New York State Department of Environmental Conservation

MEMORANDUM

TO: Tom Suozzo, Region 7 Kirkwood Office
FROM: Roseann Benson, Central Office
SUBJECT: Robintech Site, Final Proposed Plan
DATE: February 24, 1992

Attached for your information is the final PRAP. The soil remediation will be addressed in a second operable unit.

If you have any questions, please contact me at 518/457-4343.

cc: Claudine Jones, DOH
Ron Brink, DOH

Attachment
RB/td

FEB 24 1992

FEB 21 1992

Mr. Edward R. Belmore, P.E.
Director
Bureau of Western Remedial Action
Division of Hazardous Waste Remediation
New York State Department of Environmental
  Conservation
50 Wolf Road
Albany, NY 12233

Re: Final Proposed Plan, Robintech Site

Dear Mr. Belmore:

Enclosed please find two copies of the Final Proposed Plan prepared by the U.S. Environmental Protection Agency, dated February 1992, for the proposed remedial action at the Robintech Inc./National Pipe Co. Superfund Site. EPA will hold a public meeting at 7:00 p.m. on March 11, 1992 at the Vestal Public Library, Vestal, New York. The public comment period started February 21, 1992 and will end on March 21, 1992.

If you have any immediate comments or questions, please contact me at (212) 264-1858.

Thank you for your cooperation.

Sincerely yours,

Carole Petersen, Chief
New York/Caribbean Superfund Branch II

Enclosures

cc: R. Benson, NYSDEC (w/enclosure)
    R. Schick, NYSDEC (w/o)

SUPERFUND PROPOSED PLAN

ROBINTECH INC./NATIONAL PIPE CO. SITE
VESTAL, NEW YORK

USEPA - REGION II **FEBRUARY 1992**

ANNOUNCEMENT OF PROPOSED PLAN:

This Proposed Plan identifies the U.S. Environmental Protection Agency's (EPA's) preferred alternative for addressing contaminated groundwater at the Robintech Inc./National Pipe Co. Site (the "Site"), located in Vestal, New York (See Figure 1). The Site is contaminated with hazardous substances which can be classified as volatile and semi-volatile organic compounds, and metals. EPA developed this Proposed Plan in consultation with the New York State Department of Environmental Conservation (NYSDEC).

Site Location Map

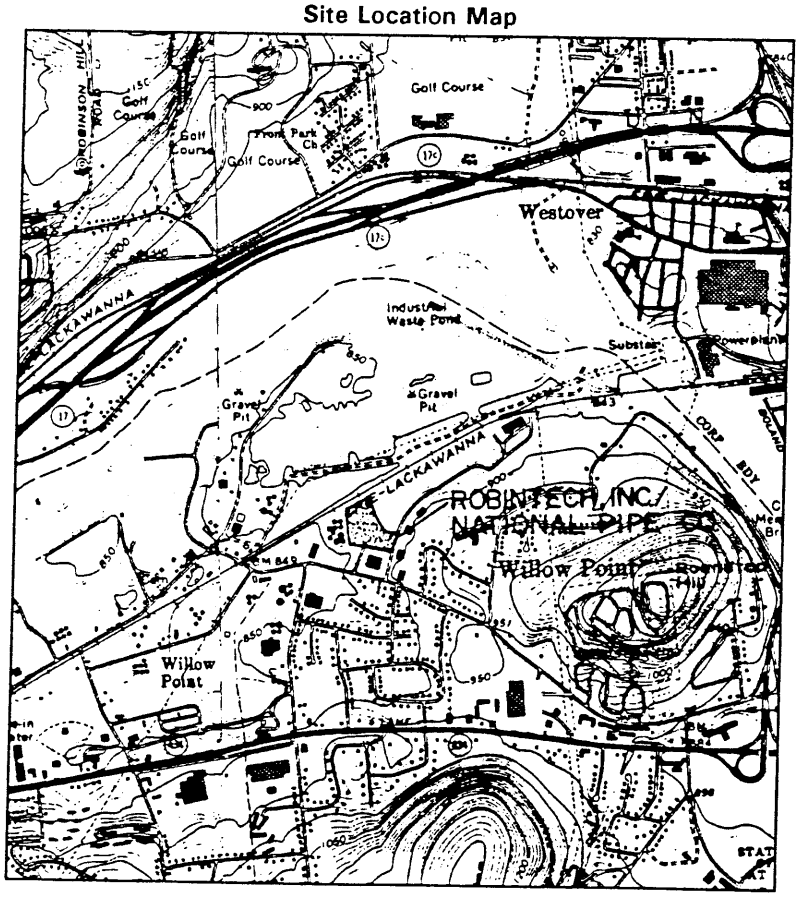

Figure 1

MARK YOUR CALENDAR

February 21 thru March 21, 1992: Public comment period on proposed remedial alternatives.

March 11, 1992: A public meeting will be held at the Vestal Public Library at 7:00 pm. The library is located at 320 Vestal Parkway East in Vestal, New York 13850, telephone (607) 754-4243.

COMMUNITY ROLE IN THE SELECTION PROCESS:

This Proposed Plan is being distributed to solicit public comments regarding EPA's preferred alternative. The public comment period will begin on February 21, 1992 and continue until March 21, 1992.

EPA, in consultation with NYSDEC, will select the final remedy for the site only after the public comment period has ended and the information submitted during this period has been reviewed and considered.

Section 117(a) of the Comprehensive Environmental Response, Compensation and Liability Act of 1980 (CERCLA), as amended, 42 U.S.C. §9617(a), requires publication of a notice and brief analysis of the Proposed Plan for site remediation. EPA's preferred alternative is based on the following documents: the Remedial Investigation (RI) Report dated September 1991, which characterizes the Site and describes the nature and extent of the contamination posed by the Site; the Feasibility Study (FS) Report, dated December 1991, which describes how the various remedial alternatives were developed and evaluated; and the Risk Assessment, which describes the risk to public health and the environment.

EPA and NYSDEC encourage the public to review these documents to gain a more comprehensive understanding of the Site and Superfund activities that have been conducted there. The Administrative Record file which contains the information upon which the selection of the response action will be based, is available at the following locations:

Vestal Public Library
320 Vestal Parkway East
Vestal, New York 13850
(607) 754-4243
Contact: James Holley, Director
Hours: Monday-Thursday, 9:00-9:00
Friday, 9:00-6:00
Saturday, 9:00-5:00
Sunday, 12:30-5:00

USEPA-Region II
Superfund Records Center
26 Federal Plaza, Room 2900
New York, New York 10278
(212) 264-8770
Hours: Monday-Friday, 9:00-5:00

EPA, in consultation with NYSDEC, may modify the preferred alternative or select another of the response actions presented in this Proposed Plan and the FS report based on new information or comments submitted during the public comment period. EPA therefore encourages the public to review and comment on all the alternatives identified here.

Written comments on this Proposed Plan should be addressed to:

Mark Granger, Project Manager
U.S. Environmental Protection Agency
26 Federal Plaza, Room 747
New York, New York 10278
Telephone: (212) 264-9588

SITE BACKGROUND:

The Robintech Inc./National Pipe Co. Site is located at 3421 Old Vestal Road in the Town of Vestal, Broome County, New York. The Site occupies 12.7 acres, and is bordered by Commerce Road and several warehouses and light industrial buildings to the east; Old Vestal Road and several residences to the south; an amusement facility (known as the Skate Estate), and fuel storage tanks (Mobil Tank Farm) to the

residences to the south; an amusement facility (known as the Skate Estate), and fuel storage tanks (Mobil Tank Farm) to the west; and by Conrail railroad tracks and Parkway Vending Inc. to the north. The Susquehanna River is located approximately a half mile north of the Site. A Site location map is provided in Figure 1.

The area has two distinct aquifers which are sources of water supply. The upper aquifer is comprised of the overburden material above bedrock. The lower aquifer is shale bedrock. The primary permeability of this material is low but the secondary permeability is much higher. Fractures along the horizontal bedding planes and vertical joints in the shale allow for groundwater flow.

In 1966, Robinson Technical Products constructed the main building that currently exists at the Site. The first floor of the building was used for the manufacture of aircraft engine mounts and automobile accelerator control cables. The second floor was used for the assembly of electronic cable. In 1970, Robinson Technical Products was renamed Robintech, and first floor production activities were replaced with PVC pipe extrusion operations. Between 1966 and 1979 the present pipe staging area was paved in four successive stages to the north. The warehouse was constructed in 1974. A Site layout map is provided in Figure 2.

The Site was bought by Buffton Corporation, the current owner, in 1982, and is occupied by its subsidiaries National Pipe Company and Electro-Mech Incorporated. Electro-Mech has continued the assembly of electronic cable on the second floor. National Pipe has continued the PVC pipe extrusion operations.

Production wells currently provide water to the plant to meet its 250,000 gal/day requirement for cooling water for the PVC pipe manufacturing operation. Ten wells were drilled on-site between 1983 and 1984, numbered PW-1 through PW-10. One well (PW-7) was abandoned and grouted to the surface with cement due to poor yield. Production well PW-10 was screened within the overburden aquifer but has been removed from operation, also due to low yield. The eight remaining wells derive water from fractures in the shale bedrock aquifer. These wells discharge into a distribution tank located near the rear of the production facility and are simultaneously activated and deactivated automatically in response to plant demand. Water from the distribution tank is used as both contact and non-contact cooling water in the pipe production process, then discharged at the permitted effluent discharge point.

A NYSDEC effluent sample collected in 1984 to verify discharge permit compliance found certain organic constituents above standards that were not covered under the existing permit. Further investigation resulted in the conclusion that the source of contamination was coming from the groundwater beneath the Site. The Robintech Site was placed on the EPA National Priorities List (NPL) in 1986. An Administrative Order on Consent (AOC) for a Remedial Investigation and Feasibility Study (RI/FS) was issued in 1987 to General Indicator Group, Inc. (a successor of Robintech), Buffton, Buffton Electronics (now named Electro-Mech, Inc.), and National Pipe Company. McLaren/Hart, retained by Buffton, implemented the EPA approved work plan. The RI Report was approved by EPA in October, 1991. The revised FS Report was submitted to EPA in December, 1991.

RI FINDINGS:

-- The topography in the vicinity of the Site slopes primarily to the west and to a lesser extent to the north. Surficial soils that were suspected of being disturbed or reworked during construction activities were classified as fill. Typically, these materials were encountered to a maximum depth of 6 feet below ground surface. The composition of the fill is similar to other surficial soils encountered on-site.

-- The average depth to water encountered in the overburden was 12 feet below grade. The overburden aquifer is heterogeneous in nature, and the occurrence of groundwater appears to be non-uniform. The glacial till comprising the overburden restricts the downward movement of water to the bedrock aquifer. The occurrence of groundwater in the bedrock aquifer is controlled primarily by the fractures in the shale bedrock. Water levels measured in bedrock monitoring and production wells during static conditions averaged approximately 34 feet below grade.

-- Overburden contour maps generated during the

Current Site Layout

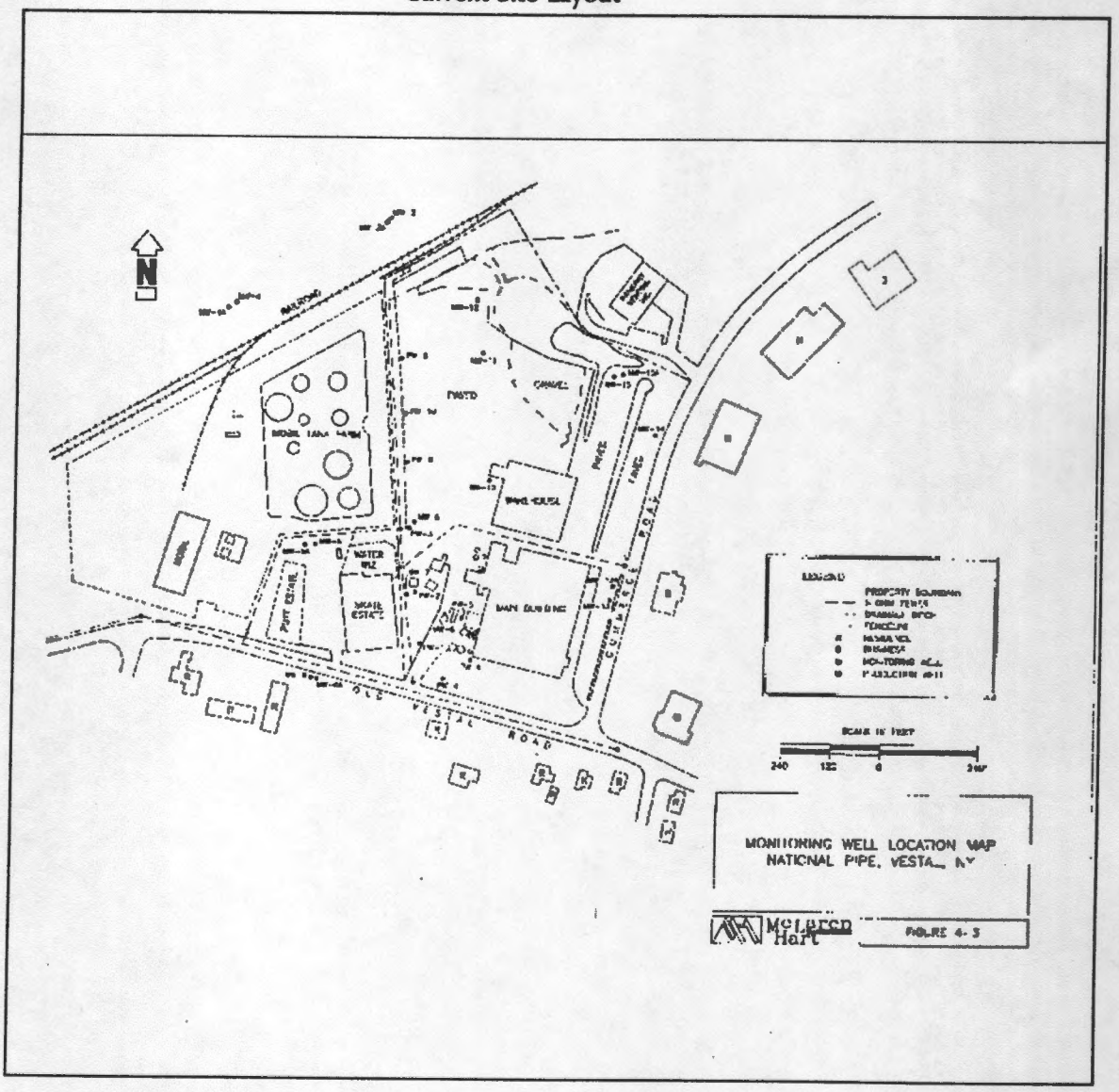

Figure 2

RI indicate a predominant groundwater flow direction toward the west. Minor flow components to the northwest and southwest are also possible. The direction of groundwater flow is consistent with the topography in the western and northern directions, toward the Susquehanna River. Groundwater contour maps for the bedrock aquifer indicate a predominant hydraulic gradient to the north-northwest direction toward the Susquehanna River. The contour maps also display westerly and southerly groundwater flow components within the southern one-third section of the Site, indicating an apparent groundwater divide trending east-west in this portion of the Site.

-- RI sampling was conducted on and around the Site in the following media: air, surface water, sediment, surface and subsurface soils, and groundwater.

-- Levels of volatile organic contaminants (VOCs) exceeding the current Federal Safe Drinking Water Act (SDWA) and/or New York State Public Water Supplies Maximum Contaminant Levels (MCLs) were detected in both the overburden and bedrock groundwater, the majority of contamination being in the PW-2 area. Contaminants include trichloroethene (TCE)(ranging from 12 to 1000 ppb), 1,1,1-trichloroethane (1,1,1-TCA)(5-1100 ppb), vinyl chloride (17-36 ppb), and 1,2-dichloroethene (1,2-DCE)(230-400 ppb). Several VOCs were detected in the overburden at lower levels, but above MCLs, in the northern portion of the "Paved Pipe Staging" area. In addition, TCE was detected ranging from 12-54 ppb in both aquifers along Commerce Road at the "Northeastern Site Boundary" area at levels exceeding the MCL for that compound. An overall summary of VOCs in groundwater can be found in the RI report for the Site.

-- Metals detected above MCLs in the unfiltered groundwater beneath the Site included, among others, chromium (ranging from 14 to 770 ppb), barium (48-1360 ppb), lead (24-29 ppb), and cadmium (5-6 ppb). Chromium exceeded the MCL in one unfiltered sample taken from an upgradient well (770 ppb), though the MCL was not exceeded in the filtered sample. For filtered samples, only barium exceeded MCLs in one sample from off-site well MW-6A (1270 ppb).

-- The majority of VOC contamination detected in the PW-2 area was not detected in downgradient monitoring well locations. Significantly lower contaminant levels in these wells indicate that: a.) constant pumping of the production wells may be curtailing the spread of groundwater contamination or b.) a plume exists somewhere between the PW-2 area and the downgradient well locations.

-- Several VOCs were detected in soil in the northern portion of the Paved Pipe Staging area at levels below concern.

-- The only VOC detected in on-site sediment samples was 1,1,1-TCA (14-28 ppb). No Federal or State standards exist for contaminants in sediment.

-- VOCs in on-site surface water samples included 1,1-DCA, 1,1,1-TCA, TCE, and vinyl chloride. A Federal Ambient Water Quality Criteria (AWQC) value of 0 ppb exists and was slightly exceeded on-site for one of these contaminants (TCE, 4 ppb).

-- For metals in on-site and downgradient soil and sediment, lead is the sole contaminant of concern, although the data that this is based upon is currently undergoing further review by EPA. Soil and sediment samples analyzed by McLaren-Hart have shown lead levels exceeding the EPA interim cleanup level of 500-1000 ppm in most samples collected down to a depth of 10 feet (concentrations ranged from 10 to 56,000 ppm). EPA conducted confirmatory split sampling at several sampling locations at the time these samples were collected. The EPA split samples failed to confirm the elevated lead concentrations (concentrations ranged from 12-61 ppm). In addition, a comprehensive soil and sediment investigation was conducted by EPA, prior to the 1988 McLaren-Hart investigation. Lead levels in soil and sediments from this investigation ranged from 1 to 143 ppm. Because of the elevated concentrations of lead indicated by the McLaren-Hart data, EPA's Emergency Response Team (ERT) sampled the suspected heavily contaminated soil and sediment in order to assess the potential need for immediate action. The results of this sampling effort, along with additional sampling that will be conducted, will be used to determine if lead in soils requires remediation as part of a second operable unit, or phase. As such, soils and sediments will not be the subject of this Proposed Plan.

SCOPE OF RESPONSE ACTION:

The FS for the Site focuses on reviewing and evaluating alternative methods for remediating all the contaminated areas at the Site. EPA's decision to address the groundwater contamination problem will serve to reduce the migration of contaminated groundwater and the potential threat to human health and the environment. Also, this action will permit the further collection of data on the aquifer and contaminant response to remediation measures. The suspected lead-contaminated soil and sediment will be addressed under a separate action by EPA.

The ultimate goal of EPA's Superfund Program approach to groundwater remediation as stated in the National Oil and Hazardous Substances Pollution Contingency Plan (40 CFR Part 300) is to return usable groundwater to beneficial uses within a reasonable time frame. Therefore, for the aquifer beneath the Robintech Site the final remediation goals will be the MCLs.

EPA's Superfund Program uses EPA's Ground Water Protection Strategy as guidance when determining the appropriate remediation for contaminated groundwater at CERCLA sites. The Ground Water Protection Strategy establishes different degrees of protection for groundwaters based on their vulnerability, use, and value. For the aquifer beneath the Site the final remediation goals will be drinking water standards. However, EPA recognizes that the final selected remedy may not achieve this goal because of potential technical difficulties associated with removing contaminants to ground water cleanup levels. The results of this preferred action will be monitored carefully to determine the feasibility of achieving this final goal. The remedial action (RA) may require continuous pumping, pulsed pumping, and flexibility in placing pumping wells at strategic locations.

SUMMARY OF SITE RISKS:

EPA conducted a Risk Assessment to estimate the health and environmental risks of all potentially affected media at the Robintech Site.
The Risk Assessment began with selecting contaminants of concern which would be representative of Site risks. These chemicals were identified based on factors such as potential for exposure to receptors, toxicity, concentration and frequency of occurrence. These contaminants included VOCs, semi-volatiles, and metals in various media. Several of the contaminants including TCE and vinyl chloride are known to cause cancer in laboratory animals and are suspected or known to be human carcinogens.

The Risk Assessment evaluated the health effects which could result from exposure to contaminated or potentially contaminated media including ground water, surface and sub-surface soils, surface water, sediment, and air.

The results of the Risk Assessment indicate that contaminated groundwater at the Site poses an unacceptable risk to human health due to the presence of VOCs above MCLs. Surface water and air were determined to pose negligible risk.

As discussed previously, soil and sediment data is currently undergoing further review by EPA. To reiterate, soils and sediments are not the subject of this Proposed Plan, and remediation of lead-contaminated soils and sediments may be the subject of a second operable unit. Any risk associated with these media will be discussed at that time.

The results of the Baseline Risk Assessment are contained in the Draft Final Risk Assessment, Robintech Inc./National Pipe Co. Site dated November 4, 1991 and prepared by Alliance Technologies Corporation under contract to USEPA. This document is included in the Administrative Record file for the Site. A summary of Site risks is also included in the FS.
Current federal guidelines for acceptable exposures are a maximum health Hazard Index (HI) equal to 1.0 and an individual lifetime excess carcinogenic risk in the range of 1 in ten thousand (1:10,000 or 1.0×10^{-4}) to one in one million (1:1,000,000 or 1.0×10^{-6}). The Hazard Index reflects noncarcinogenic health effects for an exposed population and is the fraction of the chronic daily intake of a chemical divided by the calculated daily dose believed to be protective of human health including sensitive sub-populations. If the HI exceeds one (1.0), there is a possibility of adverse health effects.

The greatest carcinogenic risk value at the Site is

associated with the highly conservative future-use ground water ingestion scenario (3.8×10^{-3} or 3.8:1000, overburden; 4.1×10^{-3} or 4.1:1000, bedrock). This scenario is conservative because it assumes that two liters per day per person of contaminated groundwater will be consumed and that the contaminant levels in this water will equal the highest levels detected for all detected contaminants. Significant risk was also associated with the inhalation of VOCs from ground water while showering under a future-use scenario for groundwater. The HI is 12.2 when the maximum VOC contaminant levels and metals concentrations in unfiltered groundwater samples are evaluated.

SUMMARY OF REMEDIAL ALTERNATIVES:

The Superfund law requires that any remedy selected for a site must be protective of human health and the environment, cost effective, and in accordance with statutory requirements. Permanent solutions to contamination are to be achieved wherever possible, and there is a bias for treating wastes and applying innovative technologies. The remedial alternatives considered for the Site are summarized below. Detailed descriptions of the remedial alternatives for groundwater can be found in the FS Report which is available in EPA's Administrative Record file. The time to implement provided for each of the following alternatives represents actual construction time, and does not include the time required to perform remedial design (RD) activities prior to construction, nor the time required to negotiate with responsible parties.

ALTERNATIVES FOR CONTAMINATED GROUNDWATER:

A common element in each groundwater remediation alternative, with the exception of the "No Action" alternative (described later) is long-term groundwater monitoring to evaluate the alternative's effectiveness. Monitoring will be conducted semi-annually for the duration of the alternative, and will include ten wells, along with the treated groundwater effluent discharge, sampled for VOCs and metals. Further detail on this proposed long-term groundwater monitoring program can be found in the FS Report on page 3-6. In addition, in accordance with Section 121 of CERCLA, EPA must review any remedial action that leaves hazardous substances above health based limits at a site once every five years to assure that the remedy selected is protective of human health and the environment. It is anticipated that all groundwater alternatives presented in this document will require a five year review.

The remedial action objectives for the contaminated groundwater are a.) to restore the aquifer as a potential source of drinking water by reducing contaminant levels to the New York State MCLs, and b.) to reduce or eliminate the potential for off-site migration of contaminants. Bedrock and overburden extraction wells located in the areas of concern will be pumped at rates that will allow for coordinating an expeditious groundwater remediation. The exact number, depth, pumping rates, and location of extraction wells will be determined during RD. A monitoring well cluster (one overburden, one bedrock) will be installed during remedial design midway between the PW-2 area and MW-5 (located on the Skate Estate property) to assist in determining pumping rates as well as to further assess groundwater quality between these areas (see Figure 2). The pre-design phase pumping rate estimate is: 20 gallons per minute (gpm) for PW-2 with a total rate of 5 gpm for associated overburden extraction wells; 10 gpm for the Northeastern Site Boundary bedrock well with a total rate of 5 gpm for associated overburden extraction wells; and a total of 5 gpm for overburden extraction wells in the Paved Pipe Staging area.

Based on current estimates (Appendix A of the FS), the aquifer in the vicinity of PW-2 could be remediated in 15 years, in the Paved Pipe Staging area in 2 years, and in the vicinity of the Northeastern Site Boundary in 6 years. These estimates can be revised as data is collected during the remedial action. The "30-Year Present Worth" figures presented include costs for monitoring beyond the estimated time to remediate.

For all alternatives, institutional controls such as deed restrictions, will be recommended to appropriate authorities in order to restrict any other groundwater withdrawal.

For treatment alternatives, the treated water from

areas of concern may either be discharged separately at the permitted discharge outfall or used as plant process water. This approach permits the design option for continued operation of groundwater treatment independent of the plant operations. Groundwater from production wells in non-contaminated areas may continue to be used for industrial purposes without treatment.

Alternative GW-1: No Action

CERCLA requires that the "No Action" alternative be considered at every site to provide a baseline of comparison among alternatives. This alternative assumes no additional activity takes place beyond the current activities at the Site. All wells that are currently pumping are assumed to continue pumping at their current rates. In accordance with Section 121 of CERCLA, remedial actions that leave hazardous substances at a site are to be reviewed at least once every five years to assure that the RA is protective of human health and the environment. The No Action alternative would have to be reviewed by EPA at least once every five years.

Cost	Capital Cost:	$0
	Annual O&M:	$0
	30-Year Present Worth:	$0
Time to Implement		None

Alternative GW-2: Groundwater Extraction/ Discharge/Institutional Controls/Monitoring

This alternative assumes continued plant operations at the present rate of water use. Overburden extraction wells will be manifolded into the bedrock well system and together they will be pumped into the plant's storage tank. The water will continue to be used as process cooling water in the plant. The process water will continue to be discharged without treatment at the existing permitted discharge point.

A long-term monitoring plan will be implemented as previously described in "Alternatives for Contaminated Groundwater" with the addition of sampling the influent water to the plant.

Cost	Capital Cost:	$133,622
	Annual O&M:	$65,929
	30-Year Present Worth:	$921,331
Time to Implement		6 months

Alternative GW-3A: GW Extraction/Air Stripping/ Discharge/Combined Flow/Institutional Controls/ Monitoring

The groundwater extraction scheme and treated water discharge for this alternative are identical to that previously described in "Alternatives for Contaminated Groundwater."

Contaminated groundwater will be pumped from areas of concern to an air stripper. Treated groundwater may either be used in the plant process or discharged separately. Approximately 95 to 99 percent of the VOCs would be removed by air stripping.* Air stripping is a proven technology, has been widely used in the removal of VOCs from groundwater, and is commercially available.

A long-term monitoring plan will be implemented as previously described in "Alternatives for Contaminated Groundwater."

Cost	Capital Cost:	$291,564
	Annual O&M:	$242,286
	30-Year Present Worth:	$2,255,877
Time to Implement		2 years

(*) Regarding potential air emissions: New York State Regulation Part 212 states that if the contaminants are less than 1 lb/hr, air emission controls are not mandatory. The application of controls will be determined during remedial design in accordance with Part 212.

Alternative GW-4B: GW Extraction/Air Stripping/ Carbon Adsorption/Discharge/**Separate Flow**/ Institutional Controls/Monitoring

The groundwater extraction scheme and treated water discharge for this alternative are identical to that previously described in "Alternatives for Contaminated Groundwater."

For this remedial alternative, liquid phase and

vapor phase carbon adsorption units follow the air stripper. Groundwater from the PW-2 area will be pumped through the stripper, then to a two-stage (in series) liquid phase carbon adsorber for the removal of any remaining VOCs. The groundwater from the Northeastern Site Boundary area and Paved Pipe Staging area enters the treatment process after the air stripper but before the carbon adsorption unit. The rationale for this approach is that the only contaminant of concern in the Northeastern Site Boundary is TCE. Also, TCE is at a lower concentration in the Northeastern Site Boundary area and the pumping rate estimate is lower (15 gpm) than that of the PW-2 area (25 gpm). The low level of TCE in the Northeastern Site Boundary, combined with the 1,1,1-TCA and 1,1-DCA from the Paved Pipe Staging area (5 gpm), can effectively be removed through carbon adsorption alone. Spent carbon would be shipped off-site for disposal or regeneration.

A long-term monitoring plan will be implemented as previously described in "Alternatives for Contaminated Groundwater."

Costs	Capital Cost:	$376,732
	Annual O&M:	$235,500
	30-Year Present Worth:	$2,430,127

Time to Implement 2 years

Alternative GW-6B: GW Extraction/ UV/Chemical Oxidation/Carbon Adsorption/Discharge/ Institutional Controls/Monitoring

The groundwater extraction scheme and treated water discharge for this alternative are identical to that described in "Alternatives for Contaminated Groundwater."

This remedial alternative is similar to Alternative GW-4B except that a free radical chemical oxidation process rather than the air stripping process would be used to remove VOCs from the groundwater. A hydrogen peroxide-ultraviolet light (H_2O_2-UV) oxidation system would treat the groundwater. This oxidation system employs a combination of H_2O_2 and UV light to chemically oxidize the VOCs in the process stream. The 25 gpm flow rate from the PW-2 area contains the majority of VOCs and is pumped through the UV system. The Northeastern Site Boundary and Paved Pipe Staging area influent is added prior to carbon adsorption. The treated groundwater from the PW-2 area would have VOC concentrations below permitted discharge limits for all contaminants except 1,1,1-TCA. The carbon adsorbers will treat the effluent of the UV system for this compound and for VOCs from the Northeastern Site Boundary and Paved Pipe Staging area areas.

A long-term monitoring plan will be implemented as previously described in "Alternatives for Contaminated Groundwater."

Cost	Capital Cost:	$494,904
	Annual O&M:	$210,300
	30-Year Present Worth:	$2,494,342

Time to Implement 2 years

EVALUATION OF CRITERIA:

EPA evaluated the remedial alternatives according to nine criteria. The first two criteria, Protection of Human Health and the Environment and Compliance with Applicable or Relevant and Appropriate Requirements (ARARs) are considered by EPA to be threshold criteria which each alternative must meet. The next five are balancing criteria, and the final two are considered modifying criteria. The nine remedial evaluation criteria are as follows:

Overall Protection of Human Health and the Environment addresses whether or not a remedy provides adequate protection and describes how risks are eliminated, reduced or controlled through treatment, engineering controls or institutional controls.

Compliance with ARARs addresses whether or not a remedy will meet all of the applicable or relevant and appropriate requirements (ARARs) of other environmental statutes and/or provide grounds for invoking a waiver.

Long-Term Effectiveness and Permanence refers to the ability of the remedy to maintain reliable protection of human health and the environment over time once cleanup goals have been met.

Reduction of Toxicity, Mobility or Volume evaluates the anticipated performance of the treatment technologies a remedial alternative may employ, or how successfully particular treatment methods could reduce the harmfulness or volume of contaminants or their potential to move in the environment.

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

Implementability examines the technical and administrative feasibility of a remedy, including availability of materials and services needed to implement a particular alternative.

Cost addresses capital, operation, maintenance, and net present worth costs of each alternative.

State Acceptance indicates whether, based on its review of the FS and the Proposed Plan, NYSDEC concurs with, opposes, or has no comment on the proposed alternative.

Community Acceptance refers to the public's general response to the alternatives described in the Proposed Plan and the RI/FS Reports.

The last two criteria are assessed primarily after the closure of the public comment period on the Proposed Plan and are evaluated in the responsiveness summary section of the ROD.

ANALYSIS OF ALTERNATIVES:

1. Overall Protection of Human Health and the Environment: Alternatives GW-3A, GW-4B, and GW-6B would provide permanent overall protection by reducing the toxicity, mobility and volume through extraction and treatment of contaminated groundwater that exceeds Federal and State MCLs. Such alternatives will provide the greatest overall protection of human health and the environment. While Alternative GW-2 is considered viable, its ability to provide reliable protection and continuous remediation over time is questionable. Deed restrictions to prevent the withdrawal of contaminated groundwater for potable purposes would be implemented for all alternatives.

The "No-Action" alternative is not protective of human health and the environment; therefore, it was eliminated from further consideration and will not be discussed further.

2. Compliance with ARARs: Since the groundwater underlying the Site is a potential future potable water supply source, Federal and State MCLs (whichever is more stringent) are ARARs. Both Federal and State MCLs are relevant and appropriate for the cleanup of the aquifer. Alternatives GW-3A, GW-4B, GW-6B, and to a lesser extent GW-2, are designed to meet these ARARs. The ability of Alternative GW-2 to meet ARAR's over time, however, is somewhat questionable as it is dependent on the continued operation of the plant and pipe production.

Any off-site discharge of treated water for these alternatives will comply with any existing NYSDEC State Pollutant Discharge Elimination System (SPDES) permit.

3. Long-Term Effectiveness: Alternatives GW-3A, GW-4B, and GW-6B would provide long-term effectiveness by virtue of the extended groundwater extraction plan, the attainment of MCLs, and a resulting minimal risk from contaminant residuals. There would be no long-term threat to the environment or human health as the aquifer will be remediated to drinking water standards. The long-term effectiveness of Alternative GW-2, though viable at present, is questionable in the long term as it is dependent on the continued operation of the plant and pipe production.

4. Reduction of Toxicity, Mobility or Volume: Alternatives GW-3A, GW-4B, and GW-6B, with an identical groundwater pumping scheme, would reduce the toxicity, mobility and volume permanently through extraction and treatment of contaminated groundwater. Alternative GW-4B would produce a cleaner effluent than GW-3A by approximately 5-10%. The reduction of VOC content for Alternative GW-6B, the alternative involving innovative technology, should be comparable to the reduction of VOCs involved in

GW-4B, but this would need to be confirmed in RD. It should be noted that GW-6B would not generate air emissions. Alternative GW-2 may tend to reduce mobility but will not address the reduction of toxicity and volume criteria as there is no treatment system currently in place, or planned, for this alternative.

5. Short-Term Effectiveness: No short term impacts on human health and the environment are anticipated with construction associated with any of the alternatives as no media will be disturbed. Monitoring will help to prevent potential future exposure during the remedial period for all the alternatives.

6. Implementability: All of the alternatives involve the use of commercially available products and accessible technology. Also, as mentioned previously, the extraction plan and pumping rates are identical for all of the alternatives. Alternative GW-2 is the easiest to implement as it involves only well installation, followed by Alternative GW-3A, which is the simplest treatment alternative. The added treatment and piping, in addition to the residuals handling and disposal associated with carbon adsorption, make Alternatives GW-4B and GW-6B more difficult and time consuming to implement. Alternative GW-6B, an innovative technology, has had limited application and may achieve the VOC treatment necessary for this Site. A treatability study will have to be performed during RD for this alternative. This, along with the technology involved, makes it more difficult to implement than Alternatives GW-3A and GW-4B.

7. Cost: Alternative GW-2 has the lowest capital and O&M costs, resulting in present worth of $921,331 because it does not involve the installation of a separate groundwater treatment system. Alternative GW-3A has the next higher cost with a present worth of $2,255,877. Alternative GW-4B adds further treatment to that outlined in GW-3A for a present worth of $2,430,127. Alternative GW-6B, the innovative treatment alternative carries a present worth of $2,494,342.

8. State Acceptance: The State of New York concurs with the preferred alternative.

9. Community Acceptance: This criterion will be addressed at the close of the public comment period and will consider any comments received by EPA from the public.

EPA's PREFERRED ALTERNATIVES:

Based on the results of the RI/FS reports, and after careful consideration of all reasonable alternatives, EPA recommends Alternative GW-3A for addressing contaminated groundwater as the preferred alternative for addressing remediation at the Robintech Inc./National Pipe Co. Site. Specifically, the preferred alternative will involve the following:

-- Contaminated groundwater will be pumped from the existing bedrock production wells and new overburden extraction wells in accordance with an extraction scheme that will be further determined during RD. The pumping will continue until ARAR MCLs are achieved in the aquifer.

-- An air stripping treatment system will be installed to remove VOCs from the pumped groundwater.

-- The treated water from the Robintech Site could be used in the plant process or pumped directly to the SPDES permitted effluent discharge point.

-- A long-term system monitoring program which includes the collection and semi-annual analysis of ten wells and the SPDES effluent discharge in order to track the migration and concentrations of the contaminants of concern will be implemented.

-- Institutional controls in the form of deed restrictions will be recommended to the appropriate authorities (on- and off-site restrictions) in order to prevent the extraction of groundwater for potable purposes.

-- The site conditions will be evaluated at least once every five years to determine if a modification to the selected alternative is necessary.

After the groundwater treatment system is in place it is estimated that groundwater in the aquifer will meet the remediation goals in 15 to 30 years. EPA may invoke a technical waiver of groundwater ARARs if the remediation program indicates that reaching MCLs in the aquifer is technically impracticable.

RATIONALE FOR PREFERENCE:

EPA believes that the preferred alternative provides the best balance among the alternatives according to the evaluation criteria. Alternative GW-3A will provide a high level of protection of human health and the environment. It will reduce the toxicity, mobility, and volume permanently through the extraction and treatment of the contaminated groundwater. The utilization of a combination of bedrock and overburden extraction wells to contain the plume and extract the contaminated groundwater is an active approach to the problem and will accelerate the time to complete the remedy. In addition, ARARs will be met during the implementation of this alternative.

NYSDEC and EPA may modify the preferred alternative or select another response action presented in the Proposed Plan and the FS Report based on new information or public comments. Therefore, the public is encouraged to review and comment on **all** the alternatives explained here.

NEXT STEPS:

After EPA has presented the preferred alternative at the public meeting and has received comments and questions during the public comment period, EPA will consider and evaluate these questions and comments in the Responsiveness Summary. The Responsiveness Summary will then become part of the Record of Decision (ROD).

Regarding potentially contaminated soil and sediment, further sampling for lead will be carried out. EPA will approach contamination of the soil and sediment as a second operable unit in the future.

In addition to the Responsiveness Summary, the ROD includes a description of the final alternative selected by EPA, the rationale for selecting it, the alternatives that were considered but rejected, and the reasons for rejecting those alternatives.

EPA will place the ROD in the Administrative Record file, which will be located at EPA and at the local information repository. The Administrative Record file includes all site findings and reports that were instrumental in the Agency's decision regarding a site remedy. If the remedy finally selected differs significantly from that presented in the Proposed Plan, EPA will inform the public of the differences by issuing an Explanation of Significant Differences.

Upon acceptance and final approval of the remedy, EPA will give the potentially responsible parties the opportunity to implement the remedy described in the ROD.

EPA will prepare fact sheets describing the upcoming Site activities as remedy implementation progresses.

GLOSSARY:

Adsorption: Incorporation of gas, vapor, or dissolved matter by the surface of a solid or liquid.

Aquifer: An underground rock or soil formation that is capable of bearing and supplying water to wells and springs.

Effluent: An outflow of waste.

Proposed Plan: A document that describes all the remedial alternatives considered by EPA for addressing contamination at a Superfund site, including the preferred EPA alternative(s).

Superfund: The common name for the federal program established by the Comprehensive Environmental Response and Liability Act (CERCLA) of 1980, as amended in 1986. The Superfund law authorizes EPA to investigate and remediate the nation's most serious hazardous waste sites.

GLOSSARY OF ACRONYMS:

o AOC: Administrative Order on Consent

o ARAR: Applicable or Relevant and Appropriate Requirement -- The federal and State requirements that a selected remedy will attain. These requirements may vary among sites and alternatives.

o CERCLA: Comprehensive Environmental Response, Compensation and Liability Act

o DCE: dichloroethene

o FS: Feasibility Study -- The second part of a two-part Remedial Investigation/Feasibility Study (RI/FS). The FS involves identifying and evaluating the most appropriate technical approaches for addressing contamination problems at a Superfund site.

o gpm: gallons per minute

o HI: Hazard Index -- The Hazard Index reflects noncarcinogenic health effects for an exposed population and is the fraction of the chronic daily intake of a chemical divided by the calculated daily dose believed to be protective of human health including sensitive sub-populations. If the HI exceeds one (1.0), there is a possibility of adverse health effects.

o MCL: Maximum Contaminant Level

o NPL: EPA's National Priority List

o NYSDEC: New York State Department of Environmental Conservation

o O&M: operation and maintenance

o PVC: Poly Vinyl Chloride -- a type of plastic used in manufacturing, among other things, pipe

o RA: Remedial Action -- A series of steps taken to monitor, control, reduce, or eliminate risks to human health and the environment. These risks were caused by the release or threatened release of contaminants at a Superfund Site.

o RD: Remedial Design

o RI: Remedial Investigation -- The first part of a two-part Remedial Investigation/Feasibility Study (RI/FS). The RI involves collecting and analyzing technical and background information regarding a Superfund site to determine the nature and extent of contamination that may be present. The investigation also determines how conditions at the site may affect human health and the environment through a risk assessment.

o ROD: Record Of Decision -- The document that presents EPA's final selection of a response action.

o SPDES: The NYSDEC State Pollution Discharge Elimination System

o TCA: trichloroethane

o TCE: trichloroethene

o UV: ultraviolet

o VOC: Volatile Organic Compounds -- Organic compounds that vaporize easily. Organic compounds are carbon-based compounds, such as solvents and oils, which do not tend to dissolve readily in water.