Department of Environmental Conservation

Division of Environmental Remediation

Record of Decision

I.W. Industries Site
Huntington (T), Suffolk County
Site Number 1-52-102

March 2000

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

DECLARATION STATEMENT - RECORD OF DECISION

I.W. Industries Inactive Hazardous Waste Site
Huntington (T), Suffolk County, New York
Site No. 1-52-102

Statement of Purpose and Basis

The Record of Decision (ROD) presents the selected remedy for the **I.W. Industries** class 2 inactive hazardous waste disposal site which was chosen in accordance with the New York State Environmental Conservation Law. The remedial program selected is not inconsistent with the National Oil and Hazardous Substances Pollution Contingency Plan of March 8, 1990 (40CFR300).

This decision is based on the Administrative Record of the New York State Department of Environmental Conservation (NYSDEC) for the **I.W. Industries** inactive hazardous waste site and upon public input to the Proposed Remedial Action Plan (PRAP) presented by the NYSDEC. A listing of the documents included as a part of the Administrative Record is included in Appendix B of the ROD.

Assessment of the Site

Actual or threatened release of hazardous waste constituents from this site, if not addressed by implementing the response action selected in this ROD, presents a current or potential significant threat to public health and the environment. As more fully described in Sections 3 and 4 of this document, disposal of metals fragments, cutting oils and industrial solvents have resulted in the disposal of a number of hazardous waste constituents, including volatile and semi-volatile organic compounds, and metals (e.g., lead), at the site. These disposal activities have resulted in the following significant threats to the public health and/or the environment:

- A significant environmental threat associated with the release of contaminants to the Long Island sole source aquifer; and
- a significant threat to human health if excavation occurs in areas of contamination that could result in exposures to contaminated soil and vapors.

Description of Selected Remedy

Based on the results of the Remedial Investigation/Feasibility Study (RI/FS) for the **I.W. Industries site** and the criteria identified for evaluation of alternatives, the NYSDEC has selected a remedy consisting of:

- removal of soils from leaching pools that impact or have the potential to impact groundwater quality;
- removal of non-aqueous phase liquids ("NAPLs," namely oils and the contaminants dissolved in them) from the top of the water table;
- long-term monitoring of groundwater to verify the effectiveness of the remedy; and
- institutional controls consisting of a deed notice and a deed restriction to prevent exposures to any residual contamination remaining after implementation of the remedy.

New York State Department of Health Acceptance

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

Declaration

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

3/30/2000
Date

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

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RECORD OF DECISION

I.W. Industries Site
Huntington (T), Suffolk County
Site No. 1-52-102
March 2000

SECTION 1: SUMMARY OF THE RECORD OF DECISION

The New York State Department of Environmental Conservation (NYSDEC) in consultation with the New York State Department of Health has selected this remedy to address the significant threat to human health and/or the environment created by the presence of hazardous waste at the I.W. Industries class 2, inactive hazardous waste disposal site. As more fully described in Sections 3 and 4 of this document, release of metals fragments, cutting oils and industrial solvents have resulted in the release of volatile and semi-volatile organic compounds, and metals (e.g., lead), at the site. These disposal activities have resulted in the following significant threats to the public health and/or the environment.

- A significant environmental threat associated with the release of contaminants to the Long Island sole source aquifer; and
- a significant threat to human health if excavation occurs in areas of contamination that could result in exposures to contaminated soil and vapors.

In order to eliminate or mitigate the significant threats to public health and/or environment that the hazardous waste disposed at the I. W. Industries site has caused, the following remedy was selected:

- removal of soils from leaching pools that impact or have the potential to impact groundwater quality;
- removal of NAPL (oils and the contaminants dissolved in them) from the top of the water table;
- long-term monitoring of groundwater to verify the effectiveness of the remedy; and
- institutional controls consisting of a deed notice and a deed restriction to prevent exposures to any residual contamination remaining after implementation of the remedy.

The selected remedy, discussed in detail in Section 8 of this document, is intended to attain the remediation goals selected for this site, in Section 6 of this Record of Decision (ROD), in conformity with applicable standards, criteria, and guidance (SCGs).

SECTION 2: SITE LOCATION AND DESCRIPTION

The IW Industries site, number 1-52-102, is located in an industrial park in the Town of Huntington, Suffolk County, New York. It is approximately 1800 feet southeast of Exit 49 of the Long Island Expressway. (See Figure 1.)

The site consists of approximately six acres and includes a one- and two-story manufacturing and office building which covers 100,000 square feet (approximately one-third) of the site. (See Figure 2.) The site has been occupied by this facility since it was built in 1966.

The industrial park is located in an industrialized area of Long Island. There are a number of listed hazardous waste sites in the vicinity of I.W. Industries, including the adjacent property to the west. (See Figure 1.)

One characteristic of industrial and commercial buildings in this area of Long Island is the disposal of surface water runoff from roofs and parking lots, as well as sanitary waste water by introduction into leaching pools. These subsurface pools are constructed of concrete rings typically eight to ten feet in diameter and four to six feet high, stacked atop one another in holes excavated into the ground. The leach pools are constructed with an open bottom and holes on the sides, which serve as access points for the water to infiltrate into the ground. Their function is to allow storm water and sanitary wastewater to discharge to the ground and infiltrate downward to recharge the aquifers.

SECTION 3: SITE HISTORY

3.1: Operational/Disposal History

IW Industries manufactures and distributes threaded metal parts for the electrical lighting, plumbing, and plumbing fixture trades. It has operated on the site since the present facility was constructed in 1966. In August 1980, discharges from parts washing operations (i.e., cutting oils and degreasing solvents along with wash water) were observed discharging to several on-site leaching pools. From these pools they apparently migrated downward into the ground, reaching the water table. No on-site discharges of wastewater have been reported since 1984.

3.2: Remedial History

According to a Preliminary Remedial Investigation Report submitted by I.W. Industries, the first remedial activities at the site resulted from an inspection by the Suffolk County Department of Health Services (SCDHS) in August 1980. The inspection revealed that discharges from metal parts washing operations were entering on-site leaching pools identified as LP-1 and LP-2 on plans and drawings. These leach pools were permitted discharge points under a State Pollution Discharge Elimination Permit (SPDES). This alleged practice resulted in the signing of an order on consent between I.W. Industries and the SCDHS (# IW82-5) for correction of SPDES violations on November 5, 1982. The order on consent called for cleaning the contaminated leaching pools.

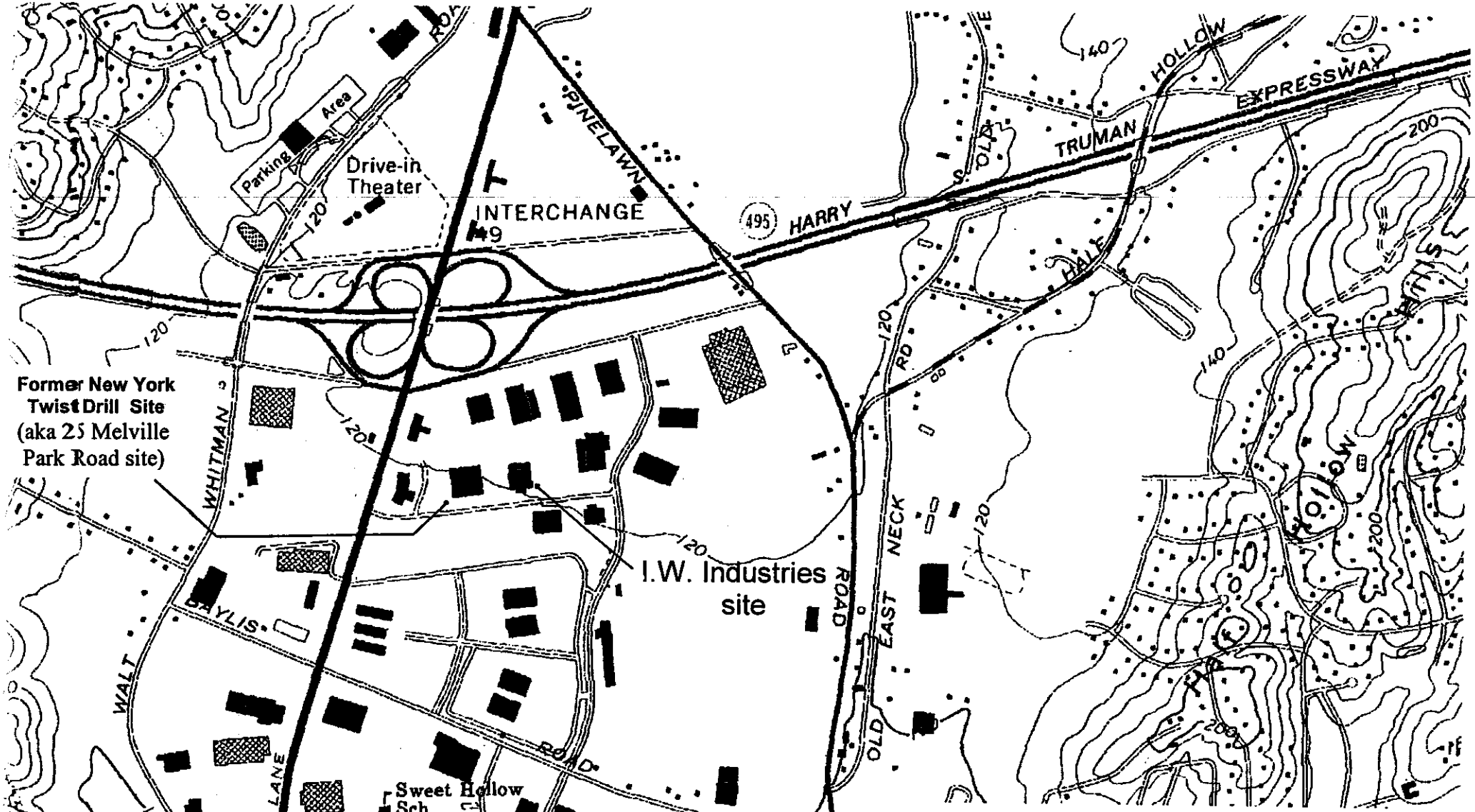


FIGURE 1

Site Location Map

I.W. INDUSTRIES Site

Site Number 1-52-102

Huntington (T), Suffolk County, NY

approximate scale 1" = 1320'

extracted from

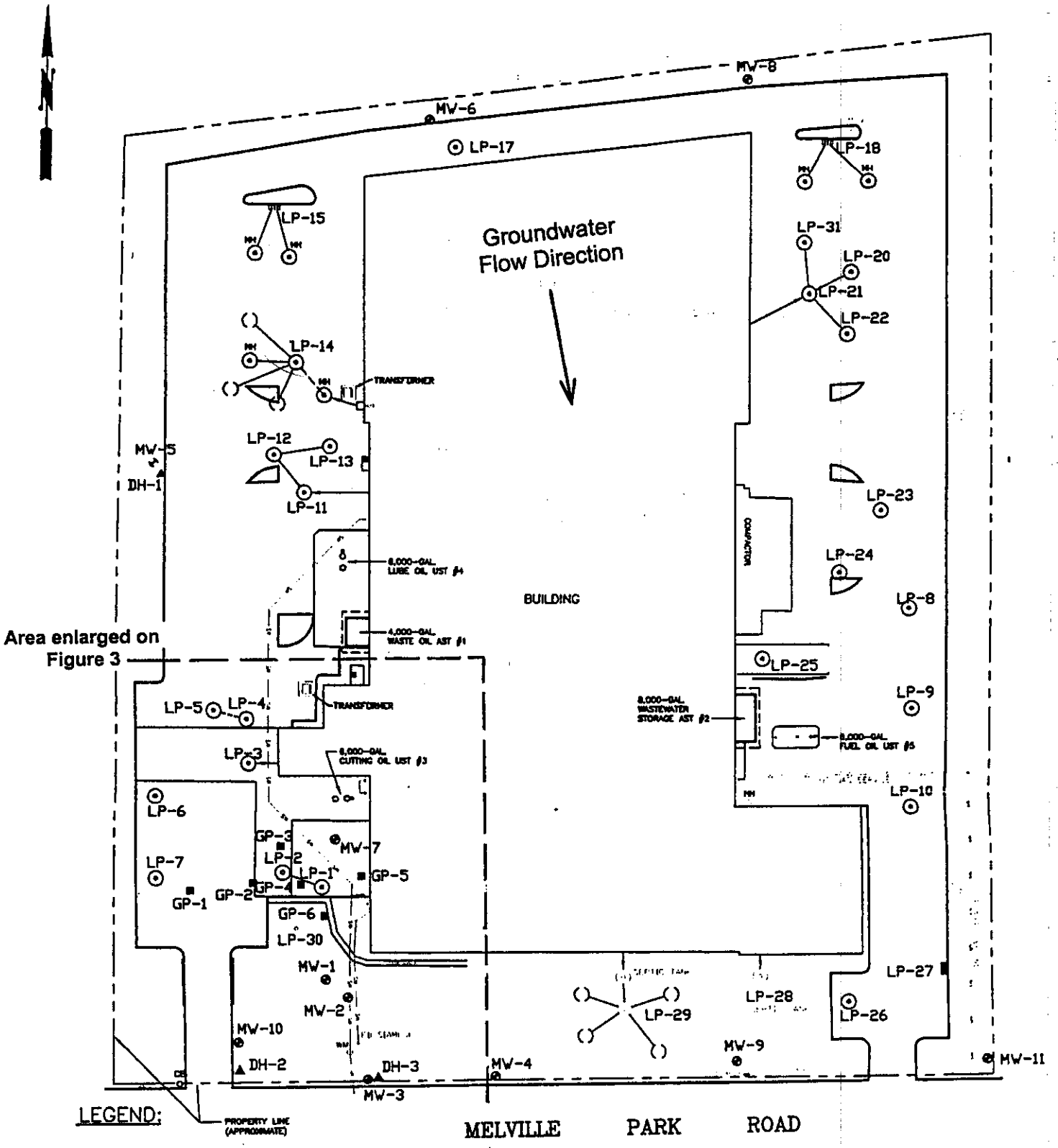


FIGURE 2

Site Plan

I.W. Industries Site

after

Fanning, Phillips & Molnar
Engineers

An inspection on January 4, 1983, indicated that all floating oil had been removed from the pools as required by the order. Two groundwater monitoring wells were also installed as part of the work resulting from this order. Around this time an ultrafiltration unit was installed in an effort to reduce discharge concentrations from the parts washing machine. However, an inspection on February 27, 1984 indicated that leach pools again contained oil, and the PRP retained the services of an environmental management firm to again clean the pools.

The preliminary actions taken in 1983 and 1984 by I.W. Industries were immediate responses to situations revealed by the SCDHS investigations. (See Section 4.2 below.)

Between 1984 and 1991 three additional groundwater monitoring wells were installed at the site. In 1993 two more wells were installed, and a previously unknown well was discovered on the site, bringing the total number to eight. At this time a Geoprobe ® soil investigation was performed by driving specially designed hollow rods into the ground and obtaining samples of soil and groundwater. The rods were driven to depths of up to 41 feet, at 24 locations on the site.

Chemical analysis was performed on collected soils and additional groundwater samples. The analytical results indicated the presence of volatile and semi-volatile organic compounds, high levels of tentatively identified hydrocarbon compounds, as well as elevated concentrations of certain metals.

SECTION 4: SITE CONTAMINATION

To evaluate the contamination present at the site and to identify alternatives to address the significant threat to human health and the environment posed by the presence of hazardous waste, I.W. Industries conducted a Remedial Investigation/Feasibility Study (RI/FS).

4.1: Summary of the Remedial Investigation

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

The RI was conducted in two phases. The first phase consisted of consolidating and analyzing the investigation work and chemical analyses that were performed between 1981 and 1994; the second phase was carried out between 1994 and 1998. Reports entitled Preliminary Remedial Investigation Report and Focused Remedial Investigation Report were issued in 1994 and 1997, respectively. A Final Focused Remedial Investigation Report, which describes the field activities and findings of the RI in detail, was issued by I.W. Industries in January 1999.

The Preliminary RI included the following activities:

- sampling and analysis of solids from on-site leaching pools;
- collection and analysis of deep soil samples; and

- installation of groundwater monitoring wells, and sampling and analysis of groundwater.

To determine which media (soil, groundwater, etc.) are contaminated at levels of concern, the RI analytical data were compared to environmental Standards, Criteria, and Guidance values (SCGs). Groundwater, drinking water and surface water SCGs identified for the I.W. Industries site are based on NYSDEC Ambient Water Quality Standards and Guidance Values and Part 5 of New York State Sanitary Code.

The media of concern for the site are groundwater, soil, and leach pool sediments. Since leach pool "sediments" are not true sediments (they are not associated with surface waters that could present exposures to fish and wildlife), they have been treated in the investigations as a special class of "soils." Throughout the RI and FS reports reference is made to "leach pool sediments." In order to clarify the distinction between soils in the leach pools and other site soils, leach pool soils will be referred to throughout this report as "source soils." Collectively, all other soils will be referred to simply as "soils."

For both soils and leach pool source soils, NYSDEC Technical and Administrative Guidance Memorandum (TAGM) 4046 has been used for cleanup guidelines for the protection of groundwater, regional background conditions, and health-based exposure scenarios. In addition, the SCDHS regulations for "Pumpout and Cleanup Criteria (12 - SOP #9-95) and the Town of Huntington Building Department code for Storm-water Facilities pertain. Under NYSDEC SCGs, site-specific background concentration levels can be considered for certain classes of contaminants in soils.

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

Chemical concentrations are reported in parts per billion (ppb), and parts per million (ppm). For comparison purposes, where applicable, SCGs are provided for each medium.

The Focused RI included the following activities:

- additional sampling and analysis of shallow soils;
- sampling and analysis of deep soils;
- installation of additional monitoring wells and groundwater sampling and analysis; and
- additional leach pool source soil sampling and analysis.

4.1.1: Site Geology and Hydrogeology

The site is located on sand and gravel outwash plains of central Long Island, New York, approximately 120 feet above sea level. The surface soil is sandy loam classified as belonging to the Riverhead and Haven soil unit. The near surface unconsolidated deposits were formed at the

end of the last ice age, as the melt water from retreating glaciers deposited gravels and sands in spillways channelized between the West Hills to the east and the Half Hollow Hills to the west.

In vertical cross-section, the following sequence of surficial geologic deposits overlies the crystalline bedrock of Precambrian (very ancient) age. The bottom most units are Cretaceous in age, dating from late in the time of dinosaurs, and are much older than the overlying glacial deposits. The Cretaceous units include the Lloyd Sand Member of the Raritan formation, consisting of sands and gravels with occasional clay lenses; the Raritan Clay member of the Rartian formation, which generally acts as a partial confining layer by restricting vertical groundwater movement; and the Magothy formation, consisting of gray and white fine-grained sand, with interbedded layers of clayey sand, silty sand, and clay. (These units are listed in geological order, from deepest to most shallow.)

The uppermost geological unit is known as the Pleistocene Glacial deposits, which are Quarternary (much younger) in age. These deposits consist of stratified sand and gravel deposits and were formed during and following the most recent ice age. This unit is approximately 50 feet thick, and extends upward to the surface at the site.

There are three primary aquifers (productive water bearing units) beneath the site. The deepest one is the Lloyd Aquifer which is associated with the Lloyd sands; the intermediate one is the Magothy Aquifer, which is associated with the Magothy formation and is estimated to be over 500 feet thick. The most shallow one is the Upper Glacial Aquifer, which is associated with the Pleistocene Glacial deposits. Most of its thickness is above the water table. It has a saturated thickness of less than 10 feet beneath the site, which is to say that only 10 feet of its 50 foot thickness lie below the groundwater table.

The three aquifers are not isolated hydraulically; however, clay layers between the units locally serve to retard groundwater flow between the aquifers.

The groundwater flow direction in the Upper Glacial Aquifer beneath the site is south-southeast. The rate of flow of groundwater is controlled by two factors: the permeability of the aquifer material and the gradient (steepness) within the aquifer. In the case of the Upper Glacial Aquifer, the permeability of the aquifer material is relatively high, but the gradient is very low.

4.1.2: Nature of Contamination

As described in the RI report, samples of leaching pool soils, groundwater, and soil were collected to characterize the nature and extent of contamination. The main categories of contaminants which exceed their SCGs are inorganics (metals), volatile organic compounds (VOCs), and semi-volatile organic compounds (SVOCs).

A total of fourteen metals and eighteen organic compounds have been detected on-site to date. The complete list can be found in Table 1. The total number of contaminants includes those believed to be migrating onto the site from adjoining properties, which are being addressed under separate remedial efforts. The chlorinated volatile organic contaminants (VOCs) 1,2-dichloroethene, trichloroethene (TCE), chlorobenzene, tetrachloroethene (PCE) have been shown

to be originating from an adjacent off-site source (the 25 Melville Park site), and are subject to a separate remedial action.

The VOCs of concern for the I.W. Industries site are xylene, toluene, and total Volatile Organic Compounds (the sum of the xylene, toluene, plus other tentatively identified compounds). The semi-volatile organic contaminants (SVOCs) of concern are the carcinogenic SVOCs *benzo(a)anthracene, chrysene, benzo(b)-fluoranthene, benzo(k)fluoranthene, benzo(a)pyrene, indeno(1,2,3)perylene the non-carcinogenic SVOCs fluoranthene, phenanthrene, phenol, dibenzofuran, pyrene,* total SVOCs, and unspecified alkanes. The inorganic contaminants of concern are arsenic, cadmium, chromium, copper, iron, lead, manganese, mercury, nickel and zinc. (See Table 1.)

4.1.3: Extent of Contamination

The following media have been identified as areas of concern: wastewater-contaminated leach pool source soils; other soils, and groundwater. Indications are that the soil and groundwater contamination originated as contamination associated with past wastewater disposal practices and subsequently contaminated leach pool source soils.

Figure 3, taken from the FS, shows the extent of soil contamination as determined from data in the RI reports.

Table 1 summarizes the extent of contamination for the contaminants of concern in soils, leach pool source soils and groundwater, and compares the data with the SCGs for the site. The following summary describes the media which were investigated and a summary of the findings of the investigations.

Leach Pool Source Soils

Oil and an oily emulsion were found in several leaching pools at various times from 1982 through 1997. I.W. Industries undertook activities to remove contaminated liquids and soil from the leach pools in 1982 and 1984, including 7,000 gallons of oils, an additional 8,700 gallons of liquids, and 8 cubic yards of solids. (See Section 4.2, Interim Remedial Measures, below.)

Leach pool source soils contain high levels of a variety of SVOCs (e.g., *fluoranthene* up to 470 ppm, vs. an SCG of 50 ppm, *chrysene* up to 240 ppm vs. 0.4 ppm). Also of concern are several metals, notably lead (up to 7,200 ppm vs. an SCG of 500 ppm), mercury (up to 4.8 ppm vs. 0.1 ppm), and zinc (up to 96,500 ppm vs. 20 ppm).

The leach pool source soils also contain VOCs including toluene (up to 71 ppm vs. the soil SCG of 1.5 ppm) and a variety of chemicals associated with the cutting oils used at the facility. The site has 29 numbered leach pools. Twenty of these pools (listed under Alternative 2) contain contamination at levels considered to be significantly above the cleanup goals. (See Table 2.) Deep soils near the water table also contain contaminants but not at levels of significant concern. Another eight pools (listed in alternative 3) contain contaminants marginally above cleanup goals (see Table 3).

Table 1
Nature and Extent of Contamination[1]

MEDIUM	CATEGORY	CONTAMINANT OF CONCERN	CONCENTRATION RANGE (ppb unless noted)	FREQUENCY of EXCEEDING SCGs	SCG/ Bkgd. (ppb)
Groundwater	Volatile Organic Compounds (VOCs)*	1,2-dichloroethene	ND - 55	2 of 8 samples	5
		trichloroethene - ?	ND - 16	2 of 8	5
		chlorobenzene	ND-41	2 of 8	5
		tetrachloroethene ?	ND - 29	2 of 8	5
Groundwater	Inorganic Compounds (metals, in ppb)	Chromium	0.87 - 677	1 of 8	50
		Iron	85.1 - 232,000	6 of 8	300
		Lead	ND - 91.4	3 of 8	25
		Manganese	107 - 2150	5 of 8	300
		Iron & Manganese	401 - 234,150	7 of 8	500
Soils	Tentatively Identified Semi-Volatile Organic Compounds	Unknown Alkanes	ND - 51,600	1 of 12	50,000
Soils	Inorganic Compounds (metals, in ppm)	Iron	1,530 - 5,180	9 of 12	2,000
Leach Pool Source soils	Volatile Organic Compounds (VOCs)	Xylene	ND - 3,500	2 of 26	1,200
		Toluene	ND - 71,000	2 of 26	1,500
		Total VOCs	1 - 382,240	4 of 26	10,000

*There is evidence of an off-site source for the VOCs in groundwater.

[1]This table is based on the complete round of sampling presented in the FS.

Table 1 (continued)

MEDIUM	CATEGORY	CONTAMINANT OF CONCERN	CONCENTRATION RANGE (ppb)	SAMPLES EXCEEDING SCGs	SCG/ Bkgd. (ppb)
Leach Pool Source soils	Semi-Volatile Organic Compounds (SVOCs)	*Fluoranthene*	ND - 470,000	7 of 26 samples	50,000
		Phenanthrene	ND - 350,000	4 of 26	50,000
		Phenol	ND - 8,700	4 of 26	30
		Dibenzofuran	ND - 23,000	3 of 26	6,200
		Pyrene	ND - 300,000	6 of 26	50,000
		Benzo(a)anthracene	ND - 130,000	15 of 26	224
		Chrysene	ND - 240,000	15 of 26	400
		Benzo(b)fluoranthene	ND - 110,000	15 of 26	224
		Benzo(k)fluoranthene	ND - 120,000	15 of 26	224
		Benzo(a)pyrene	ND - 100,000	15 of 26	61
		Indeno(1,2,3-cd)pyrene	ND - 66,000	11 of 26	3,200
		Total SVOCs	ND - 4,593,700	7 of 26	500,000
Leach Pool Source soils	Inorganic Compounds (metals, **in ppm**)	Arsenic	ND - 22.9	4 of 26	7.5
		Cadmium	ND - 74.5	2 of 26	10
		Chromium	3.2 - 1,990	2 of 26	50
		Copper	53.3 - 179,000	26 of 26	25
		Iron	1,180 - 115,000	22 of 26	2,000
		Lead	24.2 - 7,200	14 of 26	500
		Mercury	ND - 4.8	6 of 26	0.1
		Nickel	1.4 - 114	12 of 26	13
		Zinc	31.1 - 96,500	26 of 26	20

Note: PPB indicates parts per billion; PPM indicates parts per million. One part per million equals 1,000 parts per billion.

Table 2[1]

Contaminant Concentrations in Source Soils - Leach Pools Selected for Remediation[1]

Contaminant	Minimum	Maximum	Average	SCG	#That Exceed SCG
Metals (ppm)					
Arsenic	ND	22.9	4.4	7.5	2
Cadmium	0.2	74.5	6.4	10	2
Chromium	4.1	1,990	122.8	50	2
Copper	138	179,000	20,034	25	22
Iron	1,590	115,000	13,217	2,000	18
Lead	24.2	7,200	1,275	500	13
Mercury	ND	5.9	0.7	0.1	6
Nickel	3.2	172	35.4	13	12
Zinc	165	96,500	11,117	20	20
VOCs (ppb)					
Xylene	ND	3,500	277	1200	2
Toluene	ND	71,000	5,855	1500	2
Total VOCs	ND	382,000	27,103	10000	4
SVOCs (ppb)					
Fluoranthene	ND	471,000	85,935	50000	6
Phenanthrene	ND	350,000	56,535	50000	4
Phenol	ND	450	27	30	4
Dibenzofuran	ND	32,000	3,156	6200	3
Pyrene	ND	300,000	29,185	50000	6
Benzo(a)anthracene	ND	130,000	24,630	224	14
Chrysene	ND	240,000	45,000	400	14
Benzo(b)fluoranthene	ND	110,000	27,230	224	14

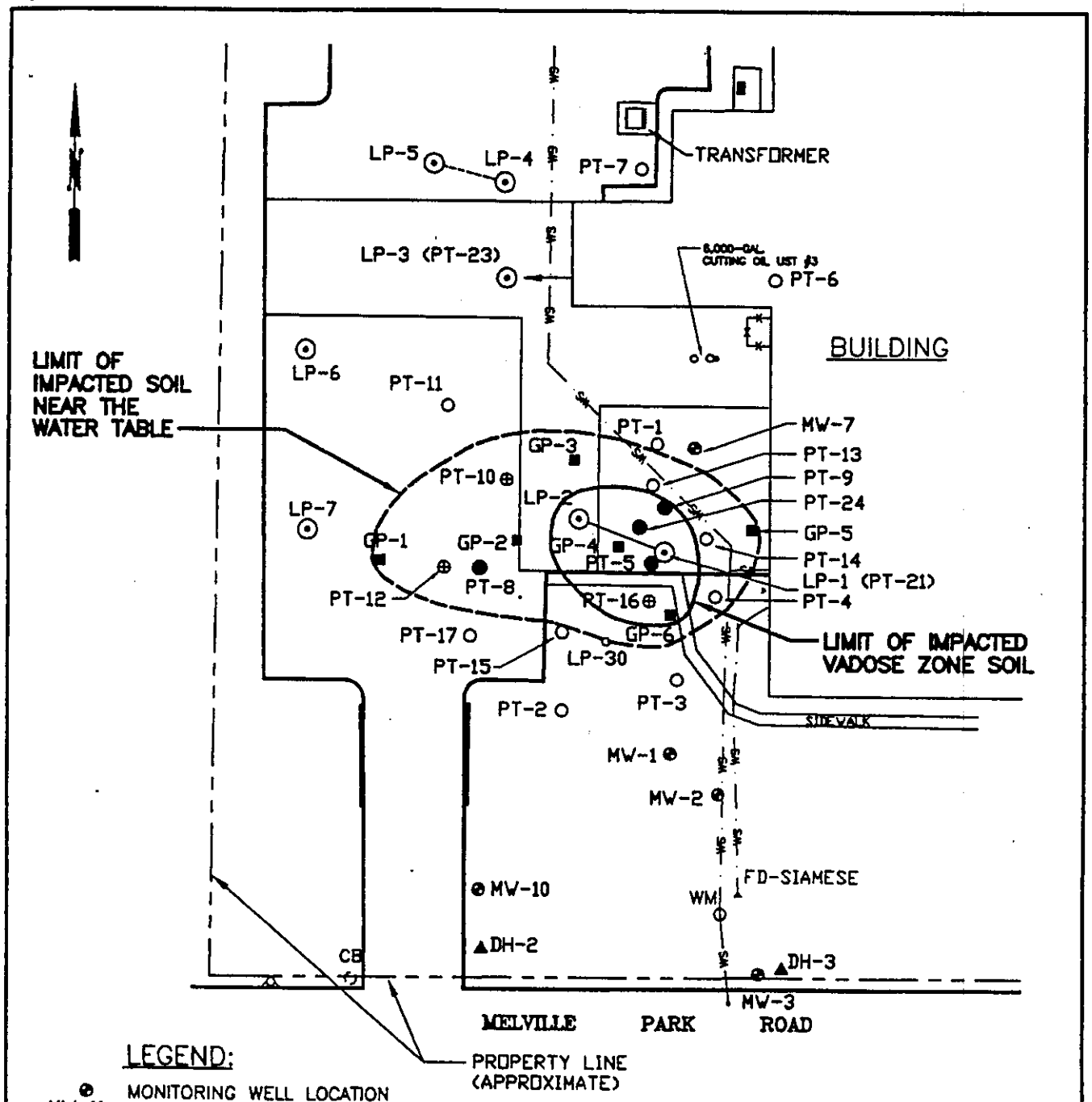
[1]Includes twenty Leach Pools: 3-15, 18, 22-24, 28, 29, 31.

Table 3[1]

Contaminant Concentrations in Source Soils - Leach Pools Selected for No Action

Contaminant	Minimum	Maximum	Average	SCG	#That Exceed SCG
Metals (ppm)					
Arsenic	0.64	11.2	3	7.5	1
Cadmium	0.04	0.84	0.37	10	0
Chromium	3.2	10.5	6.1	50	0
Copper	53.3	239	113	25	6
Iron	1180	8810	3697	2000	4
Lead	56.1	760	263	500	1
Mercury	ND	0.11	0.04	0.1	1
Nickel	0.95	7.8	4.3	13	0
Zinc	31.1	220	120	20	6
VOCs (ppb)					
Xylene	ND	7	7.0	1200	0
Toluene	ND	180	43	1500	0
Total VOCs	ND	3488	1384	10000	0
SVOCs (ppb)					
Fluoranthene	ND	5500	1293	50000	0
Phenanthrene	ND	1800	548	50000	0
Phenol	ND	230	43	30	1
Dibenzofuran	ND	50	50	6200	0
Pyrene	ND	2900	920	50000	0
Benzo(a)anthracene	ND	1300	393	224	2
Chrysene	ND	3800	912	400	2
Benzo(b)fluoranthene	ND	1900	367	224	2

[1]Includes six Leach Pools: 1, 2, 20, 21, 26, 27.



LEGEND:

- MW-11 — MONITORING WELL LOCATION
- DH-1 DR / GP-1 — SOIL BORING LOCATION
- LP-1 DR / LP-27 — LEACHING POOL LOCATION WITH MANHOLE
- PT-8 — SOIL BORING W/SIGNIFICANT ODOR
- PT-10 — SOIL BORING W/SOME ODOR
- PT-1 — SOIL BORING W/NO ODOR
- ( ) — LEACHING POOL LOCATION WITH SUBGRADE ACCESS

30 0 30 60

GRAPIC SCALE-FEET

FIGURE 3

Fanning, Phillips & Molnar
Engineers

EXTENT OF CONTAMINATED SOIL
I.W. INDUSTRIES SITE
35 MELVILLE PARK ROAD
MELVILLE, NEW YORK

Drawn By:H.C.	Checked By:SOD	Date: 3/5/98

Groundwater

Groundwater from several monitoring wells on site contained elevated levels of VOCs, SVOCs and/or metals. Some of this contamination appears to be migrating onto the site from an adjacent listed inactive hazardous waste site.

Data indicate that chlorinated VOCs (e.g., PCE) are migrating at low levels onto the site from the site to the west. Cutting oils from site operations have been found floating on the water table (Figure 3a) in MW-7 (0.4 feet)and MW-2 (0.03 feet) and oil was also detected in a hydropunch sample near the site boundary (DH-3). Site activities have contaminated groundwater with metals, notably lead (up to 91.4 ppb vs. the SCG of 25 ppb) and iron and manganese (up to 234,150 ppb vs. 500 ppb). Chromium was also detected in a groundwater sample from hydropunch sample DH-3 (at 677 ppb vs SCG of 100). Except for isolated zones associated with individual leach pools, the extent of the plume from on-site disposal appears to be limited to the area between LP-3 and MW-3. (See Figure 3b.) This is also the area where the chlorinated VOC plume encroaches from off-site. The relatively small size of the on-site plume is likely due to the low mobility of the site contaminants and the low hydraulic gradient at the site.

Soil

An area of impacted soil (around and below the leach pool source soils) is present in the vicinity of LP-1 and LP-2. The contamination is present at depth, in the vicinity of the water table surface; it was not present in shallow samples. The contamination includes primarily SVOCs that are associated with the cutting oils.

4.2: Interim Remedial Measures

An Interim Remedial Measure (IRM) is conducted at a site when a source of contamination or exposure pathway can be effectively addressed before completion of the RI/FS.

As mentioned under Section 3.2 Remedial History above, several actions were taken subsequent to site identification and prior to completion of the FS. The preliminary actions taken by I.W. Industries in 1983 and 1984 consisted of cleaning and removing soil, oil, and a mixture of oil and water from those leach pools that the SCDHS found to be contaminated. Under the supervision of Suffolk County, 7,000 gallons of accumulated oils were removed from leach pools in 1982, and an additional 8,700 gallons of liquids and 8 cubic yards of leach pool source soils were removed in 1984. When oil and/or oily emulsion have been found at the site they have been removed by pumping and disposed of off-site in an approved manner. The most recent removal was in 1997.

These actions removed significant quantities of contaminants, but were not successful in remediating the full extent of the contamination problems at the site. Apparently, episodes of re-contamination of the leach pools took place. Current operations are regulated by the State Pollution Discharge Elimination System, and new washing technology is now employed at the site to minimize or eliminate the likelihood of future spills to the leach pools.

Another cleanup action was undertaken in 1994, concurrently with the completion of the Preliminary Remedial Investigation. It consisted of installing a "product recovery device" in

monitoring well MW-7 to recover oils that were found floating atop the water table. Its success was also reported to be limited due to the design of the device. In 1997, 0.4 feet of oil was measured in monitoring well MW-7 and 0.03 feet in MW-2.

4.3: Summary of Human Exposure Pathways:

This section summarizes the types of environmental exposures and ecological risks which may be presented by the site. An exposure pathway is the manner by which an individual may come in contact with a contaminant. The five elements of an exposure pathway are 1) the source of contamination; 2) the environmental media and transport mechanisms; 3) the point of exposure; 4) the route of exposure; and 5) the receptor population. These elements of an exposure pathway may be based on past, present, or future events.

There are no known completed pathways for human exposure that exist at the site today. However, there are several pathways which may possibly be completed in the future. These include:

- ingestion as a result of releases to the sole source Long Island Aquifer system and subsequent use of contaminated water for potable supply;
- dermal contact, ingestion and inhalation as a result of on site construction activities which involve excavation in the vicinity of certain leach pits; and
- dermal contact, ingestion and inhalation if contaminated subsurface materials are redistributed to the surface following construction activities.

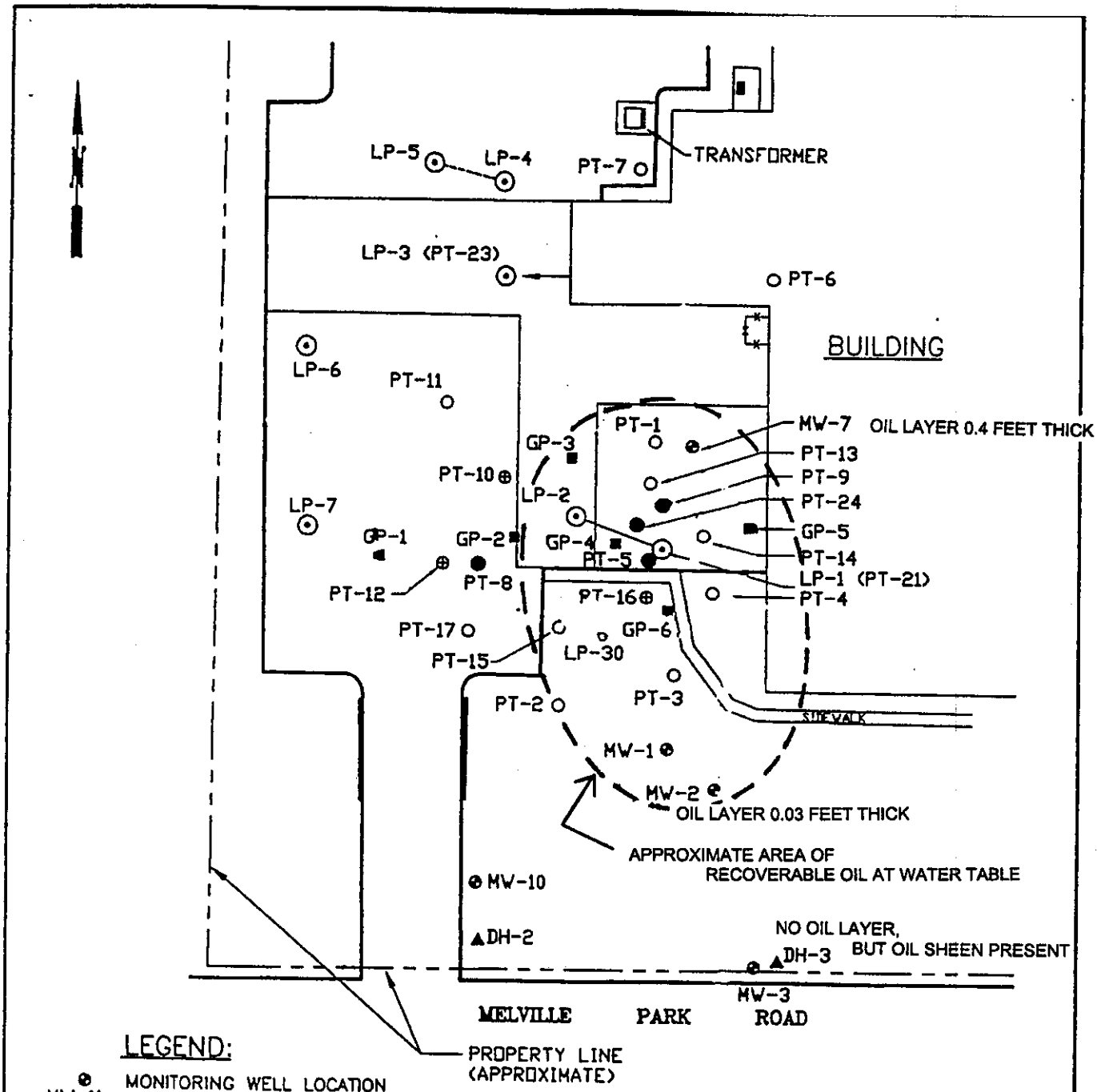
Contaminants released to the sole source aquifer could migrate and be extracted at off-site down-gradient locations for uses that could result in human exposure. A detailed water supply well survey is included in the RI. Data indicate that groundwater contamination from this site does not extend off-site at this time.

Contaminants are present beneath the surface and covered by asphalt, which prevents direct exposures. This scenario is likely to continue into the foreseeable future as the site use will remain industrial/commercial.

4.4: Summary of Environmental Exposure Pathways

This section summarizes the types of environmental exposures and ecological risks which may be presented by the site.

The Fish and Wildlife Impact Assessment included in the Focused RI presents a discussion of the potential impacts from the site to fish and wildlife resources. It concludes that there are no known pathways for environmental exposure and/or ecological risks at this time based on these considerations. No surface bodies of water or wetlands have been identified within three miles



LEGEND:

- MW-11 — MONITORING WELL LOCATION
- DH-1 DR / GP-1 — SOIL BORING LOCATION
- LP-1 DR / LP-27 — LEACHING POOL LOCATION WITH MANHOLE
- PT-8 — SOIL BORING W/SIGNIFICANT ODOR
- PT-10 — SOIL BORING W/SOME ODOR
- PT-1 — SOIL BORING W/NO ODOR
- ( ) — LEACHING POOL LOCATION WITH SUBGRADE ACCESS

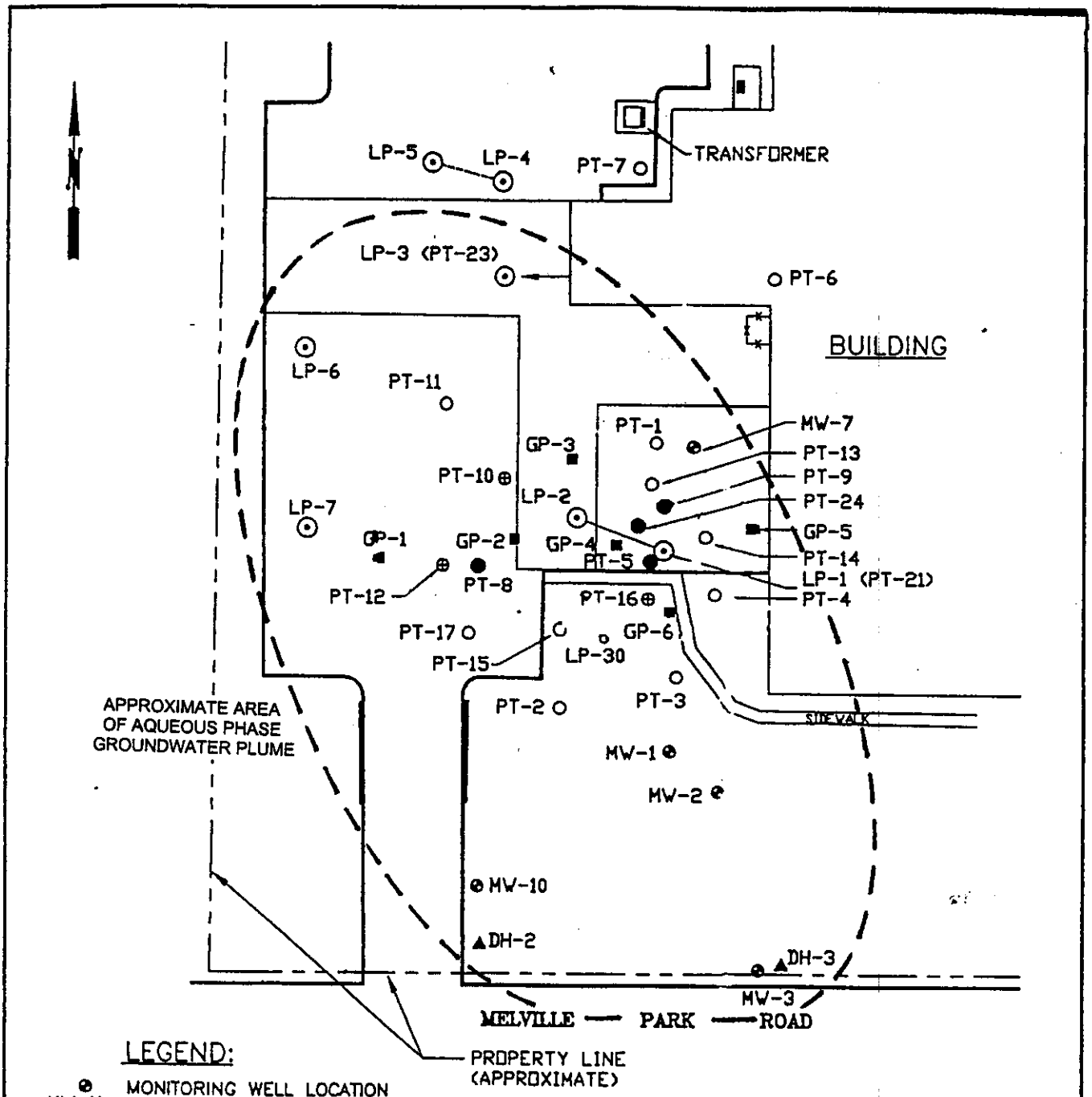
30 0 30 60
GRAPIC SCALE-FEET

FIGURE 3a, after

Fanning, Phillips & Molnar
Engineers

APPROXIMATE AREA OF
RECOVERABLE OIL AT WATER TABLE
I.W. INDUSTRIES SITE
35 MELVILLE PARK ROAD
MELVILLE, NEW YORK

Drawn By:H.C.	Checked By:SOD	Date: 3/5/98



LEGEND:

- MW-11 — MONITORING WELL LOCATION
- DH-1 DR / GP-1 — SOIL BORING LOCATION
- LP-1 DR / LP-27 — LEACHING POOL LOCATION WITH MANHOLE
- PT-8 — SOIL BORING W/SIGNIFICANT ODOR
- PT-10 — SOIL BORING W/SOME ODOR
- PT-1 — SOIL BORING W/NO ODOR
- ( ) — LEACHING POOL LOCATION WITH SUBGRADE ACCESS

30 0 30 60
GRAPIC SCALE-FEET

FIGURE 3b, after

Fanning, Phillips & Molnar
Engineers

APPROXIMATE AREA OF
AQUEOUS PHASE GROUNDWATER PLUME
I.W. INDUSTRIES SITE
35 MELVILLE PARK ROAD
MELVILLE, NEW YORK

Drawn By:H.C.	Checked By:SOD	Date: 3/5/98

of the site in the down-gradient direction; the site and its surroundings are developed as industrial/commercial; and the contamination which is present is in the subsurface.

SECTION 5: ENFORCEMENT STATUS

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

The NYSDEC and the PRP, I.W. Industries, Incorporated entered into a Consent Order on March 31, 1995, which was modified on September 24, 1996, to complete an RI/FS.

SECTION 6: SUMMARY OF THE REMEDIATION GOALS

Goals for the remedial program have been established through the remedy selection process stated in 6 NYCRR Part 375-1.10. The overall remedial goal is to meet all Standards, Criteria and Guidance (SCGs) and be protective of human health and the environment. At a minimum, the remedy selected must eliminate or mitigate all significant threats to public health and/or the environment presented by the hazardous waste disposed at the site through the proper application of scientific and engineering principles.

The goals selected for this site are:

(1) to eliminate to the extent practicable all threats to the Long Island Sole Source Aquifer that originate from this site by

- removing the remaining sources of metals, volatile and semi-volatile organic chemical, and oils contamination from the significantly impacted leach pools, and
- removing to the maximum extent practicable the layer of oil floating on the water table; and

(2) eliminating or minimizing the potential for on- site exposures to future site users, including construction workers, during any excavation work on the site by

- taking the above actions,
- requiring notification to the property owner through the institutional control of a deed notice identifying the nature of the contamination, and
- restricting future land use at the site to industrial/commercial through the institutional control of a deed restriction.

SECTION 7: SUMMARY OF THE EVALUATION OF ALTERNATIVES

The selected remedy must be protective of human health and the environment, be cost effective, comply with other statutory laws and utilize permanent solutions, alternative technologies or resource recovery technologies to the maximum extent practicable. Potential remedial alternatives for the I.W. Industries, Incorporated site were identified, screened and evaluated in the Focused Feasibility Study.

To be successful, the selected remedy must address: (1) removing or controlling the sources of metals contamination; (2) removal or control of the sources of volatile and semi-volatile organic compounds originating from on-site; (3) removal or control of the subsurface pools of oils, since the oils act as solvents for the other compounds and can collect and release them to the groundwater over time; and (4) institution of appropriate notification and restrictive clauses in the property deed. A long-term groundwater monitoring plan will be implemented to verify the effectiveness of items (1) through (3).

A summary of the detailed analysis follows. As presented below, the time to implement reflects only the time required to implement the remedy, and does not include the time required to design the remedy, procure contracts for design and construction or to negotiate with responsible parties for implementation of the remedy.

7.1: Description of Remedial Alternatives

The potential remedies are intended to address the contaminated groundwater, soils, and leach pool source soils at the site. Three alternatives were chosen for detailed analysis. These are (1) the "No Action"alternative, (2) removal of source soils from selected leaching pools, removal of free-phase product (oil) from the top of the water table, and groundwater monitoring, and (3) removal of source soils from all leaching pools, free-product removal, and long-term monitoring of groundwater.

Site-wide Alternative 1:

No action

Present Worth:	*$ 00*
Capital Cost:	*$ 00*
Annual O&M:	*$ 00*
Time to Implement	*none*

Alternative 1, the "No Action" alternative, provides a basis for comparison. Under this alternative there would be no remediation or monitoring at the site. Leaching pool source soils would remain in their present state, and it is assumed that contaminant concentrations in the source soils and groundwater would spread but gradually diminish over time. This alternative would leave the site in its present condition and would not provide any additional protection to human health or the environment.

Site-wide Alternative 2:

Removal of source soils from selected leaching pools, removal and off-site disposal of free-phase product (oil) from the top of the water table, and groundwater monitoring

Present Worth:	*$ 231,070*
Capital Cost:	*$ 165,400*
Lifetime O&M:	*$ 65,670*
Time to Implement	*2 - 3 years*
Period of Long-Term Monitoring	*15 years*

This alternative consists of three elements: (1) removing source soils from the bottom of the most contaminated leach pools, based on the sampling already conducted (that is, leach pools 3 through 15, 18, 22 through 24, 28, 29, and 31, an estimated quantity of 250 tons); (2) removal of the oil layer that is floating on top of the groundwater table under a portion of the site; and (3) monitoring of groundwater quality. Remediation would occur in phases during short plant shutdown periods. Oils collected from the water table will be disposed off-site in accordance with applicable rules for these wastes.

Site-wide Alternative 3:

Removal of source soils from nearly all leaching pools, removal and off-site disposal of free-phase product (oil) from the top of the water table, and groundwater monitoring

Present Worth:	*$ 1,330,070*
Capital Cost:	*$ 1,264,000*
Lifetime O&M:	*$ 65,670*
Time to Implement	*3 - 4 years*
Period of Long-Term Monitoring	*15 years*

This alternative contains the same three elements as Alternative 2, but with different levels of effort: (1) removing source soils from the bottom of all leach pools listed for Alternative 2 plus leach pools 1, 2, 20, 21, 26, and 27, an estimated quantity of 3,700 tons); (2) removal of the oil layer that is floating on top of the groundwater table under a portion of the site, and (3) monitoring of groundwater quality. Oils collected from the water table will be disposed off-site in accordance with applicable rules for these wastes.

A large portion of the additional costs for this alternative are associated with the additional quantities of source soils to be removed and with shoring of the deeper excavations. This alternative would also require at least an additional year to implement because the leach pools are beneath the parking lot of an operating manufacturing facility. Scheduling considerations are necessary to minimize disruptions to the PRP's normal conduct of business. Remediation would occur in phases during short plant shutdown periods.

7.2 Evaluation of Remedial Alternatives

The criteria used to compare the potential remedial alternatives are defined in the regulation that directs the remediation of inactive hazardous waste sites in New York State (6 NYCRR Part

375). For each of the criteria, a brief description is provided, followed by an evaluation of the alternatives against that criterion. A detailed discussion of the evaluation criteria and comparative analysis is included in the Feasibility Study.

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

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

The most significant SCGs for this site are soils goals (NYSDEC TAGM 4046), groundwater standards (NYCRR Part 703) and SCDHS Article 12 - SOP No. 9-95 "Pumpout and Soil Cleanup Criteria." Also applicable are the federal Underground Injection Control (UIC) requirements. The UIC requirements are equivalent to the application of NYSDEC TAGM 4046.

Alternative 1, the "No Action" alternative would not achieve soil or groundwater standards for metals either in the source area (leach pool source soils) or in the vicinity of the groundwater table. This alternative might eventually achieve cleanup standards for VOCs and SVOCs due to degradation by natural processes. However, no investigation has been made to identify which processes, if any, are occurring at this site or to support "natural attenuation" as a viable remediation strategy.

Alternative 3 would achieve SCGs for VOCs, SVOCs and metals in the leach pools (source soils). Alternative 2 would substantially but not completely achieve SCGs in source soils. The result would be to reduce contaminants to levels where the potential for migration would be minimized. This would limit future migration to the water table and should eventually lead to groundwater meeting SCGs. Alternative 2 would leave behind contamination above SCGs in eight leach pools (see Table 3). Although not in strict compliance, both Alternatives 2 and 3 would substantially meet local and UIC requirements for cleanup of the leach pool source soils.

VOCs and SVOCs in soils near the water table can be expected to partition slowly into the groundwater at low rates, eventually attenuating to environmentally acceptable levels. Metals in soils near the water table are not likely to be attenuated; however, with the exception of iron and zinc, which are not considered contaminants of concern, levels are consistently below SCGs. The other metals such as lead and zinc tend to become increasingly less mobile in the natural environment with time, and those such as chromium are present at low levels (10.5 ppm is the maximum value in the remaining leach pool source soils compared to an SCG of 50). In addition, metals generally are much less mobile than VOCs and SVOCs and partition only very slightly into groundwater.

2. Protection of Human Health and the Environment. This criterion is an overall evaluation of each alternative's ability to protect public health and the environment.

Alternative 1 would meet this criterion only in the long-term, if at all. Alternatives 2 and 3 would be protective of human health with respect to worker exposure by removing contaminated

material from the leach pools and by institutional controls. For deep soils there is not a direct pathway for human exposure. Although the potential exists for exposure through continued migration from deep soils to the groundwater resource, exposure via this pathway is considered remote in the foreseeable future and the rate of migration is expected to decrease with time. Alternatives 2 and 3 would provide protection of the environmental resource (sole source aquifer) over time. This would be verified with long term groundwater monitoring.

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

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

Potential short-term impacts are limited to remediation worker exposure during source soil and product removal, and exposure to plant employees and the general public from migration of dust during these activities. Remediation personnel would be protected throughout these activities through implementation of site-specific health and safety procedures. Plant employees and the general public would be protected through implementation of dust control methods along with a community air monitoring/contingency plan.

The length of time needed to achieve the remedial objectives is estimated to be one to two years or three to four years in the leach pool source soils for Alternatives 2 and 3, respectively, and longer in the groundwater of the aquifer. The longer time associated with Alternative 3 is due to the larger amount of source soils to be removed and the factor of plant scheduling (see discussion under "6. Implementability," below).

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

Under Alternative 1 wastes and residuals would remain on site for an indeterminate but extended period of time. Under Alternatives 2 and 3 the most contaminated wastes and residuals (leach pool source soils) would be permanently removed upon implementation of the remedy. Contaminated soils near the water table would recover more slowly. Removal of floating product (oils) from the groundwater table surface would significantly reduce the time required for groundwater to achieve SCGs with respect to organic contaminants. While the magnitude of the remaining risks is greatly reduced over current risks, Alternatives 2 and 3 anticipate the need for additional institutional controls to limit the risk.

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

The "No Action" alternative would not actively reduce contaminant concentrations currently present at the site. The only reductions in toxicity, mobility or volume of contamination would be as a result of unspecified natural degradation processes. Therefore it is not possible to predict the rate at which improvement would occur, and any protection to the sole source aquifer would occur gradually with time.

While neither alternative would reduce the toxicity of the contaminated leach pool source soils (because the quantities of these soils do not warrant the use of destruction technologies), the soils would be disposed of in a facility appropriate to the concentrations and toxicity of the contaminants. In terms of site cleanup, the remediation would be permanent.

Both Alternatives 2 and 3 would significantly and permanently reduce the volume of wastes at the site. Alternative 3 would eliminate a much larger total volume of contaminated materials (leach pool source soils) than Alternative 2; however the additional soils contain relatively low levels of contamination.

Both Alternatives 2 and 3 would significantly reduce mobility of contaminants at the site by reducing the rate at which contaminants migrate from shallow leach pool source soils to the groundwater table surface. Alternative 3, which would result in the removal of a larger quantity of contaminants, would result in a proportionately greater reduction in contaminant mobility.

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

All three Alternatives utilize conventional technologies and should encounter no difficulties with implementability. The administrative aspects of all alternatives are also implementable. The issue of disruptions to the parking lot facilities at a working manufacturing facility necessitate phasing the work to conform with plant scheduling.

Both Alternatives 2 and 3 require disruptions to the parking facilities at this operating manufacturing facility. Because Alternative 2 can be carried out in a shorter time frame than Alternative 3, Alternative 2 is more implementable in terms of scheduling.

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

The costs for each alternative are presented in Table 4. As Table 4 makes clear, the cost of implementing Alternative 3 is considerably greater than Alternative 2, due to costs associated with the greater volume of source soil removal and deeper excavation (e.g., shoring of the

Table 4
Remedial Alternative Costs

Remedial Alternative	Capital Cost	OM&M Present Worth*	Total Present Worth
No Action	$0	$0	$0
Alternative 2	$165,400	$89,700	$255,100
Alternative 3	$1,264,000	$89,700	$1,353,700

*Because different elements of Operations and Maintenance (O&M) require different lengths of time to implement, annualized O&M cost figures are misleading. An annualized amount of the total present worth over 15 years would be $8,600.

excavations). Alternative 3 does not provide environmental and human health improvements proportionate to the additional costs.

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

8. **Community Acceptance** - Concerns of the community regarding the RI/FS reports and the Proposed Remedial Action Plan have been evaluated. The "Responsiveness Summary" included as Appendix A presents the public comments received and the Department's response to the concerns raised.

In general, the public comments received were supportive of the selected remedy.

SECTION 8: SUMMARY OF THE SELECTED REMEDY

Based upon the results of the RI/FS and the evaluation presented in Section 7, the NYSDEC is selecting Alternative 2 as the remedy for this site. Alternative 2 consists of the removal of source soils from selected leaching pools, removal of NAPL (oil) from the top of the water table, and groundwater monitoring.

While the "no action" alternative (Alternative 1) would not comply with the threshold criteria, Alternatives 2 and 3 would. In addition, both Alternatives 2 and 3 are similar with respect to the majority of the balancing criteria. The major difference between these alternatives is the number of leach pools to be cleaned of source soils, the quantities of source soil to be removed, and the costs associated with removal.

Alternative 2 will provide for the removal of the source materials from the leach pools, allowing a visual and analytical inspection to ensure that all of the soils containing VOCs in excess of the proposed remedial goals will be removed and properly disposed of. Alternative 3 would not contribute much more in terms of source removal or environmental improvement because it involves cleaning a number of leach pools where contamination is only marginally greater than the cleanup criteria. Table 3 provides a summary of contaminant levels in those leach pools.

Regarding those leach pools not slated for source soil removal, the levels of contamination remaining in them are not expected to contribute additional contamination to groundwater. The primary reason that remaining contamination will not migrate to the water table is the vertical distance that separates the source soils from the water table. Since the residual contamination is not expected to reach the water table, it would not be cost effective to remove the additional source soils required under Alternative 3.

The estimated present worth cost to implement the remedy is $231,070. The cost to construct the remedy is estimated to be $165,400. The estimated present worth cost for operations and maintenance is $89,700, and the present worth for operation, maintenance, and monitoring (OM&M) annualized over 15 years is $8,600.

The elements of the selected remedy are as follows:

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

2) A project to remove source soil from Leach Pools 3 through 15, 18, 22 through 24, 28, 29, and 31.

   To minimize disruptions at this manufacturing facility, remediation of leach pools will be accomplished primarily during plant shut down periods (i.e., during summer). Verification samples will be taken after each round of removal activities and compared with the cleanup goals in Table 1. The remediation work plan will contain procedures for taking additional samples and determining whether any remaining contamination is "marginal" or must be removed.

3) A project to remove NAPL (oil) from the top of the water table by use of specially designed equipment (e.g., an in-well oil skimmer or specially designed bailer) to remove floating product from monitoring well(s). This will be focused in the vicinity of monitoring wells MW-7 and MW-2 and will continue until all recoverable product has been removed. Current operations are regulated by the State Pollution Discharge Elimination System, and the I.W. Industries has taken steps to minimize the likelihood of future spills to the leach pools or elsewhere on the property.

4) Since the remedy results in untreated hazardous waste remaining at the site, a long-term monitoring program will be designed and implemented to evaluate the success of the remediation on groundwater quality underlying the affected area of the site. The need for additional off-site monitoring wells will be evaluated during design of the monitoring program.

5) Institutional controls will also be required to reduce or eliminate future exposures to site workers and the general public. A deed notice will notify owners of the presence of residual contamination and a deed restriction will limit land use at the site to industrial and commercial uses consistent with the contamination remaining at the completion of active remediation.

SECTION 9: HIGHLIGHTS OF COMMUNITY PARTICIPATION

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

- A repository for documents pertaining to the site was established.
- A site mailing list was established which included nearby property owners, local political officials, local media and other interested parties.
- A fact sheet and meeting announcement dated February 2000 regarding the public meeting for the Proposed Remedial Action Plan (PRAP) was sent to all parties on the site mailing list.
- A public meeting to present the PRAP was held on March 9, 2000 at the West Hollow Middle School (Melville, NY).
- In March 2000 a Responsiveness Summary was prepared and made available to the public, to address the comments received during the public comment period for the PRAP.

APPENDIX A

Responsiveness Summary

RESPONSIVENESS SUMMARY

I.W. Industries
Proposed Remedial Action Plan
Huntington (T), Suffolk
Site No. 1-52-102

The Proposed Remedial Action Plan (PRAP) for the I.W. Industries site, was prepared by the New York State Department of Environmental Conservation (NYSDEC) and issued to the local document repository on February 18, 2000. This Plan outlined the preferred remedial measure proposed for the remediation of the contaminated soil and sediment at the I.W. Industries site. The selected remedy is removal of soils from leaching pools that impact or have the potential to impact groundwater quality; removal of NAPL ("non-aqueous phase liquids," i.e., oils and the contaminants dissolved in them) from the top of the water table; long-term monitoring of groundwater to verify the effectiveness of the remedy; institutional controls consisting of a deed notice and a deed restriction.

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

A public meeting was held on March 9, 2000 which included a presentation of the Remedial Investigation (RI) and the Feasibility Study (FS) as well as a discussion of the proposed remedy. The meeting provided an opportunity for citizens to discuss their concerns, ask questions and comment on the proposed remedy. These comments have become part of the Administrative Record for this site. No written comments were received from the public. The public comment period for the PRAP ended on March 24, 2000.

This Responsiveness Summary responds to all questions and comments raised at the March 9, 2000 public meeting.

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

> **COMMENT 1:** To what extent is the contamination from the I.W. Industries site impacting drinking water for residents who live in the vicinity of Walt Whitman Road?
>
> **RESPONSE 1:** Contamination from the I.W. Industries site is not impacting drinking water. There is a public water supply well to the west of Walt Whitman Road on a line approximately due west from the I.W. Industries site. It is highly unlikely that contamination would migrate from this site to that well for these reasons: (1) The direction of ground water flow at the site is to the south-southeast, and the well is due west of the site; and (2) Contamination at the site has affected the Upper Glacial aquifer at a depth of about 50 feet below the ground surface. The public water supply well produces its water from the Magothy aquifer at a depth of 300 feet below the ground

surface. Routine monitoring of the wells that serve this area has not indicated any site-related contamination. The public water supply wells in the area will continue to be monitored for contaminants at least on a quarterly basis, as required by Part 5 of the NYS Sanitary Code.

COMMENT 2: In Section 4.3 the statement is made that "Data indicate that groundwater contamination from this site does not extend significantly off-site at this time." How can this statement be made if there is no off-site data at this time?

RESPONSE 2: This statement is based on analysis of the on-site data, which suggest that groundwater contamination from the site decreases in the down-gradient direction to very low levels near the site boundary. Future monitoring activities will include off-site monitoring to verify that contaminants do not leave the site in significant quantities.

COMMENT 3: Section 7.1 discusses site clean-up strategies in terms of leach pool clean-up only. How will leach pool clean-up result in groundwater clean-up? There is discussion of remediation of iron contamination, but other metals including lead and zinc also exceed standards.

RESPONSE 3: Iron, lead, zinc and other metals are found at levels that exceed standards in source soils. However, in groundwater only iron and manganese are found at elevated levels (with one exception for chromium at location DH-2 which is not thought to be representative of site conditions). Removal of the source soils from the leach pools will prevent further leaching of the contaminants to groundwater and will allow for the long term improvement of the groundwater quality.

COMMENT 4: Leach pools 17, 25, and 30 are not listed on either table in the Feasibility Study. Why is this?

RESPONSE 4: There is no data because these three leach pools were not sampled. Upon joint inspection by representatives of the NYSDEC and I.W. Industries leach pools 17, 25 and 30 showed no evidence (either visual, olfactory, or via field instrumentation) of contamination by hazardous waste, and were not sampled for this reason.

COMMENT 5: The Fact Sheet refers to the "most contaminated leach pools". What does "most contaminated" mean? Define the terms "significantly" and "marginally" contaminated.

RESPONSE 5: The words "most contaminated" and "significantly contaminated" leach pools refer to the leach pools that are targeted for remediation under Alternative #2. The contaminant levels for these leach pools are summarized in Table 2. The term "marginally contaminated" leach pools refers to leach pools whose contaminant levels are summarized on Table 3. The levels of contamination remaining in the "marginally contaminated" leach pools (those not slated for source soil removal) are not expected to contribute additional contamination to the groundwater resource.

COMMENT 6: Figure 1 does not identify other sites; however, the text refers to other sites.

RESPONSE 6: In addition to the listed site immediately adjacent to this site (former New York Twist Drill), there is a site approximately one mile to the west southwest across Walt Whitman Road (110 Sand Company #1-52-100, now delisted) just off the edge of Figure 1. There are a number of sites in the down-gradient direction including these between one and two miles from the site: Hazardous Waste Disposal #1-52-113, Circuitron Corp. #1-52-082, Tronic Plating #1-52-028 (now delisted), Astro Electroplating #1-52-036, MinMilt Realty (Hygrade Metal) # 1-52-147, and Cantor Brothers #1-52-021. In addition, the 333 Smith Street property is a contaminated site undergoing remediation under the DEC Voluntary Cleanup Program.

COMMENT 7: In Section 4.1.1, ground water flow direction should be specified.

RESPONSE 7: The last paragraph in Section 4.1.1 states "The groundwater flow direction in the Upper Glacial Aquifer beneath the site is south-southeast." In addition, ground water flow direction is now indicated by an arrow on Figure 2.

COMMENT 8: Referring to Section 4.1.2, does the PCE contamination originate solely from off-site?

RESPONSE 8: Yes. According to a search of records at I.W. Industries extending back to the early 1980s, PCE was never used at the site. There is ample evidence that PCE was used at the adjacent site at 25 Melville Park Road (former New York Twist Drill). Recent ground water investigations there have encountered PCE contamination in a plume that trends toward the I.W. Industries property, and PCE contamination in groundwater beneath the I.W. Industries property increases in the direction of the Former New York Twist Drill site.

COMMENT 9: In Section 4.1.3, what was done to remediate leach pool source soils prior to 1997?

RESPONSE 9: Section 4.1.3 refers the reader to Section 4.2 for more detail. Also, additional information is now provided in Section 4.1.3. Oil, liquids and contaminated solids were pumped from leach pools on several occasions and removed from the site to an appropriate off-site disposal facility.

COMMENT 10: Section 4.1.3, Groundwater, contains the statement, "Cutting oils have been found floating on the water table in MW-7 and MW-2." More detail would be helpful, such as location, thickness, etc.

RESPONSE 10: Oils presumed to be cutting oils were found floating on the water table in two wells, at the thicknesses noted: MW-7 (0.4 feet) and MW-2 (0.03 feet). In addition an oil sheen was observed in MW-3. The sheen was not sufficiently thick to

measure. The locations of these wells suggests a source area in the vicinity of the loading dock, and a plume that becomes negligibly thin in the direction of the southern property line at Melville Park Road.

COMMENT 11: Please provide more details on effectiveness of the proposed remediation. Why will the present proposal work, especially considering its limited areal extent. How do you know the remediation will capture all of the contamination? How will the recovered product be disposed of?

RESPONSE 11: The proposed remedy provides for removal of the source soils from the site and their proper disposal. Removal of the source(s) of contamination will render the flux of contaminants to the groundwater insignificant; thus, the only identified pathway for migration off site will be controlled. The recovered product (oil) will be classified as either hazardous or non-hazardous (industrial) waste, removed from the site by a licensed hauler, and properly disposed of in accordance with the classification. (Petroleum wastes are normally classified as non-hazardous.)

COMMENT 12: The proposed remedy seems to be missing an off-site well. Will one be installed?

RESPONSE 12: As noted above in Response 2, some level of off-site monitoring will be required. The extent of off-site monitoring will be determined based on the results of future monitoring and the following considerations: (1) Existing data indicate that groundwater contamination originating on the I.W. Industries site diminishes toward the property boundary in the down gradient direction, and, by extrapolation, does not appear to extend to the property across the street; (2) The contaminant plume originating on the Former New York Twist Drill site does appear to be more mobile; and (3) Projections of both plumes suggests that if there is migration off-site from the I.W. Industries site, it would be co-mingled with the plume from Former New York Twist Drill shortly after crossing the site boundary, if not before. For these reasons it is likely that off-site effects from the I.W. Industries site can be combined with the investigation at Former New York Twist Drill.

COMMENT 13: How is NAPL to be removed from the top of the water table. Only at leach pools? Who will operate the equipment, how often will it run, etc.

RESPONSE 13: A NAPL recovery component will be developed as part of remedial design. I.W. Industries will be responsible for installing, operating and maintaining the equipment. Exactly which removal technology is best suited to this site will be determined during the remedial design phase.

The following written comments were received in a letter from the FPM Group dated March 22, 2000.

COMMENT 14: Section 3.2 states that "discharges from metal parts washing operations were entering the on-site leaching pools identified as LP-1 and LP-2". Further discussion concerns signing of an order on consent regarding these discharges. It should be clarified that I.W. Industries, Inc. had a SPDES permit for discharges from metal parts washing operations to LP-1 and LP-2. At issue was the discharge of materials to these leaching pools in violation of the terms of the SPDES permit.

RESPONSE 14: Revisions have been made in the text to address this comment.

COMMENT 15: In Section 4.1.3, Leach Pool Source Soils, it should be reported that oil and/or oily emulsion were found at various times from 1982 through 1997. The most recent identification and removal of oil occurred in 1997. In the last paragraph of Section 4.2 it should be noted that floating oil was detected in several leaching pools in 1997 and was removed during an IRM with the approval of the NYSDEC. The last sentence should be modified to read "In 1997...".

RESPONSE 15: Revisions have been made in the text at 4.1.3 and 4.2 to address this comment.

COMMENT 16: The figure [Figure 3a] showing the approximate area of recoverable oil at the water table should be modified to reflect the 1997 detection of 0.03 feet of oil at well MW-2 and no oil detected at well MW-1. The present version of this figure has the information from these two wells reversed. The result is a wider plume of oil than we (the consultant to I.W. Industries, Inc.) interpret to be present beneath the site.

RESPONSE 16: Figure 3a has been modified to show the correct designation of 0.03 feet of oil in well MW-2, and the absence of oil at MW-1. The dashed line designating "approximate area of recoverable oil at water table" has been retained unmodified, since its purpose is to show a general area and it does not represent a clean-up boundary. NYSDEC acknowledges that other interpretations of extent based on existing NAPL data are possible.

APPENDIX B

Administrative Record

ADMINISTRATIVE RECORD

I.W. Industries
Huntington (T), Suffolk
Site No. 1-52-102

1. Record of Decision .....
2. Preliminary Remedial Action Plan 2/18/00
3. Consent Order, Index #W1-0725095-03 (as amended 8/20/96) 3/27/95
4. Consent Order, SPDES #NY 0109533 ..... 12/19/85
5. Consent Order, Suffolk County IW 84-100 ..... 11/16/84
6. Consent Order, Suffolk County IW 82-68 ..... 11/05/82
7. Consent Order, Suffolk County IW 82-5 ..... 2/18/82
8. Focused Feasibility Study, Fanning, Phillips and Molnar 2/99
9. Focused Remedial Investigation Report, vol. I, Fanning, Phillips and Molnar 1/99
10. Focused Remedial Investigation Report, vol. II, Fanning, Phillips and Molnar 1/99
11. Preliminary Remedial Investigation Report, Fanning, Phillips and Molnar 10/94
12. Remedial Investigation Work Plan, Fanning, Phillips and Molnar 5/97
13. Community Participation Plan (incorporated in 12., above) 5/97
14. Meeting Announcement 2/00
15. Fact Sheet #1 ..... 6/97