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September 25, 2003

Mr. Ralph Keating
NYSDEC Central Office
12th Floor
625 Broadway
Albany, NY 12233-7016

RE: Dalewood I Shopping Center (VCP#V00457-3)
Hartsdale, New York

Dear Mr. Keating:

Kroll Inc. is submitting the enclosed Interim Remedial Measure Work Plan on behalf of Heritage SPE, LLC for the removal of impacted soil located behind a former drycleaner at the above referenced site.

We are proposing to:

1. remove and dispose offsite approximately 150 cubic yards of contaminated soil; and
2. install additional groundwater treatment injection wells in the area behind the building to be used in the future remediation of groundwater.

Also enclosed is a copy of a Fact Sheet to be distributed to the shopping center tenants, abutting properties, and local government officials. A copy of the enclosed Work Plan and Fact Sheet will also be on file at the Greenburgh Library for public access.

Presently we are awaiting approval from the disposal site prior to finalizing our schedule. We anticipate that work will commence sometime in October 2003. Should you have any questions regarding this submittal please feel free to contact me.

Best regards,
KROLL INC.

Neal M. Drawas
Managing Director

cc. Daniel Geraghty, NYSDOH
Carlos Tonas, Westchester County DOH

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INTERIM REMEDIAL MEASURE WORK PLAN
OUTDOOR AREA

Dalewood I Shopping Plaza
357 North Central Avenue
Hartsdale, NY

VCP Site V00457-3

September 2003

Prepared for:

Heritage SPE, LLC
535 Boylston Street
Boston, MA 02116

Prepared by:

Kroll Inc.
900 Third Avenue
New York, NY 10022

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1.0 Introduction and Purpose

Heritage SPE, LLC (Heritage) and the New York State Department of Environmental Conservation (NYSDEC) executed a Voluntary Cleanup Program (VCP) agreement for the subject Site. The VCP application was submitted based on information obtained in previous investigations completed at the Site. A NYSDEC approved Investigation Work Plan was initiated in February 2003 and from these efforts Kroll identified the presence of perchloroethylene (PCE) impacted soils behind the Site building in the area immediately behind the former drycleaning facility. The intent of this Interim Remedial Measure (IRM) Work Plan is to:

- remove and off-site disposal of approximately 150 cubic yards of contaminated soil; and
- install additional groundwater treatment injection wells in the area behind the building.

A brief summary of the results of investigations is provided in Section 2.0 of this Interim Remedial Measure (IRM) work plan. The intent of this IRM Work Plan is to identify the specific tasks that will be completed in order to mitigate a Site condition.

2.0 Site Background and Description

The subject Site consists of a retail shopping center located on the west side of North Central Avenue (Route 100) in the Village of Hartsdale, Greenburgh Township, Westchester County, NY. The Site property consists of approximately 7 acres of land and is improved with two structures consisting of 67,500 square feet and 1,500 square feet (see Figure 1). The Site area was reportedly occupied by residential structures prior to 1966. The Dalewood I Site building was constructed circa 1966. The surrounding properties are heavily developed with a mixed use of commercial and residential buildings.

The main Site building is occupied by the following businesses, based on mailing address:

355 N. Central Avenue	Coconuts Music
357 N. Central Avenue	Vacant
359 N. Central Avenue	Spectrum (Card and Novelty Store)
361 N. Central Avenue	Friendly's Restaurant
365 N. Central Avenue	Sally Beauty Supply (Retail Store)
371 N. Central Avenue	Path Mark (Grocery Store)

357 N. Central Avenue was previously occupied by a dry cleaning facility from 1966 until 1997, and is the project area of concern.

A separate building is located in the southeast area of the property with an address of 353 N. Central Avenue, and is occupied by Proper Service Center (a vehicle service center and retail gasoline (ExxonMobil) sales facility).

The shopping center construction generally consists of slab on grade with standard subsurface footing walls located below the outside structural walls and certain internal structural walls. Internal concrete block structural walls are known to exist between Units 355 and 357 and Units 365 and 371. Basements are not present in any areas of the Site building. Individual subsurface utilities are generally limited to sewer and water connections, which are predominantly located in the rear section (west) of each unit. According to town records, the property has been connected to municipal water and sewer systems since the Site was developed in 1966.

2.1 Site Hydrogeology

The ground surface topography at the Site is generally level and according to the USGS Topographic Map of this area the Site is located at an elevation of approximately 205 feet above mean sea level. A large parking area is located in the front of the shopping center and a driveway and service entrance is located in the rear of the center. A steep embankment is located immediately behind (west) the Plaza which rises approximately 110 feet in less than 500 linear feet. The closest surface water body to the Site is the Bronx River that is located ½ mile to the east and 3/4 mile to the northeast.

Soil encountered in the borings generally consists of a medium size brown sand. Groundwater is typically present throughout the Site between 3.5 and 5 feet below grade. Based on water table elevation data, groundwater within the Site area has been determined to flow toward the east/northeast. A drainage culvert is present in the front (eastern) parking area of the Site that runs in a north-south orientation. The estimated size of the drainage culvert, based on utility locating data, is four feet (4') in diameter. The culvert extends into the groundwater table and appears to act as a divide in this area of the Site.

2.2 Previous Investigations

Phase I Environmental Site Assessments have been completed for the subject property by GZA GeoEnvironmental, Inc. in February 1997 and EMG in September 2000. The GZA and EMG Phase I identified a former building tenant that completed dry cleaning on-site. The former dry cleaning facility was specifically located at 357 North Central Avenue until 1997 and subsequently occupied by the Huntington Learning Center until March 2003.

An Initial Sub-Surface Assessment was completed by Kroll, Inc. (KROLL) in March 2000. The results of this assessment identified tetrachloroethylene, trichloroethylene, vinyl chloride, trans and cis 1,2-dichloroethylene, and benzene in groundwater samples.

The NYSDEC and Westchester County Department of Health (WCDOH) were notified of these results in the form of a written report of the findings dated July 25, 2000.

A subsequent Phase II Sub-Surface Assessment of the Site was completed by KROLL during the period from August to November 2000. A Comprehensive Site Assessment

and Remedial Investigation was completed by KROLL during the period from March to June 2001, and was provided to the NYSDEC and NYSDOH in June 2001.

An Investigation Work Plan was submitted to the NYSDEC in October 2002 for additional subsurface investigation of soil and groundwater as well as indoor air. The Investigation Work Plan was approved by the NYSDEC in January 2003 and the Work Plan was initiated in February 2003. Preliminary results of the Investigation are provided in the next section of this Work Plan.

2.3 Preliminary Investigation Results

This IRM Work Plan has been developed as a result of investigation studies that have been conducted at the Site from March 2000 through March 2003. An area behind the former dry cleaning space had been identified with elevated concentrations of PCE in the shallow soils from one to five feet (1 – 5') below grade. The soil borings and shallow soil sample laboratory results are summarized in Table 1 and illustrated in Figures 2 and 3. The PCE results for soil samples collected from this area ranged from below detection limits to 241,000 parts per billion (ppb). Seven of the samples collected from this area were reported with PCE concentrations ranging from 1,120 to 241,000 ppb.

A groundwater contaminant plume has been identified in the rear and front areas of the Site building. The plume consists of PCE as well as its daughter products trichloroethylene (TCE), dichloroethylene (DCE), and vinyl chloride (VC). Groundwater sampling has determined that the contaminant plume originated in the rear of the building, behind the former dry cleaning location, and continued under the building toward the east and northeast. The contaminated soil mass located behind the Site building is considered to be a continuing source of groundwater pollution.

2.4 Previous Interim Remedial Measure

An additional volume of contaminated soil was identified below the dry cleaning space floor that contributed to indoor vapor concentrations, and also acted as a source of groundwater pollution. A previous IRM Plan was developed and implemented in May 2003 that included the removal of soil from under the building floor. A total of 111.4 tons of soil was removed in May 2003 following the previous IRM Work Plan. Post excavation soil samples were collected and laboratory analyzed as part of the IRM. The sample results indicate that the IRM was effective in reducing the volume of contaminated soil located below the building floor.

The May 2003 IRM Work Plan also included modification of a Sub-slab Depressurization System (SSDS), installation of piping for a groundwater treatment system, and application of a substrate release compound directly into the open excavation. The SSDS has been effective in providing an additional reduction in vapor concentrations. The plan to install a groundwater treatment system was developed based on the known presence of a contaminated groundwater plume extending under the building floor. Preliminary remedial alternative screening has identified that anaerobic bioremediation enhanced with a substrate releasing compound is a likely and feasible approach for

remediation of the groundwater plume. The installed groundwater treatment piping has not been utilized at this time, however, it is expected to be incorporated into the final groundwater remediation plan.

3.0 Objectives and Scope

This IRM Work Plan has been prepared pursuant to:

NYSDEC, Division of Environmental Remediation, DRAFT Voluntary Cleanup Program Guide dated May 2002.

The project organization will consist of the following individuals:

Sr. Project Manager	Neal Drawas
Project Manager:	Robert McCarthy
Quality Assurance Officer:	Richard Vocke

The primary objective of this work plan is to remedy a condition whereby a volume of contaminated shallow soil (approximately 150 cubic yards) located behind the former drycleaning facility provides a continuing source for groundwater contamination. Removal of the accessible soil mass in a timely manner will help to maintain or reduce the current groundwater contaminant concentrations.

A summary of the scope of work, health and safety procedures, sampling, and analysis to be completed is provided as follows:

3.1 Soil Abatement

The asphalt surface covering the identified area behind 357 N. Central Avenue (see Figure 4) will be removed. Excavation will be completed down to the water table (approximately 5 feet below grade) where structural conditions allow. Potential undermining of the wall footing will be monitored and excavation will be discontinued if unsafe conditions exist.

Excavation will be completed utilizing a track mounted excavator. The excavated soil will be loaded directly into lined dump trucks prepared for immediate transport off-site. The trucks will be covered following loading and when active Site work is not occurring. All impacted soil will be transported from the site for disposal. The excavation will be backfilled and compacted with clean soil. Existing Site monitoring wells will be protected and retained during the excavation process. The existing groundwater treatment injection system will be expanded with the installation of vertical well screens in the area behind the Site building.

3.2 Health and Safety Procedures

Health and safety of the Site workers and the building users will be addressed utilizing the following measures:

- A Site Health and Safety Plan will be developed that will define work zone conditions where additional personal protective equipment may be needed.
- Open excavations that may be emitting vapors will be covered with plastic sheeting when excavation or backfilling is not in progress.
- Work zone air will be monitored utilizing a handheld photoionization detector and multi gas detector (O2, LEL, CO, H2S).
- Adjacent indoor building areas will be monitored utilizing a handheld photoionization detector.
- A Community Air Monitoring Plan will be implemented.

3.3 Community Air Monitoring Plan

A Community Air Monitoring Plan (CAMP) is provided in Section 6.0 of this Work Plan. The CAMP is prepared following the New York State Department of Health "Generic Community Air Monitoring Plan" (June 20, 2000).

3.4 Citizen Participation Plan

A Fact Sheet will be developed that describes the IRM activities, schedule, and locations where additional information may be obtained. The Fact Sheet will be distributed to on-site tenants, to local public officials, and a copy will be placed in the document repository at the local public library.

3.5 Post Excavation Soil Screening and Sampling

The extent of excavation will be determined based on field screening readings collected from the bottom and sides of the excavation area. Undisturbed soil samples will be collected and field screened utilizing a photoionization detector and following the procedures described in Section 4.0 of this Work Plan.

Post excavation soil samples will be collected from the final excavation sides and bottom for laboratory analysis. Samples will be collected at approximately ten-foot (10') intervals and additional samples will be collected in locations where field conditions warrant.

Soil samples will be handled following the procedures described in Section 5.0 of this Work Plan. Soil samples from the excavation area will be analyzed for halogenated volatile organic compounds (HVOCs) by EPA Method 8021.

3.6 Groundwater Treatment System Modification

Groundwater treatment piping was installed as part of the previous IRM in the area under the building floor. Additional piping is planned to be installed as part this Outdoor Area IRM. Individual vertical sections of six inch diameter PVC well screen will be installed in locations to be determined based on actual site conditions at the time of excavation. The installed screen sections will be

continued to grade with solid PVC pipe and a surface mounted curb box will be installed in the finished asphalt surface. The vertical screen points are expected to be incorporated into the final groundwater remediation plan for the Site.

3.7 Excavation Backfill

Clean soil obtained from off site will be utilized as backfill material. Backfilling of the excavation is expected to occur in stages, as possible, while additional excavation is underway. Following collection of soil samples and installation of necessary groundwater treatment components, the backfilling process will be initiated. Backfill material will be placed and compacted in lifts, as needed.

The backfill material will be brought up to match existing grade in order to replace the asphalt driveway surface.

3.8 Soil Disposal

The contaminated soil will be loaded into lined and covered dump trucks located on-site. A preliminary review and profiling paperwork will be completed prior to completing the excavation work. Therefore, the soil is intended to be transported off-site to the disposal facility on the same day as it is excavated.

3.9 Investigation Report

A report summarizing the sampling and investigation activities will be completed including appropriate maps, tables, disposal, and laboratory data.

4.0 PID Field Screening Method

Field screening of soils for the presence of volatile organic compounds will be performed with a portable Photoionization Detector (PID) (calibrated to yield "total organic vapors" in ppmv (v/v) as isobutylene, 10.6 eV lamp). Operation, maintenance, and calibration are performed in accordance with the manufacturer's specifications. For field screening analysis, instrument calibration will be checked/adjusted no less than once every 10 analyses, or daily, whichever is greater.

The field screening procedure consists of first collecting a soil sample in a using a stainless trowel or directly into a laboratory supplied contained (i.e. utilize a backhoe to collect sample and obtain a sample from the backhoe bucket). The sample is relocated to a clean, contaminate free area and the instrument sampling probe is placed approximately 1/4 inch from the exposed portions of the soil sample, exercising care to avoid uptake of water droplets or soil particulates. The maximum instrument response is recorded.

Where suspect soils, elevated screening readings, or other conditions require, a jar headspace procedure will be followed which includes half-filling a clean 8 oz. glass jar with the sample to be analyzed. The top of the jar is then quickly covered with clean aluminum foil followed by the screw cap. A vapor headspace is allowed to develop for at least 10 minutes; the jar is shaken for 15 seconds both at the beginning and end of the headspace development period. Subsequent to headspace development, remove screw lid/expose foil seal. Quickly puncture foil seal with instrument sampling probe, to a point about one-half of the headspace depth. Following probe insertion through foil seal, record highest meter response as the jar headspace concentration. Using foil seal, maximum response should occur between 2 and 5 seconds. Erratic meter response may occur at high organic vapor concentrations or conditions of elevated headspace moisture, in which case headspace data should be discounted.

5.0 Analytical Methods

Retrieved samples will be logged by the supervising engineer/geologist and placed directly in laboratory supplied glassware and kept in an iced cooler; the cooler and samples will be transported to an independent New York State ELAP Certified laboratory under Chain-of- Custody documentation.

The primary laboratory intended to be utilized for this project is:
Contest Analytical Laboratory (New York ELAP 10899)
East Longmeadow, MA.

If necessary, an alternate laboratory intended to be utilized is:
EAS Laboratories (New York ELAP 10916)
Watertown, CT.

The analytical procedures used on selected soil samples collected at the site include the following:

Method 8021 — Halogenated and/or Aromatic Volatile Organic Compounds (VOCs) by gas chromatography (GC) with conductivity detector. The target analyte list includes purgeable aromatic hydrocarbons and purgeable halocarbons. The aromatic hydrocarbons include benzene, toluene, ethyl benzene, and xylenes (BTEX) which are gasoline indicator compounds as well as other compounds. Halocarbons include chlorinated solvents and other organohalides, which are commonly, used in dry cleaning processes and in vehicle maintenance processes such as degreasing.

Soil samples that may be collected from the contaminated soil for waste characterization will be analyzed pursuant to the intended disposal facilities requirements.

6.0 Community Air Monitoring Plan

A Community Air Monitoring Plan (CAMP) following the procedure provided in this Section will be completed during the course of excavation activities. The CAMP requires real time monitoring for volatile organic compounds (VOCs) and particulates (i.e. dust) at the downwind perimeter of each designated work area when certain activities are in progress at contaminated sites. The CAMP is not intended for use in establishing action levels for worker respiratory protection. Rather, its intent is to provide a measure of protection for the downwind community (i.e., off-site receptors including residences and businesses and on-site workers not directly involved with the subject work activities) from potential airborne contaminant releases as a direct result of investigative and remedial work activities. The action levels specified herein require increased monitoring corrective actions to abate emissions, and/or work shutdown. Additionally, the CAMP helps to confirm that work activities did not spread contamination off-site through the air.

Reliance on the CAMP will not preclude simple, common sense measures to keep VOCs, dust, and odors at a minimum around the proposed work areas.

Real-time air monitoring for VOCs and/or particulate levels at the perimeter of the exclusion zone or work area will be necessary. Continuous monitoring will be required for all ground intrusive activities. Generally, ground intrusive activities include, but are not limited to, soil/waste excavation and handling, test pitting or trenching, and the installation of soil borings or monitoring wells.

Periodic monitoring for VOCs will be required during non-intrusive activities such as the collection of soil and sediment samples or the collection of groundwater samples from existing monitoring wells. "Periodic" monitoring during sample collection might reasonably consist of taking a reading upon arrival at a sample location, monitoring while opening a well cap or overturning soil, monitoring during well bailing/purging, and taking a reading prior to leaving a sample location. In some instances, depending upon the proximity of potentially exposed individuals, continuous monitoring may be required during sampling activities. Examples of such situations include groundwater sampling at wells adjacent to busy sidewalks or parking areas.

6.1 VOC Monitoring, Response Levels, and Actions

Volatile Organic Compounds (VOCs) will be monitored at the downwind perimeter of the immediate work area (i.e., the exclusion zone) on a continuous basis. Upwind concentrations will be measured at the start of each workday and periodically thereafter to establish background conditions. The monitoring work will be performed using equipment appropriate to measure the types of contaminants known or suspected to be present. The equipment will be calibrated at least daily for the contaminant(s) of concern or an appropriate surrogate. The equipment will be capable of calculating 15-minute running average concentrations, which will be compared to the levels specified below.

If the ambient air concentration of total organic vapors at the downwind perimeter of the work area or exclusion zone exceeds 5 parts per million (ppm) above background for the

15-minute average, work activities must be temporarily halted and monitoring continued. If the total organic vapor level readily decreases (per instantaneous readings) below 5 ppm over background, work activities can resume with continued monitoring.

If total organic vapor levels at the downwind perimeter of the work area or exclusion zone persist at levels in excess of 5 ppm over background, but less than 25 ppm, work activities must be halted, the source of vapors identified, corrective actions taken to abate emissions, and monitoring continued. After these steps, work activities will resume provided that the total organic vapor level 200 feet downwind of the exclusion zone or half the distance to the nearest potential receptor or residential/commercial structure, whichever is less – but in no case less than 20 feet, is below 5 ppm over background for the 15 minute average.

If the organic vapor level is above 25 ppm at the perimeter of the work area, activities will be shutdown.

All 15-minute readings must be recorded and will be available for State (DEC and DOH) personnel to review. Instantaneous readings, if any, used for decision purposes will also be recorded.

6.2 Particulate Monitoring, Response Levels and Actions

Particulate concentrations will be monitored continuously at the upwind and downwind perimeter of the exclusion zone at temporary particulate monitoring stations. The particulate monitoring will be performed using real time monitoring equipment capable of measuring particulate matter less than 10 micrometers in size (PM-10, and capable of integrating over a period of 15 minutes (or less) for comparison to the airborne particulate action level. The equipment will be equipped with an audible alarm to indicate exceedence of the action level. In addition, fugitive dust migration will be visually assessed during all work activities.

If the downwind PM-10 particulate level is 100 micrograms per cubic meter (mcg/m3) greater than background (upwind perimeter) for the 15-minute period, or if airborne dust is observed leaving the work area, then dust suppression techniques will be employed. Work may continue with dust suppression techniques provided that downwind PM-10 particulate levels do not exceed 150 mcg/m3 above the upwind level, and provided that no visible dust is migrating from the work area.

If, after implementation of dust suppression techniques, downwind PM-10 particulate levels are greater than 150 mcg/m3 above the upwind level, work will be stopped and a re-evaluation of activities initiated. Work will resume provided that dust suppression measures and other controls are successful in reducing the downwind PM-10 particulate concentration to within 150 mcg/m3 of the upwind level and in preventing visible dust migration.

All readings will be recorded and available for State (DEC and DOH) personnel to review.

7.0 Interim Remedial Measure Summary Report

A report of the IRM outcome will be completed, including scaled site plans illustrating sample locations and results. The report will include final volumes of soil removed, post excavation sampling results, soil disposal documentation, and other pertinent details.

Table 1 - Soil Sample Laboratory Results

Dalewood Plaza
Hartsdale, New York
VCP Site V00457-3

Shallow (1 - 5') Soil Sample Summary

Parameter	Sample Identification								NYSDEC Cleanup Objective
	B-1 (4')	B-2 (2')	B-3 (4')	B-4 (4')	B-5 (1')	B-6 (5')	B7 2'	B8 4'	
cis-1,2-Dichloroethylene	ND	ND	12	10	12	ND	ND	ND	300 ug/kg
trans-1,2-Dichloroethylene	ND	ND	ND	ND	ND	ND	ND	ND	300 ug/kg
Tetrachloroethylene	1120	315	526	522	574	ND	ND	616	1400 ug/kg
Trichloroethylene	ND	ND	12	8	12	ND	ND	8	700 ug/kg
Vinyl Chloride	ND	ND	ND	ND	ND	ND	ND	ND	200 ug/kg

Parameter	Sample Identification								NYSDEC Cleanup Objective
	B9 4'	B10 4'	B11 4'	B12 4'	B13 4'	B14 4'	B15 1-5'	B16 1-5'	
trans-1,2-Dichloroethylene	14	ND	ND	ND	11	ND	ND	ND	300 ug/kg
Tetrachloroethylene	1260	78	711	68	14.6	ND	15200	38.4	1400 ug/kg
Trichloroethylene	613	78	22.2	2.5	3.6	ND	31.5	5.2	700 ug/kg
Vinyl Chloride	ND	ND	ND	ND	9.6	ND	ND	ND	200 ug/kg

Parameter	Sample Identification								NYSDEC Cleanup Objective
	B19 5'	B20 5'	B21 3'	B22 4'	B25 5'	B27 4'	B30 2'	B31 5'	
trans-1,2-Dichloroethylene	ND	ND	ND	ND	ND	ND	ND	ND	300 ug/kg
Tetrachloroethylene	5.1	10.4	5.8	3	2.9	ND	31	ND	1400 ug/kg
Trichloroethylene	ND	ND	ND	ND	ND	ND	ND	ND	700 ug/kg
Vinyl Chloride	ND	ND	ND	ND	ND	ND	ND	ND	200 ug/kg

Parameter	Sample Identification								NYSDEC Cleanup Objective
	B101 3'	B102 3'	B103 2'	MW1 0-2'	MW4 0-2'				
trans-1,2-Dichloroethylene	ND	ND	ND	ND	ND				300 ug/kg
Tetrachloroethylene	17.7	1790	241000	120	31000				1400 ug/kg
Trichloroethylene	ND	6.2	1740	ND	124				700 ug/kg
Vinyl Chloride	ND	ND	ND	ND	ND				200 ug/kg

Table 1 - Soil Sample Laboratory Results

Dalewood Plaza
Hartsdale, New York
VCP Site V00457-3

Shallow (1 - 5') Soil Sample Summary

Parameter	Sample Identification								NYSDEC Cleanup Objective
	MW-9	MW-200	MW-201	MW-202	MW-203	MW-204	Out Bot1	Out Bot2	
Depth	7'	7'	6'	6'	6'	7'	15"	15"	
cis-1,2-Dichloroethylene	ND	ND	ND	ND	ND	ND	ND	83	300 ug/kg
Tetrachloroethylene	ND	57	ND	ND	ND	9.2	55000	34000	1400 ug/kg
Trichloroethylene	ND	4	ND	ND	ND	ND	400	62	700 ug/kg
Vinyl Chloride	ND	ND	ND	ND	ND	ND	ND	ND	200 ug/kg

Intermediate (>5 - 10') Soil Sample Summary

Parameter	Sample Identification								NYSDEC Cleanup Objective
	B101 6'	B102 6'		MW1 8-10'	MW3 8-10'	MW4 8-10'			
Tetrachloroethylene	38.3	30.7		ND	ND	45			1400 ug/kg
Trichloroethylene	ND	ND		ND	ND	12.8			700 ug/kg

Deep (>10 - 50') Soil Sample Summary

Parameter	Sample Identification								NYSDEC Cleanup Objective
	MW1 24-26'	MW2 12-14'	MW2 26-28'	MW5 39-41'	MW-5 49-51'				
Tetrachloroethylene	460	ND	ND	ND	ND				1400 ug/kg
Trichloroethylene	ND	ND	ND	ND	ND				700 ug/kg

Notes:
All values are shown in ug/kg (parts per billion).
BDL = Below Detection Limit.
NYSDEC Cleanup Objectives per TAGM HWR-94-4046 (January 24, 1994).Appendix A, Table 1
Shaded fields indicate NYSDEC Allowable Concentration exceedences.

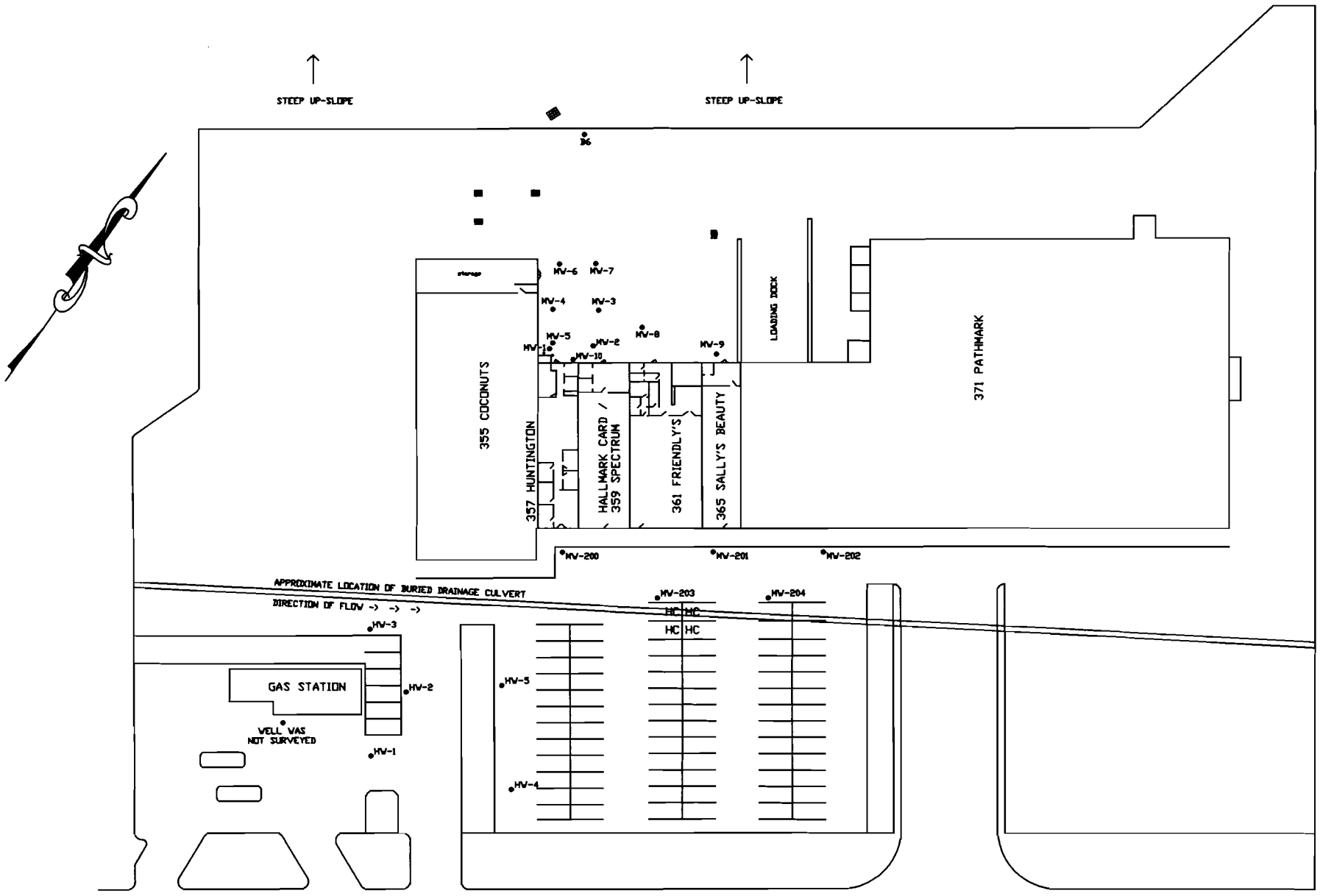


FIGURE 1 – SITE PLAN
DALEWOOD PLAZA
HARTSDALE, NEW YORK

LEGEND:

SCALE:
DATE: 3/3/00
DRAWN BY: PMR
CHECKED BY:

REVISIONS

PROJECT NO.: 2346-F

FILE NAME: 2346F-DALEWOOD PLAZA

KROLL ASSOCIATES, INC.
900 THIRD AVENUE, NEW YORK, NEW YORK 10022

1 OF 1 SHEETS

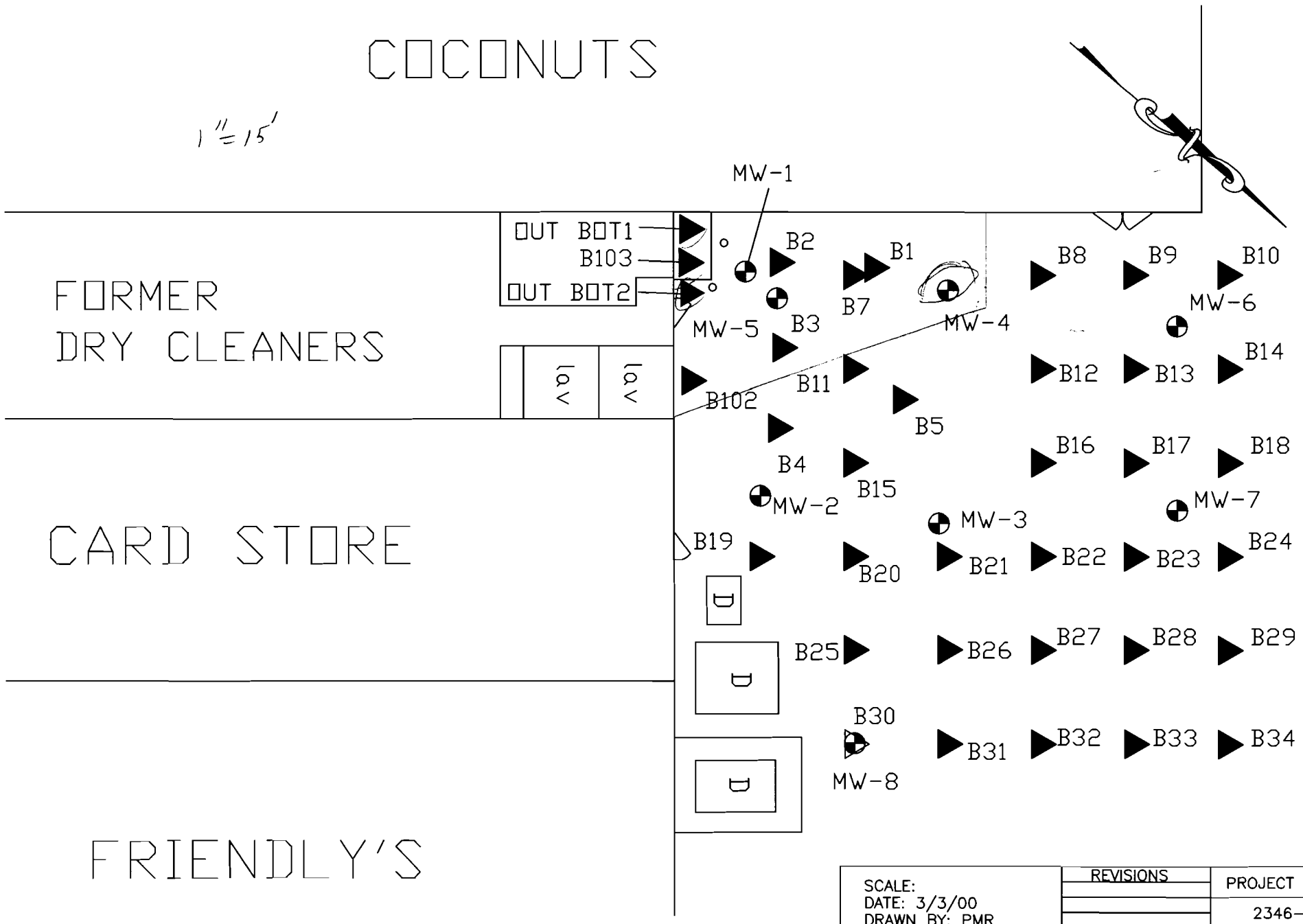


FIGURE 2 – DALEWOOD PLAZA SITE PLAN
WITH BORING AND MONITORING WELL LOCATIONS

SCALE: DATE: 3/3/00 DRAWN BY: PMR CHECKED BY:	REVISIONS	PROJECT NO.: 2346-F FILE NAME: SOIL REAR SHALLOW IRM
KROLL ASSOCIATES, INC. 900 THIRD AVENUE, NEW YORK, NEW YORK 10022		1 OF 1 SHEETS

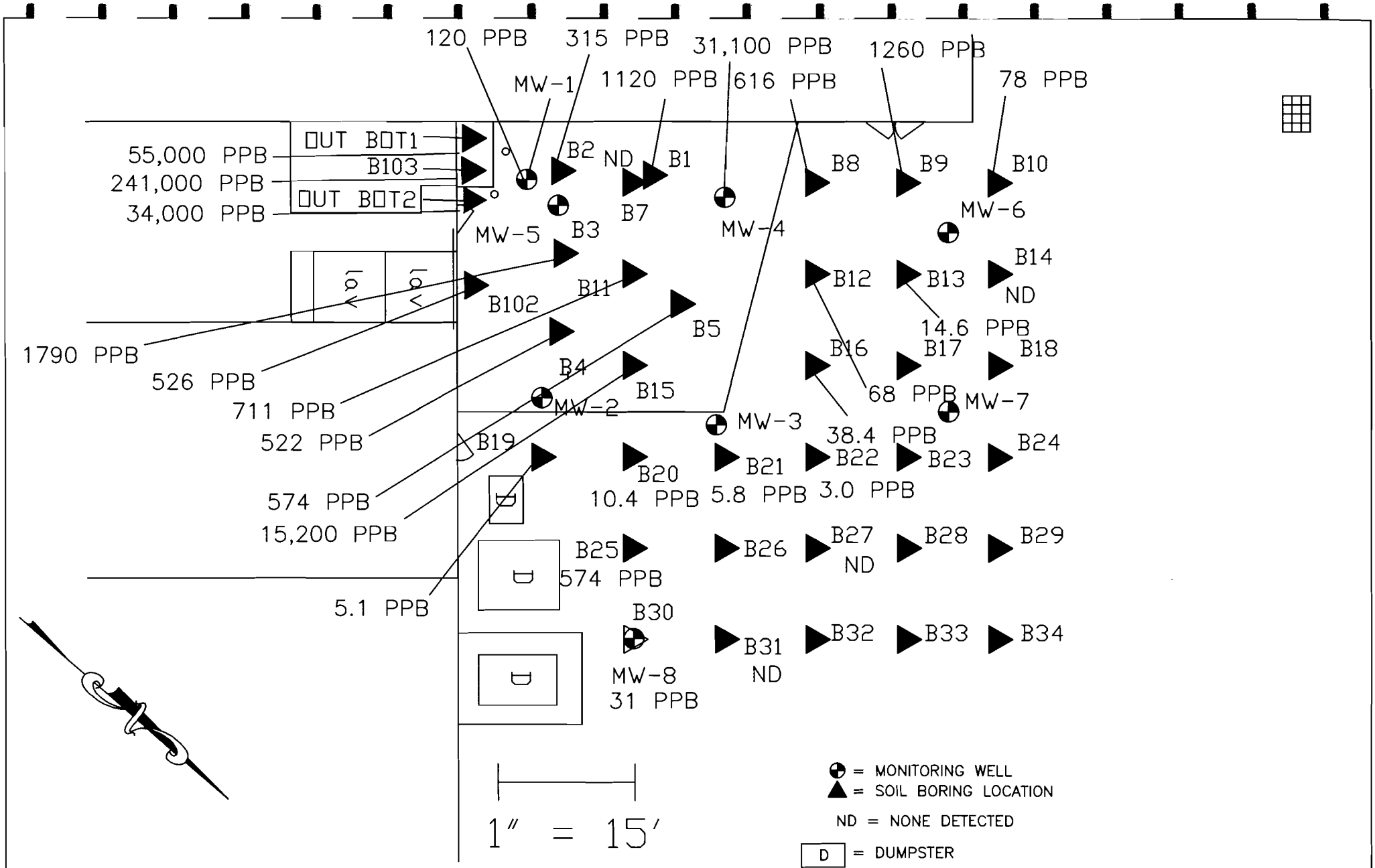


FIGURE 3 – DALEWOOD PLAZA
TETRACHLOROETHYLENE CONCENTRATIONS IN SOIL
(1 TO 5 FEET BELOW GRADE)

SCALE: DATE: 3/3/00 DRAWN BY: PMR CHECKED BY:	REVISIONS	PROJECT NO.: 2346-F FILE NAME: SOIL REAR SHALLOW IRM

KROLL ASSOCIATES, INC.
900 THIRD AVENUE, NEW YORK, NEW YORK 10022

1 OF 1 SHEETS

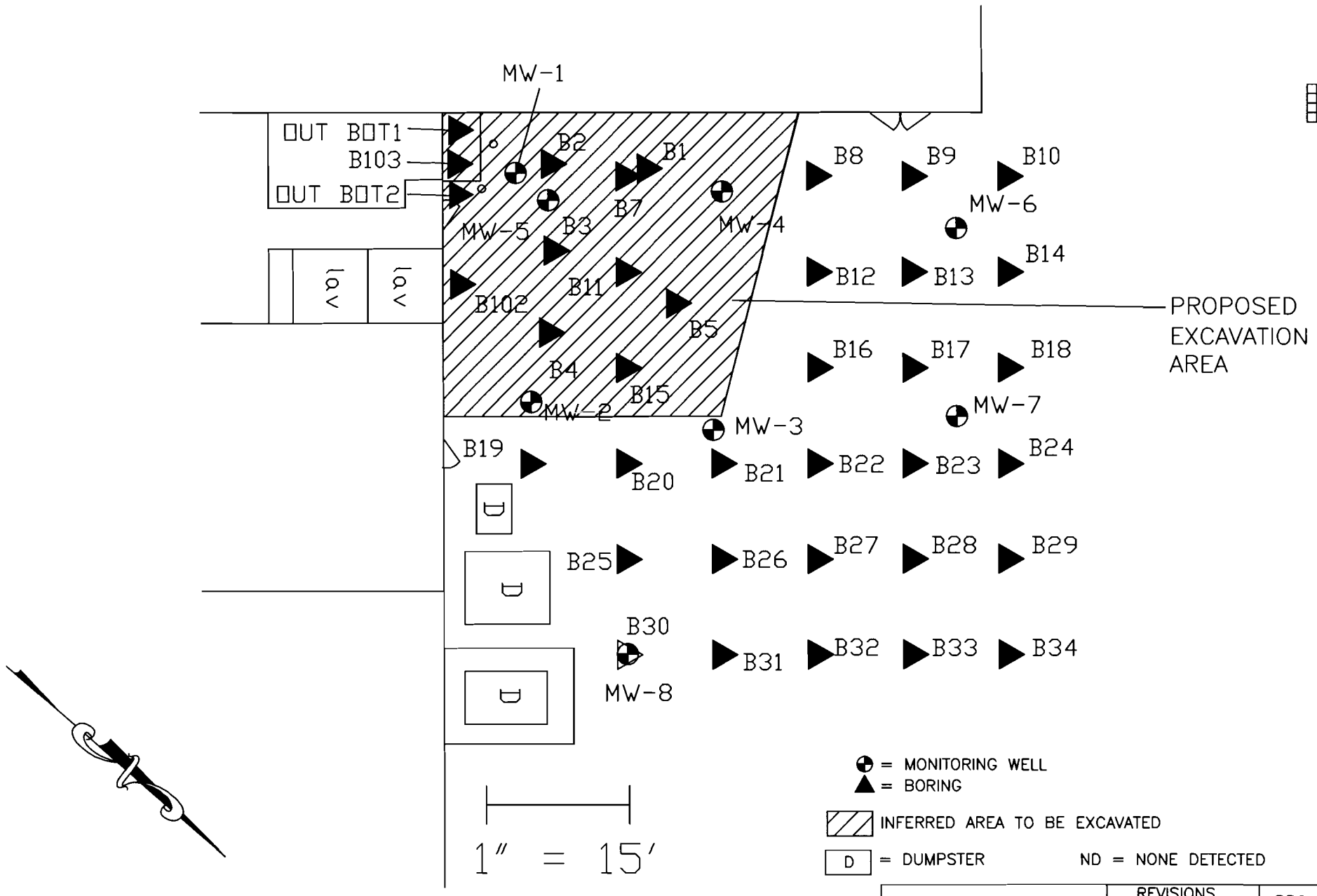


FIGURE 4 – DALEWOOD PLAZA
PROPOSED EXCAVATION IRM – SEPT 2003
EXCAVATION DEPTH TO 5 FEET

SCALE: DATE: 3/3/00 DRAWN BY: PMR CHECKED BY:	REVISIONS	PROJECT NO.: 2346-F FILE NAME: SOIL REAR SHALLOW IRM

KROLL ASSOCIATES, INC.
900 THIRD AVENUE, NEW YORK, NEW YORK 10022

1 OF 1 SHEETS

HEALTH & SAFETY PLAN

INTERIM REMEDIAL MEASURE ACTIVITIES OUTDOOR AREA

DALEWOOD I SHOPPING PLAZA
357 N. Central Avenue
Hartsdale, NY

VCP Site V00457-3

prepared:

September 2003

prepared by:

KROLL Associates, Inc.
900 Third Avenue
New York, NY 10022

receipt acknowledged by:

_____ _____
Signature Date

_____ _____
Printed Name Title

TABLE OF CONTENTS

SITE AND PROJECT LOCATION AND CONTACT DETAIL

PROJECT NAME:	**Dalewood I Shopping Plaza**
JOB SITE ADDRESS:	357 N. Central Avenue, Hartsdale, NY
SITE OWNER:	Heritage SPE, LLC
SITE / OWNER CONTACT:	Joe Cava 516-466-4300

SITE CONTRACTORS

KROLL Associates, Inc. (Project Management)	Neal Drawas (978)443-1833
AARON Environmental (Field Activities)	Robert McCarthy (860)276-1201 / (860)662-1056

SCHEDULE

START DATE: To be Deterrnined - Expected October 2003

DURATION OF SITE ACTIVITIES: 1 Week (Approximate)

SITE DESCRIPTION AND FEATURES: *Summarize below. Include principal operations and unusual features (containers, buildings, dikes, power lines, terrain, etc.)*

The property is an active retail shopping center. The main Site structure consists of a 67,500 square foot concrete block building housing multiple tenants. A parking area is located in the front (east) of the facility and a driveway and vehicle unloading area located in the rear (west) of the facility. The Site is bordered on the east by N. Central Avenue where driveway access is provided into the parking area in two locations. The Site is bordered to the north and south by other retail shopping centers. The Site is bordered to the west by an apartment complex. Underground utilities include electrical, telephone, water, sewer, and natural gas.

OBJECTIVES

Completion of an Interim Remedial Measure to remedy a condition consisting of contaminated soil located in rear (west) side of the property, immediately behind Unit Number 357. The soil is located at a depth of zero to five feet (0 - 5') below grade. Groundwater is anticipated to be present at approximately five feet (5') below grade.

SCOPE OF WORK

1. Remove asphalt surface material and excavate impacted soil.
2. Conduct Community Air Monitoring and Work Zone Monitoring during intrusive activities
3. Collection of post excavation soil samples.
4. Extend / supplement the groundwater treatment piping, as deemed necessary.
5. Backfill excavation.

EMERGENCY CONTACT INFORMATION:

	Phone No.	Non-Emergency
Fire Department	911	(914) 949-2325 (Hartsdale Fire Dept.)
Police Department	911	
Medical	911	(914) 681-0600 (White Plains Hospital)

APPARENT SITE HAZARD LEVEL:

☐ Serious ☑ Moderate ☐ Low ☐ None ☐ Unknown

SURROUNDING POPULATION:

☑ Residential ☐ Industrial ☐ Rural

☐ Urban ☑ Commercial ☐ Other

WASTE TYPES:

☐ Liquid ☑ Solid ☐ Sludge ☑ Vapor ☐ Unknown ☐ Other

WASTE CHARACTERISTICS: *(check as many as applicable)*

☐ Corrosive ☐ Flammable ☐ Radioactive

☑ Toxic ☐ Volatile ☐ Unknown

☐ Inert ☐ Reactive ☐ Other

PRINCIPAL DISPOSAL PRACTICES AND METHODS:

Excavated soil will be placed directly into dump trucks prepared for transport off-site on the same day. The dump trucks will be lined and covered in order to limit vapor emissions and potential for rainwater collection and runoff.

HAZARDOUS MATERIAL SUMMARY:

Material Safety Data Sheets (MSDSs) and a chemical hazard summary for each compound or chemical listed below are attached in the Appendix section of this plan. The listed chemicals have been identified at the Site during previous investigations.

Chemicals:

Tetrachloroethylene
Trichloroethylene
Vinyl chloride

HAZARDS OF CONCERN:

☐ Heat Stress	☑ Noise	☐ Explosion
☐ Flammable	☐ Oxygen Deficient	☐ Combustible
☐ Biological	☐ Inorganic Chemicals	☐ Radiological
☑ Organic Chemical	☑ Other - Physical Hazards (see justification)	

FIRE / EXPLOSION POTENTIAL:

☐ High ☐ Medium ☑ Low ☐ Unknown

OVERALL HAZARD EVALUATION:

☐ High ☐ Medium ☑ Low ☐ Unknown

JUSTIFICATION:

Hazards include: the potential release of dry cleaning related compounds to the environment; worker exposure to contaminated soil or vapors. Exposure of field personnel to on-site contaminants shall not exceed OSHA limits and will be maintained as low as reasonably achievable.

Physical and air emission hazards due to operation of equipment will also be present. This condition will be monitored with appropriate practices and metering devices.

FIELD ACTIVITIES COVERED UNDER THIS PLAN:

		TYPE	LEVEL OF PROTECTION Primary	Contingency
1.	Soil Excavation and Backfill	Intrusive	A B C **D**	A B **C** D
2.	Groundwater Piping Installation	Intrusive	A B C **D**	A B **C** D
3.	Air Monitoring / Soil Sampling	Intrusive	A B C **D**	A B **C** D

PERSONNEL PROTECTIVE EQUIPMENT (PPE)

- Equipment Staging and Preparation & Other Non Intrusive Site Work:

  All operations required for equipment staging and preparation will be performed in Level D PPE. Level D will consist of the following:

  - Hard hat and safety glasses
  - Routine work clothing (i.e., coveralls)
  - Disposable work gloves
  - Safety shoes

- Excavation and handling of contaminated soil:

  The removal of contaminated soils will be performed in Level D PPE. Level D will consist of the following:

  - Hard hat and safety glasses
  - Disposable tyvek coveralls over routing work clothing
  - Disposable latex / PVC outer gloves
  - Safety shoes

- If determined to be necessary, Level C will consist of the following:

- Disposable Tyvek coveralls over routine work clothing
- Disposable latex / PVC outer gloves
- Safety shoes / latex outer boots
- Full face or half face (w/safety glasses) air purifying respirator equipped with Organic Vapor / Acid gas / toxic particulate filter Cartridges or canisters.

KEY PERSONNEL

General: The Project Manager will identify responsible staff members to supervise the administration of the project and the site specific health and safety procedures.

RESPONSIBILITY	NAME	TASK
Sr. Project Manager	Neal Drawas	Oversee & coordinate all technical aspects of the project.
Project / Safety Manager	Robert McCarthy	Review project scope of work and assure that all staff understand and comply with the safety plan. Enforce all aspects of the safety plan and identify new hazards.

SAFETY BRIEFING

A site safety briefing will be held on-site prior to initiating operations. Staff members and contractors will attend this briefing. Immediately after the discovery of real or potential hazards which were not anticipated, a safety briefing will be held. Prior to any new or non-scheduled operation, a safety briefing will be held.

The safety briefing will present the following information:

- The hazards workers face and personnel responsibility
- The hazard monitoring techniques to be used
- Personnel protective equipment requirements
- Personnel protective equipment use.
- Decontamination procedures
- Safe operation procedures for equipment
- Response to injuries, property damage / fires

WORK ZONES

During all project operations, a series of work zones will be established. These zones include a "Hot Zone" or area of work where contamination is probable, a "Decontamination Zone" where personnel and equipment will be decontaminated after work evolutions, and a "Cool Zone" or staging area where clean equipment can be staged and site workers can rest.

SAFETY TRAINING / MEDICAL SURVEILLANCE

All employee's must have training applicable to their job assignments prior to beginning site work. At a minimum all workers must have the minimum training as required by applicable OSHA regulations.

GENERAL SITE SAFETY REQUIREMENTS

- All persons entering and / or working in the exclusion zone on the Site shall read, sign and become familiar with this Health & Safety Plan. The master copy will be available on-site through the site safety manager.
- No staff member or subcontractor may be allowed in the exclusion zone on the Site without the prior knowledge and consent of the site safety manager.
- There will be no intrusive activities conducted on-site without sufficient backup personnel. At a minimum, two persons must be present at the site. Visual, voice or radio communication will be maintained at all times.
- All contractor or subcontractor personnel shall bring to the attention of the site safety manager or project manager any unsafe condition or practice associated with the site activities that they are unable to correct themselves.
- There will be no smoking, eating, chewing gum, or drinking in the exclusion area.
- Hands shall be thoroughly cleaned prior to smoking, eating or other activities outside the exclusion zone.
- On-site workers must avoid unnecessary contamination (i.e., walking through known or suspected "hot" zones or contaminated puddles, kneeling or sitting on the ground, leaning against potentially contaminated equipment, etc).
- All accidents and/or injuries shall be immediately reported to the site safety manager.

MONITORING EQUIPMENT

General: A Community Air Monitoring Plan (CAMP) will be followed as described in the Interim Remedial Measure Work Plan. The intent of the CAMP is to provide a measure of protection for the downwind community (i.e. off-site receptors including residences and businesses and on-site workers not directly involved with the subject work activities) and is not intended for use in establishing action levels for worker respiratory protection. However, the data collected and instruments utilized as part of the CAMP will be utilized as part of the on-site evaluation.

Site personnel will monitor the ambient air for total organic vapor concentrations and particulate matter concentrations during on-site operations. The site Safety Manager will establish air monitoring frequency based on type of operations being performed. Work zone monitoring will include a VOC testing as well as testing for vehicle emission products. Air monitoring will be performed utilizing:

1. Photo-Ionization Detector (PID) with an electron volt range able to detect VOCs (Volatile Organic Compounds).

2. Four gas multi meter for oxygen (O2), carbon monoxide (CO), lower explosion limit (LEL), and hydrogen sulfide (H2S). The O2 and CO levels will be closely monitored during indoor vehicle operations.

3. The particulate monitoring shall be performed using real time monitoring equipment capable of measuring particulate matter less than 10 micrometers in size (PM-10) and capable of integrating over a period of 15 minutes (or less) for comparison to the airborne particulate action level.

All monitoring equipment will be operated, maintained and calibrated according to the manufacturers equipment operations manual.

MONITORING CONTINGENCIES

1. Any consistent "continuous reading" (greater than 5 ppm) in the breathing zone of:

   Any detectable odor through 500 ppm (parts per million) of VOCs
   will require site workers to don Level C protective equipment. Level C will consist of the following:

   - Hard hat
   - Disposable tyvek coveralls over routine work clothing
   - Disposable latex / vinyl gloves
   - Safety shoes
   - Full face or half face air purifying respirator equipped with Organic Vapor / Acid gas / toxic particulate filter cartridges or canisters.

2. Any consistent "continuous reading" detection in the breathing zone of:

500 ppm or greater of VOCs will require site workers to egress from the site. The site safety officer will be notified and will then determine the need for additional PPE, additional air monitoring and/or change in work procedures.

DECONTAMINATION

Personnel:

Personnel decontamination will consist of good working practice, maximum use of disposable clothing, personal hygiene and a field decontamination station to be used at the completion of each work evolution. Because the likeliest point of personnel contact with contaminants will be the feet and hands, the field decontamination will involve the following steps:

1. Disposable outer boots will be removed and discarded in a plastic trash bag.
2. Disposable outer gloves will be removed and discarded in a plastic trash bag
3. Disposable coveralls will be removed and disposed of in a plastic trash bag.
4. Inner gloves will be removed and disposed of in a plastic trash bag.

If necessary, a personnel decontamination station will be positioned at a location just outside of the contaminated area and in the clean zone. The components of the decontamination station will consist of:

- Long handle scrub brushes
- Metal wash basins large enough to step into
- Hand pressurized sprayer
- Plastic sheeting
- Plastic tubs or bowls for washing hands
- Plastic trash cans with trash liners
- Table
- First aid kit
- Portable eye wash
- Mild soap solution
- 5 gallon water container
- Class A,B,C fire extinguisher

Equipment:

All equipment shall be decontaminated before leaving the site. heavy equipment (truck, backhoe, drilling rigs, etc) directly involved in on-site activities shall be either steam cleaned then scrubbed with a water and mild soap solution or washed under high pressure water then scrubbed with a water and mild soap solution before departing the site. Light equipment (shovels, pails, hand tools) shall be scrubbed with a mild soap and water solution followed by a rinse before being removed from the site. Field decontamination of equipment will be performed by the following steps:

- Physically remove packed dirt and grit with wire brushes
- Steam clean with water / soap solution
- Rinse with high pressure water
- Allow to air dry before departing the site.

CONSTRUCTION DERIVED WASTE

Solid Waste:

All solid waste generated on-site such as disposable coveralls, gloves, soda cans, packing boxes, and general trash will be treated as "non-hazardous". This waste will be disposed of as a municipal trash.

Liquid Waste:

All liquid waste from decontamination rinse water will be collected in drums pending laboratory results.

INJURIES / EMERGENCIES

Injury:

If an injury should occur, the victim shall be removed from potentially contaminated areas if possible, immobilized if necessary, and transported to the local hospital for treatment. If the victim has received a potential spinal injury, they should be immobilized if possible and transported to the local hospital by a trained ambulance "EMS" crew. Minor injuries such as small cuts and lacerations can be treated on-site by qualified first aid trained workers. All potentially contaminated clothing should be removed from an injured worker on-site prior to transport for medical treatment.

Refer to Figure A for Hospital Location maps.

Fire:

In the event of fire, the following steps should be taken:

1. Attempt to extinguish or control fire with a Class A,B,C, fire extinguisher.
2. Notify local fire department
3. Remove vehicles from area
4. Remove flammable materials such as fuels and solvents from area
5. Egress from site to an upwind position
6. Perform a personnel count "verification"
7. Wait for fire fighting forces

SITE SPECIFIC PROCEDURES

Any site specific safety features will be determined by the safety manager during each briefing.

ATTACHED MAPS

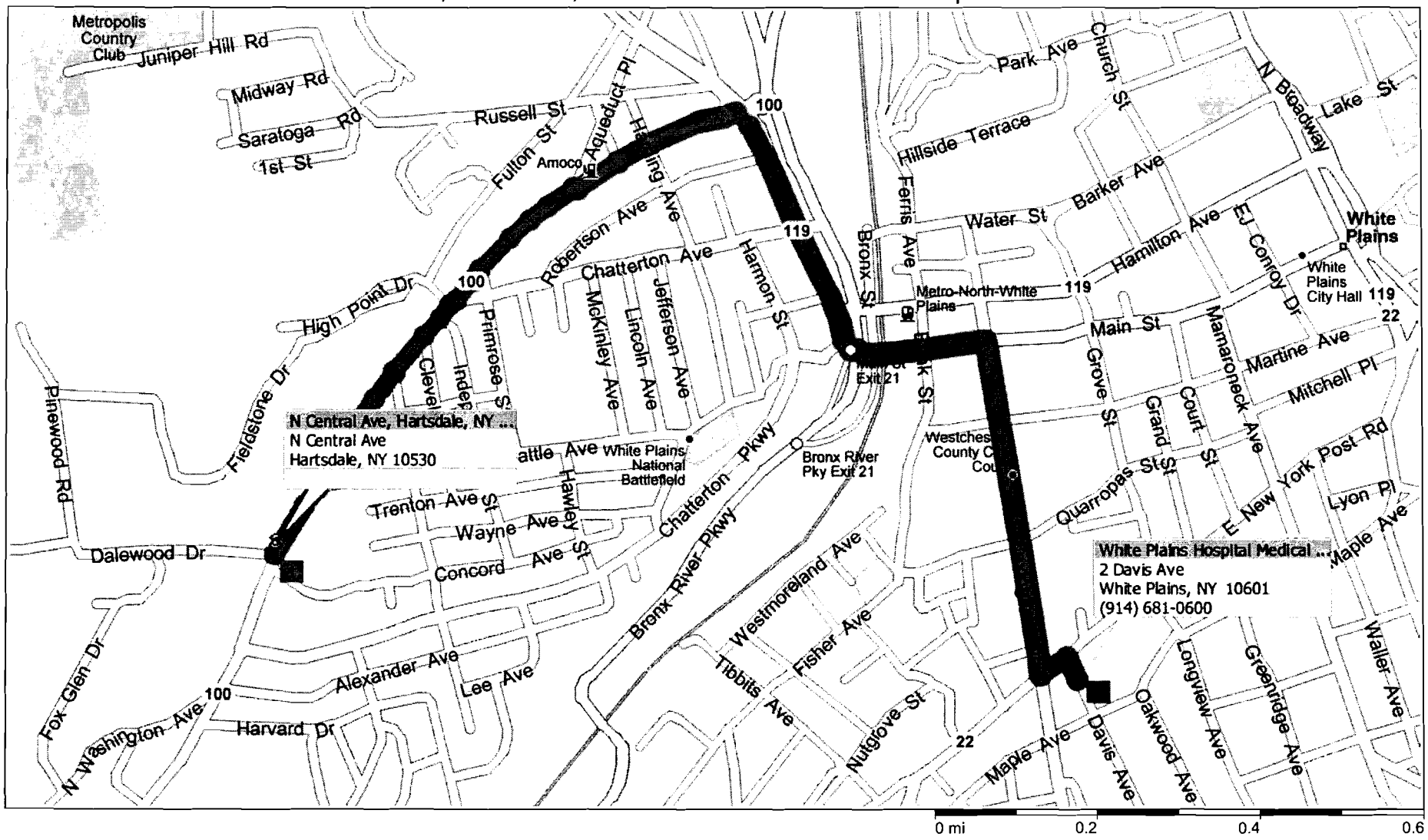
Route to nearest hospital

Site Map

FIGURE A

Route to Nearest Hospital

N Central Ave, Hartsdale, NY 10530 to White Plains Hospital Medical Ctr



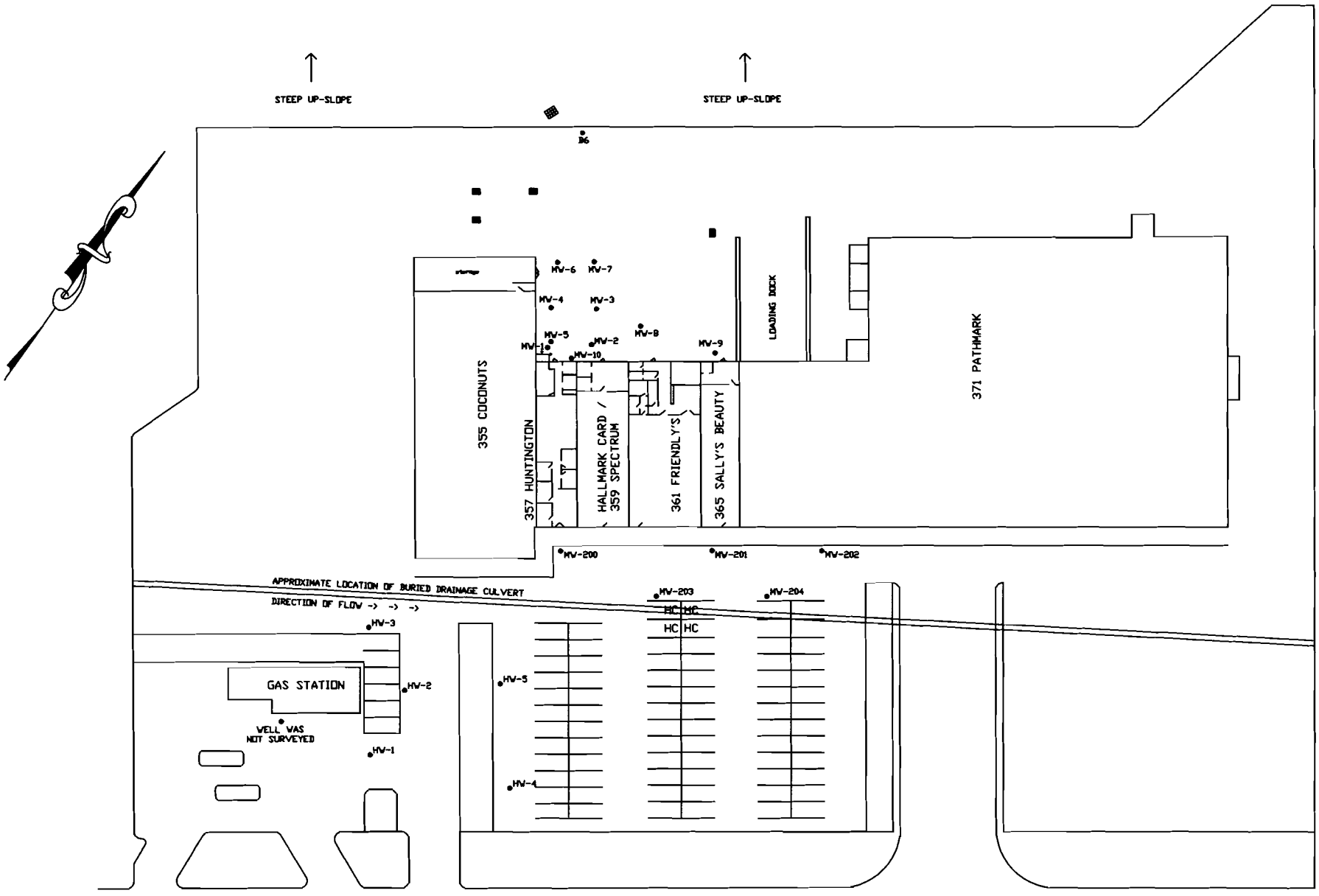


FIGURE 1 – SITE PLAN
DALEWOOD PLAZA
HARTSDALE, NEW YORK

LEGEND:

SCALE:
DATE: 3/3/00
DRAWN BY: PMR
CHECKED BY:

REVISIONS

PROJECT NO.: 2346-F

FILE NAME: 2346F-DALEWOOD PLAZA

KROLL ASSOCIATES, INC.
900 THIRD AVENUE, NEW YORK, NEW YORK 10022

1 OF 1 SHEETS

APPENDIX

Material Safety Data Sheets

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Material Safety Data Sheets

Division of Facilities Services

DOD Hazardous Material Information (ANSI Format)
For Cornell University Convenience Only

TETRACHLOROETHYLENE

Section 1 - Product and Company Identification
TETRACHLOROETHYLENE

Product Identification: TETRACHLOROETHYLENE
Date of MSDS: 04/06/1989 **Technical Review Date:** 03/03/1993
FSC: 6750 **NIIN:** 01-308-9381
Submitter: D DG
Status Code: C
MFN: 01
Article: N
Kit Part: N

Manufacturer's Information

Manufacturer's Name: MALLINCKRODT INC. SCIENCE PRODUCTS DIVISION
Post Office Box: M
Manufacturer's Address1: PARIS BYPASS
Manufacturer's Address2: PARIS, KY 40361
Manufacturer's Country: US
General Information Telephone: 314-982-5000/606-987-7000
Emergency Telephone: 314-982-5000
Emergency Telephone: 314-982-5000
MSDS Preparer's Name: N/P
Proprietary: N
Reviewed: Y
Published: Y

CAGE: 62910
Special Project Code: N

Item Description

Item Name: TETRACHLOROETHYLENE,PHOTOGRAPHIC
Item Manager: S9G
Specification Number: NK
Type/Grade/Class: NK
Unit of Issue: BT **Quantitative Expression:** NK
Unit of Issue Quantity: 4 KG
Type of Container: BOTTLE

Contractor Information

Contractor's Name: MALLINCKRODT INC., SCIENCE PRODUCTS DIV
Post Office Box: M
Contractor's Address1: UNKNOWN
Contractor's Address2: PARIS, KY 40361-0315
Contractor's Telephone: 314-982-5000
Contractor's CAGE: 1BF21

Contractor Information

Contractor's Name: MALLINCKRODT SPECIALTY CHEMICALS CO
Contractor's Address1: 222 RED SCHOOL LANE
Contractor's Address2: PHILLIPSBURG, NJ 08865
Contractor's Telephone: 908-859-2151
Contractor's CAGE: 62910

Section 2 - Compositon/Information on Ingredients
TETRACHLOROETHYLENE

Ingredient Name: PERCHLOROETHYLENE (TETRACHLOROETHYLENE) (SARA III)
Ingredient CAS Number: 127-18-4 **Ingredient CAS Code:** M
RTECS Number: KX3850000 **RTECS Code:** M
=WT: =WT Code:
=Volume: =Volume Code:
>WT: >WT Code:
>Volume: >Volume Code:
<WT: <WT Code:
<Volume: <Volume Code:
% Low WT: % Low WT Code:
% High WT: % High WT Code:
% Low Volume: % Low Volume Code:
% High Volume: % High Volume Code:
% Text: 100
% Enviromental Weight:
Other REC Limits: NONE RECOMMENDED
OSHA PEL: 100 PPM **OSHA PEL Code:** M
OSHA STEL: OSHA STEL Code:
ACGIH TLV: 25PPM/100,A3 STEL;94 **ACGIH TLV Code:** M
ACGIH STEL: N/P **ACGIH STEL Code:**
EPA Reporting Quantity: 100 LBS
DOT Reporting Quantity: 100 LBS
Ozone Depleting Chemical: N

Section 3 - Hazards Identification, Including Emergency Overview
TETRACHLOROETHYLENE

Health Hazards Acute & Chronic: ACUTE: EYE, SKIN AND RESPIRATORY TRACT IRRITATION, CENTRAL NERVOUS SYSTEM EFFECTS. HARMFUL IF SWALLOWED. CHRONIC: MAY CAUSE LIVER DAMAGE. SUSPECTED CARCINOGEN BY NTP.

Signs & Symptoms of Overexposure:
EYES: IRRITATION. SKIN: IRRITATION. INHALATION: RESPIRATORY TRACT IRRITATION, HEADACHE, DIZZINESS. INGESTION: GASTROINTESTINAL IRRITATION, NAUSEA, HEADACHE, DIZZINESS.

Medical Conditions Aggravated by Exposure:
INDIVIDUALS WITH A HISTORY OF EYE, SKIN AND RESPIRATORY DISORDERS MAY BE AT INCREASED RISK FROM EXPOSURE.

LD50 LC50 Mixture: LD 50 ORAL RAT IS UNKNOWN

Route of Entry Indicators:
Inhalation: YES
Skin: YES
Ingestion: NO

Carcenogenicity Indicators
NTP: YES
IARC: NO
OSHA: NO

Carcinogenicity Explanation: TETRACHLOROETHYLENE IS A SUSPECTED CARCINOGEN BY NTP.

Section 4 - First Aid Measures
TETRACHLOROETHYLENE

First Aid:
EYES: FLUSH WITH PLENTY OF WATER FOR AT LEAST 15 MINUTES. SEE DOCTOR. SKIN: WASH WITH SOAP AND WATER WHILE REMOVING CONTAMINATED CLOTHING AND SHOES. SEE DOCTOR. INHALATION: REMOVE VICTIM TO FRESH AIR. GIVE OXYGEN/CPR IF NEEDED. SEE DOCTOR.INGESTION: GIVE 2 GLASSES OF WATER OR MILK. INDUCE VOMITING. SEE DOCTOR. NOTHING BY MOUTH IF UNCONSCIOUS.

Section 5 - Fire Fighting Measures
TETRACHLOROETHYLENE

Fire Fighting Procedures:
WEAR FIRE FIGHTING PROTECTIVE EQUIPMENT AND A FULL FACED SELF CONTAINED BREATHING APPARATUS. COOL FIRE EXPOSED CONTAINERS WITH WATER SPRAY.
Unusual Fire or Explosion Hazard:
COMBUSTION OR HEAT OF FIRE MAY PRODUCE HAZARDOUS DECOMPOSITION PRODUCTS SUCH AS PHOSGENE (HIGHLY TOXIC) AND HYDROGEN CHLORIDE (CORROSIVE).
Extinguishing Media:
NON-FLAMMABLE. USE EXTINGUISHING MEDIA APPROPIATE FOR SURROUNDING FIRE.
Flash Point: Flash Point Text: NOT APPLICABLE

Autoignition Temperature:
Autoignition Temperature Text: N/R
Lower Limit(s): N/R
Upper Limit(s): N/R

Section 6 - Accidental Release Measures
TETRACHLOROETHYLENE

Spill Release Procedures:
REMOVE PERSONNEL. VENTILATE AREA. WEAR PROTECTIVE CLOTHING AND EQUIPMENT. ABSORB IN INERT MATERIAL AND PLACE IN APPROPIATE DISPOSAL CONTAINER AND COVER. DO NOT FLUSH TO SEWER.

Section 7 - Handling and Storage
TETRACHLOROETHYLENE

Handling and Storage Precautions:

Other Precautions:

Section 8 - Exposure Controls & Personal Protection
TETRACHLOROETHYLENE

Repiratory Protection:
NONE NORMALLY REQUIRED WITH ADEQUATE VENTILATION. NIOSH/MSHA-APPROVED RESPIRATOR OR SCBA AS APPROPIATE FOR EXPOSURE OF CONCERN.
Ventilation:
MECHANICAL (GENERAL) VENTILATION OR LOCAL EXHAUST VENTILATION TO KEEP EXPOSURE LEVELS BELOW PEL.
Protective Gloves:
RUBBER GLOVES.
Eye Protection: CHEMICAL SAFETY GOGGLES.
Other Protective Equipment: PROTECTIVE CLOTHING AS REQUIRED TO MINIMIZE EXPOSURE FROM PROLONGED OR REPEATED CONTACT. EYE BATH AND SAFETY SHOWER.
Work Hygenic Practices: WASH THOROUGHLY AFTER HANDLING AND BEFORE EATING. LAUNDER CONTAMINATED CLOTHING BEFORE REUSE.
Supplemental Health & Safety Information: NONE.

Section 9 - Physical & Chemical Properties
TETRACHLOROETHYLENE

HCC: T4
NRC/State License Number: N/R
Net Property Weight for Ammo: N/R
Boiling Point: Boiling Point Text: 246F,119C
Melting/Freezing Point: Melting/Freezing Text: -8F,-22C
Decomposition Point: Decomposition Text: UNKNOWN
Vapor Pressure: 16 **Vapor Density:** 5.83
Percent Volatile Organic Content:
Specific Gravity: 1.63
Volatile Organic Content Pounds per Gallon:
pH: N/K
Volatile Organic Content Grams per Liter:
Viscosity: UNKNOWN
Evaporation Weight and Reference: 0.27 (CCL4 = 1)
Solubility in Water: NEGLIGIBLE
Appearance and Odor: CLEAR, COLORLESS LIQUID. ETHEREAL ODOR.
Percent Volatiles by Volume: N/K
Corrosion Rate: UNKNOWN

Section 10 - Stability & Reactivity Data
TETRACHLOROETHYLENE

Stability Indicator: YES
Materials to Avoid:
STRONG OXIDIZING AGENTS, STRONG ALKALIES, ESPECIALLY NAOH, KOH, FINELY DIVIDED METALS, ESPECIALLY ZINC.
Stability Condition to Avoid:
HIGH HEAT, OPEN FLAMES.
Hazardous Decomposition Products:
CARBON MONOXIDE, CARBON DIOXIDE, INCOMPLETELY BURNED CARBON PRODUCTS.
Hazardous Polymerization Indicator: NO
Conditions to Avoid Polymerization:
NOT APPLICABLE

Section 11 - Toxicological Information
TETRACHLOROETHYLENE

None Listed

Section 12 - Ecological Information
TETRACHLOROETHYLENE

Ecological Information:
N/P

Section 13 - Disposal Considerations
TETRACHLOROETHYLENE

Waste Disposal Methods:
CONTACT YOUR LOCAL ENVIRONMENTAL OFFICER. DISPOSE OF IN ACCORDANCE WITH ALL FEDERAL, STATE AND LOCAL REGULATIONS. MANUFACTURER RECOMMENDS BURNING IN AN APPROVED INCINERATOR WITH APPROPIATE SCRUBBERS.

Section 14 - MSDS Transport Information
TETRACHLOROETHYLENE

Transport Information:
N/P

Section 15 - Regulatory Information
TETRACHLOROETHYLENE

SARA Title III Information:
N/P
Federal Regulatory Information:
N/P
State Regulatory Information:
N/P

Section 16 - Other Information
TETRACHLOROETHYLENE

Other Information:
N/P

Department of Transportation Information

DOT Proper Shipping Name: TETRACHLOROETHYLENE
DOT PSN Code: NYB
Symbols:
DOT PSN Modifier:
Hazard Class: 6.1
UN ID Number: UN1897
DOT Packaging Group: III
Label: KEEP AWAY FROM FOOD
Special Provision(s): N36,T1
Packaging Exception: 153
Non Bulk Packaging: 203
Bulk Packaging: 241
Maximimum Quanity in Passenger Area: 60 L
Maximimum Quanity in Cargo Area: 220 L
Stow in Vessel Requirements: A
Requirements Water/Sp/Other: 40

IMO Detail Information

IMO Proper Shipping Name: TETRACHLOROETHYLENE
IMO PSN Code: OJV
IMO PSN Modifier: P
IMDG Page Number: 6264
UN Number: 1897
UN Hazard Class: 6.1
IMO Packaging Group: III
Subsidiary Risk Label: -
EMS Number: 6.1-02
Medical First Aid Guide Number: 340

IATA Detail Information

IATA Proper Shipping Name: TETRACHLOROETHYLENE
IATA PSN Code: XOW
IATA PSN Modifier:
IATA UN Id Number: 1897
IATA UN Class: 6.1
Subsidiary Risk Class:
UN Packaging Group: III

IATA Label: TOXIC
Packaging Note for Passengers: 605
Maximum Quantity for Passengers: 60L
Packaging Note for Cargo: 612
Maximum Quantity for Cargo: 220L
Exceptions:

AFI Detail Information

AFI Proper Shipping Name: TETRACHLOROETHYLENE
AFI Symbols:
AFI PSN Code: XOW
AFI PSN Modifier:
AFI UN Id Number: UN1897
AFI Hazard Class: 6.1
AFI Packing Group: III
AFI Label:
Special Provisions: P5, N36
Back Pack Reference: A10.5

HAZCOM Label Information

Product Identification: TETRACHLOROETHYLENE
CAGE: 62910
Assigned Individual: N
Company Name: MALLINCKRODT SPECIALTY CHEMICALS CO
Company PO Box:
Company Street Address1: 222 RED SCHOOL LANE
Company Street Address2: PHILLIPSBURG, NJ 08865 US
Health Emergency Telephone: 314-982-5000
Label Required Indicator: Y
Date Label Reviewed: 03/03/1993
Status Code: C
Manufacturer's Label Number: N/R
Date of Label: 03/03/1993
Year Procured: N/K
Organization Code: F
Chronic Hazard Indicator: Y
Eye Protection Indicator: YES
Skin Protection Indicator: YES
Respiratory Protection Indicator: N/P
Signal Word: WARNING
Health Hazard: Moderate
Contact Hazard: Slight
Fire Hazard: None
Reactivity Hazard: None

8/8/2002 6:14:46 AM

CORNELL

Material Safety Data Sheets

Division of Facilities Services

DOD Hazardous Material Information (ANSI Format)
For Cornell University Convenience Only

TRICHLOROETHYLENE

Section 1 - Product and Company Identification
TRICHLOROETHYLENE

Product Identification: TRICHLOROETHYLENE
Date of MSDS: 01/01/1985 **Technical Review Date:** 01/10/1983
FSC: 6810 **NIIN:** 00-285-4318
Submitter: D DG
Status Code: C
MFN: 01
Article: N
Kit Part: N

Manufacturer's Information

Manufacturer's Name: J.T.BAKER CHEM. CO,CHEM COMMOD AGY,INC-DIST
Manufacturer's Address1: 222 RED SCHOOL LANE
Manufacturer's Address2: PHILLIPSBURG, NJ 08865-2219
Manufacturer's Country: US
General Information Telephone: 201-859-2151
Emergency Telephone: 201-859-2151
Emergency Telephone: 201-859-2151
MSDS Preparer's Name: N/P
Proprietary: N
Reviewed: Y
Published: Y
CAGE: KO749

Special Project Code: N

Item Description

Item Name: TRICHLOROETHYLENE,ACS
Item Manager: S9G
Specification Number: O-C-265
Type/Grade/Class: NK
Unit of Issue: GL
Unit of Issue Quantity: 6
Type of Container: BOTTLE

Contractor Information

Contractor's Name: J.T.BAKER CHEM. (CHEM COMMODITIES-DIST)
Contractor's Address1: 222 RED SCHOOL LANE
Contractor's Address2: PHILLIPSBURG, NJ 08865-2219
Contractor's Telephone: 201-859-2151
Contractor's CAGE: KO749

Contractor Information

Contractor's Name: MALLINCKRODT BAKER, INC. (FORMERLY J.T. BAKER INC)
Contractor's Address1: 222 RED SCHOOL LANE
Contractor's Address2: PHILLIPSBURG, NJ 08865-2219
Contractor's Telephone: 800-582-2537
Contractor's CAGE: 70829

Section 2 - Compositon/Information on Ingredients
TRICHLOROETHYLENE

Ingredient Name: TRICHLOROETHYLENE (SARA III)
Ingredient CAS Number: 79-01-6 **Ingredient CAS Code:** M
RTECS Number: KX4550000 **RTECS Code:** M
=WT: =WT Code:
=Volume: =Volume Code:
>WT: >WT Code:
>Volume: >Volume Code:
<WT: <WT Code:
<Volume: <Volume Code:
% Low WT: % Low WT Code:
% High WT: % High WT Code:
% Low Volume: % Low Volume Code:
% High Volume: % High Volume Code:
% Text: 100
% Enviromental Weight:
Other REC Limits: N/P
OSHA PEL: 100 PPM/100 STEL **OSHA PEL Code:** M
OSHA STEL: OSHA STEL Code:
ACGIH TLV: 50 PPM/100,A5STEL;93 **ACGIH TLV Code:** M
ACGIH STEL: N/P **ACGIH STEL Code:**
EPA Reporting Quantity: 100 LBS
DOT Reporting Quantity: 100 LBS
Ozone Depleting Chemical: N

Section 3 - Hazards Identification, Including Emergency Overview
TRICHLOROETHYLENE

Health Hazards Acute & Chronic: N/P

Signs & Symptoms of Overexposure:
VAPOR HARMFUL,DIZZY,DROWSY,HIGH CONCENTRATIONS OF HALOCARBONS CAN CAUSE ASPHYXIATION,EVEN DEATH

Medical Conditions Aggravated by Exposure:
N/P

LD50 LC50 Mixture: N/P

Route of Entry Indicators:
Inhalation: N/P
Skin: N/P
Ingestion: N/P

Carcenogenicity Indicators
NTP: N/P
IARC: N/P
OSHA: N/P

Carcinogenicity Explanation: N/P

Section 4 - First Aid Measures
TRICHLOROETHYLENE

First Aid:
INHALED:REMOVE TO FRESH AIR.GIVE CPR/OXYGEN IF NECESSARY.KEEP PATIENT WARM & QUIET.MAINTAIN NORMAL BODY TEMP.EYE CONTACT:FLUSH WITH WATER 15 MIN.SKIN:FLUSH W.WATER.REMOVE CONTAMINATED CLOTHES.SAFEST T O DESTROY LEATHER THAT IS CONTAMINATED.

Section 5 - Fire Fighting Measures
TRICHLOROETHYLENE

Fire Fighting Procedures:
WEAR SELF-CNTND BRTHG APP IN FIRE.COOL CONTAINERS WITH WATER
Unusual Fire or Explosion Hazard:
HYDROGEN CHLORIDE-GAS,PHOSGENE,OTHER TOXIC CPDS MAY BE GENERATED IF INVOLVED IN FIRE.
Extinguishing Media:
PRESENC IN FIRE DOES NOT HINDER USE OF ANY ST ANDARD MEDIUM.
Flash Point: Flash Point Text: N/A

Autoignition Temperature:
Autoignition Temperature Text: N/A
Lower Limit(s): N/A
Upper Limit(s): N/A

Section 6 - Accidental Release Measures
TRICHLOROETHYLENE

Spill Release Procedures:
DIKE LARGE SPILLS FOR LATER DISPOSAL.SMALL SPILLS.RECOVER OR ABSORB & RECOVER INTO WASTE CONTAINERS.FLUSH RESIDUES WITH WATER.DO NOT FLUSH TO SEWERS OR WATER WAYS.

Section 7 - Handling and Storage
TRICHLOROETHYLENE

Handling and Storage Precautions:

Other Precautions:

Section 8 - Exposure Controls & Personal Protection
TRICHLOROETHYLENE

Repiratory Protection:
NONE REQUIRED WITH ADEQUATE VENTILATION.
Ventilation:
MECHNICAL ADEQUATE TO MAINTAIN EXPOSURE BELOW TLV.

Protective Gloves:
RUBBER
Eye Protection: CHEM SAFETY GOGGLES.
Other Protective Equipment: N/P
Work Hygenic Practices: N/P
Supplemental Health & Safety Information: N/P

Section 9 - Physical & Chemical Properties
TRICHLOROETHYLENE

HCC: T4
NRC/State License Number:
Net Property Weight for Ammo:
Boiling Point: Boiling Point Text: 187-189F
Melting/Freezing Point: Melting/Freezing Text: N/A
Decomposition Point: Decomposition Text: N/A
Vapor Pressure: N/A **Vapor Density:** 4.5
Percent Volatile Organic Content:
Specific Gravity: 1.46
Volatile Organic Content Pounds per Gallon:
pH: N/P
Volatile Organic Content Grams per Liter:
Viscosity: N/P
Evaporation Weight and Reference: 0.001 MAX
Solubility in Water: NEGLIGIBLE
Appearance and Odor: COLORLESS,CHLOROFORM-LIKE ODOR.
Percent Volatiles by Volume: N/A
Corrosion Rate: N/P

Section 10 - Stability & Reactivity Data
TRICHLOROETHYLENE

Stability Indicator: YES
Materials to Avoid:
AVOID STRONG OXIDIZERS
Stability Condition to Avoid:
N/P
Hazardous Decomposition Products:
HYDROGEN CHLORIDE,PHOSGENE,OTHER HIGHLY TOXIC COMPOUNDS.
Hazardous Polymerization Indicator: NO
Conditions to Avoid Polymerization:
N/P

Section 11 - Toxicological Information
TRICHLOROETHYLENE

Toxicological Information:
N/P

Section 12 - Ecological Information
TRICHLOROETHYLENE

Ecological Information:
N/P

Section 13 - Disposal Considerations
TRICHLOROETHYLENE

Waste Disposal Methods:
DISPOSAL IN ACCORDANCE WITH FEDERAL,STATE AND LOCAL REGULATIONS.

Section 14 - MSDS Transport Information
TRICHLOROETHYLENE

Transport Information:
N/P

Section 15 - Regulatory Information
TRICHLOROETHYLENE

SARA Title III Information:
N/P
Federal Regulatory Information:
N/P
State Regulatory Information:
N/P

Section 16 - Other Information
TRICHLOROETHYLENE

Other Information:
N/P

HMIS Transportation Information

Product Identification: TRICHLOROETHYLENE
Transporation ID Number: 66350
Responsible Party CAGE: KO749
Date MSDS Prepared: 01/01/1985
Date MSDS Reviewed: 07/31/1991
MFN: 07/31/1991
Submitter: D DG
Status Code: C

Container Information
Unit of Issue: GL
Container Quantity: 6
Type of Container: BOTTLE
Net Unit Weight:

Article without MSDS: N
Technical Entry NOS Shipping Number:
Radioactivity:
Form:
Net Explosive Weight:
Coast Guard Ammunition Code:
Magnetism: N/P
AF MMAC Code:
DOD Exemption Number:
Limited Quantity Indicator:
Multiple Kit Number: 0
Kit Indicator: N
Kit Part Indicator: N
Review Indicator: Y
Additional Data:

Department of Transportation Information

DOT Proper Shipping Name: TRICHLOROETHYLENE
DOT PSN Code: OQK
Symbols:
DOT PSN Modifier:
Hazard Class: 6.1
UN ID Number: UN1710
DOT Packaging Group: III
Label: KEEP AWAY FROM FOOD
Special Provision(s): N36,T1
Packaging Exception: 153
Non Bulk Packaging: 203
Bulk Packaging: 241
Maximimum Quanity in Passenger Area: 60 L
Maximimum Quanity in Cargo Area: 220 L
Stow in Vessel Requirements: A
Requirements Water/Sp/Other: 40

IMO Detail Information

IMO Proper Shipping Name: TRICHLOROETHYLENE
IMO PSN Code: OVL
IMO PSN Modifier: P
IMDG Page Number: 6273
UN Number: 1710
UN Hazard Class: 6.1
IMO Packaging Group: III
Subsidiary Risk Label: -
EMS Number: 6.1-02
Medical First Aid Guide Number: 340

IATA Detail Information

IATA Proper Shipping Name: TRICHLOROETHYLENE
IATA PSN Code: YMD
IATA PSN Modifier:
IATA UN Id Number: 1710
IATA UN Class: 6.1
Subsidiary Risk Class:
UN Packaging Group: III
IATA Label: TOXIC
Packaging Note for Passengers: 605
Maximum Quantity for Passengers: 60L
Packaging Note for Cargo: 612
Maximum Quantity for Cargo: 220L
Exceptions:

AFI Detail Information

AFI Proper Shipping Name: TRICHLOROETHYLENE
AFI Symbols:
AFI PSN Code: YMD
AFI PSN Modifier:
AFI UN Id Number: UN1710
AFI Hazard Class: 6.1
AFI Packing Group: III
AFI Label:
Special Provisions: P5, N36
Back Pack Reference: A10.5

HAZCOM Label Information

Product Identification: TRICHLOROETHYLENE
CAGE: KO749
Assigned Individual: Y
Company Name: J.T.BAKER CHEM. (CHEM COMMODITIES-DIST)
Company PO Box:
Company Street Address1: 222 RED SCHOOL LANE
Company Street Address2: PHILLIPSBURG, NJ 08865-2219 US
Health Emergency Telephone: 201-859-2151
Label Required Indicator: Y
Date Label Reviewed: 12/16/1998
Status Code: C
Manufacturer's Label Number:
Date of Label: 12/16/1998
Year Procured: N/K
Organization Code: F
Chronic Hazard Indicator: N/P
Eye Protection Indicator: N/P
Skin Protection Indicator: N/P
Respiratory Protection Indicator: N/P
Signal Word: N/P
Health Hazard:
Contact Hazard:
Fire Hazard:
Reactivity Hazard:

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HEALTH & SAFETY PLAN
PRE-ENTRY BRIEFING AND
SITE ACCESS RECORD

Name of Facility: _____

Date: _____

Briefing Conducted by: _____

The following items were discussed at the meeting: (check items discussed.)

_____ Health & Safety Plan

_____ Applicable PPE and Field Monitoring Levels

_____ Personnel Responsibilities

_____ Site Details / Locations – Equipment, Communications, Figures, etc.

_____ Emergency Procedures

_____ Other _____

Personnel Name & Company	Time On Site	Time Departing Site
1.		
2.		
3.		
4.		
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13.		
14.		

The briefing report and Site access record should be kept with the Site records.

This Record should be copied as needed and completed for each day of Site work.

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