material in from off-site, fill in the excavated areas. The site would be covered with topsoil and seeded. So that doesn't include an asphalt cap. The cost of that is about seven and a half million dollars, and we estimate it would take about one year to complete that.

And finally the last alternative is low temperature thermal desorption. A thermal treatment unit would be brought to the site under this alternative. The soil would be excavated as an in alternative five, instead of being shipped off-site, it would be treated in this unit on-site. The thermal treatment unit causes contaminants to turn into gases as well, leave the soil and collect it. The treated soil is then back filled on this site. Under that one also the site would be seeded once the work was done. The estimated cost of that is $8 million and construction time is one year.

The EPA is required to evaluate each of these alternatives against nine criteria, which I list here. I'm going to go through them very briefly:

Overall protectiveness of human

health and the environment is pretty obvious. It focuses on the reduction of health risk to the public and environment.

The compliance with ARARS, does each meet the regulations.

The long term effectiveness is how well would the cleanup maintain its performance over time.

Reduction of toxicity, mobility, or volume of contaminants through treatment. It relates to the use of treatment to reduce the effects of contamination.

Short term effectiveness is how quickly can the remedy be implemented and also addresses protection of workers and the communities during the work while the cleanup work is going on.

Implementability focuses on the readily -- how readily available the equipment is that's needed for the remedy and how readily available is the technology.

And cost is pretty self-explanatory.

State support, we look to the State of New Jersey to give us feedback on our remedies or all the alternatives that we produced.

And community acceptance, both Pat

and Jeff will discuss we're in the middle of the public comment period and this public meeting is part of that to get feedback from the community on the EPA's preferred alternative.

So EPA is recommending alternative five, which is off-site, excavation and off-site disposal, as the preferred alternative for the remediation of soils, buildings, tanks, at this site. Along with -- the reason -- some of the reasons, I'll just go through it real quickly, along with alternative six, which is thermal desorption, alternative five offers the most protection of -- the protection of the environment and public health as well as the greatest long term effectiveness, since contaminated soil will be taken off this site. It meets all of the applicable regulations. It can be done safely and it will allow for redevelopment of the site.

Of the alternatives that are the most protective of human health and the environment, which are S-6, thermal desorption, and S-5, off-site disposal, S-5 is the most cost effective, so these were the factors that we used to determine that our preferred alternative was excavation and off-site disposal.

And that's it. If anyone has questions, comments?

MS. SEPPI: Would you like to come up here and use the mic, then everyone can hear you.

MR. MCNEIL: My name is Wilbur McNeil, I'm President of the Weequahic Park Association. It's a nonprofit 501:C3 organization in Newark charged with the restoration of historic Weequahic Park that's located less than a mile from the White Chemical site.

We've had two meetings about the White Chemical site with the U.S. EPA and Schorr DePalma in the City of Newark. Schorr DePalma was the contractor hired to evaluate the property for the EPA to make recommendations at the time. January of 2003 was the last of two meetings and what we were concerned about is a level playing field for the community.

You know, most people bring these proposals to the community and then they ask the community for input and they don't give them a dollar so they can perfect the assistance or they can bring alternative plans. Well, we flat out rejected the encapsulating of that soil because the ground soil hadn't been tested, you know, and not only that, we believe that most of these things are driven by other non profits like the Port Authority, who has money but don't pay any taxes and come in our community, and when those lands are ready to develop after the government cleans them up with our tax dollars, then they bring in their people to have a proposal and to stagger us with magnificent plans. The last plan Schorr DePalma brought in they brought in a plan for a warehouse and then subsequently they placed a basketball court around some trees and say this will be for the community. That's preposterous.

We not only reject those kinds of proposals brought into our community, and then you ask for community input when we don't have any input at all because we don't have any money. We are in that community because that community is an empowering zone, we represent the city, because it's a depressed area. We also represent that community as an enterprise which is also an enterprise community. It's also a community that's in need of not only jobs and money, but they need to develop some of those lands that the federal government has cleaned up with our tax dollars, so we could submit something that would gain financial backing. We certainly reject the encapsulation of that land no matter how deep you go unless you test the aquifer water beneath it, because we have an 80 acre lake that we're trying to cleanup. We always find it hard that we can't get our lake, our 80 acre lake cleaned up, but the government can cleanup the Port Authority, a whole port in Newark Bay, and for a company that doesn't pay any taxes. The Port Authority is tax free. But the citizens of that poor community can't get our 80 acre lake cleaned up.

And we believe that this whole thing, this meeting today when you ask for community output, there was no outreach, how can you have a meeting like this and not contact the main community organization that's been there for 13 years, working to improve that community and not be notified. It's preposterous. If you have anybody doing outreach, you should have at least the WPA doing the outreach so that you could have people come to this kind of meeting. You have four or five people here, you know, that's what you want. You put a few notices in the paper and then you ask the community for input, then you don't give the community any money, that's preposterous.

I'd say we want to go over this and we'll have some additional written comments, but the whole thing, you know, as far as we're concerned, is that you bring these kinds of proposals to the community. We certainly want the White Chemical site cleaned up, you know, we've been bombarded from the polluted soil and the contaminated soil in our community, but we also from the pollutants coming from that airport, you can read about it in the records, that airport is the James Bond of our community, they have a license to kill us. There are more people -- the New Jersey EPA said that more people die from the pollutants from the Port of Newark and the airport than from homicides or traffic accidents, yet, you know, the papers highlight those things.

Well, we have a solid killer in our midst that's not going to pay its way, and that's the Port Authority. So if this site is being given by the Port Authority, we also reject that, because we believe they're not paying their fair share. Thank you.

MS. SEPPI: Thank you.

MS. GADDY: My name is Kim Gaddy, Environmental Justice and North Jersey organizer for

New Jersey Environmental Federation. And I agree with everything that Mr. McNeil said from the WPA.

It is very unfortunate that I found out about this meeting -- I was out of town Saturday and I got a call at my office this morning and I called the resident back, and he said Kim, I know you're going to attend this meeting. I said what meeting?

I've been a life-long resident of Newark for many, many years, and that's the problem that we have with cleanups, especially with cleanups of Superfund sites; sometimes it takes the community 25 to 30 years to cleanup these areas, and surely you cannot do that without embracing those anchoring institutions, those community based grass roots organizations that can extend outside to the community. You have to provide some kind of technical assistance so that those individuals can empower themselves with this information, review what you have, and make some very important decisions about what should happen to this site. If you don't do that, that is an injustice. And that's some of the issues that we are faced with in the City of Newark.

All the environmental injustices, we

can have polluting companies come here and tear our communities up. When they're finished with our community, they leave, they leave them just like the White Chemical. We can name all the toxic sites that we have in the City of Newark, which our urban community has to deal with on a daily basis, and it's very, very unfortunate. So I needed to come down here this evening just to express this.

We will be reviewing what I downloaded from the Internet and we will be submitting information in writing, because not only am I the EJ organizer for the New Jersey Environmental Federation, I'm the New Jersey Environmental Justice allies, I'm the North Jersey Chair, so we will be submitting something in writing and I really think that it will be advantageous to have some kind of meeting with WPA and those community based organizations who have turned that park around, who have began to empower and educate those communities. So I hope that that park, it was a very small line of our community outreach, and that's the disrespect that we are given on a daily basis, especially when it comes to environmental issues in urban communities, they really don't care what the community has to say.

So we want that on record and we'll submit it in writing but I just think it's time that you bring those groups to the table so that we can see what the plans are. We have qualified individuals with degrees and the like and we have community folk that know when they wake up in the morning there's an unfamiliar taste or smell that they have over the years because of the contamination, so it's really important that we engage those folks in the conversation.

Thank you.

MS. SEPPI: Thank you. Thank you for your comments.

Anybody else? Any questions or comments?

MS. GADDY: I have a question. When you say dispose of the -- I walked in kind of late and you talked about your plan to dispose. Where will you be taking it?

MS. PEZZELLA: Where we take it is depending on whether the soil tests as hazardous or non hazardous, and that's just a distinction that relates to disposal.

What usually happens is once we select a remedy we go into the design phase, and even during design and then construction, that's the time that we make the decisions about what facility specifically would take the soil. It would have to be a facility that was licensed to take it, take the type of contamination that's in the soil.

MS. GADDY: Okay. And you guys have been engaged with the State holders here, the Council members of the City of Newark, because just going on the history, the City of Newark acquired this property some time ago, right, so who are you contracting with? I'm just trying to edify myself in who you're doing the work for. Is it the City of Newark that applied to EPA or I'm trying to figure out what's going on?

MS. PEZZELLA: It's a Superfund site, we're not contracted with the City of Newark at all. As a land owner we talked in the beginning, I'm not sure if you were here, about the need for deed restrictions. That's something that we would go to the property owner for as part of the remedy. Other than that, it goes through the same process that a Superfund site would go through.

MR. LITTLE: I would like to know the testing that you're doing. Because there was at one time the Passaic River ran underground right to our lake; will the lake be tested too? Because of the water that goes underground.

MS. PEZZELLA: Would the lake be tested? It's something that we've looked at and we're having -- because, as I said, we didn't get enough information when we went and looked at the groundwater the first time, so we've gotten recommendations for doing additional work at the site and I can go through that list. Jeff might have some information.

MR. JOSEPHSON: In the public library we placed a feasibility study and in that feasibility study it indicates the recommendations that were made to the EPA on what firm the work needs to be done to the groundwater and that includes what interaction the groundwater has with the surface water, which would be the lake there. We're going to evaluate all the recommendations in the feasibility study in that next phase and make a decision which ones we need to do in order to really understand the groundwater situation at the white Chemical site. So your concern about the lake and the park would be looked at in that further unit.

What EPA looked at in terms of the current conditions there, it's our understanding that there is a water main of some sort that runs underneath the facility, and that seems to be complicating the groundwater flow direction, our understanding of the direction of groundwater flow. In other words it seems to be contributing to the flow direction. Once we take down the buildings at the facility, we move all the material, we can address that pipeline that's underneath there and stop the interaction between that pipeline and the actual groundwater flow, and that will help us understand the actual flow direction from the facility.

You know, if you look at the maps that we produced in the remedial investigation report, you'll see that the flow direction is generally away from the lake, and that's what we believe today.

MS. GADDY: That's what you believe?

MR. JOSEPHSON: Yes.

MS. GADDY: And the next question, just a point of clarification, the feasibility study you said is in the Newark library?

MR. JOSEPHSON: Yes.

MS. GADDY: You don't have a copy for the community that could be disseminated?

MR. JOSEPHSON: Well, the one in the library is available to the community as a public repository, that is a repository for the Superfund site. We did not bring copies of that for everybody, no.

MS. GADDY: Okay.

MS. SEPPI: Are there any other questions?

Okay. If not, we appreciate you coming tonight. Again, I said, you know, you weren't here, as I said before, we did have a real problem getting the word out about this meeting. We didn't have a mailing list, you know. We put notices in the paper, we did a press release, you know, but you're absolutely right, I should have called probably the City and said can you give me the names of any local environmental groups or local groups and gotten in contact. And I do apologize for that, I definitely should have done that. I certainly will make sure I do that in the future, if you would please sign in so I have your name and address so that I can contact you in the future.

But in the mean time, as I said to the other two gentlemen, if you speak to anybody, any of your friends, take some of those proposals with you, pass that out. We have until September 2nd to get additional comments. It will also be part of the record, so it's important that people get those comments into us. And if you need more plans, let me know. My name is at the back of the proposed plan along with Romona's, and we'll make sure that as many plans as you need get out to anybody that you think would be interested in this.

MS. GADDY: Does the EPA still have an environmental justice person?

MS. SEPPI: Yes, we do.

MS. GADDY: And that person was not engaged in this process to reach out to?

MS. SEPPI: Well, we do have an environmental justice person, but I have to say they really don't get that involved with coming to public meetings of Superfund sites.

MS. GADDY: No, I'm saying just to reach out to the community, because they have a relationship with the State DEP, and if they reached out to Jeremy Johnson, then it would have gone out to a lot of other organizations.

MS. SEPPI: Yes, we do have, Terry Wesley is our environmental justice person, and if you'd like to get in touch with him I can get you that information. And please, don't hesitate to call Romona or me if you have any other questions.

Thank you.

Attachment D
Written Comments Received by
EPA During the Public Comment Period

SHARPE JAMES
MAYOR
NEWARK, NEW JERSEY
07102

August 26, 2005

Jeff Josephson
Team Leader
United States Environmental Protection Agency (EPA)
New Jersey Projects
290 Broadway, 19th Floor
New York, NY 10007-1866

RE: **White Chemical Company Superfund Site OU-2 (White Chemical Site)**
Feasibility Study for Buildings, Tanks & Contaminated Soils (June, 2005) (Proposed Plan)

Dear Mr. Josephson:

The City of Newark through the Department of Economic & Housing Development (Department) acknowledges receipt of the EPA's above referenced Proposed Plan for the White Chemical Site. We appreciate the time you and your staff took to review the Proposed Plan and the process for implementing such plan with key members of the Department and the entity being considered for designation as "redeveloper" for the White Chemical Site and surrounding properties.

By this letter, on behalf of the City, I hereby voluntary accept the Proposed Plan and the EPA's recommendation for submitting as a remedial alternative for addressing the contamination on the White Chemical Site, Alternative S-5: Excavation and Off-Site Disposal of all Contaminated Soil. We also voluntary accept the imposition of a deed restriction on the White Chemical Site that its uses be limited to "industrial, commercial uses."

The City thanks the EPA for its diligent efforts in working with the City to redevelop the White Chemical Site into productive use, starting first with "clean-up."

Respectfully,

Sharpe James
Mayor

Cc: Niathan Allen, PhD, Director of Economic & Housing Development
Johnny Jones, Assistant Director of Economic & Housing Development
Joaquin Matias, Director of Division of Economic Development

Appendix V

RESPONSIVENESS SUMMARY

WHITE CHEMICAL CORPORATION
SUPERFUND SITE
NEWARK, ESSEX COUNTY, NEW JERSEY

RESPONSIVENESS SUMMARY

A. OVERVIEW

As part of its public participation responsibilities, the U.S. Environmental Protection Agency (EPA) held a public comment period from August 4, 2005 to September 2, 2005, for interested parties to comment on EPA's Proposed Plan to address the contaminated soil at the White Chemical Corporation site in Newark, New Jersey. In addition, on August 9, 2005, EPA conducted a public meeting to receive oral comments on the Proposed Plan. The Proposed Plan described the alternatives that EPA considered, including EPA's Preferred Alternative S-5: Excavation and Off-Site Disposal. In addition to comments received during the public meeting, EPA received written comments throughout the public comment period. Judging by the comments received, the community supports EPA's preferred alternative.

The responsiveness summary contains the following sections:

A. OVERVIEW
B. BACKGROUND OF COMMUNITY INVOLVEMENT
C. SUMMARY OF ORAL COMMENTS RECEIVED DURING THE PUBLIC COMMENT PERIOD AND AGENCY RESPONSES

The last section of the Responsiveness Summary includes attachments, which document public participation in the remedy selection process for this site. They are as follows: Attachment A contains the Proposed Plan distributed to the public for review and comment; Attachment B contains newspaper articles chronicling the public's view about the proposed remedy; Attachment C contains the transcript of the public meeting; and Attachment D contains the written comments received by EPA during the public comment period.

B. BACKGROUND OF COMMUNITY INVOLVEMENT

Before releasing the Proposed Plan for the Operable Unit 2 (OU2) cleanup of the White Chemical Corporation site, EPA attended several meetings with local officials and the community to discuss the status of work at the site. On August 4, 2005, EPA released the Proposed Plan and supporting documentation for the OU2 cleanup at the White Chemical Corporation site to the public for comment. EPA made these documents available to the public in the administrative record repositories maintained at the EPA Region ii office (290 Broadway, New York, New York) and the Newark Public Library (5 Washington Street, Newark, New Jersey). EPA published a notice of availability for these documents in the Newark Star Ledger newspaper and authorized a public comment period on the documents from August 4, 2005 to September 2, 2005. On August 9, 2005, EPA conducted a public meeting at the Newark City Hall Council Chambers, to inform local officials and interested citizens about the Superfund process, to review the planned remedial activities at the site, and to respond to any questions from area residents and other attendees. Comments on the proposed remedy were mainly received at the Public Meeting. The oral and written comments received from the public and local officials and EPA's responses can be found in the next section of this summary. The written comments for the White Chemical Corporation OU2 Proposed Plan have been included as an attachment to this Responsiveness Summary. For readability and clarity, EPA grouped, where possible, similar comments into one general comment;

therefore, a single response may answer several comments.

C. SUMMARY OF ORAL COMMENTS RECEIVED DURING THE PUBLIC COMMENT PERIOD AND AGENCY RESPONSES

1. Oral Comment: Several members of the community expressed concerns regarding future redevelopment of the Site.

EPA Response: The Site is currently zoned commercial/industrial. All of the alternatives presented, including the preferred remedy, require a deed restriction to prevent future residential use of the site. The property owner, the City of Newark, has given EPA a written commitment that they will implement the deed restriction. EPA does not have the legal authority to restrict the development of the site beyond the implementation of the deed restriction.

2. Oral Comment: A member of the community said that an encapsulation alternative would not be acceptable because it would not address potential contamination in the groundwater.

EPA Response: The preferred remedy does not involve encapsulation of contaminated soil. In addition, the preferred remedy includes the excavation and off-site disposal of contaminated soil that may impact the groundwater.

3. Oral Comment: Members of the community said that EPA did not take appropriate steps to inform the community of the meeting and the Proposed Plan. Local citizens' groups, such as the Weequahic Park Association (WPA), were not notified.

EPA Response: A notice was placed in the Newark Star Ledger announcing the availability of the Proposed Plan, the dates of the public comment period and the specifics of the Public Meeting. In addition, EPA notified the City of Newark about the Public Meeting and the availability of documents. Everyone who attended the Public Meeting, including members of the WPA, will be placed on a mailing list and will be informed in writing of all future meetings.

4. Oral Comment: A member of the community asked about the involvement of the Port Authority in the selection of the preferred remedy.

EPA Response: The Port Authority was not involved in EPA's selection of the preferred remedy.

5. Oral Comment: Several members of the community indicated that EPA should provide funds to the community, perhaps as a TAG grant, to allow the community to hire experts to evaluate EPA's plans.

EPA Response: Communities interested in a TAG grant may contact the EPA site Community Relations Coordinator, Ms. Pat Seppi at (212) 637-3679 regarding application eligibility and process. A complete description of the TAG grant program as well as application materials are available at the following internet address: www.epa.gov/superfund/tools/tag/.

6. Oral Comment: A community member asked where the contaminated soil will be taken for disposal.

EPA Response: Soil samples will be taken to determine the appropriate disposal location(s). The soil will be disposed of at a facility licensed and permitted to accept the material. The exact disposal locations will be determined during the design or construction of the remedy.

7. Oral Comment: A community member asked about the involvement of the City of Newark in the site.

EPA Response: The City of Newark is the property owner and since the remedy will allow for commercial/light industrial development EPA requested that they place a deed restriction on the property to restrict its use to non-residential purposes. However, EPA is not contracted with the City of Newark and the preferred remedy for the site was developed by EPA in accordance with the Superfund process.

8. Oral Comment: A community member asked if Weequahic Lake would be sampled.

EPA Response: A list of sampling that may be done to address data gaps related to the groundwater under and around the Site is provided in the Feasibility Study Report and the Record of Decision. Sampling Weequahic Lake to determine the interaction between groundwater and surface water is included in this list, however, the preliminary groundwater investigation indicated that the groundwater from the Site does not flow toward the lake.

9. Oral Comment: A community member asked where the Feasibility Study Report can be found and if copies were available at the meeting.

EPA Response: The Feasibility Report, and other site-related documents included in the Administrative Record were placed in the Newark Public Library.

10. Oral Comment: A member of the community asked if EPA had an environmental justice coordinator and about his involvement in the Site.

EPA Response: The environmental justice coordinator for EPA Region 2 is Mr. Terry Wesley, Environmental Justice Coordinator, USEPA, 26th Floor, 290 Broadway, New York, New York. Specific questions about the Site should be addressed to Romona Pezzella, the project manger for the Site, or Pat Seppi, the Community Relations Coordinator.

11. Oral Comment: A member of the community asked why the EPA's Environmental Justice Coordinator was not involved in outreach to the community.

EPA Response: Outreach to the community surrounding a Superfund site is generally handled by the Community Relations Coordinator and the Project Manager for the site.