PROPOSED REMEDIAL ACTION PLAN

CHICAGO PNEUMATIC TOOL COMPANY
Town of Frankfort, Herkimer County, New York
Site No. 6-22-003

SECTION 1: PURPOSE OF THE PROPOSED PLAN

The New York State Department of Environmental Conservation (NYSDEC), in consultation with the New York State Department of Health (NYSDOH), is proposing action to remediate hazardous waste disposal areas at the Chicago Pneumatic Tool Company site located on Bleecker Street in the town of Frankfort, approximately one mile east of the city of Utica, New York.

The areas at the facility contaminated with hazardous waste are:

1. Former oil/water Separation Ponds.
2. Skimmer Pond.
3. The former Debris and Oily Waste Landfill.
4. Former Chip Chute and On-site Drainage Ditches.
5. Unnamed Creek.
6. Off-site Drainage Ditch north of Bleecker Street.
7. Storm Sewer system.
8. Additional Areas of Groundwater Contamination.

The proposed remedial action plan includes excavation of contaminated waste and soils from all the areas identified above. Once excavated, soils contaminated with elevated levels of volatile organic compounds (VOCs) would be treated prior to on-site disposal. Soils containing elevated levels of polychlorinated biphenyls (PCBs) would be transported off site to a permitted hazardous waste disposal facility. The remaining soils, including the treated residuals, would be consolidated on site in the Debris Landfill and Separation Pond areas, in a lined containment cell with a leachate collection system, which would prevent any further release of contaminants to the groundwater. The plan also includes installation of a shallow groundwater collection system with on-site treatment of the contaminated groundwater.

This Proposed Remedial Action Plan (PRAP) identifies the preferred remedy, summarizes the other alternatives considered, and discusses the rationale for this preference. The NYSDEC will select a final remedy for the site only after careful consideration of all comments submitted during the public comment period.

This PRAP is issued by the NYSDEC as an integral component of the citizen participation plan responsibilities provided by the New York State Environmental Conservation Law (ECL), 6NYCRR375. This document is a summary of the information that can be found in greater detail in the Remedial Investigation (RI) and Feasibility Study (FS) reports on file at the document repositories.

The NYSDEC may modify the preferred alternative or select another response action presented in this PRAP and the RI/FS Report based on new information or public comments. Therefore, the public is encouraged to review and comment on all of the alternatives identified here.

The public is encouraged to review the documents at the repositories to gain a more comprehensive understanding of the site and the investigations conducted there. The project documents can be reviewed at the following repositories:

Frankfort Free Library
123 Frankfort Street
Frankfort, New York 13340
(315) 894-9611

NYSDEC Main Headquarters
Division of Hazardous Waste Remediation
50 Wolf Road
Albany, New York 12233
(518) 457-5861

NYSDEC Utica Sub-Office
State Office Building
207 Genesee Street
Utica, New York 12503
(315) 793-2554

NYSDEC Regional Headquarters
Dulles State Office Building
317 Washington Street
Watertown, New York 13601
(315) 785-2513
Attn: Philip G. Waite, P.E.
NYSDEC Project Manager

Written comments on the PRAP can be submitted to Mr. Waite at the above address.

DATES TO REMEMBER:

Public comment period on RI/FS Report, PRAP, and preferred alternative:

February 16, 1996 through March 18, 1996.

Public meeting:

DATE/TIME: February 29, 1996 at 7:00 p.m..

LOCATION: Frankfort Town Hall, Litchfield Street, Frankfort, NY 13340

SECTION 2: SITE DESCRIPTION AND HISTORY

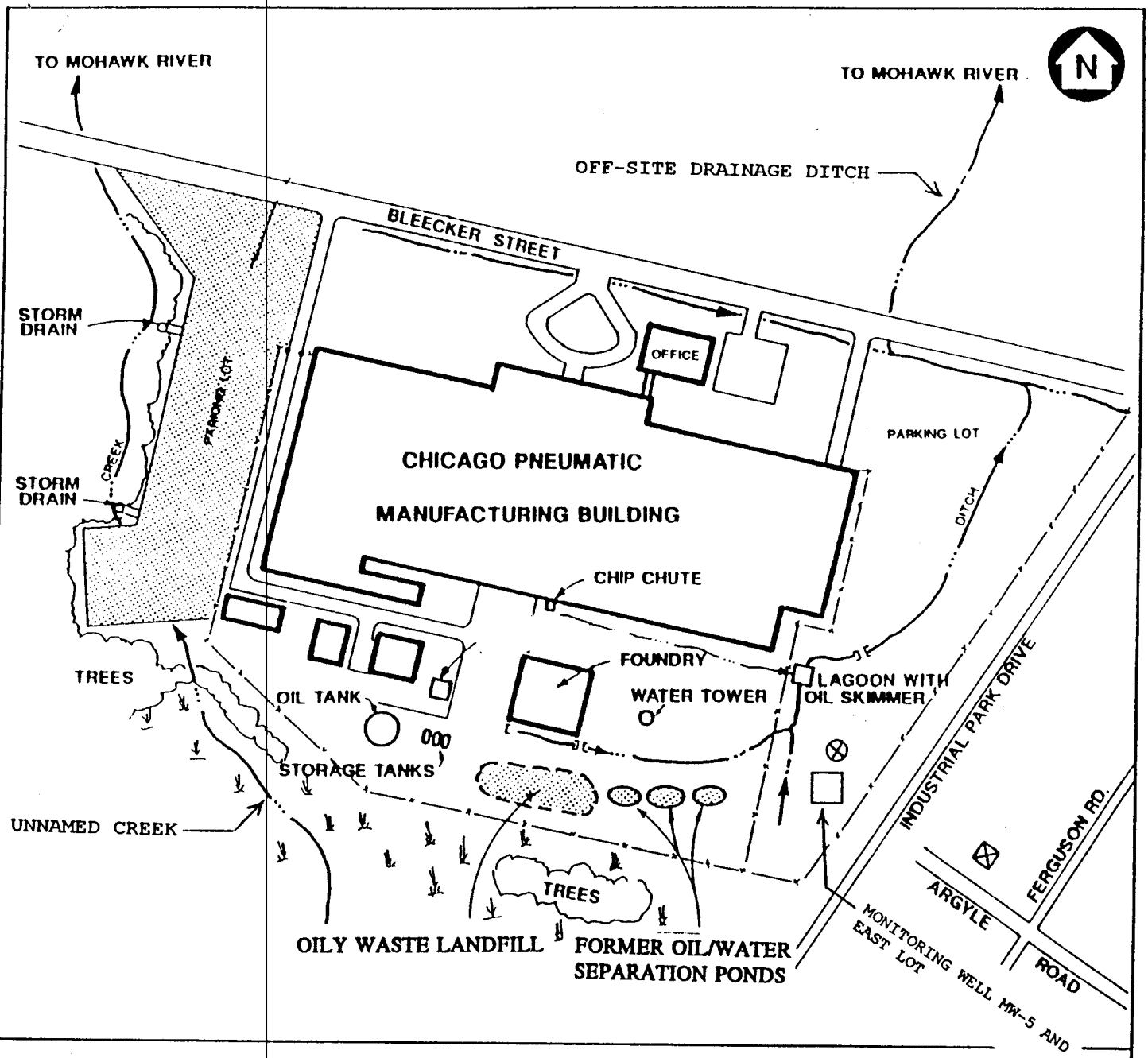
2.1 SITE DESCRIPTION AND OPERATIONAL/DISPOSAL HISTORY

The Chicago Pneumatic Tool Company, listed in the New York State Inactive Hazardous Waste Disposal Sites registry as a "Class 2" site, is located in the town of Frankfort, Herkimer County, approximately one mile east of the city of Utica, New York (Figure 1). The facility was constructed in 1948 and has since been operating as a pneumatic tool manufacturing facility. The facility is situated on a 77 acre lot and is in a mixed residential/industrial setting. It is bounded to the north by Bleecker Street, to the south by a wooded marsh and agricultural land, to the west by an unnamed creek which drains the marsh, and to the east by a property fence line bordering Industrial Park Drive. Residential properties are located on Bleecker Street approximately one tenth of a mile east of the facility, and the Masonic Home property is located adjacent to the western boundary of the site. The topography of the site is relatively flat, sloping gently to the north.

In the process of manufacturing pneumatic tools, Chicago Pneumatic historically utilized several process steps including metal parts machining, washing, degreasing, and metal plating. Two on-site drainage ditches, originating in the southern portion of the site, behind the manufacturing building, converge at an oil/water separator pond (skimmer pond). The overflow from the skimmer pond discharges into a drainage ditch flowing north along the eastern portion of the site (Figure 2). On-site drainage flowing off site eventually flows into the Mohawk River and adjacent wetlands located approximately 0.7 miles north of the site.

Since the commencement of operations in 1948, hazardous waste was disposed of on site, or migrated to off-site areas. Various Areas of Concern (AOCs) are addressed in this PRAP (see Figure 2). A brief description of each area is presented below:

1. Former oil/water Separation Ponds - Three unlined Separation Ponds received liquid waste including waste cutting oils containing PCBs, suspended heavy metals, and industrial solvents from 1966 through 1978. The area covers approximately 0.25 acres and contains approximately 2,700 cubic yards of contaminated soils. The water/oil mixture was allowed to flow through the ponds in series, then discharged from the last pond into the on-site drainage ditches. When the ponds became filled with oil, the oil was removed for off-site disposal or burned as fuel in the power plant. This practice was discontinued in 1979 and the waste oils were removed from the ponds, disposed of off site, and the



SITE NO: 622003

LOCATION: TOWN OF FANKFORT
HERKIMER COUNTY, N.Y.

LEGEND

- WET AREA
- FENCE
- DRAINAGE DITCH OR CREEK
- HOUSE ON PRIVATE WELL

SCALE IN FEET

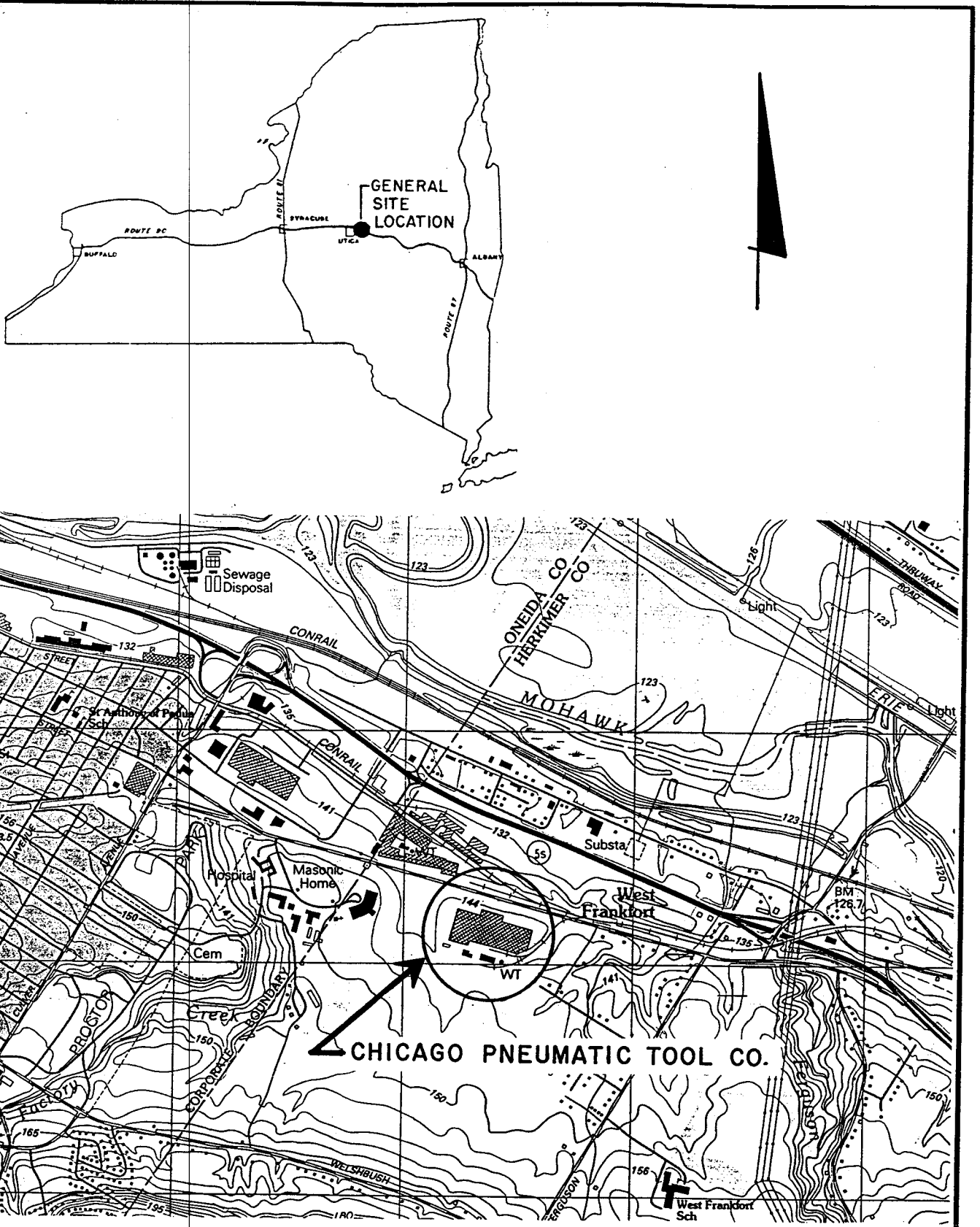
0 300 600

SOURCE MAP REVISED FROM BLASLAND & BOUCK ENG. P.C. 1990

6247-01

FIGURE 2
SITE SKETCH MAP
CHICAGO PNEUMATIC TOOL CO. SITE
PRELIMINARY SITE ASSESSMENTS
NEW YORK STATE DEC

FIGURE 1



SITE LOCATION MAP

BLASLAND & BOUCK ENGINEERS, P.C.
ENGINEERS & GEOSCIENTISTS

ponds were backfilled leaving in-place contaminated soils saturated with oils containing VOCs, PCBs and heavy metals.

2. Skimmer Pond - Constructed in 1979, the Skimmer Pond was built to intercept oils from spillage at the metal chip handling area and also intercepts oils leaching from the sediments in the drainage ditches adjacent to the Separation Ponds. The majority of the storm water runoff from the southern portion of the site flows into the Skimmer Pond where oil is skimmed off the surface of the ponded water and disposed of off site. Effluent water from the Skimmer Pond discharges into the eastern drainage ditch. This discharge (discharge point no. 003) is currently monitored as required by the facility's NYSDEC State Pollutant Discharge Elimination System (SPDES) permit.

The Skimmer Pond covers approximately 0.07 acres and contains approximately 320 cubic yards of sediments contaminated with heavy metals, PCBs and VOCs.

3. Debris and Oily Waste Landfill - This landfill was used since the beginning of plant operations through the late 1970's. Waste characterization confirmed the presence of metal chips, oily-stained soils, partially crushed drums, and scrap metal. Additional environmental sampling of the contaminated soils confirmed the presence of VOCs, heavy metals and PCBs. The impacted area covers approximately 0.45 acres and contains approximately 6,200 cubic yards of debris, oily waste and contaminated soils.

4. Former Chip Chute and On-Site Drainage Ditches - The Chip Chute was operational up to 1991 when it was dismantled. Metal chips from the manufacturing process were, in the past, stored in the Chip Chute located along the south side of the manufacturing building. The Chip Chute was used for transferring waste metal cuttings to transport vehicles for off-site recycling. Spent cutting oil and solvents drained from the metal chips onto the ground in the Chip Chute area and eventually migrated into the drainage ditch that runs along the south side of the manufacturing building to the east drainage ditch.

In addition to the drainage ditch downstream of the Chip Chute area, historical waste disposal practices at the site have also led to the contamination of the drainage ditches adjacent to the north and east sides of the Separation Ponds, as well as downstream of the current Skimmer Pond to Bleecker Street. Approximately 2,100 feet or 0.25 acres of on-site drainage ditches contain approximately 607 cubic yards of sediments contaminated with heavy metals, PCBs and VOCs.

5. Unnamed Creek - The Unnamed Creek flows around the west side of the site to Bleecker Street where it discharges into a storm drain. The storm drain is part of a county wide storm drainage network that routes storm water runoff through the Charlestown Mall located to the northwest of the site, and eventually to the Mohawk River.

Prior to receiving a SPDES permit, floor drains carried waste water contaminated with cutting oils and spent solvents from parts washing to the storm drain which discharged the wastewater into the creek. As a result, the sediments in the creek contain levels of heavy metals and PCBs above cleanup goals. The area of the Unnamed Creek impacted by the historical waste disposal practice is approximately 500 feet long, and the volume of contaminated sediments is estimated to be 1,900 cubic yards.

6. Off-Site Drainage Ditch - Prior to the installation of the Skimmer Pond, contaminated runoff from the Chip Chute area and the oil/water Separation Ponds flowed via the eastern drainage ditch under Bleecker Street to the north and onto undeveloped land. In addition, a contaminated groundwater seep located in the Bleecker Street drainage ditch adjacent to the site allowed groundwater contaminated with dichloroethene and trichloroethene to flow into the Bleecker Street drainage ditch. The sediments in the drainage ditch have been found to contain levels of site-related heavy metals and PCBs above cleanup goals. The impacted portion of the drainage ditch is approximately 1,000 feet long, ranging from 3 feet to 11 feet wide, and contains an estimated 390 cubic yards of contaminated sediment.

7. Storm Sewer System - The storm sewer system drained water from the facility's water coolers, roof drains, floor drains, and surface runoff, to the Unnamed Creek. Historic discharges via the facility's floor drains has resulted in an accumulation of an undetermined amount of contaminated sediments within the storm sewers and related manholes containing levels of heavy metals and PCBs above cleanup goals. Discharges into the Storm Sewer System were unrestricted until a SPDES permit was issued to the facility in 1981.

8. Additional Areas of Groundwater Contamination - In addition to groundwater contamination related to contaminated soils and waste disposal areas, there are two separate areas of the site where shallow groundwater contamination is of concern; the northeast corner of the site, and the East Lot.

Preliminary site investigations identified a contaminated groundwater area in the northeast corner of the site, caused by seepage from a clay pipe field drain. Further investigation revealed a shallow groundwater plume of contaminants emanating from the northeast corner of the Manufacturing Building. The plume contains trichloroethene and dichloroethene at levels above groundwater standards. Various efforts to identify the source of the contamination have proven fruitless, however, it is suspected that historical spills in the Manufacturing Building and poor hazardous waste disposal practices are the cause.

Groundwater contamination has also been discovered at the shallow groundwater monitoring well MW-5, located in the East Lot. The majority of the East Lot is an abandoned parking lot and groundwater sampling at MW-5 has confirmed VOCs, heavy metals and PCBs in the water column at levels above New York State groundwater standards. Soil sampling performed during the RI revealed a small disposal area immediately upgradient and to the south of MW-5. The source area in the East Lot is approximately 80 feet by 20 feet in size (0.04 acres) containing approximately 178 cubic yards of contaminated soils.

2.2 REMEDIATION HISTORY

NYSDEC Phase I Investigation - 1985

In 1985, Recra Research, Inc., under contract with the NYSDEC, completed a Phase I Investigation for the Chicago Pneumatic site. The Phase I Investigation identified surface and subsurface issues at the site.

USEPA Site Inspection - 1986

In 1986, USEPA contracted NUS Corporation (NUS) to prepare a Potential Hazardous Waste Site Inspection Report. Seven surface-water, ten sediment, and two soil samples were obtained by NUS as part of their investigation. The report identified four (4) potential areas of concern (AOCs): the Debris and Oily Waste Landfill area, the Separation Ponds, the On-Site Drainage Ditches, and the Chip Chute area.

Environmental Assessment: 1988 - 1991

In January 1988, Blasland Bouck & Lee (BB&L) was contracted by Chicago Pneumatic to conduct an Environmental Assessment to further characterize constituents identified at the site in the 1986 USEPA investigation. The Environmental Assessment was conducted in several phases from 1988 through 1991. The scope of the work and the results of the activities are detailed in two reports prepared by BB&L and submitted to the NYSDEC: "Summary of Site Activities and Quality Assurance Project Plan (QAPP)", dated June 1990, and "Site Investigation Report", dated July 1990.

NYSDEC Preliminary Site Assessment - 1990

In 1990, E.C. Jordan Company, under contract with the NYSDEC, conducted a Task 1 Preliminary Site Assessment which consisted of a file review/records search and a site walkover. The purpose of the Preliminary Site Assessment was to obtain information necessary for site classification. At the end of the Task 1 activities conducted in June 1990, E.C. Jordan Company submitted a report entitled "Engineering Investigations at Inactive Hazardous

Waste Sites, Preliminary Site Assessment, Chicago Pneumatic Tool Company", dated November 1990. Based on the conclusions in the report, the NYSDEC classified the Chicago Pneumatic Company site as a "Class 2" in the 1991 edition of the New York State Registry entitled "Inactive Hazardous Waste Disposal Sites in New York State". A "Class 2" site is defined as a site where significant threat to the public health or environment exists and action is required to address this threat.

CURRENT STATUS

During February 1993, Chicago Pneumatic performed employee interviews to discuss with past and current employees their knowledge of historic waste disposal practices. Based on that information, and information from the previous site investigations, Chicago Pneumatic finalized an RI/FS work plan entitled "Remedial Investigation/Feasibility Study Work Plan", dated August 1992, Revised April 1993 and Final August 1993. Chicago Pneumatic initiated a Remedial Investigation/ Feasibility Study (RI/FS) with the signing of the RI/FS Order on Consent on October 26, 1993 to address the contamination at the site.

SECTION 3: 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, and provide the necessary data to complete the feasibility study.

The RI was conducted in 3 phases, between October 1993 and December 1995. An initial RI report entitled "Remedial Investigation Report, Chicago Pneumatic Tool Company", dated October 1994, describes the field activities and findings of the initial RI. In addition, a supplemental RI report entitled "Supplemental Remedial Investigation Report, Chicago Pneumatic Tool Company", dated December 1995, describes the field activities and findings of the supplemental RIs. A summary of the RI follows:

The RI activities utilized methods and activities designed to close data gaps that existed at that time including the following:

- Existing information review.
- Employee interview program.
- Off-site residential well sampling.
- Installation of soil borings and monitoring wells for analysis of soils and groundwater as well as physical properties of soil and hydrogeologic conditions.
- Excavation of test pits and trenches to characterize waste and/or contaminated soils.
- Surface water and sediment sampling.
- Soil sampling.
- Groundwater sampling.
- Air sampling.
- Storm sewer investigation and sampling.
- Off-site environmental sampling including surface water, and sediment sampling.

The analytical data obtained from the RI was compared to Applicable Standards, Criteria, and Guidance (SCGs) in evaluating remedial alternatives. Groundwater, drinking water and surface water SCGs identified for the Chicago Pneumatic Tool Company site were based on NYSDEC Ambient Water Quality Standards and Guidance Values and Part V of NYS Sanitary Code. For the evaluation and interpretation of soil and sediment analytical results, NYSDEC soil cleanup guidelines for the protection of groundwater, background conditions, and risk-based remediation criteria were used to develop remediation goals for soil. See Table 1 for site specific clean-up goals and SCGs.

Hydrogeologic Features

Subsurface geology at the Chicago Pneumatic Tool Company site is generally characterized by unconsolidated overburden (sand, silt, clay, fill), till, and weathered shale bedrock.

The unconsolidated overburden ranges in thickness from 3 feet in the southern part of the site to 11.5 feet in the northern part. The unconsolidated overburden is underlain by a till unit present across the entire site, ranging in thickness from 11.5 to 24

TABLE - 1

CHICAGO PNEUMATIC TOOL COMPANY SITE NO. 6-22-003
SITE SPECIFIC CLEAN-UP GOALS
(See Note 1)

Constituent of Concern	Soil ** (ppm)	Sediment (ppm)	Groundwater (ppb)
Vinyl Chloride.....	N.A.	N.A.	2
Trans-1,2-dichloroethene.....	N.A.	N.A.	5
Cis-1,2-dichloroethene.....	N.A.	N.A.	5
Trichloroethene.....	N.A.	N.A.	5
Total VOCs #	10.0	N.A.	N.A.
Lead	25.5	25.5	25
Chromium	17.8	17.8	50
Copper	40.4	40.4	200
Zinc	101.0	101.0	300
Total PCBs.....	1.0 Surface 10.0 Subsurface	0.1 *	0.1

Note 1. - Clean-up goals for surface water must meet applicable 6 NYCRR Part 703 Class D surface water standards.

* It is recognized that, due to analytical and construction constraints, a clean-up goal of 0.1 ppm may be impractical. Accordingly, a clean-up goal of 1.0 ppm will be utilized for Sediment. Chicago Pneumatic is encouraged to eliminate as much of the contamination as possible while in the process of remediation, and to pursue the lowest possible clean-up level that is feasible under existing conditions.

** With the exception of Total PCBs, clean-up goals for metals in Soil are calculated using the arithmetic mean of the background concentration range plus two standard deviations.

\# Assuming the soils/waste are within the influence of a groundwater collection system.

feet. The till is underlain by black weathered shale bedrock that slopes with the surface topography to the north-east, toward the Mohawk Valley floor and the Mohawk River.

Two distinct hydrogeologic units, separated by the semi-confining till unit, exist at the site. The hydrogeologic units consist of the saturated portion of the unconsolidated overburden materials (sand, silt, clay and fill) and the weathered shale bedrock. Groundwater flow in the overburden and bedrock is generally slow and travels from south to north-northeast toward the Mohawk River. The average linear flow velocity in the overburden was measured at 1.1 ft./day, and 0.6 ft./day in the bedrock.

Off-site residential water supply wells were sampled by both the New York State Department of Health , and by Chicago Pneumatic during the RI field work. Results indicate that on-site groundwater contamination has not impacted these wells.

Contaminants

The following is an area-specific description of impacts from the disposal of hazardous waste at the facility. Contaminants in soils are shown in parts per million (ppm), whereas contaminants in groundwater are shown in parts per billion (ppb). Representative samples of waste were evaluated for toxicity characteristics, but no samples exceeded limits established for this criteria (6NYCRR Part 371.3).

1. Separation Ponds

The contaminated soils within the area of the former Separation Ponds contain site related contaminants including lead (1.6 - 674.0 ppm), chromium (2.9 - 330.0 ppm), zinc (15.9 - 2,590.0 ppm), copper (11.1 - 3,440.0 ppm), trichloroethene (0.002 - 7,300 ppm), 1,2-dichloroethene (0.003 - 2,700 ppm), and vinyl chloride (0.0 - 0.260 ppm).

Groundwater sampling downgradient of the Separation Ponds shows site related contaminants in the bedrock including vinyl chloride (0 - 4 ppb), 1,2-dichloroethene (99 - 140 ppb), trichloroethene (6 - 7 ppb), and lead (3 - 140 ppb); and PCBs (0 - 0.7 ppb) in the overburden.

2. Skimmer Pond

Contaminants have accumulated in the sediments at the bottom of the Skimmer Pond including PCBs (3.79 - 20.20 ppm), chromium (15 - 147 ppm), lead (37.6 - 674.0 ppm), zinc (131 - 1,470 ppm), and copper (73.6 - 846.0 ppm).

Downgradient groundwater sampling in the overburden shows VOC and heavy metals contamination including 1,2-dichloroethene (0 - 11 ppb), lead (75 - 200 ppb), zinc (50 - 470 ppb), and chromium (12 - 106 ppb).

3. Debris & Oily Waste Landfill

The contaminated soils and waste within the Landfill contain site related contaminants including lead (7 - 1,270 ppm), chromium (10.8 - 1,520 ppm), zinc (45.7 - 3,590 ppm), copper (21.5 - 9,540 ppm), vinyl chloride (0.01 - 0.10 ppm), 1,2-dichloroethene (0.005 - 4.4 ppm), trichloroethene (0.003 - 5.4 ppm), and PCBs (0.08 - 48 ppm).

Overburden groundwater sampling in the vicinity of the Landfill shows site related contaminants including vinyl chloride (2 - 3 ppb), PCBs (7 - 15 ppb), lead (5 - 120 ppb), zinc (25 - 967 ppb), chromium (7 - 54 ppb), and copper (141 - 1110 ppb).

4. Chip Chute Area and On-Site Drainage Ditches

The contaminated soils and sediments within the Chip Chute area and the On-Site Drainage Ditches contain site related contaminants including lead (8.2 - 556.0 ppm), chromium (8.3 - 261.0 ppm), zinc (41.2 - 1,156.0 ppm), copper (20.7 - 1,260.0 ppm), trichloroethene (0.004 - 2,900 ppm), 1,2-dichloroethene (0.004 - 660.0 ppm), vinyl chloride (0.01 - 11.0 ppm), and PCBs (0.26 - 470.00 ppm).

Overburden groundwater along the south side of the manufacturing building in the vicinity of the Chip Chute shows limited VOC contamination at

groundwater standards including trichloroethene (0 - 5 ppb).

5. Unnamed Creek

The sediments in the Unnamed Creek contain site related contaminants including lead (15.5 - 5,970 ppm), chromium (16.5 - 499 ppm), zinc (84 - 1,736 ppm), copper (36.2 - 23,900 ppm), and PCBs (0.013 - 9 ppm).

Surface water in the creek contains site related contaminants including 1,2-dichloroethene (1 - 5 ppb), trichloroethene (1 - 3 ppb), zinc (31 - 145 ppb), and copper (13 - 27 ppb).

6. Off-site Drainage Ditch north of Bleecker Street

The sediments in the Off-Site Drainage Ditch contain site related contaminants including lead (6.3 - 203 ppm), copper (28.9 - 146 ppm), and PCBs (0.177 - 108 ppm).

Prior to the completion of the IRM, surface water in the ditch contained site related contaminants including 1,2-dichloroethene (10 - 32 ppb), trichloroethene 6 - 410 ppb), lead (1 - 16 ppb), zinc (13 - 44 ppb), and copper (5 - 8 ppb).

7. Storm Sewer system

The sediments in the Storm Sewer manholes contain site related contaminants including lead (131 - 993 ppm), zinc (394 - 3,080 ppm), chromium (71.5 - 900 ppm), copper (270 - 10,900 ppm), and PCBs (0.23 - 847 ppm).

Storm water inside the manholes contained site related contaminants including trichloroethene (1 - 12 ppb), zinc (6 - 295 ppb), and copper (7 - 76 ppb).

8. Shallow Groundwater Contamination, and East Lot

The contaminated soils upgradient of shallow groundwater monitoring well MW-5 contain site related contaminants including vinyl chloride (0 - 0.42 ppm), 1,2-dichloroethene (0.014 - 0.1 ppm), trichloroethene (0.017 - 0.15 ppm), chromium (8.6 - 11.9 ppm), lead (10.1 - 21.3 ppm), zinc (32.5 - 54.8 ppm), copper (17.0 - 19.7 ppm), and PCBs (0.005 - 440 ppm).

Groundwater sampling from MW-5, and the groundwater within test pits adjacent to the well contains site related contaminants including vinyl chloride (12 - 26 ppb), PCBs (3 - 467 ppb), lead (12 - 200 ppb), chromium (13 - 81 ppb), zinc (34 - 1,720 ppb), and copper (5 - 1,130 ppb).

Groundwater in the northeast corner of the site contains site related contaminants including vinyl chloride (12 - 5,000 ppb), 1,2-dichloroethene (1 - 12,000 ppb), and trichloroethene (1 - 16,000 ppb), lead (1 - 320 ppb), and zinc (17 - 1,350 ppb).

3.1 INTERIM REMEDIAL MEASURES

An Interim Remedial Measure (IRM) was conducted at the site based on findings as the RI progressed. An IRM is implemented when a source of contamination or exposure pathway must be addressed before completion of the RI/FS.

As previously mentioned, groundwater in the northeast part of the site, contaminated with high levels of 1,2-dichloroethene and trichloroethene, was discharging from a clay pipe field drain into the Bleecker Street surface water drainage ditch, and subsequently into the Off-Site Drainage Ditch. An IRM was implemented to stop the continuing discharge from the clay pipe and eliminate the migration of contamination off site. The IRM consisted of intercepting the groundwater discharge from the clay pipe, pumping it to an air stripper located in the manufacturing building for removal of VOC contamination and discharging the treated effluent back into the eastern drainage ditch via a new SPDES discharge monitoring point 003A. The IRM also included rerouting the discharge from the oil Skimmer Pond through the air stripper.

Construction of the IRM began on January 16, 1995 and was substantially completed on February 24, 1995.

3.2 SUMMARY OF HUMAN EXPOSURE PATHWAYS

The portion of the Chicago Pneumatic site within the confines of the facility boundary is fully fenced and relatively secure. On-site exposures would mainly affect people employed at the facility. Human exposure pathways include contact with, and ingestion of contaminated surface soils and sediments, and inhalation of VOCs by both on-site workers and off-site residents. Exposures to on-site workers from contact, ingestion, and inhalation are not considered above normal ranges for an industrial site like Chicago Pneumatic Tool Company.

Off-site exposures to residents adjacent to the site, and the occasional trespasser are also considered minimal. For residents living east of the site, water supply wells are used for potable water. Therefore, there is a potential for exposure to site related contaminants via the groundwater. However residential well sampling performed prior to the RI activities by the NYSDOH, and performed by Chicago Pneumatic during the RI showed no evidence of site related contamination impacting any of the water supply wells that were sampled. The residential water supply wells that were sampled are located hydraulically side gradient from the Chicago Pneumatic site and therefore are at minimal risk of becoming contaminated.

While the Off-Site Drainage Ditch is currently located in an undeveloped area, there is a potentially complete human exposure pathway if this area were to become developed.

3.3 SUMMARY OF ENVIRONMENTAL EXPOSURE PATHWAYS

Exposure pathways for environmental receptors are possible through contact with, and ingestion of contaminated soils, surface water and sediments. The most significant contaminants of concern are PCBs, copper, and lead in the soils and sediments. There is not a significant aquatic or wildlife population within the impacted areas.

Regarding environmental impacts, site related contaminants have impacted the usable bedrock aquifer downgradient of the Separation Ponds. Bedrock groundwater sampling in other areas of the site show no impact. Surface water sampling in the Unnamed Creek shows no impacts from site related contamination.

SECTION 4: ENFORCEMENT STATUS

The NYSDEC and Chicago Pneumatic Tool Company entered into a Consent Order on October 26, 1993 (Index no. A6-0279-92-04). The Order obligates the company to perform the RI/FS phase of a remedial program. Upon issuance of the Record of Decision, the NYSDEC will negotiate with Chicago Pneumatic to implement the selected remedy under an Order on Consent.

SECTION 5: SUMMARY OF THE REMEDIATION GOALS

Goals for the remedial program have been established through the remedy selection process stated in 6NYCRR 375-1.10. These goals are established under the guideline of meeting all standard, criteria, and guidance (SCGs) and protecting human health and the environment.

At a minimum, the remedy selected should eliminate or mitigate all significant threats to the public health and to 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:

- Eliminate or control the contamination present within the soils/waste on site and off site.
- Eliminate the threat to surface waters and groundwater by eliminating any future migration of contaminants from waste, soils, and sediment.

- Eliminate the potential for direct human or biota contact with the contaminated soils on site and off site.
- Mitigate the impacts of contaminated groundwater to the environment.
- Provide for attainment of SCGs for groundwater quality at the limits of the areas of concern (AOCs).

SECTION 6: SUMMARY OF THE EVALUATION OF ALTERNATIVES

Potential remedial alternatives for the Chicago Pneumatic Tool Company site were identified, screened and evaluated in a Feasibility Study. This evaluation is presented in the report entitled "Feasibility Study, Site No. 622003, Chicago Pneumatic Tool Company", dated Final December 1995. A summary of the detailed analysis follows.

6.1: DESCRIPTION OF ALTERNATIVES

The description of remedies below addresses each of the 8 AOCs by media type (e.g. soils/sediments and groundwater/surface water).

6.1.1. SOILS / SEDIMENTS (S/S)

The no action alternative under the remedial alternatives for Soils/Sediments is evaluated as a procedural requirement and is a basis for comparison.

S/S-1. No Action

This alternative requires continued environmental monitoring only, allowing the soils and sediments to remain in an unremediated state.

Environmental monitoring costs are included under the G/S alternatives.

Because there is no remedial activities for soil or sediment, and continued environmental monitoring costs are included under the G/S alternatives, no costs are associated with the no action alternative.

Under this alternative the site would remain in its present condition, and human health and the environment would not be adequately protected. Therefore, this alternative is dropped from further consideration.

S/S-2. Limited Action

This alternative would include removal and off-site disposal of only the soils/sediments containing 50 ppm PCBs or greater. Long term environmental monitoring would be implemented as well as repairs to the perimeter fencing to provide for better site security.

Present Worth:	$ 295,000
Capital Cost:	$ 295,000
Annual O&M:	$ 0 *
Time to Implement	6 mo. to 1 year

* Included under G/S Alternative.

S/S-3. VOC Treatment/Stabilization/Solidification/ Off-Site Disposal

Three VOC treatment methods were initially screened including SVE, Low Temperature Thermal Desorption (LTTD), and off-site incineration. It was determined that SVE was the most economical means to meet treatment requirements for VOCs. SVE involves the use of an induced vacuum to strip VOCs from excavated and stockpiled soils.

Alternative S/S-3 includes excavation of all soils/sediments with contamination above cleanup goals from all the AOCs. Once excavated, materials containing 50 ppm PCBs or greater would be transported off site for disposal at a facility permitted under the Toxic Substances Control Act (TSCA).

Soil/sediment containing total VOCs at 10 ppm or greater would be treated by using Soil Vapor Extraction (SVE); followed by stabilization/solidification of SVE residuals and soils containing PCBs less than 50 ppm and heavy metals.

The stabilization/solidification process would consist of mixing the contaminated soils with silicate-based or cement-based stabilization agents with chemical additives to generate a stabilized material. The stabilization agents and chemical additives would be used to control the stabilization curing rate and enhance the physical properties of the stabilized material. Bench-scale and pilot-scale treatability tests would be required to determine the appropriate agents and additives and their mix ratios to obtain optimal performance.

Once treated for both VOC contamination and metals contamination, the soil/sediments would be consolidated within a lined containment cell located at the Separation Ponds and Debris Landfill area. The containment cell would be constructed to include a leachate collection system and low permeability cap to prevent further migration of contaminants into the groundwater.

Also included would be repairs to the existing perimeter fence, installation of fencing around the Debris Landfill and the Separation Ponds and long term environmental monitoring.

The estimated present worth cost of alternative S/S-3 is:

Present Worth:	$	4,663,000
Capital Cost:	$	4,571,000
Annual O&M:	$	6,000
Time to Implement		1 yr. to 1.5 years

S/S-4. <u>Capping/Disposal/VOC Treatment</u>

This alternative is essentially the same as S/S-3 except without using stabilization/solidification technology. It includes excavation of all soils/sediments with contamination above cleanup goals from all the AOCs. Once excavated, materials containing 50 ppm PCBs or greater would be transported off site for disposal at a facility permitted under TSCA. The contaminated material with total VOCs equal to 10 ppm or above would undergo treatment using SVE.

The SVE residuals, and any remaining contaminated soil/sediments would be consolidated on site at Separation Ponds and Debris Landfill area as described under S/S-3.

Also included would be repairs to the existing perimeter fence, installation of fencing around the Debris Landfill and the Separation Ponds and long term environmental monitoring.

The estimated present worth cost of alternative S/S-4 is:

Present Worth:	$	2,961,000
Capital Cost (VOCs):	$	2,869,000
Annual O&M:	$	6,000
Time to Implement		1 yr. to 1.5 years

6.1.2. GROUNDWATER / SURFACE WATER (G/S)

The estimated capital costs shown under the G/S alternatives do not include the cost of the already completed IRM.

G/S-1. <u>No Further Action</u>

The no further action alternative under the remedial alternatives for Groundwater/Surface Water is evaluated as a statutory requirement and as a basis for comparison.

This alternative recognizes the remediation of the site completed under the previously completed IRM. It requires only the continued operation and maintenance of the pumping stations and air stripper. No long term environmental monitoring related to the remaining site is considered.

Present Worth:	$ 729,000
Capital Cost:	$ 0
Annual O&M:	$ 48,000
Time to Implement	Already implemented

Under this alternative the site would remain in its present condition, and human health and the environment would not be adequately protected.

Therefore, this alternative is dropped from further consideration.

G/S-2. **Limited Action**

The Limited Action alternative includes continued operation of the IRM to collect groundwater from the northeast part of the site and surface water from the Skimmer Pond; and site-wide, long term environmental monitoring to document site conditions in relation to time.

Present Worth:	$ 1,006,000
Capital Cost:	$ 0
Annual O&M:	$ 66,000
Time to Implement	3 mo. to 6 mo.

G/S-3. **Removal/Treatment/Discharge**

Along with long term monitoring, this alternative includes expanding the collection capability of the groundwater collection system along the north side of the site, and south of the manufacturing building to limit migration off site, and upgrading the existing IRM treatment system to handle the additional flow from the collection systems. Discharge of the treated water would either be to existing drainage ditches or to the sanitary sewer system.

Present Worth:	$ 1,370,000
Capital Cost:	$ 133,800
Annual O&M:	$ 80,400
Time to Implement	6 mo. to 1 year

G/S-4. **Cutoff Walls**

This alternative is essentially the same as G/S-3 except that a groundwater cutoff wall would also be installed along with the expanded groundwater collection system along the northern property boundary to create an additional barrier to limit migration of contaminated groundwater off site.

Present Worth:	$ 1,604,000
Capital Cost:	$ 368,000
Annual O&M:	$ 80,400
Time to Implement	6 mo. to 1 year

6.2 EVALUATION OF REMEDIAL ALTERNATIVES

The criteria used to compare the potential remedial alternatives are defined in 6NYCRR Part 375-1.10. For each of the criteria an evaluation of the alternatives against that criterion is provided. A detailed discussion of the evaluation criteria and comparative analysis is contained 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. The last five evaluation criteria are termed "primary balancing criteria" and are used to compare the positive and negative aspects of each alternative.

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

Soils/Sediments

S/S-2 (limited action) would not meet SCGs. Under this alternative, soils/sediments containing PCBs at 50 ppm or greater would be removed for off-site disposal. However, PCBs, heavy metals and VOC contamination would remain and continue to migrate from the disposal areas into the groundwater and surface water.

S/S-3 would meet SCGs by preventing continuing releases of contaminants to groundwater and surface water.

For S/S-4 to meet SCGs, soils/waste would have to pass leaching tests for inorganics, therefore eliminating the need for treatment. This alternative would then be similar to S/S-3, and would meet SCGs for the same reasons stated above.

Groundwater/Surface Water

Under G/S-2 (limited action), VOC contamination in the groundwater and surface water would continue to

migrate from the disposal areas and may impact off-site receptors.

G/S-3 and 4 would address groundwater contamination both at the site's northern boundary and south of the manufacturing building, downgradient of the Debris Landfill, and the Separation Ponds; thus eliminating migration from the disposal areas. Therefore these alternatives would allow for groundwater SCGs to be met in close proximity to the disposal areas in an acceptable time frame.

Contaminated surface water flowing into the off-site drainage ditch has been remediated by the completion of the IRM. The treated effluent has been found to meet SPDES discharge limits and thus meets SCGs.

Other SPDES discharge violations at monitoring points 001 and 002 would be addressed when combined with remedial alternatives for Soils/Sediments.

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

Soils/Sediments

S/S-2 would not be considered protective of human health and the environment since site related contaminants above clean-up goals would remain in place and continue to leak to the environment.

S/S-3 would be considered protective since site related contaminants at levels above clean-up goals would be removed from all AOCs, and disposed of in a manner that would be considered protective. S/S-4 would also be protective based on the results of the leaching tests performed during waste characterization activities. The test results show that the inorganics would not leach out at levels that warrant treatment. Additional leaching tests would be performed on any untested soils/waste to ensure treatment via stabilization/solidification would not be required.

Groundwater/Surface Water

The contaminated groundwater is not impacting the existing residential water supply wells to the east of the site. However, there is a potential for future development along the north side of Bleecker Street. G/S-2 would not address the potential for contaminated groundwater to migrate off of the plant property.

G/S-3 and 4 both propose to eliminate potential groundwater migration to the north, and thus would mitigate potential risks to any future off-site development to the north of the site. Therefore these two alternatives would be considered protective of human health and the environment. While G/S-4 would include a cutoff wall, this addition would not be considered to provide a significant increase in protectiveness due to the relatively shallow depth of groundwater contamination in that area.

6.2.3. 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 implementation are evaluated. The length of time needed to achieve the remedial objectives is also estimated and compared with the other alternatives.

Soils/Sediments

S/S-2 would create potential short term impacts from excavating contaminated material for off-site disposal, such as exposures to on-site workers and the public to contaminated soils, dust, and noise. These impacts would be mitigated by implementing proper safety procedures, including air monitoring, wearing personal protective equipment, and decontamination of equipment prior to leaving the site; and engineering controls including covering excavated soils and installing sediment migration barriers to keep contaminants from migrating.

The amount and duration of short term impacts increases with the scope of the remediation. Therefore, S/S-3 and 4 create greater potential short term impacts. Both alternatives include greater

amounts of excavation, and both include on-site treatment alternatives. Impacts from this work would be mitigated by implementing proper safety procedures and engineering controls.

Groundwater/Surface Water

Short term impacts under G/S-2 would be minimal to nonexistent. No remedial action would be implemented with the exception of a long term monitoring program which would include the installation of additional groundwater monitoring wells, and continued periodic groundwater and surface water sampling. However, the remedial objectives would not be met under this alternative since the potential for groundwater migration off site would still exist.

In comparison, remediation goals would be met under G/S-3 and 4, however short term impacts would be slightly greater during the construction of the groundwater collection system and cutoff wall. Impacts from excavation and piping work would be mitigated by using protective personal equipment, performing air monitoring and implementing adequate engineering controls to eliminate any off-site migration of site related contaminants during construction.

6.2.4. Long-term Effectiveness and Permanence. This criterion evaluates the long-term effectiveness of alternatives after implementation of the response actions. 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.

Soils/Sediments

S/S-2 would provide minimal long-term effectiveness by removing PCBs at levels of 50 ppm or greater. However, PCBs, metals and VOCs above clean-up goals would still remain.

S/S-3 would provide for the greatest long-term effectiveness and permanence. All excavated contaminated materials would either be treated for PCBs, metals and VOCs for on-site disposal, or disposed of off site. The treated residuals would be placed in a lined containment cell with a leachate collection system, and capped with an engineered multilayer landfill cap. Once implemented, the magnitude of the remaining risks would be considered low and the controls to limit these risks adequate and reliable.

S/S-4 would be considered as effective and permanent because soils/waste would have passed leaching tests for inorganics. Placement above the groundwater table in a secure containment cell would reduce the magnitude of the remaining risks to an acceptable level, and the adequacy and reliability of the controls would be the same as Alternative 3.

Groundwater/Surface Water

G/S-2 would provide no long-term effectiveness since the only remedial action would be the continued operation of the IRM and long-term groundwater monitoring. These alternatives would not address the potential of off-site migration of contaminated groundwater.

G/S-3 and 4 would provide the means to eliminate further migration of contamination, and therefore would provide a greater level of long-term effectiveness.

6.2.5. Reduction of Toxicity, Mobility or Volume. Preference is given to alternatives that permanently and significantly reduce the toxicity, mobility or volume of the wastes as a principal element of the remedial action.

Soils/Sediments

S/S-2 would provide no reduction of toxicity, mobility or volume of the hazardous constituents in the contaminated soils and sediments. S/S-3 and 4 would provide a reduction, to varying degrees, by providing treatment of the contaminated materials.

Alternative 3 would provide the most reduction since materials contaminated above clean-up goals from all the AOCs would be treated for PCBs, metals and VOCs contamination. Alternative 4 would provide less reduction since only VOCs treatment is proposed.

Groundwater/Surface Water

Under all G/S alternatives, the existing IRM air stripper would remove hazardous constituents from the groundwater prior to discharge. However, this technology would not satisfy this criteria. The only difference between alternatives 2, 3, and 4 is the volume of groundwater collected and the potential for off-site migration of contaminants.

6.2.6. Implementability. The technical and administrative feasibility of implementing each alternative is evaluated. Technically, this includes the difficulties associated with the construction, the reliability of the technology, and the ability to monitor the effectiveness of the remedy. Administratively, the availability of the necessary personal and material is evaluated along with potential difficulties in obtaining specific operating approvals, access for construction, and coordination with plant operations.

Soils/Sediments

All Soils/Sediments alternatives would be considered implementable to varying degrees. As the complexity of the remediation increases, the implementability of each alternative is reduced. S/S-2 would be considered the most implementable since little to no remedial action would take place. However, the remediation goals would not be met.

Conversely, S/S-3 and 4 would be more difficult to implement due to the scope of the contaminated materials removal and the proposed treatment scenarios. However, the added difficulties associated with the remedial construction would not be considered significant, and the proposed treatment and disposal technologies would be considered reliable and proven. The ability to provide long-term monitoring of the effectiveness of the proposed alternatives would be considered easily implemented and administrative considerations would not be a significant problem.

Groundwater/Surface Water

All the alternatives proposed for groundwater/surface water remediation would be considered implementable to varying degrees. G/S-2 is considered implementable and would provide the means to monitor the effectiveness of the IRM on the groundwater quality by providing a long-term monitoring plan. This alternative requires minimal work and therefore is more implementable than G/S-3 and 4. However the work proposed under the groundwater collection and treatment alternatives would also be relatively simple to implement. The existing air stripper was designed to be expanded in order to accept the larger quantities of groundwater under G/S-3 and 4. In addition, the existing pump stations and piping were designed to handle the larger flows generated from collecting greater volumes of groundwater. Therefore, only minimal modifications to the existing air stripper system would be needed.

6.2.7. Cost. Capital and operation and maintenance costs are estimated for each alternative and compared on a present worth basis. Although cost is the last balancing criterion evaluated, where two or more alternatives have met the requirements of the remaining criteria, cost effectiveness can be used as the basis for the final decision. The costs for each alternative are presented in Table-2.

6.2.8. Community Acceptance - Concerns of the community regarding the RI/FS reports and the Proposed Remedial Action Plan are evaluated. A "Responsiveness Summary" will be prepared that describes public comments received and how the Department will address the concerns raised. If the final remedy selected differs significantly from the proposed remedy, notices to the public will be issued describing the differences and reasons for the changes.

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

TABLE - 2

CHICAGO PNEUMATIC TOOL COMPANY SITE NO. 6-22-003
REMEDIAL ALTERNATIVE COST SUMMARY

Alternative Description	Annual O&M Cost	Capital Cost	Present Worth Worth Cost *
SOILS/SEDIMENTS			
Alternative 1 - No Action	$ 0	$ 0	$ 0
Alternative 2 - Limited Action	N.A.	$ 295,000	$ 295,000
Alternative 3 - SVE Treatment, Solidification/Stabilization, Capping, and Off-site Disposal	$ 6,000	$ 4,571,000	$ 4,663,000
Alternative 4 - SVE Treatment, Capping, and Off-site Disposal	$ 6,000	$ 2,869,000	$ 2,961,000
GROUNDWATER/SURFACE WATER			
Alternative 1 - No Further Action	$ 48,000	$ 0	$ 729,000
Alternative 2 - Limited Action	$ 66,000	$ 0	$ 1,006,000
Alternative 3 - Removal/Treatment/Discharge	$ 80,400	$ 133,800	$ 1,370,000
Alternative 4 - Cutoff Wall	$ 80,400	$ 368,000	$ 1,604,000
VOC TREATMENT/DISPOSAL TECHNOLOGIES			
Treatment Scenario 1 - On-site LTTD	N.A.	$ 590,000	$ 590,000
Treatment Scenario 2 - Off-site Disposal	N.A.	$ 1,463,000	$ 1,463,000
Treatment Scenario 3 - Off-site Incineration	N.A.	$ 8,914,000	$ 8,914,000
Treatment Scenario 4 - On-site SVE	N.A.	$ 396,000	$ 396,000

* Present worth costs include annual O&M costs over a 30 year time frame.

SECTION 7: SUMMARY OF THE PREFERRED REMEDY

Based upon the results of the RI/FS, and the evaluation presented in Section 6, the NYSDEC is proposing combining Alternatives G/S-3 (groundwater collection and treatment without a cutoff wall) and S/S-4 (excavation of soils/sediment contaminated above cleanup goals, ex-situ SVE treatment for VOCs, and on-site disposal within a secure containment cell) as the remedy for this site.

The remedy would include excavating approximately 12,790 cubic yards of soils/sediments contaminated at levels above clean-up goals from all AOCs. Approximately 380 cubic yards of soils/sediments containing levels of PCBs equal to or greater than 50 ppm, would be disposed of off site at a permitted hazardous waste disposal facility. Approximately 2,330 cubic yards of the remaining soils/sediments would undergo on-site treatment for VOCs contamination. The treatment technology proposed would be ex-situ SVE. The treated residuals, and any untreated soils, would be placed in an on-grade, lined containment cell, in the area of the Debris Landfill and the Separation Ponds. A leachate collection system would be installed, and the cell would be capped with an engineered, multilayered landfill cap conforming with current SCGs relating to hazardous waste landfills.

Shallow groundwater collection trenches would be installed along the northern part of the site and south of the manufacturing building to collect shallow contaminated groundwater, at an average daily rate of approximately 14,300 gallons per day, for treatment utilizing an upgraded collection/treatment system in conjunction with the existing IRM. Treated groundwater would be discharged via the existing sewer system to the Oneida County POTW, or the existing SPDES 003A outfall into the eastern drainage ditch, and would be monitored as required under the current facility's SPDES permit.

The NYSDEC considers this combination of alternatives protective of human health and the environment while at the same time meeting all applicable SCGs. The following considerations have been given to each of the remedial alternatives evaluated:

The no further action and limited action alternatives for the groundwater/surface water would not significantly reduce the current potential for contaminated groundwater to migrate off site and therefore were eliminated from consideration.

The no action and limited action alternatives for soil/sediment are not considered protective and did not meet RAOs for the site or SCGs, therefore they were eliminated from consideration.

Alternatives G/S-3 and G/S-4 are considered effective at meeting RAOs and preventing off-site migration of contaminated groundwater. The addition of a cutoff wall along the north side of the site (G/S-4) results in greater potential short-term risks during construction and would not result in a significant increase in either short term effectiveness or long-term effectiveness and permanence compared to G/S-3. Therefore G/S-3 would be the most cost-effective alternative that is capable of meeting RAOs and SCGs.

Alternatives S/S-3 and S/S-4 are considered effective at meeting site RAOs, and SCGs. In addition they are both effective at reducing the mobility of chemical constituents since they both include disposal within a lined containment cell. In addition, S/S-3 would not provide a significant increase in either short term effectiveness or long-term protectiveness and permanence compared to S/S-4; therefore alternative S/S-4 is considered the most cost effective means of achieving site RAOs and SCGs.

The SVE VOC treatment technology is considered to be effective at addressing VOC contaminated soils/sediments at the site. Once implemented, the technology would allow for meeting site RAOs and SCGs. This technology is considered preferable over landfilling alternatives without treatment. In addition, current state Land Disposal Restrictions 6 NYCRR Part 376, require treatment of material containing high levels of VOCs, and heavy metals prior to landfilling. The potential risks to on-site workers and the public from on-site treatment would be minimized by implementing proper site safety procedures

including emergency contingency plans, and engineering controls. Air monitoring (both on site and at the property boundary) would be performed to ensure that air emissions from the on-site treatment system meets NYSDEC air quality standards. SVE would be considered the most cost effective VOC treatment technology that would meet site RAOs and SCGs.

The estimated present worth cost over 30 years to implement the remedy, utilizing the SVE treatment technology, is $4,331,000, and includes costs for both the S/S-4 and G/S-3 alternatives as shown on table 2. The estimated capital cost to construct the remedy is $3,003,000, and the estimated average annual operation and maintenance cost for 30 years is $86,400.

In addition the following elements would be included:

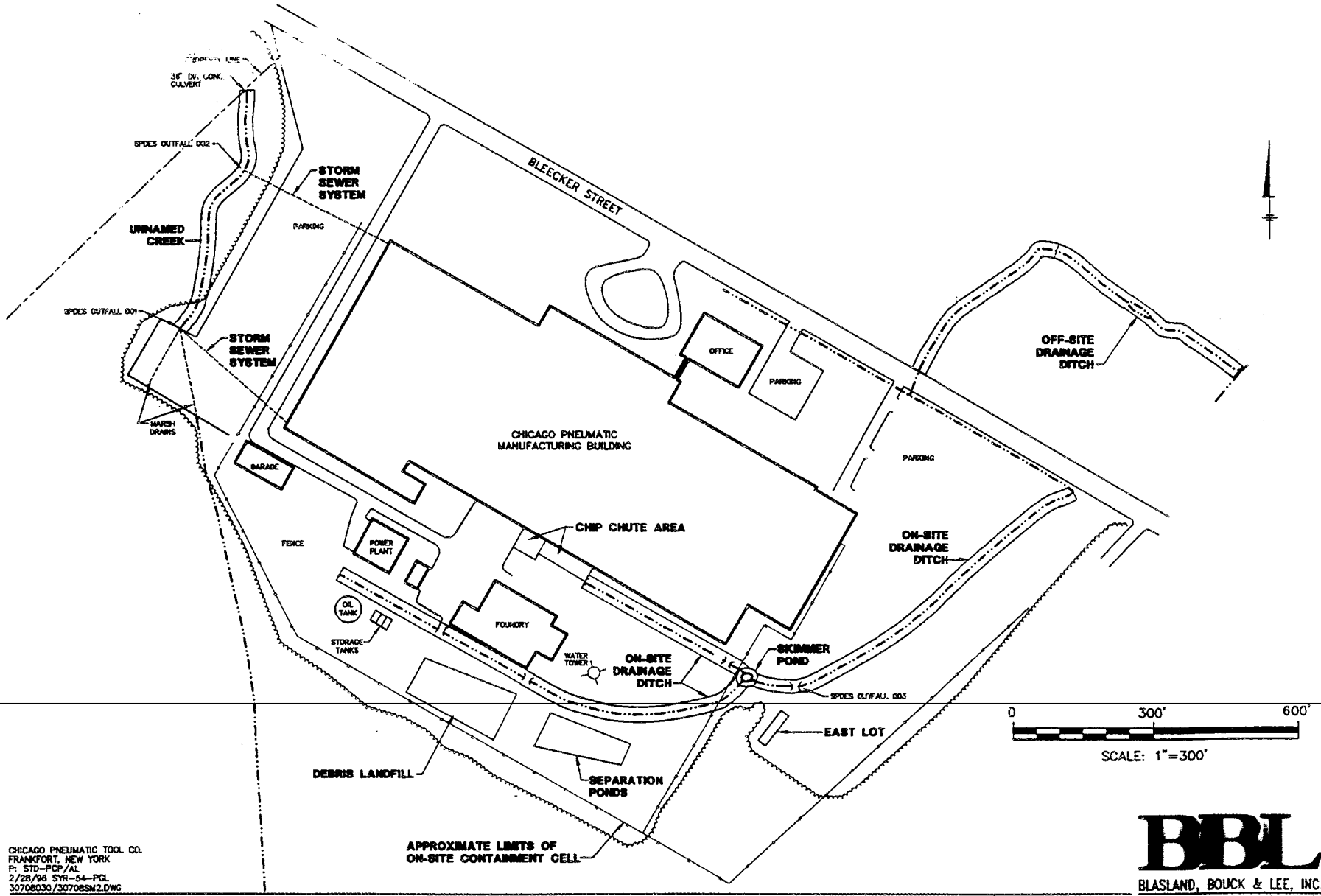
1. A remedial design program to verify the components of the conceptual design and provide the details necessary for the construction, operation and maintenance, and monitoring of the remedial program.

2. Given the relatively tight soils that would be subjected to ex-situ SVE treatment, additional treatability studies would be performed during the design phase to ensure that the SVE system would function properly. If additional tests show that the SVE system would not function properly (i.e. remove VOCs to LDR treatment requirements), Chicago Pneumatic would be required to use another treatment technology such as LTTD.

3. All collected groundwater, surface water, and leachate would be sampled to determine if treatment is required before discharge to the POTW or the eastern drainage ditch. If detectable amounts of PCBs are found on a frequent basis, the Department would determine if treatment would be required to meet the Department's Best Available Technology (BAT) treatment requirements. Continued use of the Skimmer Pond in conjunction with an upgraded water treatment system must conform to SPDES permit requirements.

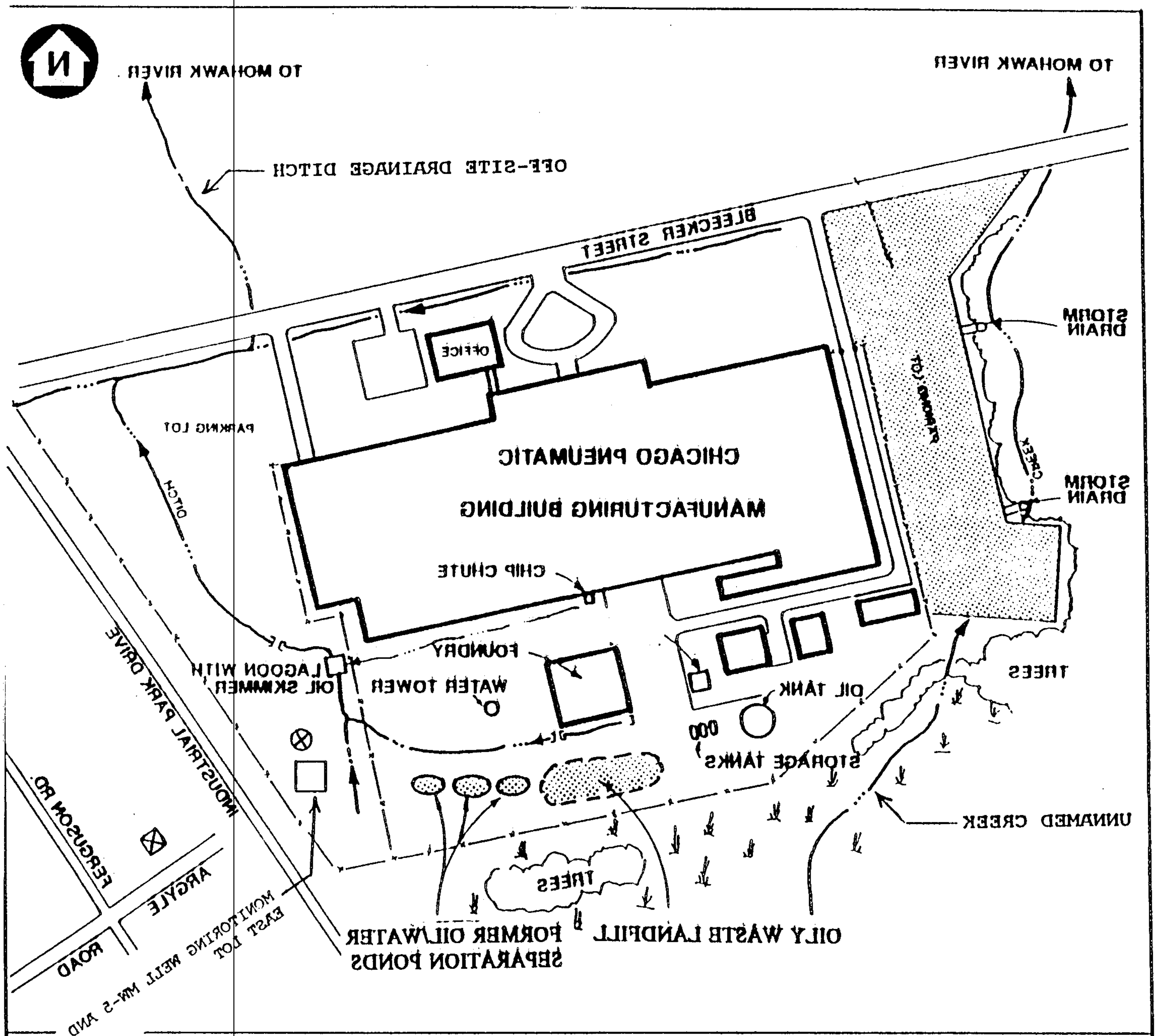
4. A long-term surface water and groundwater monitoring program for each individual area of concern would be developed and approved by the Department during remedial design. The program would consider the number, location and depth of additional groundwater monitoring wells, as well as the frequency of sampling and required sampling parameters. This long term monitoring program would be a component of the operations and maintenance for the site and allow for the effectiveness of the selected remedy to be monitored.

Areas of Concern



CHICAGO PNEUMATIC TOOL CO.
FRANKFORT, NEW YORK
P: STD-PCP/AL
2/28/98 SYR-54-PGL
30708030/30708SM2.DWG

BBL
BLASLAND, BOUCK & LEE, INC.
engineers & scientists



SITE NO: 622003

LOCATION: TOWN OF FRANKFORT
HERKIMER COUNTY, N.Y.

LEGEND

WET AREA

FENCE

DRAINAGE DITCH OR CREEK

HOUSE ON PRIVATE WELL

SCALE IN FEET

0 300 600

SOURCE: MAP REVISED FROM BLASLAND & BOUCK ENG. P.C. 1990

FIGURE 2
SITE SKETCH MAP
CHICAGO PNEUMATIC TOOL CO. SITE
PRELIMINARY SITE ASSESSMENTS
NEW YORK STATE DEC

6247-01